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THE COST OF PROTECTING INTELLECTUAL PROPERTY IN THE PROCESS OF COMMERCIALIZATION

INNOVATION MANAGEMENT – FROM IDEAS TO THE MARKETPLACE

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I. INTRODUCTION

1. Technology and inventions are important parts of the innovation process, which transform inventions into marketable products. This process is very complex and as such requires much specialized professional expertise and expert knowledge. The final phase of the innovation process is the marketing and commercialization phase, which is crucial for the success of any invention and innovation.

2. If we look more closely at the innovation process, we will realize that it basically consists of five overlapping and interrelated main phases: the idea generation and concept phase; the development and design phase; the legal phase (novelty patent search and patent application); the prototype and pre-production phase; and the production, marketing and commercialization phase.

3. The crucial point in the innovation process is the product, marketing and commercialization stage, when the invention or the new productor process based on it will meet the market test. It is only when it is accepted on the market by consumers and users that the invention or new product will begin to generate income, which will compensate inventors and manufacturers for the investment made and eventually also generate some profit.

II. COMMERCIALIZATION OF INVENTIONS

4. As already mentioned, the returns in terms of profit upon its commercialization are the ultimate (and possibly the most important) proof of the success of any invention or new product.

5. The innovation process is not a linear one and its different components overlap and interact to a considerable degree. Thus, the commercialization and marketing of an invention could be initiated at a very early stage of its development, for example during the idea generation and design phase.

6. However, it is not advisable for the inventor or his company to begin commercialization at such an early stage and at least not before having filed a patent application.

7. The price offered for such an inventive concept would be very low, if not zero, regardless of its ingenuity and market potential, since a lot more development work will have to be done before the invention may be used in practice and could generate any income.

8. Inventors and those involved in marketing inventions and innovations should not forget that only a very small percentage (five to seven per cent) of all inventions for which patents have been granted reach the commercialization phase of the innovation process.

9. The great percentage of failure is not usually due to the quality of the invention, but is rather the result of the influence of other factors, such as the high investment cost for a relatively small effect, the need for additional R&D work, the fact that manufacturing and technological environment are not yet ripe for such invention, no real market need exists, etc.

10. Commercialization and marketing strategies will largely depend on the kind of invention and the field of technology, to which the invention relates. They will be different for a mass product and for an invention in a specialized field, applicable only in the production undertaken by a few manufacturers. The market environment, customs and traditions, purchasing capacity and power of people (consumers) in the area will, to a large extent, define the methods and approaches used.

11. Commercialization and marketing of inventions is a most complex process, and in a highly competitive market it needs a professional approach and a lot of professional expertise in order to have real chances of success.

12. Inventors are advised to seek as much professional expert assistance as possible when involved in that process.

III. TRAINING COURSES ON INNOVATION MANAGEMENT

13. In order to improve the independent inventor's skills and performance, the Argentine Association of Inventors conducts regular training courses on innovation management, based on the following key assumptions:

- *"the test of an innovation, after all, lies not in its novelty, its scientific content, or its cleverness. Its lies in the success in the marketplace..."*

  Peter F. Drucker

- innovation is a specific tool used by entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service. It is capable of being presented as a discipline, able to be learned and practiced;

- independent inventors and entrepreneurs in general need to search purposefully for the sources of innovation, the challenges and their symptoms that indicate opportunities for successful innovation. They need to know and apply the principles of successful innovation;

- innovation is also a specific instrument used by inventors and entrepreneurs. It is the act that endows resources with a new capacity to create wealth. Indeed, innovation creates a resource. There is no such a thing as a "resource" until an inventor or researcher finds a new use for something (existing in nature or invented by himself) and thus endows it with economic value.

IV. CHARACTERISTICS OF A SUCCESSFUL NEW PRODUCT

14. Most of the reasons for success have nothing to do with the nature of the product, but everything to do with the vigor with which the product is marketed.

15. Six basic questions should be answered satisfactorily before an invention project is presented to a potential strategic partner:

(a) Does it really work?

16. There are various ways in which a responsible person can be assured that a product or process does what it was intended to do. Since most technologies are not "advanced technologies," the answer is usually obvious.

17. However, certain facts are very difficult to determine, especially when the device claims a significant mechanical, chemical or electronic improvement and does not have a working prototype.

18. When the question "Does it really work?" is not clear from the ideas drawn on paper or even computer drawings, making sense of the project and obtaining the necessary independent technical evaluation becomes a real challenge.

(b) Is it unique?

19. A general principle of product success is that it must solve a problem or fulfill a need better than the direct and indirect competition.

20. Strategic alliance partners, aware of the effects competition can have on a project, always look for some kind of proprietary position. A project's uniqueness is usually determined by a patent or a patent pending, but could also lie in the manufacturing technique, or even in the distribution channels.

21. Exclusivity and the potential market volume are the most important considerations in determining royalty rates for inventors.

22. The examination of patents, trademarks, copyrights and trade secrets enters into a project at some point. Generally this analysis revolves around the patent search, the preliminary response from the patent examiner (if still pending), and/or the breadth of coverage provided by the granted patent. This too depends on where the project is in its development stage.

23. Patent attorneys and agents are necessary and very useful partners. One of the first questions asked by a potential licensee or joint venture partners is: "Who did the patent filing work?" Unless a professional has done the work, the project's credibility is usually lost.

(c) Will the patent be easy to design around?

24. From this point of view only a positive answer from a professional patent attorney or agent will move the project forward.

25. A preliminary competitive analysis should also be undertaken. Intellectual property rights (IPRs) do not guarantee success any more than firing a bullet guarantees hitting the target. If the product or process does not possess a clear advantage over the features, benefits or pricing of the competition, the question asked is "why produce it?"

(d) Is there a real market for the product/invention?

26. Usually in order to gain the interest of potential alliance partners, there has to be a preliminary and independent product analysis, even in a rudimentary form.

27. This is done through the use of new product surveys and testimonial letters from users or industrial experts. In most cases, on-line database searches (on the Internet) quickly identify and retrieve relevant information describing the industry and market.

28. The bottom line is that private sector firms do not want to hear an independent inventor's dreams or glorified estimates of market size. They want facts and quality information upon which decisions can be made.

(e) What are the manufacturing costs?

29. Will a product be successful if the retail price is only twice the cost of raw material and labor? It usually requires three or four times this amount to cover the overhead and an array of sales and marketing expenses, while still leaving room for profits. If the product can be made of plastic, is injection molding or vacuum molding the best choice? How much will the mold cost? What are all the possible distribution channels? Would it be best to use distributors or sell directly to the consumer? Many new product innovators overlook such critical questions. Accurate answers require experienced input from both manufacturing and marketing experts.

(f) Is the intellectual property owner prepared to make a deal?

30. Has the inventor enough information, training, skills and will to face all the difficulties of the innovation process? This is the most important of the six above questions.

V. PATENT COSTS

31. Clearly, there is a link between cost and scope of protection as follows:

Type	Cost	Scope
Patent	Tens of thousands	Conceptual
Design	Thousands	Specific shape
Trademark	Thousands + marketing $	Specific name
Copyright	Nil	Narrow
Know-how	Nil	Personal

VI. PATENT STRATEGY

32. A typical protection strategy includes:

(a) an initial search to determine patentability;

(b) an initial filing to establish a priori date;

(c) a review, after one year, of commercial interest, updating of the application and filing in other countries of interest.

VII. PROSECUTION COSTS

A. INITIAL SEARCH

33. If you have access to excellent manual search facilities such as in the USPTO, and you have a search conducted by an independent searcher, it will cost you around US$375. The instruction, analysis and report of the search would take two hours of professional time (US$450), so the cost of the initial search would be about US$825.

B. PREPARATION OF INITIAL FILING

34. There are two possibilities for initial filing, either an informal (provisional) application or a regular full application. Each has its merits in particular circumstances, but in either case the description of the invention must be as detailed as possible.

35. The provisional application form of the USPTO indicates an average time of eight hours to complete the application. For a standard case, the cost of the initial application would be US$1,750. The government fees would be around US$100, so the total cost of the initial application would be around US$1,850. This cost level is not unusual for straightforward mechanical applications but is obviously at the lower end of the range. Some companies with an active filing program require provisional applications to be completed from a fairly detailed invention disclosure for around US$950, other subjects (particularly biotechnology and information technologies) are far more complicated and costs of around US$6,300 may be expected.

C. FOREIGN FILING

36. There are two basic options for foreign filing, via the PCT or direct national filing. In the latter option there is the possibility of regional applications or a national application.

(a) <u>The specification</u>

37. In either case, it is necessary to prepare the application for international filing by revising the description to cover new embodiments, if necessary; preparing claims and obtaining formal documents such as drawings, assignments and application forms. Typically this would incur costs similar to those in preparing the initial application, i.e. US$1,850. Assume therefore that a further US$1,850 is spent in revising the application. At this stage, total expenditure of approximately US$3,800 has been incurred.

(b) To PCT or not to PCT?

38. The PCT process is very popular with small firms selling to protect their inventions overseas. It is seen as a way of keeping options open and, as presently structured, providing additional information that allows risk management at a later date. For many companies, however, the size of the US market is the most important factor, and therefore it is common to file a PCT application and a US application at the convention priority date. This has the added advantage of providing additional search information to assess patentability and early issue of the US patent.

(i) Initial filing

39. PCT filing costs are fairly uniform. Additional costs are incurred, such as formal drawing. Usually a patent law (agent) firm will charge a set fee to cover the preparation of papers, file openings and the like. The set fee covers reminders to be sent to the inventor, advice on an appropriate strategy, implementation of that strategy, and follow-up documentation.

40. Using the cost estimation program, the cost of filing applications under the strategy, over and above preparations are:

	Professional fees	Associate fees	Government fees	Disbursements
PCT	US$ 750		US$1,850	US$220
US	US$ 375	US$470	US$ 450	US$ 65
Total	US$1,125	US$470	US$2,300	US$285

(ii) Initial prosecution

41. Over the next twelve months the applicant will receive:

- a PCT search report (16 months from the date of initial filing, i.e. priori date), that must be evaluated;
- an information disclosure statement (IDS) that must be filed within three months of the filing date and when the PCT is received;
- a US office action;
- the need to request preliminary examination.

42. The costs incurred during this phase will vary widely, depending on the nature of the reports. However, in general and rational terms, we could expect the PCT search report to take two hours to evaluate and report to the inventor (US$450), which each of the IDSs will probably cost US$200 and the US office action will take six to eight hours to review and for a response to be prepared.

43. The expenses incurred during the next 12 months' activities can be summarized as:

	Professional fees	Associate fees	Disbursements	Government fees
IDS (1)	US$ 190	US$ 65		
PCT search	US$ 450			
Ids (2)	US$ 190	US$ 65		
US OA.	US$1,600	US$200		
Demand	US$ 160			US$1,400
TOTAL	US$2,590	US$330		US$1,400

44. The total cost for the second 12 months is about US$4,500, giving total expenditure to date of around US$14,000.

(iii) Continued prosecution

45. In the next 12 months, i.e. the third year, the costs start to increase significantly. However, by this time, there should be sufficient indication of commercial interest to determine if the investment is justified.

46. The substantive work in this process is the response to the written opinion and the response to the second US office action. In an ideal world these would be the same but the reality is that they are not. Examiners will probably rely on different art and on different arguments necessitating the preparation of two different responses. Each of these is likely to incur similar costs, so a standard charge will be used for each (around US$1,600).

47. The choice of countries for national entry into national phase will depend on the nature of the invention and the geographical range of the applicant. One of the factors that influence the choice of country is the language used for patent prosecution where there are alternatives on the wish list. Selecting different countries with a common language can reduce the cost, a factor often overlooked.

48. By way of example we can select a filing program including Australia, Brazil, the EPO and Japan, as well as the US application already filed. Looking at each country in turn, in summary, the program indicates an initial cost of filing the selected program of Australia: US$1,300; Brazil: US$1,600; EPO: US$2,400; Japan: US$2,500.

49. Summarizing the costs for the third year we have the following:

	Professional fees	Associate fees	Disbursement	Government fees
Response to WO	US$1,600			
Response to US	US$1,600	US$ 200		
US issue fees	US$ 200	US$ 300		US$ 650
Australia	US$ 400	US$ 750		US$ 150
Brazil	US$ 400	US$1,000	US$ 200	US$ 50
EPO	US$ 400	US$1,750		US$1,000
Japan	US$ 400	US$1,500	US$ 500	US$ 160
TOTAL	US$5,000	US$5,500	US$ 700	US$2,010

50. The total cost for the third year is around US$13,000, giving an aggregate total to date of around US$27,500.

(iv) Entry into the national phase

51. Thereafter, each county will proceed in its own manner. We have set out the anticipated costs for each country assuming that a response to a substantive office action will, on average, be required and that some local input is expected.

(a) Australia

	Professional fees	Local agent fees	Disbursements	Government
Examination	US$1,600	US$350		US$ 150
Grant	US$ 125	US$200		
Total	US$1,725	US$550		US$ 150
Annuities				US$6,800

(b) Brazil

	Professional fees	Local agent fees	Disbursements	Government
Examination	US$1,600	US$ 700	US$190	US$ 130
Grant	US$ 125	US$ 400		US$ 30
Total	US$1,725	US$1,100	US$190	US$ 170
Annuities				US$13,500

(c) EPO

	Professional fees	Local agent fees	Disbursements	Government
Examination	US$1,560	US$ 700		
Grant	US$ 125	US$ 700	US$225	US$ 650
Total	US$1,685	US$1,400	US$225	US$ 650
Annuities				US$1,000

(d) Japan

	Professional fees	Local agent fees	Disbursements	Government
Examination	US$1,560	US$750		US$ 700
Grant	US$ 125	US$200	US$450	US$ 400
Total	US$1,685	US$950	US$450	US$ 1,100
Annuities				US$15,000

52. The cost of prosecuting after filing the national entries is around therefore US$14,000, excluding annuities and validation of the European Patent.

53. So, the total cost for a basic global patenting strategy is around US$50,000, or even more.

VIII. OTHER STRATEGIES THROUGH THE INTERNET

A. KEY STRATEGIES IN WEBSITE PROMOTION

54. Internet consultants advise inventors to take advantage of as many of the following website marketing promotion strategies as possible:

(a) Get posted in web directories

55. In an effort to make web cruising a little easier, a number of businesses have packaged themselves in easy-to-use directories that help Internet cruisers to access their sites more quickly. Many inventors also use the same approach

(b) Consider a professional search engine listing firm

56. Seasoned web users turn to search engines such as: **www.yahoo.com** and **www.google.com**, to help them to find specific information on the Internet quickly. They simple type in a subject area and the search engine brings back “links” that they can “click on” for further information.

(c) Create your own website

57. Promote your invention through your own website.

(d) Link until you drop

58. Probably the easiest, least expensive, and most effective way to promote a site is to link your page with every other non-competitive page on the Internet that shares the same interest.

(e) Recommended sites:

(i) www.invention-ifia.ch/store.htm;

(ii) www.wipo.int;

(iii) www.inventorsdigest.com;

(iv) www.PatentCafe.com;

(v) www.inventivaonline.com.

IX. CONCLUSION

59. A successful inventor is like the conductor of an orchestra. He knows only a little about each instrument and yet somehow organizes the playing of a symphony. He is a salesperson, marketing researcher, technical researcher, public relations officer, talent scout, evaluator and negotiator. These roles should, at first, be willingly accepted and then given to those who are specialists.

60. In order to assist independent inventors in our country in the best way possible, we have found an invaluable source of information and permanent support both in WIPO and IFIA's programs, serving as an active tool for our regular training courses and general services, which are useful and benefit the inventor's community in different ways.

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