

This Overview gives a brief summary of *Intellectual Property – A Power Tool for Economic Growth* by Kamil Idris, Director General of the World Intellectual Property Organization (WIPO).

The full text of the publication can be obtained in hard-backed paper copy or on CD-ROM from WIPO at the address below, or can be ordered through the Organization's electronic bookshop (www.wipo.int/ebookshop).

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INTELLECTUAL PROPERTY

A POWER TOOL FOR ECONOMIC GROWTH

Kamil Idris

OVERVIEW



WORLD
INTELLECTUAL
PROPERTY
ORGANIZATION

INTELLECTUAL PROPERTY

A POWER TOOL FOR ECONOMIC GROWTH

INTRODUCTION

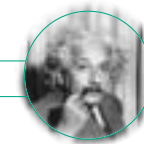
Intellectual property is a term increasingly in use today, but still little understood. To many people it remains an obscure legal concept of little relevance to everyday life.

Intellectual Property – A Power Tool for Economic Growth seeks to demystify intellectual property (IP) and to explain the *why* and the *how* of the subject – unlike many other IP texts that concentrate on the *what*. Its message is that **intellectual property is a “power tool” for economic development and wealth creation that is not yet being used to optimal effect in all countries, particularly in the developing world.**

It is a practical guide to using those intangible assets – such as knowledge, information, creativity and inventiveness – that are rapidly replacing traditional and tangible assets – such as land, labor and capital – as the driving forces of economic health and social well-being.

CREATIVITY AND INNOVATION – UNIVERSAL NATURAL RESOURCES

“Imagination is more important than knowledge” Albert Einstein



Albert Einstein's preference for imagination over knowledge is a starting point, because IP is based on the power of imagination. Einstein understood that it is the ability to stand on an existing foundation of accepted knowledge, and see beyond to the next frontier of discovery that is the source of personal, cultural and economic advancement.

The World Intellectual Property Organization (WIPO) believes that IP is native to all nations and relevant in all cultures, and that it has contributed to the progress of societies.

The great African-American chemist and inventor, George Washington Carver – born in the 1860s – recognized the truth of that message.

Carver invented crop-rotation methods for conserving nutrients in soil and discovered hundreds of new uses for crops such as the peanut, which created new markets for farmers in the United States of America. He understood that the power of creativity and innovation applied to artistic expression or the solving of practical problems is not the exclusive province of any country or people, but is **a resource of limitless potential available to everyone.**

Harnessed in the form of IP, it is a force that can be used to enrich the lives of individuals and the future of nations – materially, culturally and socially.



THE EVOLUTION OF IP

Courtesy: Gutenberg Museum Mainz

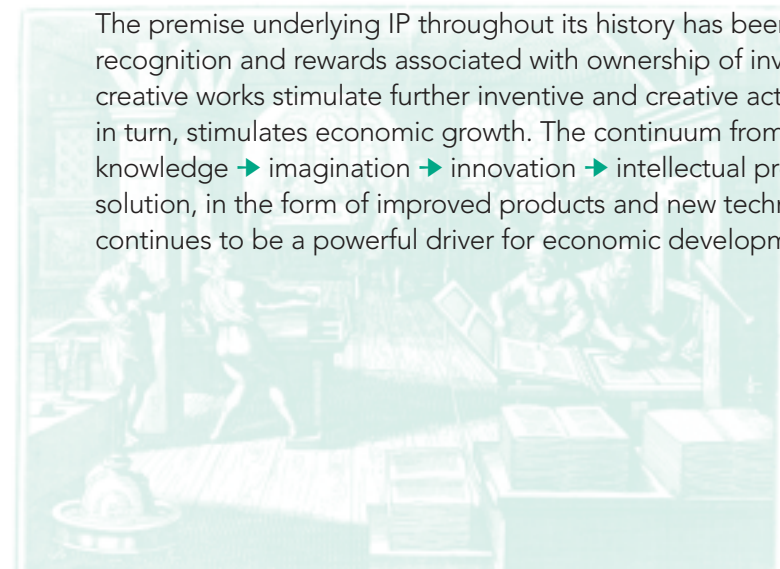


Renaissance northern Italy is thought to be the cradle of the IP system – so the concept is not a new one. A Venetian law of 1474 made the first systematic attempt to protect inventions by a form of patent, which granted an exclusive right to an individual. In the same century, the invention of movable type and the printing press by Johannes Gutenberg around 1440 contributed to the birth of the first copyright system in the world.

Towards the end of the 19th century, inventive new ways of manufacture helped trigger large-scale industrialization accompanied by such phenomena as rapid city growth, expanding railway networks, the investment of capital, and growing transoceanic trade. New ideals of industrialism, the emergence of stronger centralized governments, and stronger nationalism **led many countries to establish their first modern IP laws.**

The international IP system also started to take root at that time with two fundamental intellectual property treaties, the Paris Convention for the Protection of Industrial Property in 1883, and the Berne Convention for the Protection of Literary and Artistic Works in 1886.

The premise underlying IP throughout its history has been that the recognition and rewards associated with ownership of inventions and creative works stimulate further inventive and creative activity that, in turn, stimulates economic growth. The continuum from problem → knowledge → imagination → innovation → intellectual property → the solution, in the form of improved products and new technologies, continues to be a powerful driver for economic development.



ECONOMICS AND IP


For many years, economists have tried to provide an explanation as to why some economies grow fast while others do not; in other words, why some countries are rich and others are not. It is generally agreed that knowledge and innovation have played an important role in recent economic growth. The renowned economist Paul Romer suggests that the accumulation of knowledge is the driving force behind economic growth. For countries to promote growth, his theory goes, their economic policies should encourage investment in new research and development (R&D) and subsidize programs that develop human capital.

This can be seen in the economic growth achieved by some countries in the 1990s. Rapid knowledge creation, including the emergence of new technologies, resulted in **policy changes regarding intellectual property and the adoption of new knowledge-asset management practices.**

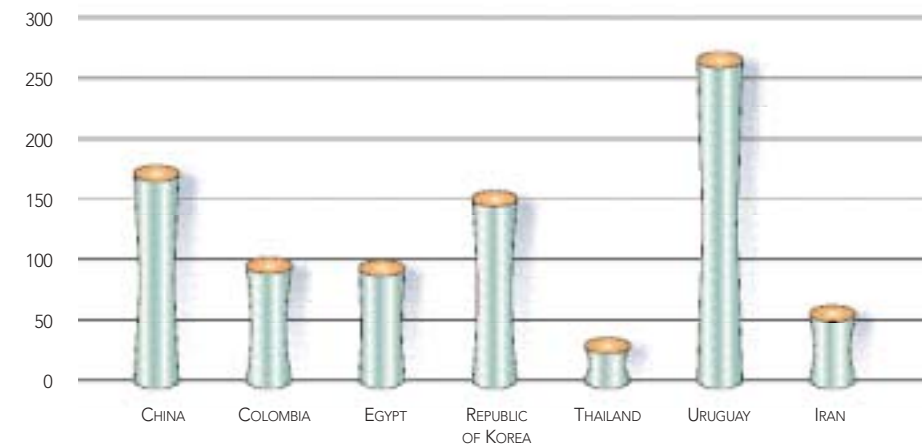
One of the consequences of the emerging importance of IP and the new pattern of global trade that started at the beginning of the 1990s was the forging of a deliberate connection between the two. Some developed countries began to use trade measures to curb piracy of intellectual property abroad. Among other things, this led to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), one of the World Trade Organization (WTO) agreements resulting from the multilateral trade negotiations under the Uruguay Round.


In the 1990s, an increasing number of policy-makers in emerging economic powers recognized the important role of the IP system in encouraging private investment in R&D, especially in the industrial and scientific fields. Many studies suggest a healthy IP system is a key element in encouraging foreign direct investment (FDI). A steady

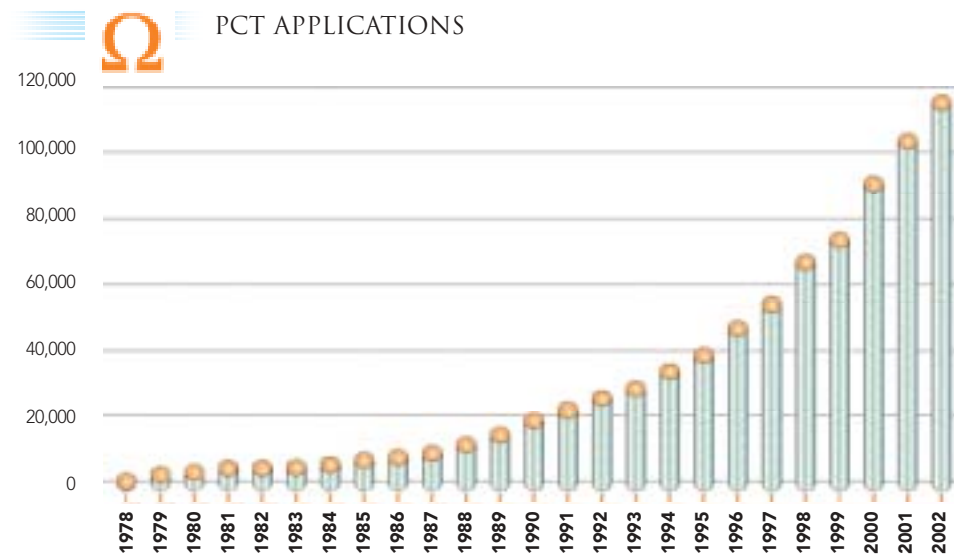
increase in the level of FDI in India, for example, has been evident ever since patent and trademark reform was introduced in the early 1990s. An even more dramatic development took place in Brazil with spectacular growth in FDI following the introduction of a new industrial property law in 1996 (US\$4.4 billion in 1995 to US\$32.8 billion in 2000).

The tendency of firms to patent their inventions has similarly increased worldwide and is particularly noticeable in Japan, the United States of America, and Europe. In Japan, it took 95 years to grant the first million patents, whereas it took only 15 years to grant the next million. Applications for patents are also increasing in developing countries (see  showing applications filed in national offices of selected developing countries).

 TOTAL PATENT APPLICATIONS IN SELECTED DEVELOPING COUNTRIES (PERCENTAGE INCREASE FROM 1994 TO 2000)



A similar trend is evident in total international patent applications filed under the WIPO-administered Patent Cooperation Treaty (PCT) – it took 18 years to reach 250,000 applications but only 4 years to double that figure (see  below).



The PCT simplifies, and reduces the cost of, obtaining international patent protection and facilitates public access to a wealth of technical information relating to inventions. An applicant filing one international patent application under this Treaty can simultaneously seek protection for an invention in all or any of its 121 Member States (as of June 2003) throughout the world.

INTELLECTUAL ASSETS AND ENTERPRISE VALUE

Intellectual assets are gaining ground as a measure of corporate viability and future performance. In 1982, some 62 percent of corporate assets in the United States of America were physical assets, but by 2000, that figure had shrunk to a mere 30 percent. In Europe, at the beginning of the 1990s, intangible assets accounted for more than a third of total assets and as early as 1992, in the Netherlands, they accounted for more than 35 percent of total public and private investments.

A recent study shows that, **on average, 40 percent of the value of a company – that tied up in its intangible assets – is not shown in any way on its balance sheet.**



For this reason, IP is sometimes referred to as “hidden value”; but whether hidden or expressly valued, it is now clear that patents, copyright and related rights, trademarks, geographical indications and trade secrets are significant contributors to enterprise value.

USING IP ASSETS IN BUSINESS TRANSACTIONS

It is being increasingly realized that **IP is now one of the most valuable, or often the most valuable, asset in commercial transactions,**

whether licensing agreements, manufacturing, purchase or distribution agreements, or mergers and acquisitions. Licenses to use patents, copyrighted material and trademarks are often combined with transfer of know-how in the form of training, and are an increasingly important element of such transactions. The notion that the IP system confers exclusive rights that are exercised by blocking competitors is increasingly being disproven – in practice, IP is used as often to license products and technologies as to prohibit others from using them. These licenses provide royalty revenues to the owners of the IP, and distribute products and technologies to licensees who might not otherwise have had access to them. In such transactions, the licensees may also gain rights to create improvements or derivative works and to develop their own IP assets, which can then be cross-licensed or licensed to others. This creates a very productive cycle of invention and business transaction.

A report issued by PricewaterhouseCoopers in 1999 found that the global IP licensing market totalled more than US\$100 billion, giving an idea of how economically important IP assets are today.

MODERN IP MANAGEMENT AND THE NEW ECONOMY

Because of increasing recognition of its economic value, IP is becoming a major element in corporate business management. Intellectual property managers are helping to accumulate hefty corporate IP asset portfolios, for use in mergers and acquisitions, joint ventures, cooperative R&D agreements, and licensing agreements, in much the same way as product managers help to build up product portfolios. These IP asset portfolios are developed strategically, targeting cluster areas based on product and technology markets and cross-licensing opportunities. **Companies are forging alliances with each other in order to heighten the value of their IP assets and to obtain mutually beneficial competitive advantages through cross-licensing.**




Such alliances can give the companies involved substantially increased weight in their area of technology, or enable them to set technological standards in their particular field.



PATENTS

The patent, which protects a new and useful idea, gives the inventor a temporary shelter from the forces of market competition. The shelter is limited to the precise terms of the claims of the patent, but it is sturdy and durable for many years. The premise of the patent system is that this shelter and the resulting competitive advantage encourage invention because inventors know that they can reap a financial reward from their ingenuity.

The patent system also promotes technological and business competition because patent holders must disclose the details of their inventions in exchange for the specified period during which they have exclusive rights over their exploitation. As a result, both they and their competitors race to improve those inventions and to use the technology to create new ones (see .



TOYOTA'S ATTEMPT

Presented by TOYOTA Motor Corporation



In 1896, Sakichi Toyota obtained a patent for a version of a power loom which resembled machines previously used in Europe. Thirteen years later, Sakichi succeeded in inventing an automatic loom and a number of additional patents were obtained to complement and fine-tune the invention. In 1924, the Toyota Type G Automatic Loom reached the market and Kiichiro Toyota, Sakichi's son, reached an important agreement with Platt Brothers & Co. for its commercialization. Platt Brothers paid Toyota £100,000 (equivalent to US\$25 million today) for the exclusive right to manufacture and sell the automatic loom in any country other than Japan, China, and the United States of America. Toyota decided to use the £100,000 as initial capital to set up an automobile company and fund the necessary R&D.




Source: Tadashi Ishii, "Industrial Innovation in Japan and the Role of the Patent System: Case Study of Toyota" (presented at a conference, Washington University, St. Louis, Missouri, October 2000).

PATENTS CAN PROMOTE ECONOMIC DEVELOPMENT

The ways in which patents stimulate economic development could be the subject of several volumes, however the following sections attempt to distill the essence of how this process works – and provide some facts and examples. Patents can be used to stimulate economic development in four main ways:

- patent information facilitates technology transfer and investment;
 - patents encourage R&D at universities and research centers;
 - patents are catalysts of new technologies and businesses; and
 - businesses accumulate and use patents in licensing, joint ventures, and other revenue-generating transactions.
- **PATENT INFORMATION FACILITATES TECHNOLOGY TRANSFER AND INVESTMENT**

The *quid pro quo* for issuance of a patent is full disclosure of the invention. For this reason, **patent databases, which are public and searchable on the Internet, are a rich source of technical information** that can be used, provided that the patent is not infringed. Patent databases can also be used to find potential licensors and business partners. It has been reported that 67 percent of US companies own technology assets that they fail to exploit (assessed at between US\$115 billion to US\$1 trillion). About US\$100 billion is tied up in such idle innovation within the IP portfolios of big companies. Rather than let the invention accumulate the expense of its maintenance, the company may put it up for sale or license (see ).



τ AZITHROMYCIN – ONE OF THE WORLD'S BEST-SELLING ANTIBIOTICS, FROM CROATIA

Pliva, one of the most profitable companies in Croatia and one of the largest pharmaceutical companies in Central Europe, is widely considered to be Central Europe's first home-grown multinational. Once struggling to stay alive, this company witnessed a dramatic turnaround in its fortunes, following its discovery of azithromycin – today, one of the world's best-selling antibiotics. Patented by Pliva in 1980, the drug was subsequently licensed to Pfizer, which markets it as Zithromax™. Sales of Zithromax™ were US\$1.5 billion in 2001. The phenomenal revenues derived from the licensing agreement have facilitated Pliva's rapid expansion across Croatia, Poland, and Russia. Remarkably enough, all this came about because Pfizer's scientists happened to stumble upon Pliva's patent in 1981, while searching through patent documents at the United States Patent and Trademark Office (USPTO).

Source: Wall Street Journal (Brussels), March 3, 1999, 14.

- **PATENTS ENCOURAGE R&D AT UNIVERSITIES AND RESEARCH CENTERS**

The relationship between publicly-funded and university-based research and intellectual property can be a dynamic one. The R&D carried out by these bodies can result in inventions that can then be used to generate revenue for them through licensing. A university, enriched by licensing revenues, in turn can fund further R&D, as well as strengthen its primary educational mission. The research center/university becomes the hub of a cycle of dynamic innovative activity. This environment has beneficial macro-economic effects, including reducing "brain drain", generating financial support for education, and promoting state-of-the-art research.

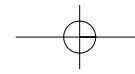




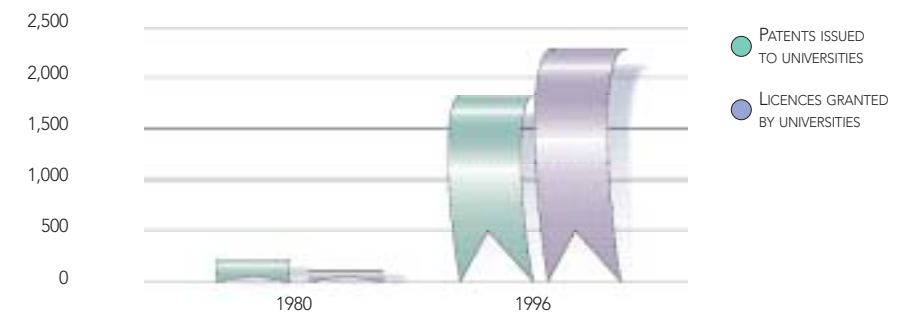
In developing countries, research programs are mainly funded by the public sector or universities (most of them are public), but this funding is often inadequate. The percentage of global R&D expenditure in developing countries continues to decline. A promising approach to enhance inward investment is through foreign direct investment and partnerships between local research centers/universities and the private sector. Such investment and licensing ventures are encouraged through, *inter alia*, strengthening IP laws and also modifying laws and policies to **facilitate the licensing of technology from universities and research centers to the private sector.**

Such laws and policies allow universities and public institutes to obtain patents, grant exclusive or non-exclusive licenses to private firms, and retain royalty revenues.

For example, in the United States of America, the Bayh-Dole Act of 1980 permitted universities and small businesses to elect ownership of inventions made under federal funding and to become directly involved in the commercialization process. This new policy also permitted the licensing of new inventions from universities to the businesses that would, then, manufacture them. The Act promoted a substantial increase in technology transfer between universities and industry (see **Π**).



Π TECHNOLOGY TRANSFER FROM US UNIVERSITIES TO INDUSTRY – THE IMPACT OF THE BAYH-DOLE ACT OF 1980



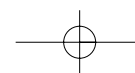
• PATENTS ARE CATALYSTS OF NEW TECHNOLOGIES AND BUSINESSES

Patents are a powerful tool for stimulating the creation of new technologies and industries. Biotechnology, for example, could not have developed as it has done without the patent system (see **Π**).

Π DR REDDY'S SUCCESS IN INDIA

Dr. K. Anji Reddy founded a pharmaceutical company in India that has rapidly expanded to provide high-quality, low-cost pharmaceutical products to markets worldwide. Dr. Reddy's Research Foundation (DRF) was established in 1993 with the purpose of discovering new drug therapies. It attributes much of its success to patent protection, through which it is able to market and license its new drugs internationally. The Foundation has filed patent applications in several countries for all its inventions, including 31 product patent applications in the United States of America, of which 17 have already been granted. In India, 110 product and process patent applications have also been filed. Because patent protection is central to its activities, DRF has established an in-house intellectual property management group to oversee all international patent filings and matters relating to patent strategy.

Source: Dr. Reddy's Research Foundation




The global nature of pharmaceutical and biotechnological research has resulted in the formation of partnerships between companies from all over the world, including the new economic powerhouses of Brazil, India, China, Cuba, the Republic of Korea, and Singapore (see .

BIOBRÁS – BIOTECH JV AND UNIVERSITY RESEARCH IN BRAZIL

Biobrás was a small, independent laboratory within the Federal University of Minas Gerais, Brazil, when it began its activities producing enzymes under a licensing agreement with the US-based New England Enzyme Center. In 1977, with the assistance of the Brazilian Ministry of Health, Biobrás negotiated a joint-venture agreement with patent holders and pharmaceutical multinational Eli Lilly for the production of animal insulin and its commercialization in Brazil. As part of the cooperation agreement, Biobrás personnel were trained by Eli Lilly in various aspects of R&D as well as in administration and marketing. By the time the agreement with Eli Lilly ended, six years later, Biobrás had become an important insulin manufacturer utilizing state-of-the-art technology. Since then, Biobrás has also engaged in research, leading to an important breakthrough in the field. The company is now one of only four pharmaceutical companies – and the only non-multinational – to have the capacity and the technology to produce human recombinant insulin. The technology was developed by Biobrás in collaboration with the University of Brasilia and was subsequently patented in Brazil, Canada, Europe, and the United States of America.

Sources: Biobrás (www.uol.com.br), USPTO, and pharmalicensing.com

- **BUSINESSES ACCUMULATE AND USE PATENTS IN LICENSING, JOINT VENTURES, AND OTHER REVENUE-GENERATING TRANSACTIONS**

Businesses, from multinationals to small and medium-sized enterprises (SMEs),  can benefit from accumulating IP assets and engaging in IP licensing transactions.

This activity can promote competition and create profitable business opportunities that provide jobs, job training, and human resource development; supply needed goods and services; and increase business and individual income.

Today, licensing – the sharing and distribution of IP assets – rather than litigation, is increasingly the *raison d'être* of patents. Such licensing can be tremendously profitable. IBM realized US\$1.7 billion in revenues from patent licensing in 2000 alone. Texas Instruments realized US\$500 million. Total worldwide revenues from patent licensing increased from US\$10 billion in 1990 to US\$110 billion in 2000. These impressive figures should not convey the idea that technology licensing is only for the major multinational companies or the superstar research institutes. An SME with patent assets can also participate in such patent-enhanced business relationships. However, an SME without patent assets must rely on time-to-market advantage, superior service, and other factors. This is equally true in developed and developing countries.

THE RELEVANCE OF PATENTS TO DEVELOPING COUNTRIES

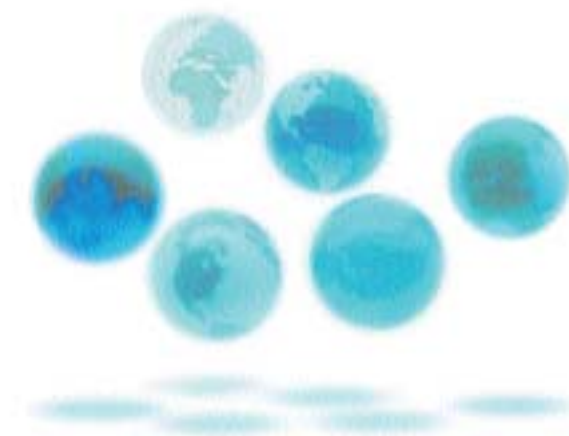
It is important to address the opinion, which is occasionally voiced, that patents, as opposed to other forms of IP, are not relevant to developing countries because of their relatively low state of technological development. The argument is sometimes made that copyright, trademarks, and geographical indications may be useful and appropriate for those countries, but not patents, except insofar as developing nations should offer patent protection in order to attract foreign direct investment. Some critics of the patent system claim that patents may even be harmful to developing countries because of the power over markets and price that patents confer on their owners.

These ideas – that patents are not relevant to developing nations, or are incompatible with their economic objectives – are inaccurate, giving the impression that it is possible to simply opt out of the international patent system, and yet still achieve economic development. This is an error as patents are an essential component of economic strategy for all countries, regardless of their state of economic development.

Indeed, developing countries today, some to a greater extent than others, are adroitly wielding the patent system for optimum leverage on economic development. The role of their governments and policy-makers is crucial in determining how effectively such countries use the power of the patent system for economic development by implementing a pro-active patent policy.

PRO-ACTIVE PATENT POLICY

Using patents for economic development requires a pro-active patent policy (PPP) intrinsically related to economic development. The experiences of Singapore and the Republic of Korea with patent policy confirm the importance of a pro-active approach. National policies and the PPP should be designed to promote patent licensing, joint ventures and strategic alliances, as these can encourage invention at the national level as well as FDI. In parallel with FDI and technology transfer through the PPP, stimulating R&D in universities and research centers is another way to jump start domestic knowledge development and can provide the “fuel” to keep the national innovation cycle running. Handled properly, **patents are efficient drivers of national innovation, R&D, product creation and business transactions** that have beneficial macro and micro economic effects.



TRADEMARKS

Trademarks perform a valuable macro-economic function in terms of identifying the origin of products and technologies and thereby fostering accountability to the consumer. They also play a strategic marketing role in individual enterprises. The most common use of trademarks is in consumer advertising to promote product sales, but trademark use has become increasingly sophisticated and varied.

Trademarks help to cement customer loyalty. Studies show that customer retention is as effective in generating revenues as the attraction of new customers: "Reducing defections by just 5 percent generated 85 percent more profit in one bank's branch system, 50 percent more in an insurance brokerage, and 30 percent more in an auto-service chain". In addition to promotion of product sales and cementing customer loyalty, trademarks help their owners increase profitability, respond to unfair competition, expand and maintain market share, differentiate products, introduce new product lines, gain royalties through licensing programs, support strategic partnerships and marketing alliances, and justify corporate valuation in financial transactions.

Trademarks are also one of the basic elements of franchising. The International Franchise Association estimates that franchising accounts for one-third of all retail sales in the United States of America, including the sales of firms such as McDonald's, Coca-Cola, General Motors, and Re-Max. The strategic use of a trademark with franchising is an effective business model in many countries (see 8).



Courtesy of @Vegemite

8 NANDO'S, A SOUTH AFRICAN SUCCESS STORY IN BRANDING



In the heart of the local Portuguese community in Johannesburg, chicken was prepared according to a well-kept secret recipe. In 1987, Fernando Duarte and his friend Robert Brozin became partners to set up Nando's, which is today a fast-growing restaurant chain with over 200 outlets across Africa and Australia as well as in Canada, Egypt, Israel, Malaysia, Saudi Arabia, and the United Kingdom. The company has developed considerable international reputation and goodwill in its Nando's name, which is readily and distinctively associated with its fast-food chicken outlets around the world, so much so that it now owns an extensive international portfolio of registered trademarks surrounding the word "Nando's". The strength of the "Nando's" brand has also allowed the company to diversify into other sectors which include Nando-branded retail products and merchandise. "We're probably one of the biggest non-American global brands in quick-service restaurants. A lot of South African companies have bought global brands, but no one has taken a South African brand and gone out to trade in the high street. That's what we're trying to do," said Mr. Brozin.

In March 2000, Nando's filed a cybersquatting case with the WIPO Arbitration and Mediation Center under the Uniform Dispute Resolution Policy (UDRP) applicable to generic top-level domains adopted by the Internet Corporation for Assigned Names and Numbers (ICANN). The respondent, a California resident, had registered the domain names nandos.com and nandoschicken.com and offered to license or sell them back to Nando's. The administrative panel found the case in favor of Nando's and ordered the respondent to transfer the domain names to the company.

Sources: Nando's International Limited and the Financial Times (London).

The growing complexity of trademark use in marketing is illustrated in the licensing of the Harry Potter character from the popular children's book series by J.K. Rowling. Warner Brothers, which acquired worldwide merchandizing rights to the work, was amazed to see one of the biggest movie openings of all time, as "Harry Potter and the Sorcerer's Stone" earned an estimated US\$93.5 million in its first three days. Warner Brothers had divided up the license rights among various of its business partners/licensees: Hasbro gained the rights to distribute trading cards and youth electronic games; competitor Mattel to make toys; another company has the rights to make interactive candy; Electronic Arts, the California software entertainment company, is licensed to make Harry Potter computer and video games; and Coca-Cola secured still other rights relating to marketing of the film. Seen in the context of this complex network of agreements, the trademark license becomes a way of "extending the brand" and co-marketing, so that each product helps sell the other products by reinforcing the popularity of the character.

As technology has become an increasingly important component of business, uses of trademarks have changed and become more complex, such as signaling compliance with safety requirements, the fulfillment of technical specifications, or the interoperability of complex technical systems. In another technology-driven trend, the rise of the Internet has raised a number of difficult issues relating to the interplay between domain names and trademarks.

Some trademarks have become global "cultural icons" as their use has expanded beyond business branding to individuals, charitable organizations, and nations seeking to communicate a message about their special characteristics. For example, the star from Reykjavik, Bjork, projects a fresh and unconventional image that has been said to represent Iceland. Similarly, the Chinese Olympic committee has sought to redesign the Olympic logo to represent the movement inherent in T'ai Chi; while Spain promotes tourism with the sunny España logo.

Trademarks are effective business tools that can communicate a strong, focused message about products, technologies, cultures, and individuals. Unlike patents and copyright, trademarks can be renewed indefinitely, which makes them a very powerful IP asset. They are most effective when integrated into a total business and marketing strategy – which can include licensing and sales transactions involving strong products and other forms of IP – but can be damaged when the products and technologies they identify do not live up to customer expectations.

GEOGRAPHICAL INDICATIONS

A geographical indication, like a trademark, communicates a message. It tells potential buyers that a product is produced in a particular place and has certain desirable characteristics that are only found in that place. **Geographical indications may be used strategically to promote regional or national enterprises.**

Regional specialties may have their stature enhanced in the eyes of the consumer when a regional collective and its members enjoy the exclusive right to use a particular geographical indication. Like trademarks, geographical indications may add dynamic marketing power to a product and, because they are inherently collectively owned, they are an excellent tool for regional or community-based economic development.

The story of Tequila in Mexico illustrates the success that can come from the strategic use of geographical indications (see Y).



Courtesy: La S.A. des Caves et Producteurs réunis de Roquefort

γ TEQUILA: ONLY WHERE THE AGAVE GROWS

Tequila is a Mexican drink that has acquired a distinct identity, often enhanced by bottle designs featuring some of Mexico's characteristic symbols. What few people know, however, is that Tequila is only produced within a specific area in Mexico where its primary raw material, the cactus-like agave plant, grows and that the name "Tequila" is protected as a geographical indication in Mexico under a 1977 Presidential Decree. Under this special legislation, "Tequila" can only be used for beverages originating in five Mexican states which have the exclusive right to produce it. Today, Tequila has earned a worldwide reputation. Because this term is a protected geographical indication in many countries, competitors can be prevented from using it for spirit drinks not from the distinct Mexican area of production, or not made in compliance with the applicable Mexican legislation. For example, the term "Tequila" is protected as an appellation of origin in accordance with the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (an international agreement administered by WIPO). The sale of Tequila has been further enhanced because producers are able to guarantee the quality of the product and can avoid the name being used for products made with different ingredients which could taint the reputation of the original Mexican product and mislead customers.



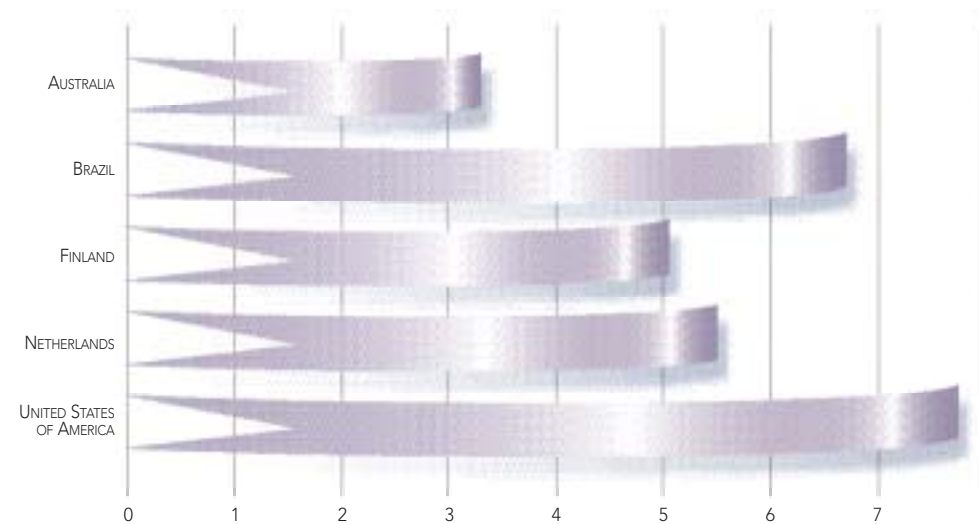
Source: Tequila Regulatory Council

COPYRIGHT AND CULTURAL INDUSTRIES

Copyright is the area of law that provides protection to original works of authorship such as books, paintings, architecture, musical compositions, and computer software. **The legal protection afforded such works permits the development and flourishing of cultural industries, as well as technology-oriented businesses based on computer software and other technologies.**

To get an idea of the size of the copyright industries, a few statistics are presented below (see Σ). Looking at the United States of America, for 2001, the total copyright-based industries contributed an estimated US\$791.2 billion to the economy, representing approximately 7.75 percent of GDP.

Σ CONTRIBUTION OF TOTAL COPYRIGHT-BASED INDUSTRIES TO GDP (PERCENT)





The following brief description about musical composition will illustrate how copyright and related rights contribute to the culture industry. The entire process underlying the business model of the music industry starts with a song or, more accurately, a musical composition. The songwriter or the composer are the owner(s) of all copyright in the musical composition at the point of fixation, that is, when it is physically "fixed", either in musical notes, or by using analog or digital recording capacities. Upon creation or fixation, depending on the national legislation, copyright protection automatically comes into force without further formality. The creative uses to which it can be put can be seen quite clearly in the example below (see η).

η BOWIE BONDS

The famous British musician David Bowie, over the course of his 30-year plus career, has written hundreds of musical compositions, as well as performing and recording them. From his recordings of those compositions, and from cover versions by other artists, an income stream has been produced; and is likely to continue on into the future. A creative brokerage organization, the Pullman Group, saw an opportunity to "securitize" the musical compositions as an income-producing asset. It licensed Bowie's rights to his musical compositions for US\$55 million, which it paid to him. It then sold bonds to investors on the basis of a repayment and profit model using the income from the musical compositions as both the security for the investment, and the source of the repayment. This is, thus far, a win-win-win situation, in that Bowie received present income based on many years of projected royalties. The Pullman Group received fees and will receive profits from its creative business model. The investors will receive a return on their investment at much higher rates than normal. The whole transaction is securitized by proven IP assets in a most creative way.

Source: <http://www.pullmanco.com>; Global Finance, November 1999.

COLLECTIVE MANAGEMENT OF COPYRIGHT AND RELATED RIGHTS

For individual creators, trying to monitor the use of their works – on radio or television, for example – can be extremely difficult. As a result, some countries have special bodies (collective management societies) to carry out that task and ensure that creators are paid for the use of their works. These societies can help promote the development of local culture, for example, by giving local artists a return on their intellectual property when their music is played at home and abroad. The income generated in this way can be considerable, making a significant contribution to GDP.



COPYRIGHT AND TECHNOLOGICAL CHANGE

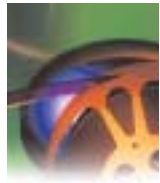
The introduction and enhancement of new media, information, and telecommunications technology – such as the videocassette recorder (VCR) in the late 1970s, the digital revolution in the 1980s, and the Internet in the 1990s – has consistently challenged both copyright laws and the cultural industries and communities that live and prosper under them.

When the CD swept away vinyl records and music cassettes, it gave the music industry an opportunity to resell its existing catalogues in CD format. Today, a similar process is taking place with audiovisual productions in digital format. The new DVDs offer high-quality resolution fairly cheaply and a whole new generation of consumers is now repurchasing audiovisual productions in this format, including many previously thought to be not commercially viable. However, the content of DVDs is easy to copy and to post on the Internet and millions of unauthorized copies could, potentially, be pirated in this way.



Courtesy: EMI Group

Courtesy: Sony (overseas) S.A.



Strong efforts are underway by the audiovisual industry to prevent such activity, and where it does occur, to stop it in its tracks and seek civil or criminal penalties against those responsible. Technological measures, such as encryption, are essential tools to stop digital piracy. It is for this reason that the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT), the most recent international treaties in the copyright and related rights fields, contain **special provisions which prohibit circumvention of such measures of technological protection for copyright works.**

In the area of music, MP-3 technology has made it easy to compress music files, so that they take up considerably less space, are easy to upload and download over the Internet, and can be neatly stored in mobile devices. Because of the ease of use of such technologies, they can be used to download and copy without the knowledge or consent of the holders of the rights to the music, in violation of the spirit and express provisions of copyright law (see **λ**).

λ THE NAPSTER CASE: PIRACY ON THE INTERNET

On February 12, 2001, the United States Court of Appeals for the Ninth Circuit rendered its landmark decision in an important legal case, *A&M Records, Inc., et al. vs. Napster, Inc*, ruling that Napster's "fair use" defense was without merit. Napster was a hugely successful music file-sharing website and program (up to 10,000 downloads per second), using musical copyrighted works without the authorization of the rightholders. It was a business built on illegal transactions, but which, interestingly, has contributed to the development of new business models within the recording industry.

TRADITIONAL KNOWLEDGE

Traditional knowledge – used here broadly to refer to tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields – had been largely over-looked in the IP community until quite recently. It is now increasingly recognized that **the economic value of traditional knowledge assets could be further enhanced by the use of IP.**

Holders of traditional knowledge are exploring how best to commercialize its practical applications, utilizing various intellectual property approaches including patent, trademark, and copyright laws (see **χ**, for one example). Just because a product, technology, or work has been collectively held or has been in existence for some time, does not preclude its treatment as IP. All IP is linked to prior invention, knowledge, and creativity. Often the enhancement of an old technology generates valuable new inventions, or the adaptation of an old artistic tradition results in new creative works. These questions are the subject of focussed discussion in the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore, which is making substantial progress in addressing both policy and practical linkages between the IP system and the concerns and needs of holders of traditional knowledge and custodians of traditional cultures.

χ INDIGENOUS LABEL OF AUTHENTICITY

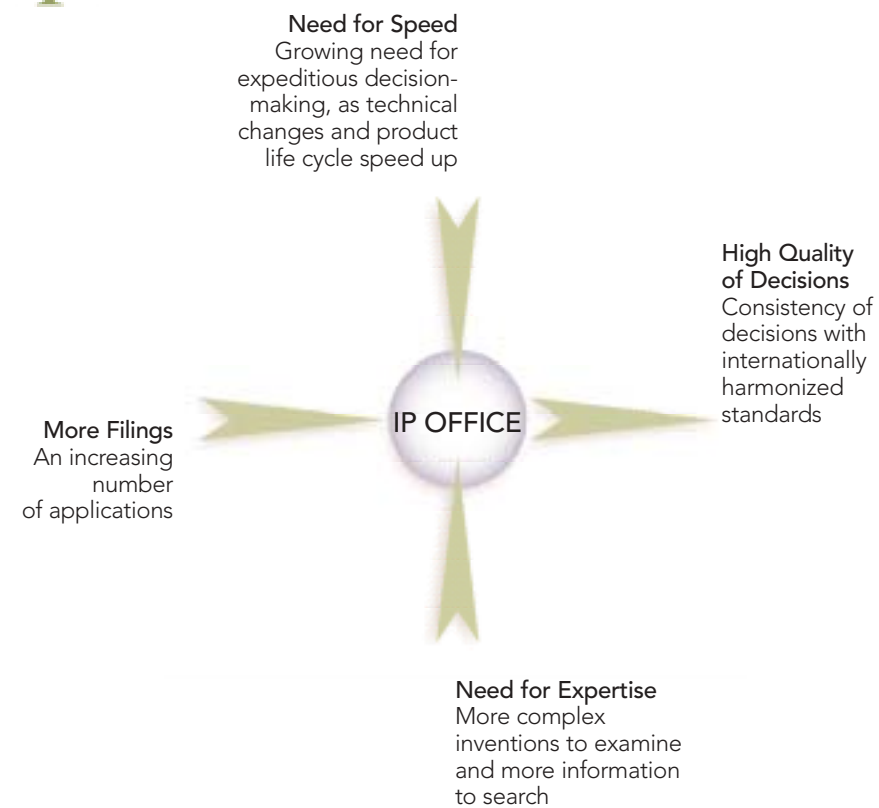
The registration of collective and certification trademarks to protect tradition-based innovations and creations is being actively explored in Australia where an Indigenous Label of Authenticity was launched in late 1999. It was developed by the National Indigenous Arts Advocacy Association with the backing of the Aboriginal and Torres Strait Islander Commission (ATSIC) and the Australia Council for the Arts. The use of such marks of authentication is seen as an effective way of maintaining the cultural integrity of Aboriginal and Torres Strait Islander art, to ensure a fair and equitable return for these communities, and to promote an understanding both nationally and internationally of their cultural heritage and art.



SYSTEMS FOR ACQUISITION OF IP RIGHTS

The intellectual property office (IPO) is the main administrative unit within a government that is in charge of administering the system of IP rights acquisition and maintenance. The economic and social costs of establishing and maintaining an IPO have recently been the focus of special attention, as users of the IP system have requested a reduction of the fees for filing an application, and obtaining and maintaining IP rights (see Φ).

Φ GROWING DEMAND FOR IPO SERVICES



However, almost all IPOs suffer from financial constraints and difficulties in recruiting and retaining qualified staff members for their operation. The problem of limited resources is particularly acute in the developing world and means that IPOs are often not able to provide the services they would wish to users of the IP systems in those countries (see Δ).

Δ STAFF AND BUDGET OF SELECTED PATENT OFFICES

Country (Patent Office)	Staff numbers: total	Patent applications (including PCT designations)	IP Office Annual Budget (in mill. US\$)
United States of America	4,700	262,787	863
European Patent Office (20 States)	4,400	121,750	513
Russian Federation	2,700	58,532	14.3
Japan	2,500	437,375	844
Republic of Korea	1,002	121,750	120
Sweden	1,000	149,493	69
Australia	830	57,706	42
Mexico	611	44,721	25.5
Brazil	610	50,866	42
Spain	600	147,889	45.3
Egypt	146	1,682	1
Singapore	85	44,948	4.9



GLOBAL AND REGIONAL SOLUTIONS

The establishment of an international patent system was already being considered as a long-term solution when WIPO Member States adopted the Patent Cooperation Treaty (PCT) in June 1970. Today, countries have more reasons than ever to look to global and regional solutions in order to leverage resources, decrease costs, and increase user value. They also wish to take advantage of the digital revolution, which gives them the possibility to enhance cooperation and share data and information in a rapid, paperless, and inexpensive manner.

In October 2001, WIPO launched worldwide consultations on the development of a **strategic blueprint for the future evolution of the international patent system.**

The initiative, known as the "WIPO Patent Agenda", seeks solutions to long-term problems as well as to more immediate difficulties, most notably those facing a number of patent offices in managing excessive workloads. The project will complement and strengthen on-going work such as that on PCT reform and the harmonization of substantive patent law.

ENFORCEMENT OF IP RIGHTS

Enforcement of IP rights is needed because people do not respect the rights of others. The reasons underlying such disrespect are many and varied, and range from greed, perceived necessity, lack of awareness, and ruthless criminal intent, all the way to innocent mistake. The scale of such disrespect also varies considerably, from illegal copying of protected works at home for personal use to large-scale commercial criminal enterprises, which produce hundreds of thousands of illegal copies.

When illegal products take market share (or even kill a potential market), and pose risks to health and safety; and when recouping an investment is prevented by intervening criminal activity, enforcement mechanisms are called into play to protect vital interests, not only of the holders of the rights involved, but also of the public. Intergovernmental and non-governmental organizations and industry bodies whose mandates involve dealing with various aspects of counterfeiting and piracy and their effects have estimated that **the market in illegal, counterfeit products is between 5 and 7 percent of total world trade** (see [E](#)).

E ESTIMATED PROPORTION OF COUNTERFEIT AND PIRATED PRODUCTS

Organization	Estimate
World Customs Organization	Around 5% of all world trade
European Commission	Between 5% and 7% of world trade, representing EUR 200 to 300 billion a year in lost revenue, and the loss of 200,000 jobs worldwide
Organisation for Economic Co-operation and Development	More than 5% of world trade

Source: <http://www.interpol.int>; Commission of the European Communities, "Green Paper: Combating Counterfeiting and Piracy in the Single Market" (Brussels, 1998): 2, see http://europa.eu.int/comm/internal_market/en/intprop/indprop/922.htm; OECD, ICC Counterfeiting Intelligence Bureau, "The Economic Impact of Counterfeiting" #DSTI/IND(97)6/REV1 (Paris, 1998): 5.

NEGATIVE IMPACT ON LOCAL INDUSTRIES

Countries in which counterfeiting and piracy take place with little or no focused government effort to prevent such activities, suffer **losses on several levels, both tangible and intangible.**

For example, manufacturers of legitimate goods will establish their facilities in other countries which do enforce IP rights. This results in a loss of FDI, as well as the technology transfer and foreign know-how that may accompany it. Loss of FDI also manifests itself in a loss of foreign income, which ultimately affects a country's balance of payments.

The cycle continues in ways that hurt a country's long-term prospects. Local creators, inventors, and SMEs are discouraged by the risk that their products will be illegally copied and sold, denying them a return on investment and restricting future growth, as well as dampening the very spirit and energy that are an integral part of the creativity process. That spirit, so important to a country's well-being, is notable when it thrives. Just look at the "silicon valleys" of California in the United States of America and Bangalore in India.

SOCIAL CONSEQUENCES OF COUNTERFEITING AND PIRACY

The social consequences of counterfeiting and piracy are felt most personally by artists, creators, and entrepreneurs.

The counterfeiting of medicines and airplane and auto parts has a detrimental effect on the health and safety of the public. The World Health Organization (WHO) estimates that **approximately 6 percent of pharmaceutical products sold worldwide are counterfeit.**

Developing countries account for the largest portion of such sales, with up to 70 percent of medicine sold in some African countries being counterfeit.

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TOWARDS THE CREATION OF AN IP CULTURE

WIPO is working to raise awareness – at all levels – of the value of IP and of the potential positive impact that it can bring to society.

Awareness of the potency of IP as a source of economic, social, and cultural dynamism will ensure that:

- government officials and agencies formulate their policies and administrative and management programs with a view to optimizing the use of, and respect for, IP rights;
- the private sector, from SMEs to multinationals, leverages the value of its IP assets and recognizes the value of upholding IP rights in increasingly knowledge-based industries and economies;
- the public understands the benefits of purchasing legitimate goods and services, thereby boosting local industries and increasing the tax base.

The absence of such an IP culture results in a stagnant or receding economy, a reduction in creativity and inventiveness, and a business climate bereft of FDI, consistency, or reliability. The creation of an IP culture in developing countries that do not yet have developed IP assets will require **pro-active policies.**

These could start with:

- an IP audit to assess the current status of IP assets;
- the preparation of a national IP strategy, integrated with scientific, cultural, trade, economic, and educational policies;
- incentives and awards for inventors and authors, as well as for societies and collective organizations that develop and use IP assets.

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Attention must be paid to all the elements needed to create a rich soil to sustain the growth of an IP culture – human resource development, education, marketing, up-to-date IP offices and administrations, involvement of civil society organizations, promotion of innovation, culture, and IP at universities and research centers, programs to develop practical skills such as licensing, well-drafted laws, and effective enforcement of rights (see **B**).

B CREATING AN IP CULTURE IN SINGAPORE USING PRO-ACTIVE POLICIES

Singapore recognizes the importance to its economy of intellectual property, both as a national resource and in attracting foreign investment. To develop intellectual property as a strategic and competitive asset, Singapore adopts an essentially pro-active IP rights policy for the development of high value-added and creative-content industries. In 2000, the Intellectual Property Office of Singapore (IPOS) was converted into a semi-autonomous statutory board charged, inter alia, with administering the IP system in Singapore. One of the recent IPOS initiatives is the provision of IP information via the recently launched SurfIP (<http://www.surfip.gov.sg>), an IP portal for searches across multiple patent databases in various jurisdictions, as well as the provision of other technical and business resources. On the IPR enforcement front, the agency primarily responsible for domestic enforcement is the Intellectual Property Rights Branch, a specialized Crime Division of the Criminal Investigation Department, while border enforcement is undertaken by the Customs and Excise Department. In the field of education, Singapore has public education campaigns led by IPOS and the National Science & Technology Board aimed at promoting greater public awareness of IP rights. Today, Singapore is one of the leading nations in terms of patent filings and the creation of other IP assets.

Source: Dr. Ng Siew Kuan, National University of Singapore



INTELLECTUAL PROPERTY EMPOWERMENT

IP is the commercial application of innovation and creativity to improving and enriching our lives – at both the practical and cultural levels. It is empowering because it supports and rewards creators and innovators, stimulates economic growth, and promotes human resource development.

IP is a resource that is available to all peoples. One of WIPO's major challenges is to assist its Member States in developing and using the tools to mine that resource and to use IP for the benefit of their nations.

IP can only thrive in a culture in which its importance is fully understood and accepted and in which it is protected by laws that are vigorously enforced. WIPO's mission will continue to be to work for robust IP protection and enforcement to ensure its continuing vitality.



