

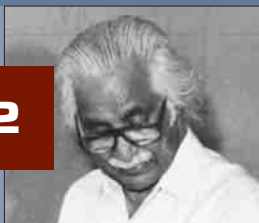


WORLD
INTELLECTUAL
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WIPO MAGAZINE

GENEVA - APRIL 2007 - No.2

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The Battle of the Mural

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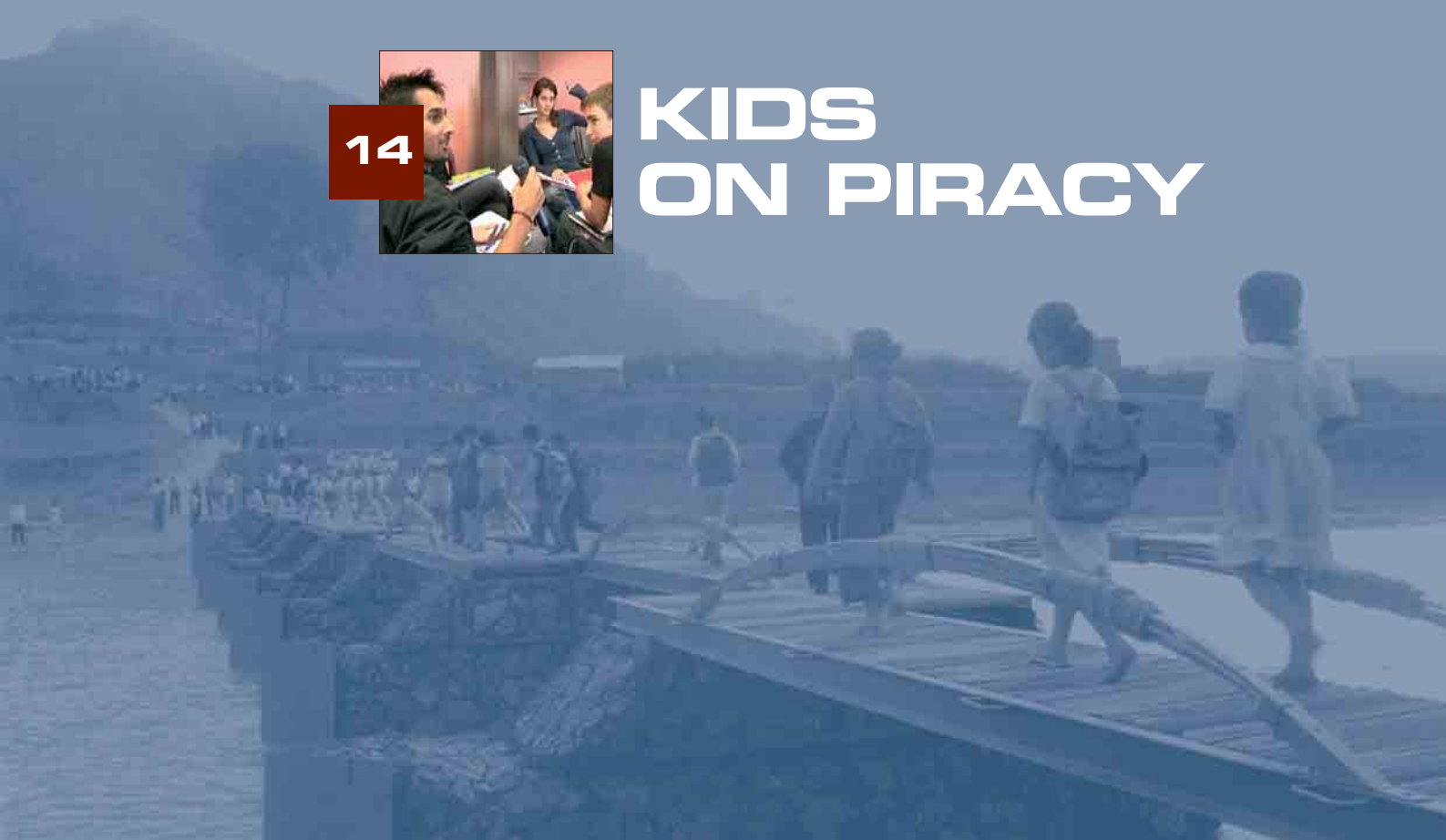
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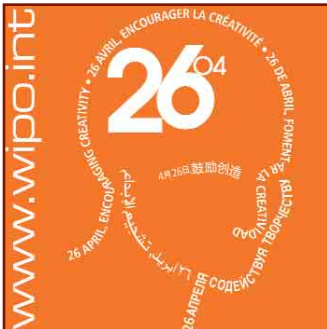
From
Cradle to Cradle

14



KIDS ON PIRACY





World Intellectual Property Day 2007 Message from Kamil Idris, Director General, World Intellectual Property Organization

Each year on April 26, governments and organizations around the world join WIPO in celebrating World Intellectual Property Day. Our theme this year is *encouraging creativity*.

For many people, the connection between intellectual property and creativity is far from obvious. The word creativity conjures a world of artists and music makers, of poets and problem solvers. Whereas intellectual property all too often summons images of gray-suited lawyers, locked in litigation. But look more closely, and it quickly becomes clear that it is the intellectual property system itself which sustains and nourishes those creators.

Everywhere we look, we see images of intellectual property in action:

- in the color and drama of a box office hit from Bollywood, providing entertainment and employment for countless people;
- in the songs of a rising star from Mali, whose CD sales transport African rhythms to listeners around the world and help him earn a living from his music;
- in the vision of a non-governmental organization, which develops an engineer's patented device for bringing clean water to isolated villages;
- in the intricate weaving of an Iranian carpet, bearing a registered mark to show its authenticity;
- in the latest trend-setting accessories from a Japanese design team;
- in new medical treatments based on innovative research in China, in Jordan, in Cuba;
- in the best-seller written by a young mother, which brings magic to millions, launches dozens of careers, and earns untold revenues from film and merchandising rights.

Encouraging creativity – rewarding the creative, innovative talents on which our world and our future are built – these are the ends which intellectual property serves. This is what drives WIPO's work. This is what makes World Intellectual Property Day a cause for celebration.

WIPO MAGAZINE ISSUE 2007/2

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CONTENTS

- 2 **COPYRIGHT IN THE COURTS**
HOW **MORAL RIGHTS** WON THE BATTLE OF THE MURAL
- 4 **GREEN DESIGN** - FROM CRADLE TO CRADLE
- 6 DESIGN FOR LIFE AWARDS - MAOSI BRIDGE
- 7 **BRAZIL** HARVESTS THE WEALTH OF ITS RAIN FORESTS
- 10 TK AND GENETIC RESOURCES - SHARING THE BENEFITS
- 11 RECORD YEAR FOR THE PCT AND **MADRID SYSTEM**
- 12 **PCT PORTRAITS**
COMBATING HAZARDS
- 14 **OUTREACH**
TALKING TO THE **DOWNLOAD GENERATION**
- 16 **FLEXIBILITIES** IN THE PATENT SYSTEM - COLLOQUIUM
- 18 CYBERSQUATTING DISPUTES INCREASE
- 19 BIOMEDICAL INNOVATION IN **JORDAN AND INDONESIA**
- 22 **BOOK REVIEW**
AMERICAN WOMEN AUTHORS AND LITERARY PROPERTY
- 23 **COMMITTEE MEETINGS**
DEVELOPMENT AGENDA
- 24 **NEWS ROUNDUP**
MP3 - Record-breaking Patent Settlement
Captain Copyright's Nemesis
US\$25 Million for a Technological Solution to Air Pollution
New Name for the UK Patent Office
IP Australia Attains ISO Quality Management Standard
African Performers Appeal for Assistance at WIPO Symposium in China
Innovation in the Classroom: South African Solar Energy Workbook
- 27 **WIPO AWARDS**
- 28 **CALENDAR** OF MEETINGS

COPYRIGHT IN THE COURTS

How Moral Rights Won the Battle of the Mural



The moral rights of an artist over his work were put to the test in a High Court of India in 1992, in what was to become a 13-year legal battle, finally settled in 2005. The following account of this landmark case was written for WIPO Magazine by **BINNY KALRA**, a senior attorney specializing in intellectual property litigation at the New Delhi firm of Anand and Anand, which represented the artist.

Sehgal's mural

Back in 1959, the Ministry of Works, Housing and Supplies of the Union Government of India commissioned a talented sculptor, Amar Nath Sehgal, to design a mural. The work was to adorn the walls around a central arch of the Vigyan Bhawan, a venue for important government functions in the capital city. The design was given the green flag by the first Prime Minister of India, Pandit Jawahar Lal Nehru, and the mural was completed in 1962. In its final shape, it measured a mammoth 40 feet high and 140 feet long.



Prime Minister Nehru visits the mural with the sculptor.

The mural won widespread acclaim, and gave the world a glimpse of the 'real' India – its farmers, artisans, women and children, their daily chores and celebrations, frozen in time, and molded from tons of solid bronze. For nearly 20 years the mural attracted dignitaries and art connoisseurs from all over the world. It became a landmark in the cultural life of the capital.

Then the Vigyan Bhawan buildings were renovated. In the process, the mural was ripped off the walls and the remnants put into store.

Poetic justice

Distressed by the destruction of his artistic work, and after petitioning the authorities for years without a response, Mr. Sehgal brought a lawsuit against the government¹ for violation of his moral rights. Specifically, he claimed that:

- the dismemberment of the homogeneous blend of the pieces of each tile in the mosaic constituted an act of mutilation;
- the Ministry's action was prejudicial to his honor and reputation as an artist, because, by reducing the mural to junk, it dealt a body blow to the esteem and celebrity bestowed on the work at its inception;
- the obliteration of his name on the work violated his right to claim authorship.

Though too late to rescue the mural by the time his grievance came to court in May 1992, Mr. Sehgal was nonetheless granted an interim injunction restraining the defendants from causing further damage to the work. By a quirk of fate, the presiding Judge was himself an art aficionado with, literally, a flair for poetic justice. The restraining order handed down by Justice Jaspal Singh came across as an acutely empathetic one:

"Sometime in the year 1962, the barren walls of Vigyan Bhawan were blessed with a mural... created by the magic hands of eminent sculptor Amar Nath Sehgal, approved by connoisseurs of all that is beautiful... For years, it was dance to the discerning eye, and song to the ears who could hear. However, in 1979, it was pulled down and dumped in a storehouse. It is said that improper handling caused immense damage, and that bits and pieces have altogether disappeared, including the name of its creator... In a country rightly proud of its creativity and ingenuity, men who can hardly distinguish the heads of Venus from those of Mars cannot be al-

1. Amar Nath Sehgal vs Union of India through the Secretary, Ministry of Urban Development & Anr.; Suit No. 2074 of 1992 before the Delhi High Court.

lowed to decide the fate of artists who create our history and heritage. The cry is: Ils ne passeront pas! and in such a situation Indian courts will always be found dynamic and responsive. Section 57 of the Copyright Act provides the light..."

Robust defense

The defense objected at the outset to the power of the court to intervene in the matter. Confident that the ministry was within its legal rights, it argued that:

- the plaintiff (Mr. Sehgal) had assigned his copyright to the defendant (the government) in an agreement dated 31st October 1960;
- the defendant had purchased all rights from the plaintiff, and was consequently free to do as it pleased with the mural;
- the mural had already been damaged in a fire in the Vigyan Bhawan;
- according to the terms of the 1960 agreement, any grievance should be referred to an arbitrator appointed by the defendant.

In the second round of the battle, the Judge held in Mr. Sehgal's favor by dismissing the defendant's application to refer the dispute to arbitration. The decks were then clear for the case to go to trial, though not before further months were spent in unsuccessful efforts to find a mutually acceptable solution which Mr. Sehgal felt would vindicate his honor and reputation.

And finally...

Evidence was led, and the matter came up for final hearing.² In the third key decision, Justice Pradeep Nandrajog of the Delhi High Court ruled that: "All rights of the mural shall henceforth vest with Mr. Sehgal." The court ordered the return of the remains of the mural to the sculptor, and also slapped damages of Rs.500,000 (some US\$ 12,000) on the defendant.

But the fight was still not quite over. The decree was not fulfilled, and Mr. Sehgal again took recourse to the court in execution proceedings, while the defendant appealed against the decree to a division bench of the court. Ultimately, the matter was amicably resolved. After the hard fought and emotional battle, Mr. Sehgal, grateful for his victory, waived the claim of damages against the government in exchange for the return of the mural.

Protecting the soul of artistic expression

At the outset, the odds had appeared to be stacked heavily against the artist. Not only had he created the work on commission, but he had also explicitly assigned



Amar Nath Sehgal (left) inspects the remnants of his work.

his copyright – and so all economic rights – to the commissioning ministry. He faced a powerful opponent.

Amar Nath Sehgal won his civil law action thanks to the single statutory provision on "author's special rights" in Section 57 of the Indian Copyright Act (1957). Based on the Berne Convention Article 6*bis*, this codifies the concept of moral rights, by protecting an author's right, independent of his copyright, to claim to authorship of his work, and to restrain any distortion, mutilation or modification of the work which could be prejudicial to his honor or reputation.

It is worth reflecting that, had the mural had been completely destroyed, it is unlikely that Mr. Sehgal would have obtained the same relief, particularly given the long gap between the removal of the mural and the institution of the legal proceedings. The court's decision was influenced by the fact that the stored remnants were still redeemable, and that, on viewing them, the court could visualize the magnitude of the work.

The fact that the defendant was the government was also significant. One of the arguments that appealed to the court was that, unlike a private owner of an artwork, the Indian government had an obligation to protect, preserve and respect cultural rights and the country's artistic and cultural heritage. This was enshrined in the national 2002–2007 Five Year Plan. Extracts from UNESCO's non-copyright cultural conventions also helped create a link between the facts of this case and governmental obligations.

The case of Amar Nath Sehgal's mural throws into relief the importance of the Section 57 provision of the Indian Copyright Act, and of the weight it has been accorded by courts in India. It also gives reason to thank the wisdom of those who resolved, all those years ago, that there should be a higher law to protect the soul and essence of artistic expression as much as – or more than – the physical or tangible form of that expression.

2. Amar Nath Sehgal vs Union of India [2005 (30) PTC 253].

GREEN DESIGN FROM CRADLE TO CRADLE

Sustainability is today's buzzword in design. The green market is expanding rapidly and eco-friendly design is helping companies to stand out from the competition.

Green designers – a new breed of environmentally conscious engineers and architects – are rethinking entire product life cycles, from the industrial manufacturing processes, to what happens at the end of the life of the product. They aim to build non-polluting factories, which make products that are safe for the environment and 100 percent recyclable, by designing new industrial methods and scrutinizing every raw material that goes into fabrication. Some products created according to these principles now carry a new certification mark: Cradle to Cradle™ (C2C).

The C2C certification mark is the brainchild of one of the leading lights of the movement, the architect and industrial designer William McDonough, who co-wrote "Cradle to Cradle" in 2002 with his business partner, German chemist Michael Braungart. Mr. McDonough's vision differs from that of traditional environmentalist. Rather than seeking to reduce consumption, he wants to help bring about a new Industrial Revolution: the reinvention of industrial processes to produce clean solutions and create an industry where

"everything is reused – either returned to the soil as nontoxic 'biological nutrients,' or returned to industry as 'technical nutrients' that can be infinitely recycled."

The goal is to remodel industry and architecture to emulate the balance found in nature's ecosystems. It may sound an impossible dream, but hard-headed Fortune 500 companies are already working with him.

Fabric "safe enough to eat"

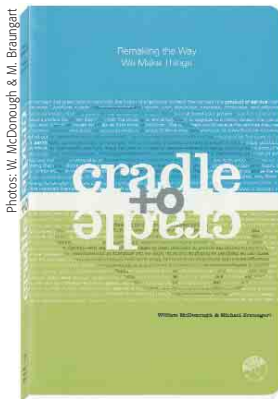
In 2002 the Swiss textile manufacturer Rohner Textil made headlines, cut costs and won new business when the company teamed up with Mr. McDonough and U.S. textile design firm Designtex to produce a biodegradable upholstery fabric that they describe as "safe enough to eat."

While Rohner's textile mills already complied with Swiss environmental regulations, its fabric trimmings had been declared hazardous waste. To produce the new fabric, Climatex® Lifecycle™, a fundamental re-design took place in every aspect of production, from the factory work space, to the elimination of all toxic dyes and chemicals, to the sourcing of raw materials. It is woven from the wool of free-range New Zealand sheep and from ramie, an organically grown fiber from the Philippines. The manufacturing process generates no pollutants. Extensive testing identified just 16 out of 1,600 color dyes that met the consortium's sustainability criteria. As a result, Rohner claims that its factory waste water now tests cleaner than the water coming into the plant. The fabric trimmings are recycled with a consortium of strawberry farms, which use the biodegradable scrap as mulch for ground cover and plant insulation. Moreover, the elimination of regulatory paperwork reduced production overheads by 20 percent.

William McDonough notes: "Not only did our new design process bypass the traditional responses to environmental problems (reduce, reuse, recycle), it also eliminated the need for regulation, something that any businessperson will appreciate as extremely valuable."

Sustainable building

Mr. McDonough is also working with the China Housing Industry Association, which has a commission from the Chinese Government to build homes for 400 million people over the next 12 years – seven new cities. He is working with them to identify environmentally safe building materials, such as a polystyrene from BASF which uses no noxious



Photos: W. McDonough & M. Braungart

The book embodies the authors' philosophy: It is printed on a 'paper' made from plastic resins and inorganic fillers, which is waterproof and rugged, but can be completely recycled.



The C2C certification mark (silver, gold or platinum level) distinguishes products the entire life cycles of which are based on sustainable design.

Living Roof

Planted with sedum, the living roof on the Ford Company's Rouge Factory helps reduce the urban "heat effect" created by acres of tarred and paved surfaces. It also insulates the building, reducing heating and cooling costs by up to 5 percent. The sedum traps air-borne dust, absorbs carbon dioxide, and creates oxygen. By protecting the under-lying roof structure from ultraviolet radiation and the thermal shock caused by warm days and cool nights, the roof is expected to last over twice as long as a conventional roof, so potentially saving millions of dollars in replacement costs.

The sedum is planted in a four-layer, mat-like system, which collects and filters rainfall as part of a natural storm water management system. Combined with other elements, such as porous pavements, underground storage basins and natural treatment wetlands, this reduces the amount of storm water flowing into the Rouge River, while also improving water quality. Even when soaked with water, this innovative vegetation blanket weighs less than 15 pounds per square foot.

(Source: www.thehenryford.org)



Photo: Ford Motor Company

The roof on the Ford Rouge Factory is a 4.2 hectare garden, filled with birds and butterflies.

chemicals and can be used "to build walls that are strong, lightweight and super-insulating," he told Newsweek Magazine. "The building can be heated and kept cool for next to nothing. It's so silent, if there are 13 people in the apartment upstairs, you won't hear them."

And that is just one of his home solutions. He has designed a new luxury toilet bowl that requires only a light mist to flush, and has included bamboo wetlands in the project planning to purify the waste and provide wood. He is making rooftops into farmland, such as the "living roof" on the Ford Company's Rouge Factory, which cleans storm water and cuts down on energy costs.

In the office

Office cubicles have also been built in accordance to C2C standards. The evidence that PVC (polyvinyl chloride) – ever present in construction materials, furniture finishing and wiring – is a carcinogen and

that its disposal is harmful to the environment, ruled out its use in any C2C certified product. So PVC laminated work surfaces were replaced by wood, and suppliers of non-PVC-coated wiring were identified.

Many paints contain volatile organic compounds (VOC), which cause paint to release toxins in the air for years after application – the principal reason why indoor air tested by the Environmental Protection Agency was three times more polluted than outdoor air. Green designers had to work with industry to develop environmentally friendly zero-VOC paints for their office space.

Accepting the challenge

Many companies are accepting the cradle to cradle challenge. From diapers to artificial turf, from pre-fabricated building exteriors to office chairs – the list is long and growing.

For more information, visit www.mbd.com.

DESIGN FOR LIFE AWARDS - MAOSI BRIDGE

"The typical Architectural bridge is one that solves the problem of span, context and load in as elegant a manner as possible. The [Maosi] Bridge is modest and chunky but brilliantly answers the demands of the context. It is a wonderful example of how inventive architectural and design thinking results in something both delightful and socially empowering." – Jury's Comment, Royal Institute of British Architects International Award 2006



School children from Maosi village in Gansu Province, China, commute safely to school across the bridge that they helped build.

Among the top nominees for this year's Design for Life INDEX Awards is an extraordinary construction project in the remote province of Gansu, north-west China. Extraordinary, not because it is high tech, or a great work of art, but because of the harmony between the principles of its design and construction, and the needs of the community which it serves.

The Po River runs through the middle of Maosi village, cutting it in two. The old log bridge had to be rebuilt by the villagers each autumn after it was destroyed by monsoon flooding. Its narrow, slippery surface was hazardous for the 200 children, who had to cross the river several times a day to and from their school on the other side. Among regular accidents, a mother and her child were swept to their deaths.

Professor Edward Ng Yan-ynug of the Department of Architecture at the Chinese University of Hong Kong CUHK came across the village by chance, and took up the challenge of designing a solution which would be cheap, simple and easy to maintain by the villagers. He brought together architects, engineers, laymen and students to develop ideas. After two years of research and planning, the result was the 80-metre long *Wu Zhi Qiao* (Bridge of Sustainability).

Rather than try to conquer nature with a massive structure, the team constructed piers without foundations, shaped to minimize resistance to the water and heavy enough not to be washed away. The bridge was constructed largely by hand by the villagers, with extensive use of natural, local materials, such as stone and bamboo. It is designed in small sections with handles so that each section, if detached, can be replaced by six villagers. The bridge planks on the piers form a zig-zag pattern, which discourages heavy vehicles from crossing the bridge – and is an added bonus for those who hold the traditional Chinese belief that evil spirits cannot turn corners. "After 20 years, now I can again walk to visit my friends on the other side," an elderly man told the bridge builders.

The new bridge has survived the floods over the last 15 months, and the bamboo decks have gained strength as a result of being covered with mud. The project has won three major architectural awards, including from the Royal Institute of British Architects (RIBA). Encouraged by the success, the team has embarked on another bridge project in a Tibetan village in Sichuan. Professor Ng hopes that young villagers will themselves be inspired to build more bridges, reaching more communities.

For more information: www.bridge2far.info.

For more on the INDEX Design for Life awards: www.indexaward.dk

BRAZIL HARVESTS THE WEALTH OF ITS RAIN FORESTS

This article by Michael Ryan was first published in the IP Legal Times of May 2006. Mr. Ryan is the Director of the Creative and Innovative Economy Center at the George Washington University Law School. He is currently writing a book on drug innovation, patents, and health security in developing countries. This article is reproduced with the permission of the author.

When a man in Brazil injured his knee while playing football, a local healer urged him to apply the leaf alcohol of the *maria milagrosa* plant on his knee to relieve the swelling. It worked. The injured man, who was the founder of the French-Brazilian drug manufacturers, Aché, was impressed with the market potential for such a wonder remedy in a country full of football players. He recruited a University of Sao Paulo scientist to isolate the active compound.



Photos.com

With biomedical research on the rise since the reform of Brazil's patent regime, the Amazonian jungles are yielding new treasures.

But that was the easy part. Who would pay to develop the best formulation of a new anti-inflammatory drug? Who would pay for the toxicology studies? Who would pay for the laboratory tests, the animal trials, and the human trials? If all these investments were made, how could competitors be prevented from analyzing the chemical composition of the final product and selling it under their own brand names?

The story took place in Brazil in the early 1980s, when Brazilian law did not permit the patenting of pharmaceuticals. That meant the answers to all the above were negative: not Aché and, indeed, no-one, as competitors could not be stopped from freely copying the invention. Government scientists may have seen the myriad possibilities, but a lack of financial investment in the private sector severely constricted the pipeline from laboratory to marketplace.

Going for the green

Brazil has long recognized that the vast jungles traversed by the Amazon River hold tremendous wealth. But traditionally efforts to exploit these resources focused on drilling for oil and natural gas,

mining for minerals, cutting of trees, and planting of agricultural crops. Amazonia possesses the world's greatest biodiversity – extraordinary flora and fauna seen nowhere else – however biomedical research was not a priority for Brazil. Companies were reluctant to invest in the long process of research and development. And the public and private sectors did not work together.

That started to change in 1996 when the Brazilian government undertook a major reform of its patent law. The new patent regime permitted patents on pharmaceutical products and processes, provided a 20-year term of exclusive rights, and barred parallel imports of patented products.

Fresh interest

The new policy had immediate effect. That same year Aché's founding families decided to hire a team of executives with experience in global pharmaceutical management. The new president articulated a business strategy to market drugs previously unavailable in the Brazilian marketplace in partnership with multinational companies and to push Aché itself into the innovation business.

The new R&D director heard the story of the anti-inflammatory remedy that had never been developed and saw real market potential. Because Aché lacked its own internal R&D capabilities, it sought partnerships with universities and hospitals to establish a program of toxicology research, animal testing, and human trials. Aché paid for this initiative by, among other things, winning a government grant.



Seven years of study, testing, and trials demonstrated the *maria milagrosa* compound to be both effective and safe. The Brazilian public health authority approved the compound for sale in November 2004. Aché filed for patent protection in Brazil, the United States, and Europe. The anti-inflammatory cream *Achéflan* went on the market in the summer of 2005.

Achéflan is apparently the first patent-protected biomedical product to be developed by Brazilians from a natural resource. And it was an instant hit with professional football players, weekend athletes and their doctors.



An R&D alliance between BioLab and Biosintetica aims to develop innovative drugs from Brazil's many snake and insect species.

Buoyed by its medical and financial success, Aché has gone on to establish more R&D partnerships with universities. Together Aché and its partners are seeking to develop therapeutic treatments in such areas as anxiety, diabetes, high blood pressure, liver disease, and sleep disorder.

Making a deal

Other Brazilian drug makers are also stirring the creative juices. Two companies, BioLab and Biosintetica, have formed an R&D strategic alliance because, in the words of one manager, "innovation is fundamental to survival." Their first-of-its-kind initiative in Brazil was five years in the making. Its goal was to develop new drugs from Brazil's many snake and insect species.

The partners, whose independent R&D efforts have resulted in some three dozen international patents between them, saw in each other complementary business capabilities. But they realized that they also needed to connect with university researchers. Not surprising, BioLab and Biosintetica managers report that their collaborative agreements with academia were difficult to negotiate. (Aché tells a similar story about its research arrangements with universities and hospitals.) In general, universities in Brazil did not have experience with these kinds of

collaborative relationships. Academic researchers did not trust the private sector as partners. They also lacked both know-how and capabilities with respect to intellectual property management. And they brought to the table some unrealistic expectations regarding risks, rewards, and royalties.

But over time, the BioLab and Biosintetica negotiators built up a level of mutual trust. Eventually, they figured out how to protect everyone's interests to everyone's satisfaction. To date, the R&D partnership has yielded 11 international patents, although it has not yet brought any innovative new products to market.

Selective science

The successes of BioLab, Biosintetica, and Aché begin to point the way to more public-private pairings.

For many years, the Brazilian government has made significant investment in the country's public research universities and national laboratories. This investment has been most pronounced in the State of Sao Paulo, which dominates the Brazilian economy. For 50 years, the State of Sao Paulo Research Foundation – commonly known as FAPESP (Fundacao de Amparao a Pesquisa do Estado de Sao Paulo) – has funded basic scientific research and graduate education at the University of Sao Paulo, the University of Campinas, and Paulista State University.

The biomedical research base in Brazil also includes two important publicly supported research institutes, the Instituto Butantan and the Oswaldo Cruz Foundation. As operations of the Ministry of Health, both institutes seem to have been organized to create biomedical development and production capability for government-owned pharmaceutical facilities, which in Brazil produce some 200 different drugs and vaccines. But the institutes have not traditionally served to encourage much innovation or to push the commercialization of technology through public-private partnerships.

The problem for Brazil was that the public investments in basic science and technology had not yielded many marketable products. And the private sector in general still invested too little in R&D. FAPESP data show that two-thirds of R&D spending comes from the government; only one-third is invested by the private sector. Seventy-five percent of scientists and technologists work in the universities; only 18 percent work in private business.

Most industrial R&D carried out in the Brazilian private sector occurs in the agriculture, aircraft, and energy industries. Until very recently, private-sector biomedical R&D was close to nil. Few companies run their own research laboratories. There are not

The Brazilian Innovation Law

The 2004 Brazilian Innovation Law was introduced to provide the legal framework needed to improve the country's capacity to generate and commercialize technology. The Law deals with incentives to increase the establishment of cooperative links between public scientific and technological institutions (STI) and enterprises. It also regulates the use and negotiation of IP generated from collaborative activities between STIs and firms.

To improve its innovative capacity, Brazil needed to encourage more firms to invest and become involved in technological developments. The Ministry of Science and Technology estimated that 70 percent of R&D in Brazil is financed with public resources. In addition, 80 percent of Brazilian researchers carry out their activities within public institutions, concentrating on the production of scientific papers. The country produces 1.5 percent of the worldwide total of papers in scientific fields – a similar percentage to Korea. However, whereas the number of USPTO patents granted to Brazilian inventors only increased from 33 in 1980 to 113 in 2000, in Korea the increase in the same period was from 30 to 3,472.

Public STIs have long struggled to formalize activities involving collaboration with enterprises. The previous legal framework regulating STIs compelled them, among other things, to undertake a public bidding process for the licensing of technologies. According to the new Innovation Law, STIs are only requested to publish a previous “request for licensees” for the purposes of transferring or licensing their technologies. With this new regulation, STIs are able to accelerate the process of licensing and selecting the best partners.

The Law allows STIs to negotiate the use of their laboratories with SMEs. This possibility will facilitate R&D among small companies. In addition, there is a special requirement for funding agencies to promote specific programs to stimulate innovative projects in micro and small enterprises.

The Innovation Law serves as an incentive to establish partnerships aimed at developing new technologies. Researchers have the possibility to work in other STIs and continue to receive their regular salaries. Researchers are also able to request special leave without pay to become involved with a start-up company in order to further develop their new technologies.

From “In Search of an Innovative Environment – The new Brazilian Innovation Law” (2005) written by Maria Beatriz Amorim Páscoa, then Director of Institutional Partnerships and Technological Information, at INPI Brazil.

many private-sector jobs for biomedical graduates and thus modest incentives to pursue higher education in the biomedical sciences.

Clearly, something needed to be done to jump-start the engine of private innovation.

Amazon partners

In December 2004, the Brazilian government promulgated another major legal reform, the Technology Innovation Law. The purpose of the legislation is to encourage more public-private cooperation by making it easier for public and private enterprises to share resources, raise capital and clarify intellectual property rights.

Eight provisions are key:

- Public research institutes are permitted to share their laboratory facilities with private-sector enterprises.
- Public research institutes and private-sector enterprises are permitted to enter into capital relationships for the purpose of R&D.

- Public and private partners may specify the ownership of any future intellectual property rights by contract.
- Public research institutes and their employees must protect trade secrets associated with their research.
- Public research institutes may license their technologies to private enterprises.
- Individual public researchers may share in the economic returns associated with the successful commercialization of a new product.
- Public researchers may take leave from their public position in order to work for a private enterprise.
- Government development agencies should provide financial and human resource assistance in support of private-sector R&D.

By substantially reforming its patent law and removing major institutional barriers to technological development, Brazil has made certain that the innovation will not end with *Achéflan*. The stage has been set for the next fruitful act in Brazil's quiet biomedical revolution.

TECHNOLOGY BASED ON TRADITIONAL KNOWLEDGE AND GENETIC RESOURCES

Sharing the Benefits

Technological developments have increased our ability to derive industrial and commercial benefits from traditional knowledge (TK) and genetic resources. As seen in the previous article on Brazil, there are many examples of TK and ge-

It is often remarked that the bulk of the world's traditional knowledge and biodiversity lies in the developing world, whereas the capacity to extract commercial benefit from these still resides largely in the developed world. Patent statistics show a predominance of developed country activity in this field, and although several developing countries are now showing a rapid increase in relevant patent activity, they are starting from a very low base. The International Patent Classification was recently amended to introduce new classes to help identify and monitor patents on medicines derived from natural products, which often make use of TK and genetic resources.



The Convention on Biological Diversity was concluded at the 1992 Earth Summit in Rio de Janeiro, Brazil.

netic resources providing essential inputs to the development of valuable new products including medicines, crops and industrial enzymes.

But this same trend has sharpened concerns about how to ensure (a) that knowledge and genetic resources are used with the prior informed consent of the traditional and local communities concerned, and (b) that benefits of such use are shared equitably, especially with the custodians of the resources. *The Convention on Biological Diversity* (CBD), for instance, which was concluded at the 1992 Earth Summit in Rio de Janeiro, establishes the principles that access to genetic resources should be subject to prior informed consent and the benefits of their use should be shared equitably.

Different approaches

The debate over access and benefit sharing has led a number of countries to amend their laws to require disclosure of any TK and genetic resources used in a patented invention. This extends in some cases to requiring evidence of prior informed consent and equitable benefit sharing. Such requirements make a direct link between the context in which genetic resources and TK are accessed and used, and the filing of patents on inventions based on such inputs. Several such proposals have also been made at the international level, including a proposal within the World Trade Organization (WTO) to amend the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement) to make such disclosure requirements mandatory in national laws. Other countries have taken the view that different means, such as access contracts, are preferable to amending patent law and international treaties in this way.

Several WIPO forums have considered this question, and WIPO has developed two detailed studies on this question at the invitation of the CBD. An extensive debate continues in several international fora, including the WTO, the CBD and WIPO.

For more information: www.wipo.int/tk/en/genetic

RECORD YEAR

for International Patent Filings and Trademark Applications

PCT: chart-topping figures from Northeast Asia

A record 145,300¹ international patent applications were filed under the Patent Cooperation Treaty (PCT) in 2006, an increase of 6.4 percent over the previous year. For the third year running, the most remarkable growth rates came from countries in northeast Asia, the source of 25.3 percent of all international applications under the PCT. The fastest growing technology areas were semiconductors (28 percent increase), information technology and pharmaceuticals.

"Developing country economies are capitalizing on the tools of the intellectual property system for wealth creation," said WIPO Deputy Director General Francis Gurry. "New centers of innovation – in particular in northeast Asia – are emerging and this is transforming both the geography of the patent system and of future global economic growth."

While the U.S., Japan and Germany remained the top three filing countries, the Republic of Korea, with a 26.6 percent increase, overtook the U.K. and France to become the fourth biggest country filer. Applications from China, where PCT use grew by an impressive 56.8 percent, dislodged Switzerland and Sweden to take eighth position. Among the top fifteen, Italy and Israel also achieved double-digit increases.

For more details see:

www.wipo.int/edocs/prdocs/en/2007/wipo_pr_2007_476.html

Top Filing Companies in 2006

PCT

Philips Electronics N.V., **Holland** (2,495)
Matsushita, **Japan** (2,344)
Siemens, **Germany** (1,480)
Nokia, **Finland** (1,036)
Bosch, **Germany** (962)

Madrid System

Lidl, **Germany**
Novartis, **Switzerland**
Janssen Pharmaceutica, **Belgium**
Henkel, **Germany**
Nestlé, **Switzerland**

Top Filing Companies in Developing Countries in 2006

PCT

Huawei Technologies, **China**
LG Electronics, **Korea**
Samsung Electronics, **Korea**
LG Chem, **Korea**
Electronics and Telecommunications Research Institute, **Korea**
ZTE Corporation, **China**
Agency for Science, Technology and Research, **Singapore**
Ranbaxy Laboratories, **India**
Council of Scientific and Industrial Research, **India**
NHN Corporation, **Korea**

Madrid System

China Network Communications Group Corp., **China**
Shanghai Tyre & Rubber Co., **China**
Xiamen Xingyatai Plastic Industry Co., **China**
ESTsoft Corp, **Korea**
TMAX SOFT Co, **Korea**
Maroc Telecom, **Morocco**
Asia Pacific Breweries, **Singapore**
Société de Promotion Pharmaceutique du Mahgreb "Promopharm", **Morocco**
INGELEC, **Morocco**
Office National de Commercialisation des Produits Viti-Vinicoles, **Algeria**

Madrid System: Germany holds its lead

WIPO received a record 36,471 applications in 2006 under the Madrid System for the international registration of trademarks – up 8.6 percent over 2005. For the 14th consecutive year applicants from Germany headed the list of top filers, accounting for 18 percent of the total, followed by users in France. After only three years as a member of the Madrid System, users in the U.S. ranked third, followed by Italy and the Benelux.

WIPO Assistant Director General Ernesto Rubio noted that international trademark filings had increased by over 25 percent in several countries, including Australia, Italy, the Republic of Korea and Norway. Applications from Morocco were up by over 80 percent.

The 25 countries of the European Union together accounted for around two-thirds of applications in 2006. Since October 2004, applicants from these countries have the option of filing their international applications either through their national trademark office or through the European Community's regional Trademark Office (OHIM) in Alicante.

For the second year, China was the country most frequently designated by applicants for protection, reflecting increasing levels of trading activity by foreign companies in China. It was followed by Russia, Switzerland, the U.S and Japan. Increasingly, applicants are opting to designate the EC as a whole for trademark protection rather than individual EC countries. Ukraine moved up to 9th place with a 9.5 percent increase in designations.

For more details see:

www.wipo.int/edocs/prdocs/en/2007/wipo_pr_2007_480.html

1. Provisional estimate – WIPO continues to receive PCT applications filed with national offices in 2006 throughout the first half of the year

PCT PORTRAITS

Combating Hazards

More than 1.2 million international patent applications, covering new technology of every description, have been filed since the Patent Cooperation Treaty (PCT) began operating in 1978. Continuing our series of snapshots, WIPO Magazine dips into the PCT database and seeks out the people behind the patents. In this edition, innovators from Israel, Australia and the U.S. pit human ingenuity against natural and unnatural hazards.

Shark shock



A shark approaches then turns away from a diver wearing the Shark Shield.

It was the stuff of nightmares. Mike Wescombe-Down was, at age 16, a carefree, water-loving youth, until his diving companion was mauled to death by a Great White Shark in the coastal waters of Australia. The trauma left him with a hatred of the notorious predators. But as he came to know and understand their ways better, this developed into a desire to find a technical solution that could prevent the recurrence of such horrors, while enabling swimmers and sharks to co-exist safely in the same waters.

Mike Wescombe-Down's research led him to some ingenious technology,

which had been developed in the 1990s by the well-respected Natal Sharks Board of South Africa. Based on electronic wave-fields, this was marketed to divers under the name of Shark POD, but the product was bulky and expensive, and enjoyed limited success. Mike set up the SeaChange Technology company, acquired the rights to the South African technology under an exclusive worldwide licensing agreement, and put his diving experience and industrial design skills to work to produce a new, improved shark deterrent.

The result was the Shark Shield™, featured last year on the Australian Broadcasting Company's (ABC) *New Inventors* series. The compact device, which straps onto a swimmer's leg, or into a diver's pouch, consists of two electrodes, which generates a powerful electromagnetic field around the user in the water. A shark which swims within

seven meters of the device experiences a sensation of acute discomfort as the electric waves hit sensory receptors found on the shark's snout. While completely harmless, should the shark draw nearer, the discomfort grows more intense until it causes muscle spasms and drives it away. Neither the swimmer, nor other marine life, is affected.

SeaChange Technology Holdings, based in Adelaide in South Australia, filed four international patent applications via the PCT in 2002 and 2003. These covered their Shark Repelling Device and related inventions, including a shark-repelling hull for boats. Mike reports that the Shark Shield is selling well, to both recreational and professional divers, swimmers, surfers, fishermen and kayakers. ■

For more see:
www.sharkshield.com

Zapping deadly chemicals with nano-particles



A Kansas emergency response unit tests FAST-ACT on vapors from a leaking propane tank.

In 1995, members of a sinister cult released deadly sarin nerve gas into the crowded Tokyo subway. Emergency teams struggled to evacuate choking passengers as the gas spread. Among the millions watching the horrifying images on the evening news was Dr. Kenneth Klabunde, a professor of chemistry at Kansas State University, U.S. Dr. Klabunde's laboratory had been working on nano-engineering methods to develop unique materials with the potential to help during such an attack. Two years later, the university filed a PCT application covering the techniques he had developed for creating substances capable of adsorbing and destroying highly toxic chemicals.

Dr. Klabunde founded NanoScale Corporation, which then licensed the technology from Kansas State University. With support from the National Science Foundation, the company began producing and marketing FAST-ACT® (First Applied Sorbent Treatment Against Chemical Threats), as a groundbreaking chemical threat response product. FAST-ACT consists of nano-crystalline particles of magnesium oxide and titanium dioxide that are sprayed from a pressurized canister. The particles of powder latch onto

Chute to safety

Israeli entrepreneur Eli Nir did not want others to have to suffer what he had experienced as he watched fire-fighters struggle up and down ladders to rescue his eight year old son, trapped on the top floor of a burning, high rise hotel. His son escaped unscathed. Others, in similar situations, have been less fortunate.

The solution conceived by Mr. Nir was a simple one: collapsible steel coils sheathed in fireproof, Kevlar-like fabric are installed on the outside of the upper floors of a high rise building, and accessed by emergency exit doors. When a fire alarm sounds, the tubes unfurl. The occupants of the building step through the door and slide down to the ground – much like in a giant water-slide at an amusement park. The speed of their descent is controlled by a series of “steps” incorporated into the structure of the chute.

Mr. Nir filed a total of six PCT applications relating to his “rescue sleeve” between 2000 and 2002. His concept was developed by

Tel Aviv-based manufacturers, Advanced Evacuation Systems (AES), who raised US\$ 1 million from private investors. Former Israeli Prime Minister Ehud Barak joined the board of directors to help promote the invention.

The demonstration of the prototype at a Washington hotel in October 2002 caused a splash, as the press gathered to watch a series of volunteers launch themselves through the 50 meter chute, and emerge beaming at the bottom. AES’ statistics indicated that the structure would enable a person to descend 25 stories in under 10 seconds, so that 15 people could be rescued per minute. New models were planned, based on a corkscrew principle, for use up to 100 floors high.

The deputy chief of the Washington fire department, Mike Smith, was impressed by what he saw, and the chute was singled out by Time Magazine as one of the Best Inventions of 2002. But not all inventions live up to their promise. Take-up by



Courtesy of AES

At the press demonstration volunteers launched themselves from the 11th floor of a Washington Hotel.

potential clients failed to match expectations, and the company concluded that further work was needed in order to secure active backing from U.S. health and safety bodies. For now, all has gone quiet at AES. A case of back to the drawing board? Or down the tubes? ■

For more see:
www.aes-systems.com

See also www.wipo.int/pct/en/inventions/ for WIPO’s PCT website Gallery of Notable Inventions and Inventors, featuring a selection of other interesting innovations.

the toxic gases or liquids and render them harmless. As well as neutralizing sarin, mustard gas, and other chemical agents, the powders can be used to mop up spillages of hazardous industrial chemicals and acids. The invention won Kenneth Klabunde a 2005 Breakthrough Award from Popular Mechanics magazine.

Nano particles possess properties quite different from either the individual atoms of a substance or the bulk material. They form a new class of matter, to which neither quantum chemistry nor classical physics theories apply. The secret of the punch packed by the FAST-ACT powders lies in engineering the nanoparticles to create jagged edges, which vastly increase their surface area, porosity, and chemical reactivity. As Dr. Klabunde explains, where as ordinary magnesium oxide powder has a surface area of only 30 square meters per gram, the techniques used to produce FAST-ACT increase this more than ten-fold: “Just seventeen grams of the powder has the surface area of a football field,” he says. ■

For more see: www.NanoScaleCorp.com

TALKING TO THE DOWNLOAD GENERATION

"I wouldn't steal a car. I wouldn't steal a DVD. But I might borrow a DVD from a friend. And what's the Internet these days, but a big group of friends sharing stuff?" – Hussein, aged 17*

* The names of the students have been changed.

Hussein was among a group of 16-17 year olds whose views on piracy provided delegates to the 2007 Global Congress on Combating Counterfeiting and Piracy with food for thought. A WIPO team had taken cameras into the classroom of an international school, shown the students a range of anti-piracy publicity materials, and filmed their reactions. With the subject of awareness-raising high on the Global Congress agenda, the film was intended to illustrate the importance of understanding the attitudes of a target audience when designing outreach campaigns.

knew ever been fined or punished for illegal downloading. But as it was, they saw it as a non-crime with no consequences.

But what about the ethical rights and wrongs? Hussein was quick to voice a sense of popular outrage: "Yeah, well how is it moral to charge 25 dollars for a CD that costs 25 cents to produce?" This unleashed a flood of invective against perceived corporate greed, of which the teenagers viewed themselves – and many artists – as innocent victims. "For them to say they're losing millions because of downloading is hypocritical," fumed Ayushi. "The record labels are just *minting* money."

Out of the Mouths of Rappers



People don't wanna pay for CDs
Now every other household's got PCs
They download on mp3s,
People please be reasonable.
How am I gonna make my Gs
If you got the album before the release?
The quality's rubbish and there ain't no sleeves.
Do you deem that feasible?

Lyrics from "Download" by U.K./Ghanaian rap artist, Sway.

Rights and wrongs

A show of hands in the classroom revealed that downloading music illegally was a daily practice among this typical group of bright teenagers. Why, we asked them, did these normally law-abiding citizens have no qualms about breaking the law in this particular area? It was clearly not through lack of awareness of copyright law. The students were well informed. Yet they did not feel that they were doing anything wrong. "Downloading seems kind of unreal compared to other crimes," reflected Elena. "Sure, we know it's illegal," added Harry, "but it's not like you're going to get a knock on the door and find a policeman standing there." They might feel differently, the students agreed, had anyone they

An explanation from the WIPO team as to how record companies use sales profits to subsidize new talent and unprofitable bands, made little impact. One earnest lad in the front row urged his classmates to see "the economic point of view. – It's a business, after all, and businesses have got to make money." But others shot back: "then they should work harder on making us *want* to pay for it." Ricardo argued that the time had come for new business models: "They've got to find ways to make money other than selling CDs, because stopping people from downloading illegally is, well, extremely hard."

What of the artists?

Surely, though, these music-loving kids would see that taking music without paying for it was unfair to their favorite artists? The WIPO team showed the class a short film, in which Malian world music star Amadou describes about how piracy has affected him. This did leave some of the class pensive. "Yes, I can see that it makes a difference for an artist like that, who doesn't have a lot of money," commented Lucy. Deborah compared a recent interview with mega-star P!nk: "I heard her talking [about piracy], but it didn't affect me at all, because I know just how



Photos: WIPOM/J. F. Aron/World

rich and famous she is." Ali put his finger on the difficulty in finding the right kind of artist to communicate anti-piracy messages: "Trouble is, I'd never heard of the Malian guy. It needs to be someone really famous to catch our attention in the first place – but then we wouldn't believe they need the money."

Ayushi flagged up some cultural differences, describing a successful Bollywood campaign in which popular stars appealed to the public not to buy pirated DVDs. "In India we love our cinema and our film stars. That works for us," she mused. Other kids picked up on a news clipping about a Hong Kong campaign in which boy scouts were used to report instances of piracy. While that might work well in some cultures, smiled Lucy apologetically, "it would just make me hate boy scouts."

Hussein, meanwhile, questioned the premise that downloading is bad for artists, citing bands which become well known as a direct result of their music being "shared" on the Internet. And he railed against what he saw as the hypocrisy of bands such as the heavy metal group, Metallica; "I mean, they sued [P2P file-sharing site] Napster, and yet the whole reason they got so famous was because of the illegal tape trade 15 years ago."

Tuning out

The students' reactions to the anti-piracy materials we showed them suggested that messages designed to alarm were perhaps the least effective. A poster suggesting that pirated DVD sales funded terrorists was met with disbelief. The notion that the FBI would hunt down illegal downloaders was dismissed as laughable. An advertisement with dramatic music and visuals, which equated piracy with car theft, certainly caught their attention, but left none persuaded by its message.

Several of the kids pointed out that young people are so bombarded by messages and warnings that they tend to tune them out. "We're always being

told: 'don't smoke, you'll get caught; don't do this, you'll get caught'... the messages just don't affect us any more." Others found factual press reporting about the consequences of piracy more persuasive than "fancy" publicity campaigns. "Just give us simple facts and figures."

Irresistible

Ultimately, they all agreed, downloading music is just too easy, too accessible, too attractive to resist. A click of a mouse and "it's all at our disposal. – Thousands of songs that we can do whatever we want with." Said Caitlin: "It's true there are legal ways too, but the illegal ways are so much simpler." If you really want to stop it, the kids told us, target the technology-providers who make it all so easy and who could, if it was such a bad thing, come up with technological solutions to prevent it. "These campaigns shouldn't be talking to us," argued Ricardo, "they should talk to the corporations that give us all these opportunities, that lead us to do illegal things."

This snapshot of teenage attitudes to piracy resonated with the experiences of many of the organizations at the Global Congress, which are actively seeking solutions to tackle piracy – be it through awareness-raising, legal enforcement, technology, or new business models. "I stare at this problem seven days a week," said David Benjamin, head of anti-piracy at the Universal Music Group, "and these kids are just the tip of the iceberg." Benoît Battistelli, director general of the National Institute for Industrial Property (INPI), France, urged delegates not to shy away from repressive measures since – *rien ne vaut la peur d'un gendarme* (nothing beats the fear of a policeman). Others, however, argued strongly against moves to criminalize consumers.

And a last word from the kids? – "The sad truth about our generation," Ayushi concludes, "is that if it's free, we're gonna go for it."

FLEXIBILITIES IN THE PATENT SYSTEM

WIPO Patent Colloquium



"Historically, the space provided to national governments in the patent system enabled industrialization to grow." – Professor Gopalakrishnan.

What room for maneuver do governments need within the international patent law system so as to enable them to safeguard national interests? Should the balance between obligations and flexibilities in the current system be adjusted? Such questions were debated at a recent WIPO colloquium on patent issues – one in a series of public colloquia, designed to offer information on a range of patent-related topics, and to provide an informal forum for participants to exchange views.

The February 16 colloquium, held at WIPO headquarters, addressed the topical theme of the "flexibilities" in the patent system, i.e., the space for maneuver by national governments, which is allowed within the rules governing the international patent system. These flexibilities recognize that, while international harmonization of patent standards helps facilitate trade and investment in a global economy, there also needs to be sufficient leeway to accommodate national differences, notably in terms of differing levels of economic development, and public policy concerns. This surfaced as a hotly debated issue during negotiations leading up to – and following – the 1994 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).

Two invited experts presented the colloquium with complementary views on the evolution and effectiveness of the flexibilities in the current system: Dr. N. S. Gopalakrishnan, Professor in IP law at the Cochin University of Science and Technology, India; and Professor Joseph Straus, Director of the Munich-based Max Planck Institute for Intellectual Property, Competition and Tax Law, Germany.

Narrowing of flexibilities

Professor Gopalakrishnan gave an historical overview, in which he traced the progressive narrowing of flexibilities through three main phases: from the 1624 English Statute of Monopolies to the Paris Convention (1883); from the Paris Convention to TRIPS (1995); and from TRIPS onwards.

During the initial phase of "total flexibility," each country's patent system was based on standards determined entirely by the national government. Patents, seen as a privilege granted by the state, were used to facilitate investment and build up the national, industrial base. But there was no obligation to protect foreign inventions, imitation was rife, and incentives for innovation were inadequate.

The Paris Convention, Professor Gopalakrishnan explained, imposed a set of minimum international standards, so introducing a period of "minimum obligations with maximum flexibilities." States were left free to determine, for example, their own standards regarding the criteria of novelty and non-obviousness/inventive step; their own limitations and exceptions to patent protection; the term of protection; and the conditions for issuing compulsory licenses. The patent system came to be recognized as a powerful tool for innovation and industrialization. New economic powers emerged, but while some Asian countries shared the benefits with Europe and the U.S., development was not equal. Moreover, member states failed to observe the minimum standards, and the system lacked effective mechanisms to prevent trade distortions.

The TRIPS Agreement marked the start of the current period, characterized by binding obligations on member countries, with limited flexibilities. Dr. Gopalakrishnan noted that TRIPS leaves open some scope for states to determine standards of patentability, (e.g. regarding novelty and inventive step); to limit patent protection in respect of key new technologies, (such as biotechnology and software patents); and to set their own enforcement standards and procedures. Article 30 allows room for interpretation by each country regarding limitations and exceptions to patent protection, for example, to allow patented technology to be used for research purposes. And the Doha Declaration codifies the flexibility allowed for governments to issue compulsory licenses on public health grounds.

Professor Gopalakrishnan highlighted challenging questions facing World Trade Organization (WTO) and WIPO members as they consider the future direction of the patent system: Do patent rights now exceed the optimum level required to incentivise innovation and investment? Have economic arguments been allowed to outweigh public policy concerns,

e.g. regarding access to patented medicines? Should the TRIPS-based system be revisited? He noted that, historically, the right balance of flexibilities had facilitated industrial growth and enabled the patent system to grow. And he called for governments now to pinpoint where flexibilities are most needed in order to fulfil their dual purpose of promoting investment and innovation, and meeting public needs.

The TRIPS Agreement – a successful marriage of convenience

Professor Straus regretted that too much debate in this area was based on ideology rather than on facts. He produced multiple sets of statistics in support of his central contention, namely that the “TRIPS marriage of convenience,” in which developing countries accepted higher standards of patent protection in return for ease of access to technologies, was working well. He showed economic indicators to demonstrate that, in the 10 years following the introduction of the TRIPS Agreement, developing country economies had expanded at a healthy rate (China at 9 percent; Latin American and Caribbean countries at 4.5 percent; India at 7 percent; compared to the industrialized countries’ average of 2.5 percent). And he highlighted the rapid rise in patent applications from developing countries.

Taking China from 1996 to 2002 as a test case, Professor Straus cited a two-fold increase in investment in research and development (R&D), plus the establishment by foreign firms of over 200 R&D laboratories in the computer and telecommunications sector alone, as evidence that technology and knowledge transfer was thriving under TRIPS. In the same period, average manufacturing wages paid to Chinese employees had increased three-fold.

He gave examples of how some Latin American states, in defining their patentable subject matter, were using TRIPS flexibilities with regard to the notion of an invention – as against a discovery or product of nature. The Andean Group had opted to exclude from patentability all substances pre-existing in nature. Brazilian law excluded any plant and animal parts, including active substances isolated from plants, animals

or natural micro-organisms. Professor Straus questioned whether these exclusions were truly advantageous, drawing a link with the debate on benefit-sharing from genetic resources, which he believed would be facilitated by IP protection in this area.

IP rights, he stressed, were only one factor required to promote economic development. But high standards of IP protection combined with liberalized markets, low labor costs, a reliable judiciary, good education, and a stable political environment, made a country irresistible to companies looking to relocate their R&D.

Compulsory licenses

In the ensuing discussion, participants discussed, *inter alia*, developing countries’ use of the flexibility under the TRIPS Agreement to issue compulsory licenses for drugs. The recent cases in Thailand were explored, with further information contributed by a Thai official. Some questioned why so few countries had used this provision, while others noted that it only worked where there was adequate local drug-manufacturing capacity. Professor Straus cautioned that over-use of compulsory licenses risked “killing” investment incentives in e.g. HIV drug research, and he called on the international community to find solutions to such public health needs outside the framework of the TRIPS Agreement. A WTO participant drew attention to the significant value of the compulsory licensing provision as a negotiating tool. This, he said, had been used to powerful effect by developing countries in various negotiations with pharmaceutical companies to date, thus achieving its purpose in an alternative way.

Speakers and participants alike shared the view that the key lay in finding the right balances: a patent system, in which international standards were balanced with flexibilities appropriate to national needs; and a balanced, objective approach by policymakers and stakeholders in shaping the future development of the system.

For more information, including the speakers’ presentations and details of forthcoming colloquia, see: www.wipo.int/patent/colloquia/en/



“The TRIPS deal – higher patent standards in exchange for developing country access to technology – is working.” – Professor Straus.

CYBERSQUATTING DISPUTES INCREASE

New Practices Threaten Trademark Owners' Interests

The number of Internet domain name cybersquatting disputes filed with WIPO's Arbitration and Mediation Center increased by 25 percent in 2006. Many related to trademarks which were attracting media coverage, such as a spate of cases involving the *Tamiflu* trademark, filed at the height of international concern about an avian flu pandemic.

Commenting on the figures, WIPO Deputy Director General Francis Gurry drew attention to new practices in domain name registration which are threatening the interests of trademark owners. These include the use of *Whois* privacy services for registrations; the growth in the number of professional domain name dealers and the volume of their activity; the use of computer software to automatically register expired domain names and their 'parking' on pay-per-click portal sites; the option to register names for free for a five-day trial; the growth in the number of accredited registrars; and the establishment of new generic Top Level Domains (gTLDs). The combined result is to create greater opportunities for mass, often anonymous, registration of domain names without consideration of third-party IP rights.

"Practices such as 'domain name tasting' risk turning the domain name system into a mostly speculative market," said Mr. Gurry. "Domain names used to be primarily specific identifiers of businesses and other Internet users, but many names nowadays are mere

commodities for speculative gain," he said. With mass-automated registrations turning domain names into "moving targets," Mr. Gurry called for consideration to be given to concrete policy responses.

Domain name tasting services enable a person or entity (who may be affiliated with a registrar) to register a domain name for a five-day grace period without a registration fee, and to park the name on a pay-per-click website monitored for revenue. The name is then dropped or re-registered by a new registrant, thereby starting a new grace period. Only those domain names generating significant traffic are permanently registered. As a result of computer applications, tens of millions of domain names are temporarily registered on this basis each month.

Traditionally, cybersquatting involved the registration of domain names by individuals seeking to sell the 'squatted' domain name. Nowadays, 'domainers' derive income from the large-scale automated registration of domain names. They acquire domain name portfolios, buy and sell domain names, and park domain names, claiming a significant share of the well over 100 million domain names that are now registered.

There is a rapid growth of domain parking sites, on which links to other sites are organized and indexed. These links usually operate on a 'pay-per-click' basis with registrants and parking services sharing revenue generated by web traffic. This

is fueling rapid growth in 'domaining' and registrar activities.

Implications for the UDRP

Whois privacy services are allowing domain name registrations to be made through a proxy registrant, often a registrar-related entity. WIPO panel decisions are beginning to explore the practical implications for the Uniform Domain Name Dispute Resolution Policy (UDRP) of these developments, for example in terms of whether or not the privacy service discloses the identity of its client once the service has been alerted to concerns of trademark infringement.

The application of the UDRP decision criteria is already evolving to accommodate a number of such new developments. For example, WIPO panels have generally held that for a domain name to be transferred under the UDRP, there needs to be some indication that the registration was made with the intention of taking advantage of the complainant-trademark owner's rights in that name. With regard to bulk buyers of domain names using automated registration processes, a WIPO panel decision issued in February 2006⁵ found that failure to conduct prior checks for third-party rights in certain circumstances would represent 'willful blindness,' representing bad faith under the UDRP.

5. *Mobile Communications Services Inc. v. WebReg RN*, WIPO Case No. D2005-1304, www.wipo.int/amc/en/domains/decisions/html/2005/d2005-1304.html; see also, *Media General Communications, Inc. v. Rarenames, WebReg*, WIPO Case No. D2006-0964, www.wipo.int/amc/en/domains/decisions/html/2006/d2006-0964.html

INDONESIA AND JORDAN

Capturing the Benefits of Biomedical Innovation

Indonesia is the fourth most populous country in the world, and is host to the world's second greatest range of biodiversity. Jordan, with four million inhabitants, is relatively small, with little biodiversity, few natural resources and no oil reserves. Yet, both countries have strong potential in biomedical innovation: Indonesia in the natural medicines market; and Jordan in the pharmaceutical industry – the country's second largest export earner. Despite fundamental differences in their size, structure, resources and geopolitical context, both countries have developed intellectual property (IP) strategies, which aim to promote public benefits from domestic biomedical innovation.

This article explores the institutional settings which ensure that IP policies relating to biomedical research help contribute to public welfare, highlighting the different approaches taken by Indonesia and Jordan. It draws on studies shortly to be published by WIPO, which analyze innovation in the life sciences in a range of developing countries.

Managing IP in the public interest

Innovation in the life sciences – including health and agricultural research – aims to serve basic human needs: food, health, a clean environment. Policy makers face the challenge of shaping incentives through the IP system to ensure those needs are addressed. Promoting biomedical innovation, and managing the resulting IP for broader public welfare, requires a systematic approach to addressing key public interest goals – such as building indigenous innovation capacities, creating affordable medicines, capturing welfare benefits from publicly-funded research, and harnessing private sector resources to serve the public interest. This approach is ideally supported at three levels by:

- a balanced regulatory framework;
- accountable and effective public institutions; and
- effective use of public and private resources, including through partnerships.



Indonesia's tropical forests are home to some 7,000 species of known medicinal plants.

The regulatory framework

IP regimes cannot be seen in isolation from the broader regulatory context, especially in the field of life sciences. Both Indonesia and Jordan have set IP policy within the broader public policy picture. "Jordan Vision 2020", a private sector initiative under the patronage of King Abdullah II and supported by the Jordanian Government, identifies biotechnology as lying "at the heart of competitive innovation ... over the next 20 years," and highlights knowledge management as a means of strengthening competitive advantage. An export-driven pharmaceutical sector is one objective of this plan. The Ministry of Planning and International Cooperation is responsible for coordinating public policy measures to promote innovation and for evaluating Jordan's global competitiveness.

Both Indonesia and Jordan have undertaken extensive legislative programs to bring their IP laws into compliance with the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Both have acceded to the Paris Convention, the WIPO Convention and the Patent Cooperation Treaty. Jordan has also signed the Protocol relating to the Madrid Agreement Concerning the Registration of Marks (ratification pending), and has entered a bilateral trade agreement with the United States with implications for its IP laws.



In Indonesia, close coordination between the Ministry of Research and the IP Office includes the screening of research grants to public institutions by the IP Office, to assess the extent to which the proposed research may generate future IP. Grant applicants are assisted in conducting a patent search, which supplements their literature review.

Courtesy of the RSS



The technology transfer center of Jordan's Royal Scientific Society is mandated to exploit the institution's technical capacity "for the good of society."

Indonesia also offers funding to patent applicants from local companies and public research institutions.

Ownership of IP generated within Indonesia's public research institutions is now held and exercised by

the institutions themselves. This arrangement enabled the establishment of ten technology transfer offices throughout the country in the early 1990s, and virtually all major public research institutions dealing with biomedical innovation in Indonesia now have a technology transfer center (also known as IPR units/clinics/management or licensing offices). The centers have succeeded in establishing a number of business operations in recent years. The Technology Institute of Bandung has struck international licensing agreements and research collaborations with national companies, which actively seek to meet local needs. One such public-private partnership, for example, has produced a new machine for harvesting local agricultural crops.

Accountable and effective public institutions

The benefits of the regulatory framework depend in turn on establishing public institutions that are both accountable and effective in serving the public. These obligations go beyond the traditional institutional objectives of IP offices in administering the patent and trademark system.

Jordan's IP office reports to the Ministry of Industry and Trade; Indonesia's to the Ministry of Justice and Human Rights. Both IP offices are accountable and transparent in their day to day decision-making processes. Regardless of the difference in size – Indonesia processes some 4,000 patent filings per year compared to Jordan's 200 – both offices focus on the operational challenges of serving diverse

stakeholders with limited resources. Both also confront the familiar problem of finding qualified technical staff to deal with the increasingly complex field of life sciences, and thus ensure patent quality.

The Indonesian IP office also pursues an active dialogue with the Food and Drug Administration of the Ministry of Health in the context of trademarks for natural medicine. In Jordan the Higher Council for Science and Technology (HCST), which is responsible for promoting dialogue on IP policy, has created an IP committee to ensure that IP is always taken into account in Jordan's innovation policy. The HCST also engages in outreach activities on IP management within the Royal Scientific Society and the research community.

Public-private partnerships

Innovation in the field of life sciences is often characterized by 'upstream' or basic research conducted by public sector or academic researchers, plus a dependence on the private sector to commercialize the basic research and produce finished products. This has led to the proliferation of public-private partnerships, with diverse approaches to managing the relationship between those conducting early research, and those investing in the product development phase.

Public sector research institutions can leverage their IP holdings to ensure adequate returns from public investment in research, whether those returns are defined in financial terms, or in terms of broader benefits for society. It is also the responsibility of public sector IP managers to ensure that scientific innovation with the potential to serve public needs is not left on the shelf. Technology transfer centers situated within universities have a dual role of looking out for public interests as well as of mediating between academia and the market – and so contributing to national capacity to nurture innovation-based growth.

Indonesia has developed a strong framework for public-private partnerships. The Indonesian Institute of Sciences (LIPI) provides IP courses for its researchers, and a LIPI unit devoted to IP issues, which reports straight to the Director General, has issued several licenses. The specialized unit, has helped LIPI to form alliances with research institutions overseas, such as Germany's Max Planck Institute, in which all IP generated is jointly-owned by both research partners.

In Jordan, there are several examples of university-private sector collaborative projects in biomedical R&D, although the emphasis so far has been on pri-

Reversing Jordan's Brain Drain

Courtesy of Triumpharma



Jordan's IP reforms encouraged the establishment of new innovative drug companies, such as Triumpharma.

Inspired by an appeal from King Abdullah II to Jordanian entrepreneurs living overseas, Dr. Ahmad Al-Ghazawi left the U.K. in 2002 to return to Jordan and set up a biotechnology company. "I wanted to do something high-tech," says Dr. Al-Ghazawi, "and I didn't want to do it in San Diego." Already a patent holder, including as co-inventor of a US\$2 billion anti-depressant drug, he decided that Jordan was the place to start up an innovative drug company, both because of the IP legal reforms which had been put in place plus the plentiful supply of well-educated, and relatively low cost, talent from Jordan's universities.

By 2004, his Triumpharma company had begun offering bioanalytical, clinical research, and pharmaceutical R&D services. The company established relationships with local hospitals and nurses, and is now providing services such as *in-vivo* and *in-vitro* tests, toxicity studies, and animal and human trials on behalf of U.S. and European clients. Dr. Al-Ghazawi's longer term

strategy, however, is that these services will subsidize internal R&D efforts aimed at innovating new therapies. He is focusing on developing new drug delivery systems by converting off-patent molecules that have side effects and absorption problems into improved, patented molecules. Dr. Al-Ghazawi explains that improved drug delivery R&D demands lower initial investment, and that time-to-market can be 3-4 years rather than the 10-12 years that characterizes the kind of radical innovation R&D carried out by the big U.S. and European companies for which he formerly worked. Triumpharma has so far filed for four patents.

For more see: Profiles in Creativity and Innovation, Creative & Innovative Economy Center, George Washington University, at www.law.gwu.edu/Academics/CIEC/About+CIEC.htm and www.Triumpharma.com

vate-sector led research, and the question of a suitable legal framework for ownership of IP created from publicly funded research is still under discussion. This, plus the fact that Jordanian academics have a heavy teaching load, means that public-private partnerships are still relatively rare. Jordan's renowned Royal Scientific Society (RSS) has an applied research orientation, and the RSS' strategy has hitherto been based more on providing services to business partners, than on establishing public-private partnerships for developing new technology. These relationships between academia and the private sector activities hold the promise, however, of further institutionalized partnerships, and the promotion of public-private partnerships are a key strategy within the King Abdullah II Vision 2020.

Moving forward

Jordan's pharmaceutical industry is shifting away from generic manufacturing and towards biomedical innovation. Six out of the twelve Jordanian pharmaceutical companies now own patents, several of which are potential blockbusters. In just five years following the reform of Jordan's patent legislation in 2000, the Jordan Pharmaceutical Manufacturing Company (JPM) alone, for example, built a portfolio of 30 patents, which JPM's general manager, Dr. Adnan Badwan, estimates to be worth some US\$200 million. This is a striking development given that, until recently, these companies made little or no use of the patent system.

Measures taken by Indonesia to bolster its overall innovation promotion strategy include promoting awareness of the economic opportunities in the natural medicine market, where annual growth rates are as high as 20 percent. Indofarma, one of Indonesia's leading pharmaceutical firms, has made considerable investments in the development of traditional Indonesian medicines, or *jamu*, into new pharmaceutical products, for instance collaborating with Gadjah Mada University to discover derivatives of *curcumin* from the traditional medicinal plant *curcuma domestica* (*turmeric*).

Indonesia and Jordan provide complementary examples of how appropriate institutional structures, combined with more diverse and tailored approaches to managing IP in the public interest, can help a country to promote and benefit from domestic biomedical innovation.

With major health and social needs at stake in this sector, particularly in developing countries, the challenge of achieving a balance between the exercise of exclusive commercial rights and greater equity in the distribution of benefits from technological advancement is of fundamental concern for the public and policy makers of all nations.

AMERICAN WOMEN AUTHORS AND LITERARY PROPERTY

To mark International Women's Day, March 8, WIPO Magazine reviews Melissa Homestead's work on American women authors and literary property, which portrays the plight of women authors in a society that did not permit married women to exercise their own copyright and that lacked an instrument for the international protection of copyright.



**"In English common law a married woman is nothing at all. She passes out of legal existence."
– Harriet Beecher Stowe (1869)**

The author is a teacher of English, not law, at the University of Nebraska-Lincoln, but has interestingly combined both disciplines. She studies popular women writers of the nineteenth century in the U.S. – in most detail Catharine Sedgwick, Harriet Beecher Stowe, Fanny Fern, Augusta Evans and Mary Virginia Terhune – to show the dilemmas faced by women writers in both a national and international context.

Until the 1880s, under the common law doctrine of *coverture* (based on the English law) a married woman could not hold any kind of property in her own right. The author explains that the way for her to enforce her rights under copyright law was by *pre-nuptial* agreement, and this, too, only to arrange for her assets to be held in trust for her by others such as male relatives. Another disadvantage all women faced (this one shared by men), in the absence of an international copyright system, was the free use of their works abroad without authorization or remuneration, since U.S. (and British) law only protected nationals of or residents in the country.

The different personalities and strategies of women authors make fascinating reading. The deserted wife and mother, Emma Southworth, moved to England to claim her copyrights abroad in the face

of her husband's attempts to appropriate her American literary properties and profits. Augusta Evans, a committed Confederate during the Civil War – in a Confederacy which legislated for an international copyright system some thirty years before the U.S. did so in 1891 – secured publication and remuneration in the North, by audaciously sending her work to her former publisher in New York through a blockade-runner via Cuba. Harriet Beecher Stowe is the only writer in this study who is still widely remembered today, as the bestselling author of *the* anti-slavery novel of her century, *Uncle Tom's Cabin*.

The paradoxes in the characters and situations of these women are ably evoked. Stowe, claiming a moral and religious purpose without expectation of wealth, presented a spectacle of "abolitionists attacking the world's most famous advocate of abolition" for exploiting her work in the very spirit of capitalist market economics they opposed. Mary Virginia Terhune, though doggedly pursuing her own rights as an author and espousing the causes of women writers, was neither feminist nor abolitionist, and actually opposed women's suffrage.

In recounting the shift in U.S. copyright law, from support for readers' and publishers' interests by limited

terms of protection, to increasing authors' rights, culminating in current demands for protection in perpetuity, the author warns us of a possible future impoverishment of the public domain and greater corporate power over culture. But her affirmation on the nineteenth century, that their legal disabilities rather encouraged women to write more, is open to question. Although this may be true of the women who wrote to promote legal and social reform, the development of women's education is also important in the emergence of women authors. Moreover, we cannot know how many women might have written *for publication* but for legal disabilities and the social stigma suffered by certain women authors.

The subject matter of fiction is a part-reflection of an age, so we find a period flavor in these "copyright heroines" – a Phemie who ends her husband's abuse of her copyrights by divorce, an Agnes who dies in anguish fearing her husband's discovery of her authorship. This study will greatly interest both copyright specialists and readers of literary and social history.

**American Women Authors and
Literary Property, 1822-1869**
by **Melissa J. Homestead**
published by **Cambridge University
Press, 2005**
ISBN 0-521-85382-6

BREAKTHROUGH IN DEVELOPMENT AGENDA DISCUSSIONS

WIPO Director General Kamil Idris joined delegates and observers in warmly welcoming the positive outcome achieved at the February 19 to 23 meeting of the Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA).

Under the chairmanship of Ambassador C. Trevor Clarke, Permanent Representative of Barbados to the United Nations in Geneva, the negotiators from 105 countries, looking at proposals to enhance the development dimension in WIPO's work, agreed on a first set of recommendations. This will be a part of the final list of agreed proposals to be recommended for action to the WIPO General Assembly in September 2007, following a further meeting of the PCDA in June 2007. The first set of recommendations pertain to WIPO's work in the areas of technical assistance and capacity building; norm-setting, flexibilities, public policy and public domain; technology transfer, information and communication technologies and access to knowledge; assessment, evaluation and impact studies; institutional matters, including mandate and governance, and certain other issues.

Dr. Idris congratulated negotiators on showing the political will, the spirit of compromise and the mutual understanding necessary to move these discussions forward. "I am certain that it is the collective will of members of this Organization and the Secretariat," he said, "to ensure that international efforts to build the intellectual property (IP) system are balanced and responsive to the needs and interests of all countries – developed and developing. IP protection is not an end in itself, but should serve a wider social and economic interest. The rights of inventors and creators have to be balanced by wider considerations of the good of society."

"IP protection is not an end in itself, but should serve a wider social and economic interest." – WIPO Director General, Kamil Idris

Lists of proposals

The WIPO General Assembly in October 2006 had agreed to renew the mandate of the PCDA for a year. The General Assembly agreed that the PCDA should hold two 5-day sessions to allow for structured in-depth discussions on all 111 proposals made to date, and identified the list of proposals to be discussed in the first and second sessions. In this regard, Ambassador Manalo of the Philippines, Chairman of the General Assembly, had produced an initial working document in consultation with Member States in December 2006 and January 2007. This was used as a working document of the PCDA. At this first session in February, the PCDA chairman requested specific delegations to coordinate discussions on the proposals listed in the different clusters, in an attempt to reach a consensus on the list of agreed proposals. The draft lists prepared by the different delegations were discussed in the plenary, and the PCDA agreed on several sets of proposals. These are available at: www.wipo.int/edocs/prdocs/en/2007/wipo_pr_2007_478.html#pcda.



NEWS ROUNDUP

MP3 - Record-breaking Patent Settlement

If the U.S. Federal Jury's February decision in favor of Alcatel-Lucent is upheld in appeal, Microsoft will have to pay US\$1.52 billion for its use of the MP3 patent – the largest patent judgement ever. This could also effect hundreds of other companies that make products, such as software, portable players, computers, etc, that play MP3 files. Alcatel-Lucent owns two patents which were filed by Bell Labs on the technology before Thomson (France) and Fraunhofer Institute (Germany) – the current licensor of the MP3 technology – joined forces with Bell Labs to develop MP3.

This decision above is part of a series of trials by Alcatel-Lucent to enforce Bell Lab patents on tech-

nology related to speech recognition, user interfaces and video processing. A week after the MP3 decision (March 2), a federal judge dismissed Alcatel-Lucent's patent claim against Microsoft over speech recognition technology.

Microsoft said it will petition the judge in the MP3 case to set aside or reduce the judgement. If that does not work, it will probably appeal the case.

A spokesperson for Alcatel-Lucent Jean Campion commented, "Intellectual property is a core asset of the company. We will continue to protect and defend that asset." ■

Captain Copyright's Nemesis

Early in his super hero career, Captain Copyright – the comic strip character created by Access Copyright (Canada) – has met a sticky end. The character was developed to teach schoolchildren about the importance of copyright, but from the moment he was launched on the Internet last year to defend his cause, he ran smack into opposition from critics who labeled him as propaganda. His stance, they said, was one-sided and did not show the full picture. Even the Canadian Library Association criticized his lack of balance.



Photo: Access Copyright

In response to the criticisms, Access Copyright worked extensively to remedy the Captain's shortcomings, seeking assistance from educational and copyright experts, and teacher-testing the revised lessons. But in vain. Despite progress in addressing the concerns, as well as positive feedback and requests for the lesson kits from many teachers and librarians, the project was abandoned in the face of continuing opposition, just eight months after its launch. ■

US\$25 Million for a Technological Solution to Air Pollution



"We have only our ingenuity to fall back on."
Richard Branson

Inspired by the success of past competitions which have led to great innovations, Sir Richard Branson, Chairman of the Virgin Group, is offering a US\$25 million prize to anyone who can invent an economical way to remove polluting carbon from the atmosphere. This is the biggest prize offering in history. "We have no super-hero. We have only our ingenuity to fall back on," said Sir Richard when he announced the Virgin Earth Challenge.

Former U.S. Vice-President Al Gore, James Lovelock, the originator of the Gaia Theory, and Sir Crispin Tickell, former British ambassador to the United Nations, will be on the panel of judges. While environmentalists have welcomed the initiative, some find it ironic that the prize is offered by an airline owner, who is also promoting commercial space travel – major sources of carbon pollution.

The Virgin Earth Challenge aims to find an innovative, cost-effective way to remove "a significant amount" of green house gases from the atmosphere every year for a decade. The winner will initially receive only US\$5 million, with the rest of the prize money being paid only after the 10-year goal has been achieved.

The closing date for the Earth Challenge is February 9, 2010. ■

New Name for the UK Patent Office



On April 2, 2007, the United Kingdom (UK) Patent Office will change its name to the UK Intellectual Property Office. The name change is just one of the recommendations made by the Gowers Review, published in December, which examined the legal, regulatory and commercial climate in the area of intellectual (IP) in the UK. The Review states: "The name of the Patent Office can be misleading to stakeholders. The

present name contributes to the perception that other forms of IP, for example copyright, take a lower priority." Along with the name change will come a change in the slogan from "for innovation" to "for creativity and innovation."

The Review further sets out a number of recommendations designed to deliver an IP framework fit for the digital age. The principle recommendations are aimed at:

The Royal Mail's "The World of Invention" stamp series, illustrated by cartoonist Peter Till, take a quirky look at some of the UK's great scientific achievements.

- tackling IP crime and ensuring that rights are well enforced;
- reducing the costs and complexity of the system; and
- reforming copyright law to allow individuals and institutions to use content in ways consistent with the digital age. ■

IP Australia Attains ISO Quality Management Standard

IP Australia has become one of the first IP offices in the world to attain the ISO 9001:2000 International Standard for quality management systems in respect of its key customer transactions.

"Quality management is central to our commitment to becoming an 'Office of Choice' in a competitive global IP market," IP Australia's Peter Cornish (General Manager Customer Operations Group) told WIPO Magazine. "The ISO 9001:2000 Certification means our business has been independently audited and reviewed against a set of internationally agreed components of business excellence."

Approximately 91 percent (by value) of all IP Australia's customer transactions are covered by

ISO 9001:2000 certified processes. The key services recognized as having attained the international best practice standard for quality management are: Trade marks – Examination and Assisted Filing Service; Patents – National Search and Examination, International Search and Examination and Innovation Examination; Customer Services – Pre and Post Examination Services, International Services and Receipt of Correspondence.

IP Australia had already received a State Gold Award and a Silver National from the Australian Organisation for Quality. "The awards celebrate IP Australia's commitment to encouraging Australian innovation through improving and enhancing the IP system," said Mr. Cornish. ■

African Performers Appeal for Assistance at WIPO Symposium in China



At a WIPO Symposium on Performers' Rights in the Digital Network Environment, held in China in February, Mr.

Alhaji Sidiku Buari, Chairman of the Copyright Owners Society of Ghana, appealed to the international community for assistance for African musicians.

Mr. Sidiku was invited to the Symposium to share his experiences from Ghana with the other participants, who were from the Asia-Pacific region. He described

the plight of African performers – already suffering the consequences of rampant piracy before the advent of digital technology – who now found it virtually impossible to make a living from their work. African musicians, he said, would never fulfill their potential to contribute to the global musical culture unless the problem of illegal downloading of music from the Internet was halted.

Mr. Yan Xiaohong, Deputy Director of National Copyright Administration of China, reported on progress in tightening regulations to protect artists' rights in China, but noted the need for further improvement in the area of enforcement.

The Symposium participants agreed that closer international collaboration, greater support to performers' associations, and increased public awareness, were essential to protecting the rights of their stakeholders in the digital environment. ■

Innovation in the Classroom: South African Solar Energy Workbook

The Technology Department of the University of Johannesburg has published a new workbook for secondary school pupils, designed to stimulate innovation through critical and creative thinking. "The Impact of Technology on the Environment (Solar Energy)" is a comprehensive, yet user-friendly workbook which focuses on the benefits, impact and household application of solar energy. The book helps pupils to construct simple, but effective, solar cookers using everyday household items, while helping to develop their skills in decision-making, problem-solving and design. It is accompanied by an information packed facilitator guide.

The use of energy has increased drastically since the earliest times of the industrial revolution, yet in 1994 only around 40 percent of South Africans had electricity in their homes. The situation has improved, but the burning of fossil fuels to create energy comes at a price for the planet: global warming, ozone layer depletion, acid rain, deforestation, soil erosion, health problems, etc. The University of Johannesburg's schools project helps promote solar energy as an efficient and non-polluting alternative.

For more information visit www.uj.ac.za/techned.

WIPO AWARD WINNERS

WIPO bestowed a total of 138 awards in 2006: 96 for inventors, 34 Creativity Awards and 8 Trophies for Innovative Enterprises. The recipients came from 111 countries, mostly developing and transition countries.

The following are the winners from January to March 2007, to the extent that their names were made available to WIPO before this issue of the Magazine went into print. We congratulate the winners and wish them continued success.

WIPO Gold Medal for Inventors

IRAN

20th Khwarizmi International Award (KIA):

- Dr. Jawad A. Salehi – outstanding inventor, for his project on optical code division for multiple access communication systems
- Dr. Farsid Noorbakhsh – best young inventor, for his project on the role of par-2 in the pathogenesis of neurodegenerative disorders

MAURITANIA

4^{ème} Salon National de l'invention (SANIM):

- Chirfa Mint Adje – Best Invention, for his dietary anti-diarrhoeic powder
- Leila Mint Babe – Best Woman Inventor, for her honey from Arabic gum

THAILAND

Inventor's Day:

- Mr. Pholsak Piyatat – outstanding inventor, for his invention of a biological filter
- Miss Janpoyon Promprayoon – best woman inventor, for her invention of a quick change wrist unit
- Mr. Pawin Hongprayoon, Mr. Teerawoot Martjumroonkul, Ms. Ponglux Tiamdow – best young inventors, for their dust monitor using light scattering technique

VIETNAM

Scientific and Industrial Innovation Awards:

- Dr. Hoang Van Quy, and his collaborators, engineers: Pham Xuan Son, Tran Xuan Nhuan, Hoang Xuan Ban, Nguyen Nhi Thuy, Tran Giang Son, Dang Duc Nhan – best invention, for their research on technological solutions for determining reservoir parameters aiming at reserves calculation and oil field development in fracture basement reservoir using BASROC 3.0 software
- Vu Thi Hoa – best woman inventor, for her research and application of the whole-lung lavage process for pneumococcosis
- Le Thy Quyen, under the supervision of Prof. Dr. Pham Thi Thuy – best young inventor, for his research on technology to produce metarhizium anisopliae fungus biomass for controlling insect on crop

WIPO Creativity Award

MOLDOVA

- Mr. Eugen Doga – on his 70th Anniversary, in recognition of his outstanding musical achievements

WIPO Trophy (Innovative Enterprise)

VIET NAM

- Saigon Cosmetics Corporation – for its active use of the intellectual property system in its R&D, production and commercial activities

More information on the WIPO Awards Program is available at: www.wipo.int/innovation/en/wipo_awards/.

Copies of the free brochure "WIPO Awards Program" (No 923, available in English, French and Spanish), are available from Publications.Mail@wipo.int

Calendar of Meetings

APRIL 11 ■ GENEVA

■ *Seminar on the Hague System of International Registration of Industrial Designs (English and French session)*

The seminar aims at increasing awareness and practical knowledge of the system among actual and potential users, whether in industry or in private practice. It will cover all aspects of the Hague system including legal and practical matters (main features and advantages of the system, different procedures, etc.) as well as the latest trends in the field of international industrial design registration.

Invitations: Open to interested parties against payment of a fee. Government officials of Members of the Hague Union are exempted from the payment of the fee.

APRIL 12 AND 13 ■ GENEVA

■ *Seminar on the Madrid System of International Registration of Marks (English session)*

The Seminar aims at increasing awareness and practical knowledge of the system among actual and potential users, whether in industry or in private practice. In addition, ample time will be reserved for discussion and practical exercises. The seminar focuses on the needs of independent and in-house trademark agents (paralegals as well as attorneys) who file applications for international registrations of trademarks and/or administer such registrations.

Invitations: Open to interested parties, against payment of a fee. Government officials of States members of the Madrid Union are exempted from the payment of the fee.

APRIL 23 TO 27 ■ GENEVA

■ *Working Group on Reform of the PCT (Ninth session).*

The Working Group will continue to consider proposals for amendment of the Regulations under the PCT.

Invitations: As members, the States members of the PCT Union and the European Patent Office; as observers, other States members of the Paris Union and certain organizations.

MAY 7 TO 11 ■ GENEVA

■ *Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications (SCT) (Seventeenth session)*

The Committee will work on issues as agreed at its Sixteenth session, in particular new types of marks, trademark opposition procedures, a draft questionnaire on formalities concerning the procedures for design registration and the relationship between trademarks and industrial designs, and certain administrative and legal aspects concerning Article 6ter of the Paris Convention.

Invitations: As members, the States members of WIPO and/or the Paris Union; as observers, other States and certain organizations.

MAY 14 AND 15 ■ GENEVA

■ *Seminar on the Madrid System of International Registration of Marks (French session)*

The Seminar aims at increasing awareness and practical knowledge of the system among actual and potential users, whether in industry or in private practice. In addition, ample time will be reserved for discussion and practical exercises. The seminar focuses on the needs of independent and in-house trademark agents (paralegals as well as attorneys) who file applications for international registrations of trademarks and/or administer such registrations.

Invitations: Open to interested parties, against payment of a fee. Government officials of States members of the Madrid Union are exempted from the payment of the fee.

Biotechnology: Strategies for Management of Intellectual Property

Chicago, U.S.A., June 11 to 14, 2007

In cooperation with the Kellogg School of Management and the Kellogg Center for Biotechnology, WIPO's Worldwide Academy invites applications for a four day course focused on the strategies required for effective IP management in the biotechnology sector.

As companies seek to achieve competitive advantage through exploitation of their technological assets, managing IP has become a key issue. The WIPO-Kellogg course is designed for legal professionals, business administrators, scientists involved with IP issues, and executives involved in technology transfer and licensing. It aims to expose participants to the organizational skills needed to develop, analyze and negotiate the IP assets of their company. For full details, see: www.wipo.int/academy/en/execed/sipm/chg_jun_07/index.html.

To register, please contact Mrs. Silvia Nunez, WIPO Worldwide Academy, 34, Chemin des Colombettes, 1211 Geneva 20, Switzerland. Tel: (+41-22) 338 9703; Fax: (+41-22) 740 1417; e-mail: execed.academy@wipo.int.

WIPO Conference on Collective Management of Copyright and Related Rights in North America

Nashville, Tennessee, U.S.A., October 17 to 19, 2007

The WIPO Conference on Collective Management of Copyright and Related Rights in North America will be the first on this topic since 1997 when WIPO held an International Forum on the Exercise and Management of Copyright and Neighboring Rights in the Face of the Challenges of Digital Technology in Sevilla, Spain.

In the ten years that have gone by, different solutions have been found for the problems faced by collective management organizations in the digital world. These have opened new avenues, created challenges and brought much improvement to the exercise and management of rights. The Conference will address all aspects of the collective management of rights in the inter-linked technological environment.

For program details and to register online, see the Vanderbilt University website: www.law.vanderbilt.edu/wipoconf/index.aspx

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