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INTELLECTUAL PROPERTY EXPLOITATION AND VALUATION

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INTRODUCTION

Exploitation of intellectual property rights (IPR) may often be the ultimate goal of the process of creation of inventions, or it can be a useful instrument of penetration of new markets or protection of existing market shares. In this presentation we will focus mainly on exploitation of inventions and new technology which is very challenging, but also most complex.

Research results and inventions are usually at an embryonic stage commercially when they are brought to the attention of potential users who, usually, could be impressed but would not really engage in developing such ideas. They would prefer to have a ready to use product or technology.

To achieve success in exploitation of IPRs, it is important from the outset to select projects that have the greatest potential, not only technically but also commercially.

1. Assessment and Evaluation

The starting point for exploiting IPRs is to know their value. One should always remember that the value of an object (tangible or intangible) is very relative and for many IPRs would have very little correlation with the cost. In simple terms, one could say that the cost of an object may be presented as the sum of all the inputs necessary for its creation (production), but the value is an estimation of how much such object is worth for its owner or buyer. Or, in other words the value of an IPR is the amount of money that a buyer would be ready to pay for it.

Experience shows that even with careful assessment and prudent management, only about one in ten projects will make a profit and one in 100 will be a significant success. Moreover, the lead time before a new invention, product or technology reaches the market normally takes several years (at least five). A careful appraisal of a project's commercial potential will increase its chance of success. Any appraisal (or valuation) process should analyze and asses the following:

1.1 Technical Assessment

The technical assessment compares the new research result or development with existing products or processes and seeks to identify all the strengths and weaknesses and record their commercial significance. New technology developed because of a market need is more likely to be commercially relevant than technology that is of limited practical use. Moreover, incremental improvements to known technology are generally easier to commercialize than new "breakthroughs." However, a breakthrough invention could have greater significance and market value, especially if it has general applicability.

1.2 Intellectual Property Rights (IPRs) Portfolio

With the increasing awareness of the importance of IPRs for business many companies have build a portfolio of IPRs (including patents, know-how, related technology, but also copyrights and trade marks) during the course of product development and marketing. In many cases the primary reason for filing patent applications was to discourage product piracy.

An increasing number of companies are gaining awareness that IPRs can offer additional benefits, which may include, *inter alia*:

Reaching new markets
Further amortizing development costs
Introducing technology to new industries
Controlling the spread of the technology through grant-back (or cross-licensing) clauses
Influencing standards bodies and creating defacto standards

An audit of IPRs at the company level can produce savings and identify opportunities for additional income (e.g. from licensing).

Every product planning process should include provisions to assure that maximum value is derived from the intellectual property developed and acquired. Otherwise the IPRs will become an under-utilized asset.

Licensing is one way to extract value from IPRs. Companies that desire to maximize such assets have set up offices or units that manage the exploitation of the company's IPRs. Often such offices also have the task of determining the value of the company's IPR assets and they accumulate the expertise gathered in managing and exploiting the IPR portfolio. Periodic assessment of a company's IPR portfolio provides the opportunity to determine its value and would be very useful in relation to mergers and acquisitions, initial public offerings, privatization, offers to license specific technologies, developing franchises, etc.

1.3 Intellectual Property Assessment

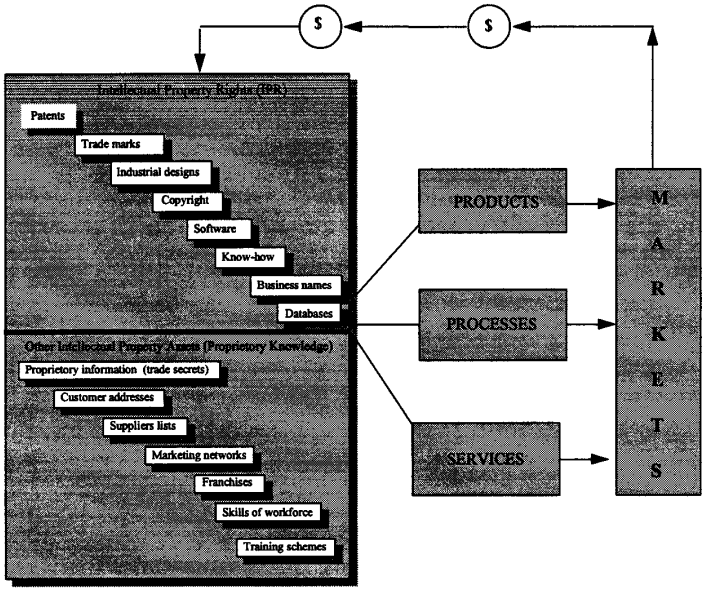
IPRs are a foundation for business. Typically, IPRs emerge as a new idea or discovery that is confidential information. The confidential information is usually written down and would enjoy protection as copyright. Then, with the continued R&D work perhaps a patentable invention is made resulting in more intellectual property rights ("IPR").

These various IPRs (patents, trade marks, copyrights, trade secrets, appellations of origin) individually or collectively can constitute a basis for building a business that may develop additional valuable IPRs. Through its operations the business will create further confidential information and the cycle of innovation continues (see Diag).

It is important to assess and evaluate:

1.2.1 the IP elements in the project (whether the project has or can generate IPRs, for example, confidential information, copyright, a patentable invention, trade mark, etc.);

INTELLECTUAL PROPERTY ASSETS OF A COMPANY



It is important to assess and evaluate:

- who owns project and/or the IPRs;
- are the rights transferable to a user or a business company;
- what has already been disclosed;
- how the rights can be protected;
- whether additional valuable IPRs can be created;
- whether there could be infringement of third party rights;
- the potential cost of IPRs protection and management.

1.4 Need of Further Development

Inventions and early stage research can rarely be exploited commercially without further investigation and development, for example, to demonstrate technical feasibility or to build a pre-production prototype. The requirements for this should be calculated in terms of time, the resources needed, and costs. An estimate of the unit cost of the finished product or cost of introducing a new process is also needed to help work out the potential economic benefits of exploitation.

1.5 Market Assessment

A very important step is to examine market potential (location of markets, volume, value, competitors, possible allies) and growth over time. Ideally, a project should have a large financial "up-side"; that is to say, a market potential of several million dollars per year. This is necessary to compensate for the expense and risk of developing a project. Information on the following should be collected and analyzed:

- diversity of products or processes to which the invention/R&D result is applicable;
- location of markets;
- money value of individual markets;
- market size as global sales ($ p.a., sales volume p.a. & growth);
- competitive products (price per unit & sales volume – if available);
- competitive companies and R&D organizations;
- potential allies.

1.6 Regulatory Issues

Most countries have regulations and laws governing the conduct of business. These can influence strongly the development and launch of a new product or process. For example, before a new medicine can be released, typically it must satisfy efficacy and safety requirements and be passed for use by a government department of health. This is a fairly obvious example. It is prudent to check what government regulations, if any, are relevant to the project. Compliance with such laws can be time consuming and costly and must be factored into the strategy for commercialization.

1.7 Financial Requirements

R&D commercialization can only proceed through further investment. In developing a commercial strategy, it is helpful to establish the financial requirements for a project both in terms of dollar value and also the kind of investor required to take the project forward. The characteristics of potential investors should be defined in terms of their capabilities, financial strengths and likely commitment to the project and only those meeting the requirements should then be further considered.

1.8 The R&D Team

An assessment should be made of a researcher's potential to work well with others and to achieve goals in a timely fashion. Researchers are not usually experienced in managing IP, commercial law, finance, the development of a commercial product, manufacturing and marketing. However, these will be important for adding value to a technology and its overall commercial success. It is a golden rule that if you have to choose between a great project with a mediocre R&D team, and mediocre project with a great R&D team, the project with the great R&D team is the best choice.

2. Exploiting IPRs: Optimizing the Outcomes

Having decided which projects to pursue, the next task is to "manage-up" the projects with good prospects in order to optimize their value and the financial returns.

As a general rule, the greater value that can be added before involving a third party, the greater the rewards. This can require the provision of additional financial support for R&D as well as supporting costs of IP protection and project management, often over several years. In other words, once a decision is taken to commercialize one must be prepared to accept some risk in order to optimize the benefits. When engaging in a commercialization process one should aim to:

2.1 Add Value to the Project

There are two important elements:

2.1.1 technical value adding, e.g., by making further technical developments, particularly those which meet a market demand, and

2.1.2 commercial value adding, for example, through protection of IPR, understanding the market, knowledge of investors and competitors, evaluating the merits of possible commercial arrangements and, importantly, preparation of an attractive investment prospectus.

2.2 Reduce Apparent Risk for Investors

This can be done for example by:

2.2.1 verifying (auditing) the scientific and technical viability of the project in-house and by using independent expertise and,

2.2.2 commercial diligence, e.g., by undertaking patent searches, obtaining written independent assessments of the technical and IPR strength, market potential and feasibility of any proposed developments.

2.3 Harmonize Technical and Commercial Strategies

Having a productive relationship between technical and marketing staff involved in a project is very important. Here are some practical hints in this respect:

secure IPR and avoid premature disclosure. Keep comprehensive dated records of the research and communications related to it. Do not provide valuable information to third parties without adequate protection. Use appropriate Confidential Disclosure Agreements ("CDAs") and "Supply of Materials Agreements" ("SMAs") when giving proprietary information and/or materials to others;

beware of compromising IPR. Third party CDAs and SMAs should be reviewed very carefully. "Grants" which a research institution may wish to accept may actually be contracts under which third parties claim ownership in IP created. Terms for a research institution's collaborative activities with outside groups should be agreed and understood by all those involved, if there are potential IPR consequences. Only senior executives of a R&D institution should have authority to bind these entities in contracts and "informal" collaborative arrangements should be avoided. Also, it is often overlooked that, unless there is an agreement to the contrary, consultants are normally the owners of the IPR they create (at least that is the law in some countries);

ensure there is an IP policy which rewards inventors and that the policy is understood by all concerned.

2.4 Negotiation and Management of Deals

To achieve the transfer of a technology and IPR to manufacturers and marketers requires the negotiation of a deal or several deals. Skillful negotiations and deal management are vitally important components in the commercialization of research results. The following comments may be helpful:

Specifically target suitable investors or developers. Initially non-proprietary information should be provided, followed by information subject to a Confidential Disclosure Agreement (CDA) and/or Supply of Materials Agreement (SMA) and an attractive investment prospectus.

Know your target's business. Pitch your presentations to satisfy their likely wants.

Be flexible and open minded. Arrangements for research and development and commercialization of IPR (e.g., sale, license, license-R&D, joint venture) should satisfy all the parties involved.

An investor values a project by the financial return it could provide, over a given period, discounted for risk and inflation. There may also be strategic reasons why a project could have appeal and this also should be considered when approaching investors.

To the owner of the IPR a project's value is what the market will pay for it. This is an important point, because it means there is no automatic ceiling on the price and negotiations will determine the level.

Get first class professional advice. This is always strongly recommended even though it might be expensive. If this is not done and some technical or commercial problems arise later, the cost of rectifying the situation or lost revenue might be higher.

Even the best deals hardly ever go smoothly. Formal agreements should be structured to protect the interests of the IPR owner in case things go wrong.

Build good relationships between commercial parties and researchers from the start. This should be done as insurance for difficult times in the future.

2.5 Research and Commercialization : On-Going Management

Exploitation of inventions and research results, but also of other IPRs normally requires a transfer of knowledge, technology and know-how and the establishment of productive relationships between people. The technology provider should continue to monitor the commercialization activities of the recipient during the course of their agreement. Diligent management of arrangements should help maintain a productive relationship and catch problems at an early stage before they become a danger to a project's success.

Project management imposes a burden and therefore cost to the technology provider which must be taken into account when first estimating the potential profitability of alternative technology development and transfer arrangements. In theory at least, the burden should be less for a License Agreement than for a Joint Venture which demands co-management of all facets of the commercialization process.

CONCLUSION

In this document we have provided some ideas based on various experience about invention assessment and commercialization. To achieve sustained success in this field, it is important to gradually create a portfolio of IPR (investments in inventions, technologies, know-how, proprietory information, copyrights, etc.) and to manage the portfolio as a whole, as well as the individual investments. Portfolio management is a subject for discussion in its own right, perhaps at some time in the future.

RESEARCH COMMERCIALIZATION

CHECKLIST

1 What is the technical field of your discovery?
e.g. Biotechnology, Remote Sensing, Communications, Business

2 Who made the discovery and when?
please give full name(s), address(es), telephone numbers(s), and date

3 Why do you think the discovery has commercial potential?
e.g. is it a new product, process, or know-how with commercial relevance

4 List the key characteristics of the discovery
please use headings as in the example below :

	FEATURE	FUNCTION	BENEFITS	
			Technical/Social	Economic
1)	voice controlled robotic arm	locates & picks up objects on command	leaves operators hands free	more efficient warehousing
2)	can be miniaturized	domestic applications	help for disabled	human resource use
3)	etc.....			
4)	etc.....			

5 Are there any other special aspects of the discovery?
e.g. is it a fundamental development with several applications, is it in the national interest, is it topical?

6 What resources of your R&D Organization/University have been devoted to the project?
e.g. two person years, $10,000 expendable research materials per annum, 100 sq. M lab space per annum, 40% use $25,000 equipment, etc.....

7 Has the project received financial support from outside your R&D Organization/University?

if so
a) *what was the source of the funding?*
b) *how large was the support?*
c) *do you know if the source has any legal rights in the project?*

8 Do you think further development of the discovery is required?

if so a) *in the University or R& D Organization*
b) *in a commercial enterprise*

For (a) and (b) please indicate the development objective, required human resources, required materials, equipment, space and finance

9 Please estimate the unit cost to manufacture the new product or the cost advantage of the new process

10 Has the research result been made public in any way?
if so, when and how?

11 Is the research result patentable or does it involve a patentable invention?

12 Has the practical utility of the research result been demonstrated?

13 Can you estimate the domestic and export market potential?

e.g. *a)* *diversity of products or processes to which the discovery is applicable*
b) *location of markets*
c) *$ value of individual products*
d) *market size as global sales in $ per annum &/or sales volume per annum*
e) *are there competitive products and what is their price/unit and global sales per annum?*
f) *who are the competitors - researchers and commercial enterprises?*

14 Has anyone spoken to a commercial enterprise about the research result or invention?
if so, to whom and when?

15 Can you suggest business enterprises or other organizations which could be interested in your research result?

[End of Annex and of document]