

INTELLECTUAL PROPERTY AS A LEVER FOR ECONOMIC GROWTH

"Our imagination is the only limit to what we can hope to have in the future". – Charles F. Kettering, (1876-1958) prolific inventor and co-owner of more than 140 patents.

Kettering's words are ringing true for the leaders of an increasing number of countries seeking to strengthen their economies through the power of innovation. His sentiments could be a rallying cry for those countries attempting to leverage their national resources, not only of the traditional kind (flora, fauna, minerals) but also those human resources that are the building blocks of the new global economy – creativity, ingenuity and invention.

In his recent book "Intellectual Property – A Power Tool for Economic Growth", WIPO Director General Kamil Idris underscores how these resources – when transformed into intellectual property – can become valuable and powerful assets or "tools" that, when used to full effect, can boost national wealth creation and enhance social and cultural well-being.

His message to policymakers is clear. Once they have

- ▶ recognized the potential in the innovative power of their country's people;
- ▶ taken active steps to encourage it;
- ▶ put in place a firm legal framework to protect the IP deriving from it; and

▶ developed strategies and policies to exploit the commercial and social benefits to be had from the IP assets thus created then – as Kettering would no doubt have put it – by nurturing the imagination of their citizens they will have given them the gift of the future. Policymakers who act on this message will, in the words of the United Nations Millennium Declaration, be working to "create an environment... which is conducive to development", one of the major goals of that Declaration.

This is a broad view of the WIPO vision of the IP landscape for developing countries. But what of the details? What are the practical elements needed to turn such a vision into reality? Certain actions are key for countries to effectively identify and leverage value from their IP assets. These include exploiting national strengths when forming a strategy for IP creation – for example, long-standing skills in irrigation; rich, indigenous bio-diversity (often linked to traditional healing methods); or strong musical and artistic traditions.

Once such strengths are identified, countries must ensure security and confidence for potential backers/investors in IP development and commercialization through an efficient, well-functioning national IP system. They must support the education and training necessary to create a supply of skilled professionals in areas such as R&D, law and marketing. They must provide funding and other support for the creation, protection and commercialization of IP assets (in particular, recognizing

the important role of small and medium-sized enterprises), and assist in the development of national skills in negotiating agreements associated with IP assets (for example, for transfer, licensing, or joint venture development). Countries must also work to create partnerships (domestic and international, and public and private) that enhance innovative activity and increase the creation of viable IP and its exploitation. Attracting foreign involvement at this level can also result in significant technology transfer and inflow of know-how and training.

The best way to illustrate how these elements contribute to a healthy, dynamic and productive IP environment is to examine concrete examples that illustrate an effective and creative use of the IP system, and to explore how this affects economic health and social well-being. This goes beyond the direct creation of financial return and useful or even life-saving products, and includes aspects such as job creation, the strengthening of national identity and pride, creative fulfillment, and the stemming of the flow of trained professionals (the lifeblood of any economy) abroad.

In the coming months the WIPO Magazine will feature a series of such stories from different countries on different continents – and concerning different types of IP – that will examine the factors leading to their success and the benefits obtained from the experience. This issue contains the first part of an article that looks at leveraging the IP system in Africa. The article will be continued in the next issue.

Tapping the innovative power of a resourceful continent

The examples of successful innovative endeavor used in this series have been triggered by a wide variety of catalysts, ranging from the attributes of a thorny plant growing in a stone-dry land, to the knack of turning a readily available fruit into a marketable delicacy, to the need to stop the advance of a deadly virus and to ease the plight of sufferers from a painful genetic disease.

These last two examples, which will be examined in this issue, show the way in which national innovative activity can be spurred by the need to find commercially viable solutions to specific problems – often disease-related, and in this instance, with important implications for public health. They concern initiatives in Kenya and Nigeria, respectively, to find a possible anti-HIV vaccine and develop a treatment for the extremely painful, potentially life-shortening sickle cell disease.

Anti-HIV vaccine developed in Kenya

Kenya is attracting much world attention through the Kenya AIDS Vaccine Initiative (KAVI), which has produced a drug aimed at preventing infection with HIV, due to be tested on up to 10,000 healthy volunteers next year in the final phase of clinical trials. With the support of the Kenyan government and financial backing from the



International AIDS Vaccine Initiative, scientists from the universities of Nairobi and Oxford (the British Medical Research Council) formed a partnership to work on the project after scientists noticed that a high-risk segment of the population in Nairobi was proving consistently immune to HIV infection and set out to explore why.

This partnership resulted in a potential new vaccine against HIV on which patent applications have been filed in numerous countries. After an initial misunderstanding over the ownership of IP rights in the invention, a new partnership agreement was signed giving the three participating bodies joint ownership in the patent and including an understanding that (according to a reported joint press statement) the partners will "use their ownership to help ensure that if the vaccine proves effective it will be made available at reasonable prices to Kenya and other developing countries."¹

Not only has the project resulted in a joint stake in an important IP asset (patents) that could result in considerable financial return to the country, it has also leveraged national innovative thinking to work towards finding a solution to a problem that causes extreme human suffering and puts a tremendous strain on the social fabric of affected countries.

The national experience gained from the project, including the lessons learned from the misunderstanding over IP ownership, has had the added advantage of emphasizing the importance of IP awareness at all stages of any scientific endeavor. Nicholas Biwatt, Kenya's Minister for Tourism, Trade and Industry, has been quoted as saying, "...my advice to local researchers is to include matters of intellectual property rights from the launch of any collaborative research agreements or memorandum of understanding."

Some of the positive factors deriving from the project (and contributing to the development process) include:

- ▶ sensitization to IP issues and the need to ensure adequate protection of potential IP assets;
- ▶ creation of possible future income from actual joint ownership of the IP asset;
- ▶ contribution to national infrastructure and human resource development (for example, the means to meet required international standards for carrying out a vaccine trial had to be built from scratch in the country);
- ▶ increased prominence for the country as a player in global R&D resulting from a project of such worldwide importance;

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¹ The research being carried out is for the HIV strain dominant in Kenya. However, Dr. Job Bwayo, team leader of KAVI has said that "If this works, it can be used as a prototype to be modified in the laboratory for developing vaccines for other subtypes of HIV."

increased attractiveness of domestic research possibilities (through, among other things, the safeguarding of the IP rights in new discoveries) helping to curb the temptation for scientists to leave the country to conduct research abroad.

A new drug developed from native plants in Nigeria

Sickle cell disease is a painful hereditary disorder that strikes particularly hard in Nigeria, where an estimated 100,000 children are born with it every year. Nigerian scientists at the National Institute for Pharmaceutical Research and Development (NIPRD), working with a traditional medicine practitioner, have developed and patented a new treatment which is said to be a breakthrough in dealing with the disease. Sickle cell disease is also prevalent among the African-American population of the United States of America, affecting an estimated 1,000 newborns every year.

An exclusive license for commercial production of the drug (developed from native plants) in Nigeria and for global marketing has been negotiated with US-based Xechem International, Inc. The government has been quoted as stating that this was done to ensure mass production of a drug that will bring relief to thousands of Nigerians and other sufferers around the world. The disease affects life expectancy and its symptoms include extreme pain, severe infections, and organ damage, including kidney failure and

heart attacks. Observers have noted that the agreement between NIPRD and Xechem, which ensures that the country keeps a stake in the further development and global use of its traditional medicines, could be a model for other countries. The agreement with the foreign commercial development company took place after efforts to find a local company willing to take on the task failed.

Charles Wambebe, who led the NIPRD during the development phase of the drug, said that greater recognition was needed in developing countries of the value of research and of the fact that investment in research does not necessarily produce immediate returns. Ramesh Pandey, head of Xechem, urged developing countries to "look at your strengths" and likened the biodiversity of Nigeria and many other developing countries to gold, particularly in the light of increasing global interest in, and demand for, herbal-based products. Pandey's company will not only undertake the commercialization of Nicosan™ (Xechem's name for the non-toxic, phyto-pharmaceutical product originally developed under the name of Niprisan™), but will also take the drug through the US Food and Drug Administration approval process.

Benefits to the country from this research include:

- use of the IP system to leverage financial and social benefits from the country's natural resources, in this case its rich biodiversity;



- increased sensitization to the potential value of well-channelled IP creation;
- experience in customized R&D to address a specific domestic problem, resulting in the likely improvement of the quality of life for the many Nigerians (and others) suffering from the disease;
- further experience in using IP assets in the most efficient and effective way possible;
- potential income stream in the form of royalties and other revenue flowing from the agreement with Xechem;
- training and technology transfer associated with the agreed production of the drug in Nigeria (by Xechem Pharmaceuticals Nigeria);
- the spin-off benefit of associated job creation.

These two cases from Kenya and Nigeria vividly illustrate the potential benefits – social, economic, and otherwise – of developing and exploiting national assets through the skillful use of the IP system. In the next issue, the WIPO Magazine will explore more case studies from Africa and examine the importance of partnerships and public awareness in such endeavors.

To order a copy of "Intellectual Property—A Power Tool for Economic Growth" please visit the WIPO electronic bookshop at www.wipo.int/ebookshop

VALUATION OF INTELLECTUAL PROPERTY: WHAT, WHY AND HOW

What is the Value of Intellectual Property?

Business Week's 2003 annual rankings of top brands finds Coca-Cola at the top once again - valued at US\$70.45 billion. The second- and third-placed brands are Microsoft at US\$65.17 billion and IBM at US\$51.71 billion. The Apple brand name, at number 50, is valued at US\$5.55 billion. These sums are not only huge on their own, but they often represent as much as 70 to 99 percent of the total market capitalization of the company as well.

In the last ten years, smart companies have effectively used the intellectual property (IP) system to create, extract or leverage the value of most of their intangible assets by developing and executing IP asset management strategies. However, the number of such companies worldwide is rather small. A study conducted in 1997 concluded that the majority of firms in the United Kingdom do not undertake a formal valuation of their IP assets.² Another study showed that even in the USA, 76 percent of the 226 Fortune 500 companies surveyed did not assign value to their intangible assets in their annual reports.³ Conventional wisdom tells us that small and medium-sized enterprises (SMEs) could only be worse off in this respect.

Why Undertake Valuation of IP Assets?

The valuation of any type of asset, including an IP asset, helps its owner to decide as to the most cost-effective way in which that asset may be used, protected, insured, sold, leveraged or exchanged in the market place. Most activities relating to planning, negotiating or managing business relationships or transactions require information on the value of the IP assets of a company. These activities include:

Licensing - Before a company makes an agreement to license IP (see WIPO Magazine May-June 2003), it must know as accurately as possible the true value of the IP assets involved in the arrangement. Without knowing the value of the IP assets being licensed, neither party can know if it has really entered into a 'win-win' deal in financial terms. A good IP valuation helps a prospective licensee to compare the financial terms of a proposed licensing deal offered by a particular technology supplier with those of alternative suppliers.

Mergers and Acquisitions - The increasing contribution of intangible assets, in particular IP assets, to the overall market value of enterprises has sharpened the focus on IP issues in merger and acquisition (M & A) transactions. In-depth knowledge of the relative importance of the IP assets of the enterprises

involved will contribute to the success or failure of the M&A. Therefore, each party submits to the other(s), after signing mutual confidentiality or non-disclosure agreement(s), an **IP due diligence report**, which essentially provides a detailed picture of IP assets of the party.

Cost Saving - Recognizing the importance of IP assets, many companies have embarked upon systematic identification and documentation of their IP assets. This process leads to follow-up measures, such as legally protecting these IP assets. Like any other asset, maintaining IP assets has costs and benefits. Maintenance of some types of IP assets could be prohibitively expensive, especially if those assets are not providing, and are not expected to provide, more benefit than the cost incurred on maintaining them for the remaining period of their legal or business life. IP valuation helps firms identify IP assets in their portfolio whose inherent value has diminished below a benchmark value. For IP assets used in the non-core business activities of an enterprise, or those whose strategic importance has decreased, IP valuation may provide enough information to do a cost-benefit analysis to decide whether to continue maintaining the asset, license it, or allow it to lapse.



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² Bosworth, Derek. L. March 2003, *The Importance of Trade Marks to Capital Raising and Financial Performance- Lessons for SMEs*

³ *ibid*