

Geneva, September-October 2005

PROFILES IN INNOVATION

The Matriarch of Indian Biotech



ANIMATION IN SENEGAL

The Story of Pictoon



COUNTRY FOCUS

IP Challenges in Lebanon and Pakistan



50 YEARS OF ITALIAN DESIGN

An exhibition spanning 50 years of Italian design will open at WIPO's Geneva headquarters on September 26, 2005 coinciding with the start of the WIPO Assemblies of Member States. The exhibition, which showcases the Italy's flair for design, is sponsored by the Italian Government and was made possible by the generous support of the Italian Patent and Trademarks Office (UIBM), the Italian Institute for Foreign Trade (ICE) and the Italian Association for Industrial Design (ADI). It will be open to the public.

The exhibition features over 50 objects which exemplify Italian creativity in design across a range of sectors. The exhibits are all part of the prestigious *Compasso d'Oro* (Golden Compass) ADI award collection. Set-up in the early 1950s by Milanese designer Gio Ponti, the *Compasso d'Oro* has become one of the most respected awards in this field. Awards are granted by international juries for designs ranging from toys, and sports gear, to car interiors, furniture, electric appliance and websites.



From September 26 to November 30, 2005.
Opening hours: 9:00 - 17:00

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EDITOR'S NOTE

This edition of WIPO Magazine presents intellectual property and innovation at work the world over. The head of India's biggest biotech company explains how she used the international patent system to build a billion dollar business (page 2). One of Colombia's most renowned scientists, Dr. Manuel Patarroyo, talks of what inspires him in his search for vaccines to prevent orphan diseases (page 6). The founders of a Senegalese cartoon studio describe some of the challenges they overcame to put Africa on the animation map (page 10). The Magazine also takes a look at some eye-catching innovations to have come through the PCT – from brain chips in the United States to bioplastics in Italy – and outlines current activities by the IP offices of Lebanon and Pakistan (pages 17 and 20).

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Geneva,
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BUILDING BIOTECH IN BANGALORE

Kiran Mazumdar-Shaw



Biodata

Born: 1953, India

Education: B.Sc. honors degree in Zoology from Bangalore University, India (1973); qualified as a Master Brewer at Ballarat University, Australia (1975); honorary Doctorate of Science from Ballarat University.

Occupation: Chairman and Managing Director, Biocon Limited.

Awards: Economic Times Businesswoman of the Year 2004; Best Employer of India, 2004 Hewitt award; Ernst & Young's 2002 Entrepreneur of the Year Award, Life Sciences & Healthcare; 2000 Technology Pioneer Recognition, World Economic Forum; the *Padmashri* (1989) and *Padma Bhushan* (2005) presented by the President of India for her pioneering efforts in industrial biotechnology.

Patents: Over 100 Biocon patents.

"We started from scratch and built a billion dollar business. How? We had a great team. And we focused on innovation as the key to building value."

The press delights in coining new titles for her: the Biotech Queen from Bangalore, India's First Lady of Biotech, the Mother of Invention. Her company made headlines last year as only the second Indian company ever to cross the US\$ 1 billion mark on its first day of listing on the stock exchange. Kiran Mazumdar-Shaw, the dynamic chairman and managing director of the Biocon group in Bangalore, is being hailed as a torch-bearer for the burgeoning biotechnology industry in India.

Catching her at a quiet moment in her non-stop, transcontinental schedule proved easier said than done. But following a trail of e-mails from Bangalore to Paris, WIPO Magazine caught up with her during a London stop-over. She spoke, with characteristic warmth and animation, about her experiences in building Biocon Ltd., and of how intellectual property (IP) helped to spur the growth.

Starting out

As a student, Kiran Mazumdar-Shaw had planned to follow in her father's footsteps. He was a master brewer, in itself unusual for a Brahmin family from the state of Gujarat, which prohibits alcohol. But after completing her studies in Australia, she returned to India to find that the industry was not ready to accept its first woman master brewer.

Undeterred, she turned her interest in fermentation science to other ends. The then 25-year old persuaded a small Irish company to form a joint venture, and in 1978 Biocon India was born. Initially working out of her garage, and with only a handful of rupees in the bank, she began making enzymes for industrial application, such as *papain*, a proteolytic enzyme extracted from the papaya fruit, which prevents chilled beer from turning hazy. Already during these early years Ms. Mazumdar-Shaw was showing her mettle as an innovator with an instinct for finding the gaps in the market. She recalls with pleasure the satisfaction she derived from producing – and patenting – novel products, such as a new enzyme to clarify tea.

Manufacturing enzymes continued to form the core of Biocon's business after its Irish partner was acquired by Unilever in 1989, and it remains a major part of the company's activity. Indeed, a quarter of today's world market in pectinase, an enzyme that breaks down the pectin in fruit juice, is supplied by Biocon.

Breakthrough

But Biocon's big breakthrough came in the 1990's, when the company invented a new fermentation technology to replace the conventional tray-based culture

of microorganisms. Known by its trademarked name, the *PlaFractor* is a bioreactor, which – in simplified terms – enables all the different stage processes involved in the cultivation and extraction of microorganisms to be carried out within a fully enclosed system and under precise computer control. It was a commercial success and boosted Biocon's reputation for innovation.

Moreover, the *PlaFractor* served as a technology bridge, allowing Biocon to cross from industrial enzymes into biopharmaceuticals. With it, Biocon was able to begin research and development in areas such as immunosuppressants, these being particularly difficult organisms to cultivate using conventional tray culture. (Immunosuppressants are used, for example, to reduce the risk that transplanted organs will be rejected by the body's immune system.)

The company never looked back. In 1998 Ms. Mazumdar-Shaw and her husband John Shaw, bought out Unilever's shareholding, and Biocon became an independent entity. Today the Biocon group (with subsidiaries Clinigene and Syngene) employs some 1,500 people and ranks as India's largest biotechnology company.

Putting IP to work

But to what extent, we asked her, had IP been a factor in the rise of Biocon over the years? "Oh, IP was there right from the start!" she exclaimed. "To begin with,

Why Bangalore?

Already the center of India's booming information technology sector, Bangalore is home to over 90 biotechnology companies, the biggest concentration in India. Companies are attracted by the presence of many of India's top research and scientific institutions, such as the Indian Institute of Science and the National Centre for Biological Resources. The interaction between scientists and industry has made for a fertile biotech spawning ground.

While conscious of competition from Hyderabad, the government of Karnataka State (of which Bangalore is the capital city), is keen to establish Karnataka as a pre-eminent biotech hub. To this end, Bangalore is being re-branded as *The Biocon City*; the Vision Group on Biotechnology, chaired by Ms. Mazumdar-Shaw, brings together academia, industry and government to elaborate policies and initiatives; and the annual "BangaloreBio" is billed as India's flagship biotech event.

when Biocon was just part of a small company trying to compete in international markets, it was really just a matter of where I could sell the products, of our freedom to operate. But after Unilever bought the company, we entered this highly professional world where the role of IP was very acute. We were creating very novel IP and I started then to see just how valuable this was."

Again, the *Plafractor* innovation marked a turning point. "It was very exciting," recalled Ms. Mazumdar-Shaw. "This was the big first patent application that we handled entirely on our own, rather than leaving it to Unilever." The commercial success of Biocon's new patented technology generated a three-fold expansion in the company in 1996.



The Plafractor. Inventing a new fermentation system gave Biocon their technological and commercial breakthrough

This was also Ms. Mazumdar-Shaw's first hands-on experience of WIPO's Patent Cooperation Treaty (PCT), of which she remains a fan: "Patenting is an expensive business. So you have to be very strategic as to how you go about it. The PCT lets you file, and then take some time to decide in which countries it's worth pursuing commercially. And in the meantime it gives you a priority position and lots of protection."

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Biocon today is India's biggest biotech company. Kiran Mazumdar-Shaw started out brewing enzymes in her garage.

PROFILES IN INNOVATION

Ms. Mazumdar-Shaw talked us through how Biocon had used the patent system to gain initial access to the field of human insulin production, where the company is now a major player. The product patent on human insulin had long expired, but it was still protected by strong process patents. So the Biocon team went through all the relevant published patents, in search of a gap which would enable them to gain a foot-hold. "We noticed that most of the patented processes used e-coli and bakers' yeast," she explained. "At Biocon we had expertise in another sort of yeast, and we had already licensed the IP for it from a small company in the U.S. So the way was clear. We started making our own insulin using Pichia yeast. This was a new and unique process, which wasn't covered by any of the existing patents."

IP-based partnership: a sum greater than its parts

Among Biocon's current priorities is a program to develop an orally-deliverable insulin. "Just imagine if the world's diabetics could get their insulin in tablet form instead of having to inject it," said Ms. Mazumdar-Shaw, "Think what a difference that would make to them each day." The program was kick-started when Biocon scientists spotted an interesting patent

held by Nobex, a small U.S. company, which related to a technology for the oral delivery of peptides. This directly complemented what Biocon was trying to achieve, and a mutually beneficial partnership was formed.

"Sharing IP is the way to develop business very fast in today's world," states Ms. Mazumdar-Shaw emphatically. "I don't mean just buying it, but really sharing. We have something another company needs; and they have something we need. Put it together and you have this powerful and very exciting synergy."

"Sharing IP is the way to develop business very fast in today's world."

Examples of how Biocon puts the IP-partnership philosophy into practice are multiplying. Take, for instance, the recent partnership between Biocon and Vaccinex Inc. of New York, to take forward Biocon's search for antibodies for use in immunotherapy-based cancer treatment. The companies are now jointly developing novel, fully human antibodies, by combining Vaccinex's patented technology for generating human antibodies with Biocon's expertise in clinical research and manufacture of biologics. Biocon has forged similar partnerships with companies and research institutes as far away as Cuba and Scotland in the United Kingdom.

Affordable medicines

"If I can deliver oral insulin to India at a level people can afford, then I will have done my job. Without patents, I couldn't do it at all."

Ms. Mazumdar-Shaw shared her views on fears that India's new patent law (see box) could push up the price of medicines. "The reality," she reflected, "is that the vast majority of people in India only have access to old generic antibiotics and pain-killers. Less than 5 percent of new, patented drugs make up the Indian market today. So it would be a very long time before any cost implications were

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India's new patent law

Indian biotech companies benefited for many years from India's 1970 patent law, under which protection could be granted only to processes and not to products. This enabled Indian firms to use alternative methods to produce cheap generic copies of drugs which had been patented in other countries. In order to comply with commitments under the World Trade Organization's TRIPS Agreement, the Indian Parliament passed a bill in March 2005 which outlawed this practice, by recognizing both processes and products.*

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*Agreement on Trade-Related Aspects of Intellectual Property Rights

Building the Brand

Biocon calls its new trademark a dynamic helix or "dynamix." Created by an independent young designer from Bangalore, its shape evokes multiple associations: DNA chains, molecules, inter-locking "B"s for Biocon and Biotechnology; while its slanting movement symbolizes the company's forward and upward-looking vision.

"Branding is a slow process," says Ms. Mazumdar-Shaw. "But we were very clear about the values we wanted to convey: innovation, quality, reliability, distinctiveness and an international outlook combined with pride in being an Indian company." This is reflected in the presentation of the company's products, publications, website and public statements. The pale blue packaging of Biocon medicines was chosen to be subtle, while standing out among the standard white packages on the shelves of pharmacies. The company name works well in the international arena as well as within India.



Photos: Biocon

factors of rural indebtedness in India is illness. It leads to bankruptcy and suicidal debts," she explains. This concern has driven her to set up schemes, including vaccination camps, a network of free clinics in outlying areas and health education camps.

Favoring solutions which help those in need to help themselves, she is now pioneering a low-cost rural health insurance scheme. For three US dollars per year, the insurance provides access to quality health care and medicines. She calculates that Biocon can deliver the cover at minimal cost because of the massive economies of scale made possible by the target subscriber group of one million (100,000 people have signed up so far).

Secret of success?

"Building Biocon has been a great and very satisfying journey. We started from scratch and built a billion dollar business. That's a tremendous feeling. How did we do it? We had a great team. And we focussed on innovation as the key to building value."



Biocon scientists are now working to develop oral insulin for diabetics and new antibodies for cancer treatment.

felt. But now Indian companies have to unleash their innovation. If I can deliver oral insulin to India at a level people can afford, then I will have done my job. Without patents, I couldn't do it at all."

Nonetheless, she reflected that, as Biocon and other Indian compa-

nies moved towards developing, for example, complex cardio-vascular or cancer drugs, they would not necessarily be able to do so at low cost. Nor could the IP system be expected to achieve everything. "We need an enforceable patent regime to be able to develop these drugs in the first place," she concluded, "but the issues of affordability have to be addressed through a number of different angles and mechanisms, such as insurance, for example."

Community action

Ms. Mazumdar-Shaw's entrepreneurial success is matched by a keen sense of corporate social responsibility. She has thrown herself with vigor into tackling major social problems, such as rural health care. "One of the biggest



SCIENTISTS WITH VISION

Dr. Manuel Elkin Patarroyo



Biodata

Born: 1947, Colombia

Education: National University of Colombia medical faculty; post-graduate study at Yale, U.S.A.; Ph.D. at Rockefeller University, U.S.A.

Occupation: Professor of the National University of Colombia. Founder and Director of the Colombian Institute of Immunology.

Awards: The Alejandro Angel Escobar National Award for Science (1979, 1981, 1984 and 1986); 1990 Academy of Sciences of the Third World (Venezuela); 1994 Doctor of the Year (France); 1995 WHO Leon Bernard Prize, 2002 Health Personality of the Year (Spain).

This is the second in WIPO Magazine's series of interviews with distinguished scientists and researchers, each of whom embodies the qualities of creativity and innovation which the intellectual property system is designed to stimulate

Pathologist Manuel Elkin Patarroyo is Colombia's best known and most colorful scientist. Passionately committed to science in the service of humanity, he has dedicated his life's work to the search for vaccines against the "orphan diseases" which claim the lives of millions in developing countries each year. Dr. Patarroyo broke new ground with his first, partially effective, chemical malaria vaccine in 1986, for which he subsequently donated the patent to the World Health Organisation (WHO). Since then he has pursued his goal of producing a 100 percent effective malaria vaccine.

Dr. Patarroyo, can you tell us how you came to devote yourself to medical research?

My vocation came from the dreams which my parents nurtured in me from childhood. They considered that the best thing a person could do was to make himself useful to others; and that the most fascinating thing in life was knowledge. If you put those two things together, essentially you have a scientist working for the well-being of humanity. They gave me comics and children's books to read, including books about Louis Pasteur. I was fascinated by this man who dedicated his whole life to preventing diseases. Pasteur became my idol – and he still is my idol.

What made you choose to focus on vaccines for "orphan" diseases?

When I studied in New York at the Rockefeller University, I observed an enormous imbalance from the

point of view of scientific research. It is legitimate for developed countries to work on the main pathology or health problems which affect their own populations. But the diseases in developing countries had been neglected. Coming myself from a developing country, I decided to dedicate myself to developing vaccines primarily for those problems which basically afflict the peoples of developing countries, such as malaria, tuberculosis, hepatitis, leishmaniasis, cervical cancer, which is an enormous problem, and many other infectious diseases.

What has given you the greatest satisfaction in your research?

I must give enormous thanks first of all to my country, which has supported me unconditionally, and to my colleagues who have such a conviction in what we are collectively doing. Thanks to this,

there have been many results that have given me great satisfaction. For example, having found that vaccines can be produced chemically, which was my dream since I was a child. Finding that this is feasible is tremendously satisfying, as it means that any infectious disease can be attacked through chemistry.

What might you do differently if you could start your career again?

If I had to start my life again, I would even make the same mistakes. The truth is that I have learned more from my mistakes, and most of all from the criticisms which have been made of us, either rightly or wrongly. I have learned much more than from my own training. If a concept developed previously by others or by us proves wrong, we resolve it quickly, take a step back and pick up the correct route.

What are the greatest challenges you face as director of a research center in a developing country?

There are 517 infectious diseases from which a human being can suffer, for which we have only 12 vaccines. It is a problem of universal dimension. It is my obsession and my passion. But people always talk about problems, and we should not forget the benefits, for example, the advantages which make it possible to set up an institute of this kind in Colombia.



Photo: CDC/ James Gathany, Dr. Frank Collins, University of Notre Dame

The Anopheles funestus mosquito, one of the two most important malaria vectors in Africa. Malaria symptoms can vary from fever and headaches, to cerebral malaria, anemia, kidney failure and death.

Malaria Facts

- ▶ An African child dies of Malaria every 30 seconds.
- ▶ Malaria is a parasitic disease transmitted by mosquitoes.
- ▶ It causes over 300 million acute illnesses and over one million deaths each year
- ▶ Together with HIV/AIDS and Tuberculosis, it is one of the major public health challenges undermining development in the poorest countries in the world.
- ▶ Malaria parasites are developing unacceptable levels of resistance to one drug after another. Scientists are redoubling the search for an effective vaccine.

Source: World Health Organisation/Roll Back Malaria (www.rbm.who.int).



Photo: WHO/CDC

The greatest challenge now is our search for a logical and “mathematical” method for developing any vaccine. To this end, the Institute has been set up to include not only chemists, but also physicists and mathematicians. Based on the knowledge we have from – let us call it – a physical way of analyzing molecules, we can attempt to deduce the mathematical way of developing these vaccines. It is a search for a universal formula, which would save so much time in research, so much money, so many lives.

You have had to deal with some major financial setbacks. What motivated your team to follow you through the difficult times?

As a result of the debts accumulated by the Immunology Institute and the hospital, absolutely everything was lost: our headquarters, laboratories, equipment, budget. Saddest of all, we lost a large number of people who, in the face of the economic difficulties, had to emigrate to the United States or to other developed countries, where they are now carrying out fantastic research work.

But there is complete conviction among the whole team that we should move ahead. We are all convinced that finally we are on the right track. So people see the development of the ideas, and can see the other problems which we encounter as incidental, i.e. as the natural drawbacks of being in a situation where we have a great number of advantages but also disadvantages.

What messages might you offer to policymakers based on your experience of research in the developed and developing world?

Talent is without doubt equally distributed in all parts of the world. The difference lies in the possibilities which such talented people have. I endeavor to convince governments and institutions of the importance of creating centers *in situ*, in each country, in order to increase the possibilities for talented people to develop their potential, and to produce solutions in those places where problems are endemic.

Governments in many developing countries have little awareness of science. They have not integrated science into their discourse and daily tasks. But this is not only a matter of government policies. Our own mothers can stimulate and plant in their chil-

dren the desire to be scientists. This is where everything begins. Science must be given social importance. And there must be a kind of pressure. Nowadays in Colombia 0.2 percent is invested in science and technology; and in the United States of America 2.5 percent. This gives rise to an enormous difference.

And finally, Dr. Patarroyo, what would you say to young people considering a career in science?

One of the fundamental elements of my daily activity is to visit schools and to receive children at the Institute in order to speak to them about science. I tell them to dream. Dream, and strive every day for your dreams, and if together you work for the well-being of others, everyone will help you to achieve your goal, because they too will achieve what they want.



LEARNING THE ROPES

Technology Licensing in Universities



Seated around a negotiating table at the University of Karana, a group of lawyers, university staff and company executives thrash out a technology licensing deal in which everyone wins. The issues are real, the case convincing – except that there is of course no such place as Karana. And the technology in question does not yet exist.

This was in fact a role-playing exercise, the culmination of a WIPO-run training workshop in Yaounde, Cameroon, on how to negotiate successful technology licensing agreements. In the above photograph, participants representing a notional biotechnology company are negotiating with university representatives the precise terms of an IP license, under which the company would acquire the rights to develop and market a new malaria treatment, invented and patented by a Karana University professor and his team.

Role-playing scenarios form a core part of the WIPO training, allowing participants to put theory into practice, to experience a negotiation from the other side of the table, and to experiment with different approaches.

A group of 15 jurists and 35 research scientists completed this last course in July. They had come from Cameroon, Gabon, Equatorial Guinea, Chad and the Republic of Congo. The Geneva International Academic Network (GIAN) funded and co-organized the training, and experts from Swiss institutions generously provided their time both in hands-on teaching and in preparing reference materials.

R&D Networks Project

Training of this sort is an integral part of the WIPO-led R&D Networks Project, which began a year ago in September 2004, with GIAN funding.

The project aims to test a 'networks and hub' model as a means of boosting the capacity of research institutions in developing countries to create, own and license IP assets (primarily patents), thereby converting research results into revenue. Working closely with partner organizations, the project has established two research networks in the field of health, one in Central Africa and one in Colombia. The project began by identifying fundamental problems, such as the absence of IP policies in universities, the chronic shortage of patent agents and of other legal and marketing experts. It is now seeking to address these by equipping a pool of people with key skills, and creating shared hubs of IP resources. (For a full description of the project and desired outcomes see WIPO

Magazine of September/October 2004, accessible on the WIPO website).



Feedback from the workshops has been enthusiastic. In the words of one participant: "One inspiration I got from the conference was that I did not need to wait for a research sponsor from a big donor, but could without fear spend my own money and come out with something scientifically excellent."

The following publications on technology licensing are available from WIPO's e-bookshop:

Exchanging Value – Negotiating Technology Licensing Agreements: A Training Manual (2005).
Publication no. 906.

Successful Technology Licensing (2004).
Publication no. 903



PUTTING AFRICA ON THE ANIMATION MAP

The Story of Pictoon, Senegal

"Unless we know how to sell our culture, others will sell it for us."

Pierre Sauvalle, founder and co-director of Pictoon.



Photos: Pictoon

encounters misfortune and adventure, and through his storytelling reveals the magic in the myths and legends of the country's past.

The 13-part cartoon series, the first to be entirely made in Africa, is the work of a small animation studio, Pictoon, based in Senegal's capital Dakar. Broadcast on the Canal France International (CFI) satellite service in December, 2003, *Kabongo* was an instant hit. "It's a magnificent series, very ambitious, and very African," CFI's programming director, Pierre Block de Freiberg, told *TIME Europe Magazine*.

Kabongo was the brain child of Pierre Sauvalle, who set up Pictoon in 1998 together with his co-director, Senegalese businesswoman Aïda Ndiaye. Mr. Sauvalle had worked for eight years in French production companies after graduating from the renowned animation school, *Les Gobelins*, in Paris. But he had always nursed the desire to return to Africa in order to start creating genuinely African productions. He engaged both African and French writers to work on the screenplay for *Kabongo*, but the storyboards, the animation, the colorization and the editing were all done by Pictoon in Dakar. Only post-production work (i.e. sound) was done in France.

With *Kabongo*, Pictoon has put Africa on the map of the animation industry and proved that Africa can produce seamless, high-quality cartoons. But that is just the start of Pictoon's ambitions. While the company could earn more than enough by producing local television commercials to keep it in business, its real aim is to attract some of the US\$ 75 billion global animation industry its way.

Home grown talent

Mr. Sauvalle and Mrs. Ndiaye are unfazed by the challenge. So far they have found solutions to every difficulty they have encountered, be it a shortage of qualified artists, the power outages, or the problems of obtaining computer equipment and software appropriate for their use and sturdy enough for their environment.

Unable to find trained cartoon artists, Mr. Sauvalle began training them himself. He set up a two-year drawing and computer-animation apprenticeship for promising young artists whom he talent-scouted locally. As the apprentices gain experience and master the necessary skills, they in turn teach new arrivals. During busy periods, Pictoon now employs up to 120 people, all of them trained on site.



Images from Pictoon's *Kabongo le griot*, soon to be released in English.

Africa's traditional heritage is rich in storytelling. So it seems altogether fitting that the first animated film series to come out of the continent is about *Kabongo* the griot, a West African storyteller. *Kabongo* strides through the countries of the world, his singing monkey Golo at his side, searching for a worthy pupil to whom he can pass on his art and skills. In each country he

“The art industry is really important to Africa because it creates an image of us.”

Pictoon co-director, Aïda Ndiaye.



Young Senegalese artists receive cartoon animation training in Pictoon's studio.

Other problems that Pictoon could not resolve, they worked around. “You can put in all the surge protectors you like, but it doesn't change a thing,” says Mrs. Ndiaye, the company's managing director. “Every year we have to replace the entire computer system.”

Competing globally

The wages paid to the art apprentices in Senegal, which is classified as one of the world's least developed countries, allow Pictoon to compete on cost grounds with Asian countries, such as South Korea, to whom European and U.S. animation production firms currently out-source much of their artwork. Combining low costs with high quality – which Mr. Sauvalle notes has impressed animation professionals around the world – Pictoon is shaping up to be a serious competitor in the global marketplace.

But Pictoon does not want business at any cost. Its founders are determined to continue producing their own films in order to remain true to their cultural heritage. They plan to create more African cartoons, inspired from legends and stories that have been passed from father to son for generations. Such stories, they believe, hold a universal appeal. Following the success of *Kabongo* in France and across francophone Africa, Sauvalle is confident that the soon-to-be released English version will capture the world market.

Registering intellectual property

Pictoon understands the value of its intellectual property and has registered *Kabongo* with the French collective management society, the Society of Authors and Composers of Dramatic Works. But Mr. Sauvalle is deeply concerned that the costs involved in protecting intellectual property are proportionally so much greater for developing countries. “The

cost of registering creations and applying for patents is often simply beyond the means of creators from African countries,” he observes. He would like to see fees waived for the poorest countries like Senegal, so that creators could register their works for free, “just as a father registering the birth of his new child.”

Coming soon...

Soon to hit television screens is Pictoon's next series, *The Invincible Lions of Africa*. With, again, a winning combination of good story-telling and wisdom, the series weaves moral messages through the adventures of its football-playing animal stars, while projecting a positive image of Africa. Pictoon fans eagerly await its arrival.



PCT PORTRAITS

Never mind the acronyms

Meet the innovators

Since the Patent Cooperation Treaty (PCT) began operating in 1978, inventors have filed more than one million international patent applications, covering inventions of every description. Some of these never make it beyond the patent stage. Others are preserved as nuggets of technical know-how until they are acquired and commercialized by an IP-savvy company. Many lie at the heart of fast-moving technological developments across every conceivable sector. In this series of articles, WIPO Magazine picks out a few eye-catching innovations from among the million applications.

Bio-plastics: letting the planet breathe

Petroleum-based plastics, the convenience materials *par excellence* of the 20th century, are clogging the pores of our planet.

Courtesy of Novamont



Combating the environmental scourge is Novamont, a research-based company in northern Italy led by Dr. Catia Bastioli. Novamont's project, "Living Chemistry for Quality of Life," is anchored in Dr. Bastioli's firm conviction that scientific research should benefit mankind.

"If we look at the problems of waste, climate change and pollution of the air, water and soil... then unless industry

takes responsibility for what it is doing in a very short time we will destroy the planet," Dr. Bastioli told Reuters. "We need to meet the needs of the present generation without sacrificing the lives of future generations."

Material scientists at Novamont invented Mater-Bi, a 100 percent biodegradable and compostable biopolymer, made from corn starch and similar renew-

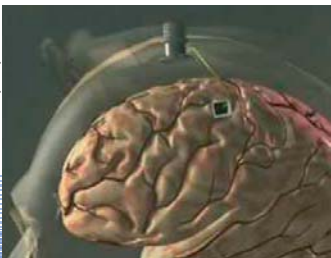
able resources of vegetable origin. Already a market-leading bio-plastic, Mater-Bi has the versatility of conventional plastics. It is being used in the manufacture of products, including bags, packaging, tires, toys and disposal diapers. Agricultural applications include fully biodegradable mulching film, which in turn reduces the need for pesticides, accelerates the cultivation cycle, and cuts down water consumption.

Novamont's contribution to sustainable development has been recognized in a string of awards. These include the 2002 "World Summit Business Award for Sustainable Development Partnership," given in Johannesburg by the United Nations Environmental Programme (UNEP) and by the International Chambers of Commerce.

Founded in 1989, Novamont today has a turnover of €30 million and employs over a hundred people. With over 20 PCT applications to her name, Dr. Bastioli has made extensive use of the PCT in the company's IP strategy, as well as registering the Novamont and Mater-Bi trademarks via the Madrid system. (For more see www.materbi.com/) ◆

Brain chip translates thoughts to actions

Courtesy of Cyberkinetics



A micro-device capable of reading the thoughts of a paralyzed person and translating them into actions? This surely is the stuff of science fiction. But a project led by neuroscientist Professor John Donoghue of Brown University, Rhode Island, in the United States, is turning fiction into fact.

Building on years of laboratory research, Professor Donoghue co-founded Cyberkinetics-Neurotechnology Systems, Inc. which is now conducting

clinical trials of a brain-computer interface known as the BrainGate. The first participant in the trials is a young man who was left paralyzed after a knife attack.

In pioneering neurosurgery, the BrainGate, a sensor the size of a contact lens, has been implanted in the part of the man's brain which controls muscle movements. Consisting of 100 electrodes of less than a hair's breadth, it intercepts and decodes the language of neurons, i.e. the electrical signals which the brain sends to the different parts of the body. (The brain often contin-

Dignified homes out of dirt and devastation

Thirty years ago, Nader Khalili left his architectural practice designing high rise office blocks in Los Angeles and Tehran, and set off by motorbike across the Persian deserts of his home land. During a five-year odyssey, he read poetry by 13th century mystic Jalaluddin Rumi on the elemental forces of earth, fire, wind and water, while seeking inspiration among ancient Middle Eastern building forms which could help solve global problems of today.

Foremost among the problems which preoccupied him was the need for emergency shelter for the people displaced by wars and natural disasters. The answer, he concluded, lay in the dirt under the victims' feet and the strength in their hands.

Combining thousand year old principles with modern building technology, Nader Khalili developed an earth construction technique known as the superadobe/superblock system. With it he created dome-shaped housing, based on coiled layers of dirt-filled sandbags. Barbed wire between the layers prevents the sandbags from slipping. The materials of war – sandbags and barbed wire – are thus used for peaceful ends.

The beautiful, vaulted structures are strong, (rigorous official tests in California broke the testing equipment but not the building), environmentally friendly and resistant to floods, fire, earthquake and hurricanes. The walls provide natural insulation against heat and cold. They can be constructed cheaply and



Depending on the external finish, the domes can be either temporary refugee shelters or homes lasting up to 30 years.

quickly by men, women and children with minimal instruction. They can also be readily adapted to provide permanent housing.

Mr. Khalili explained to AlertNet that his decision to patent the building method was driven by his desire to ensure that he could deliver the technology to those in need: "The mission of my life for the last 25 years has been to provide shelter for people who cannot afford it. But you need to protect this, because many systems of building have been started for the poor, but along the way they become too commercial to get to them."

His prototype shelters have attracted interest from organizations ranging from UN agencies to NASA, and featured among winners of the 2004 Aga Khan Award for Architecture. (For more see www.calearth.org/) ◆

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.

ues to transmit these signals in people who have lost the ability to move their limbs). The BrainGate then relays the messages to a cursor on a computer screen, allowing the user to operate a number of household devices.

The young man is now to able to read his e-mails and play video games, to grasp objects with a robotic arm and to operate his television controls and lights. – All simply by thinking the actions.

"Our ultimate goal is to develop the BrainGate System so that it can be linked to many useful devices," says Professor Donoghue. His team is working on linking the BrainGate to medical devices, such as muscle stimulators, which could eventually enable severely disabled people to control their own limbs and bodily functions. (For more see cyberkinetics.com) ◆

LAUNCHING A NEW PRODUCT: FREEDOM TO OPERATE

In September 2003, three pharmaceutical companies, *Cambridge Antibody Technology*, *Micromet AG* and *Enzon Pharmaceuticals*, announced that they had signed a non-exclusive cross-license agreement. In the agreement, all three parties obtained substantial "freedom to operate" authorizing each other to use some of their respective patented technology. This enabled them to conduct research and develop a defined number of therapeutic and diagnostic antibody-based products.¹

Agreements of this kind have become common practice in certain sectors, as companies seek to ensure that their products, processes and services do not infringe on patent rights of others. Patent litigation can be an expensive, uncertain and risky affair and, as the say-

ing goes, prevention is better than cure. This article explores different strategies which businesses can consider as a means of reducing such risks and maximizing their freedom to operate.

Whenever a company is planning to develop and launch a new product, a major risk, particularly in technology sectors where there is extensive patenting, is that commercialization may be blocked by a competitor who holds a patent for a technology incorporated within that product. This is why many companies, at an early stage, seek to secure their "freedom to operate," i.e. to ensure that the commercial production, marketing and use of their new product, process or service does not infringe the IP rights of others.

While an absolute guarantee of freedom to operate will never be attainable, there are ways of minimizing the risks that can save a company significant resources.

Searching patent documents

A Freedom to Operate (FTO) analysis invariably begins by searching patent literature for issued or pending patents, and obtaining a legal opinion as to whether a product, process or service may be considered to infringe any patent(s) owned by others. Many private law or IP firms offer such analyses as part of their legal services to clients. Some national IP offices (for example the Swiss Federal Institute for Intellectual Property) also offer such services for a fee.

Spotting Opportunities in Patent Limitations

In conducting an FTO search and analysis, it is worth bearing in mind that some of the limitations on patents also offer potential opportunities. For example:

- ▶ Patent protection is **territorial**. While a certain technology may be protected in a company's main markets, it may be in the public domain in other countries. In the latter, no permission (or license) is needed from the patent owner in order to commercialize the product.
- ▶ Patents have a limited **duration**. Patent protection lasts for a maximum period of 20 years. Thereafter, a patent is considered to be in the public domain and may be freely used by anyone. Moreover, the European Patent Office (EPO) estimates that fewer than 25 percent of all patents granted through the EPO are maintained for the maximum 20 year term. Many patents are allowed to lapse through non-payment of maintenance fees by the patent holders before the 20 years are up.
- ▶ Patents have limits of **scope**. The claims section in a patent document determines the scope of the patent. Any aspect of an invention not covered by the claims is not considered to be protected. That said, it is not always easy to determine the scope of a patent. It requires considerable experience in interpreting the claims, the written specification and the history of the application process.

1. www.cambridgeantibody.com/html/news/press_releases/2003/2003_09_03_micromet_enzon.htm

Clearing obstacles

An FTO analysis based on the search of patent literature is just the first step. If the patent search reveals that one or more patents do limit a company's freedom to operate, the company must decide how to proceed. Assuming that the blocking patent is valid, options include:

- ▀ **Purchasing the patent or licensing in.** Licensing involves obtaining written authorization from the patent holder to use the patented technology for specified acts, in specified markets and for a specified period of time. The convenience of such an agreement will depend largely on the terms and conditions of the proposed license. While there is a potential loss of autonomy, and while the patent holder will require payment of a lump sum and/or periodic royalties, it may be the simplest way of clearing the ground for the commercialization of a new technology or product.
- ▀ **Cross-licensing.** This involves two or more companies exchanging licenses so as to be able to use certain patents owned by the other parties. In order to be able to cross-license, a company needs a well-protected patent portfolio that is of value to potential licensing partners.

- ▀ **Inventing around.** A third option is to "invent around" the invention. This implies steering research, or making changes to the product or process in order to avoid infringing on the patent(s) owned by others. For example, if freedom to operate is limited by a process patent, then a company may be able to develop an alternative process for arriving at a similar end result and thus be able to commercialize the invention without the need to pay a licensing fee to someone else.

- ▀ **Patent pools.** This is a mechanism by which two or more companies practicing related technologies put their patents in a pool to establish a clearinghouse for patent rights. A well-known example of a patent pool is that formed by *Sony*, *Philips* and *Pioneer* for inventions that are essential to comply with certain DVD-Video and DVD-ROM standard specifications.

Protecting technology

If the patent search indicates that there are no patents blocking access to market and that a new technology is likely to meet the patentability criteria, a business owner may wish to seek patent protection for the new technology to ensure a greater degree of freedom to operate, instead of keeping it as a trade secret.



Photos: www.photos.com

Starting to evaluate the options early can save time and money.

There is, nonetheless, a clear limit on the extent to which a patent owner has the freedom to operate. A patent in itself does not provide the right to commercialize the protected technology, but only to prevent others from commercializing it. While the distinction may seem subtle, it is a crucial one. A third party may, for example, have an even broader patent that encompasses the subject matter of the first company's patent.

Therefore, in order for a company to commercialize its own technology, it may need to use technology patented by others. In biotechnology, the Cohen-Boyer patent on recombinant DNA is a classic example. For many years, the commercialization of any new technology using the technology developed by Cohen and Boyer required payments to obtain the relevant license. There may also be government regulations not directly concerned with IP which restrict the access to >>>

IP AND BUSINESS

market of a patented invention (for example regulations requiring approval for food or pharmaceutical products).

Notwithstanding the above, freedom to operate is one of the reasons why companies apply for patent protection. While the grant of a patent is not in itself sufficient to clear the way for commercialization, it is a useful step and may prevent problems at a later stage.

Defensive publishing or technical disclosures

There are many reasons why a company may wish to *avoid* patenting a given invention, such as cost, or the fact that the invention may not meet the patentability criteria. An alternative that is sometimes used by businesses is "defensive publishing" or technical disclosure. This stands in sharp contrast to keeping it as a trade secret.

Defensive publishing involves disclosing an invention to the public in order to ensure that no one else can patent it. This provides some degree of freedom to operate for all. The disclosure should be done in a well-recognized technical journal or other publication that is likely to be consulted by patent examiners when examining future patent applications, for example, journals that are included as part of the PCT minimum documentation for International Search Authorities.² Some journals devoted exclusively to defensive publishing have become respected sources of technical information. Defensive publication is not generally done for a major breakthrough in technology or for a core technological invention that is likely to be central to the strength of an enterprise.

Some large corporations (such as *Xerox*) rely on their own technical disclosure bulletins, which are widely disseminated to disclose inventions that are not patented. The United States Patent and Trademark Office enables applicants to request the publication of a Statutory Invention Registration (SIR) of a filed patent. This is effectively a technical disclosure of an invention for which a patent was applied. With an SIR, the applicant abandons the prosecution of the patent in exchange for the disclosure of the invention by the patent office.

Choosing the right path

Whichever means is chosen, technology companies are well-advised to consider their options at an early stage. In some cases, minor product adaptations, or payment of a small licensing fee to the patent owner, may be sufficient to avoid future disputes. Systematically evaluating a company's freedom to operate prior to launching a new product is, therefore, a way of minimizing the risk of a patent infringing the patents owned by others. It will also improve a company's chances of finding business partners and attracting investors to support its business development plans.

For more information on various practical aspects of the IP system of interest to business and industry, please visit the website of the SMEs Division at <http://www.wipo.int/sme/en/>



2. For more information on the International Search Authorities and the PCT minimum documentation, see website of the PCT at <http://www.wipo.int/pct/en/index.html>

LEBANON

Meeting IP Challenges



Photos: Courtesy Lebanese Ministry of Tourism

The Intellectual Property Protection Office of the Ministry of Economy and Trade in Lebanon has developed rapidly and faced many challenges in the last few years. Today, however, it may be facing its greatest challenge as it tackles Lebanon's counterfeiting and piracy problem. At the beginning of summer, Fadi Makki, Director General of the Ministry, announced a new crackdown on piracy, both by increasing raids and through education and incentive programs to increase understanding of intellectual property (IP) rights.

The road behind

Lebanon was one of the first countries in the Arab region to pass legislation to protect IP, and has been a member of various international IP conventions since the 1920s. So when new international and regional agreements necessitated a revision of IP laws and infrastructure for many countries, Lebanon did not hesitate. Over the last decade, Lebanon has updated IP laws and enforcement mechanisms, a continuous effort that has required much reorganization and training of personnel.

For example, Lebanon enacted new laws on the protection of copyright in 1999 and on patents in 2000. The government is currently putting the final touch to a new law on trademarks and geographical indications, and is developing legislation on distinctive signs, designs and unfair competition. The Ministry of Economy and Trade faced a number of difficulties in implementing the new laws because of gaps in the institutional infrastructure. Some of the problems included:

- ▶ outdated IT equipment and network links between offices;
- ▶ a lack of specialized staff and judges in the courts;
- ▶ limited technical capacity and available human resources for enforcement;
- ▶ limited means to promote public awareness of new laws.

Assistance from WIPO and other organizations, including the private sector, have helped them to overcome some of these problems. The Ministry has now computerized its offices, and launched an online trademark database this summer (www.economy.gov.lb). Staff have been trained to carry out the full range of trademark registration processes. An outreach program was launched in schools. Enforcement raids are now coordinated between the IP Protection Office, customs and the judiciary.

But an increase in counterfeiting in 2004 raised the bar.

Facing the challenge

Lebanon already had one of the highest rates of counterfeiting and piracy in the world. A report by PricewaterhouseCoopers in 2003 estimated that losses for the Lebanese government resulting from counterfeit products ranged from US\$75 to 100 million per year. In a recent report, the Business Software Alliance (BSA) estimated that losses related to software piracy in the country amounted to US\$26 million in 2004 – an increase of over 18 percent on the previous year's figures.

In the last year and a half, Lebanese authorities carried out hundreds of raids, seized counterfeit goods worth tens of millions of dollars and increased corresponding fines. But still piracy increased. The Director General of the Ministry of Economy and Trade explains, "the main problem is that people tend not to associate IP infringement with stealing or other immoral acts." So on August 1, 2005, the Ministry launched a major media campaign, aimed at spreading understanding and respect for IP rights among consumers, students and businesses. "There can be no better deterrent for counterfeiters than an unwilling consumer," said the Director General.



Lebanese anti-piracy poster: Stop Draining Human Potential – Fight Piracy

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COUNTRY
FOCUS

The campaign addresses IP protection of local cultural industries, especially in areas where Lebanon is strong, such as music, software, advertising and fashion design. It aims to show consumers that they are all stakeholders, and that as such it is in their interest to help build an IP culture in Lebanon. The campaign will use video clips, posters and information leaflets, as well as training seminars and workshops to educate officials, consumers and businessmen. Events are planned in Bekaa, Beirut, Saida and Tripoli.

The Ministry is backing its educational program with incentives to encourage business to use legal software. It is tightening enforcement measures against pirated software on one hand, and on the other is negotiating with computer companies to reduce the costs of legal software for small and medium-sized businesses.

The Ministry also set up a consumer hotline to respond to questions and complaints. Mr. Makki said, "We are encouraging intellectual property holders to complain to us. We have received lists of music shops that sell pirated CDs and are already taking action."

The Ministry has joined forces with other government agencies and with the private sector to reach out to the broadest possible public. Microsoft is working with the Ministry to provide Internet cafés with software worth US\$20,000 for an annual subscription fee of US\$295 per café. The Director General believes the initiative will reach some 1,500 Internet cafés, and cut Lebanon's current piracy rate by 15 percent.

The initiative will create a partnership with local Internet cafés in order to promote an educational, safe and secure Internet experience. By transferring skills and technology to the cafés' owners and users, it aims to increase awareness of the value of licensed software.

The Lebanese authorities are also multiplying raids, and increasing fines on counterfeit goods to deter counterfeiters. In the first ten days of August, over 3,300 counterfeit items were seized and then publicly destroyed. The shock this caused in the market should make pirates think again, as they face jail sentences and fines of up to US\$50,000.

Moving forward

Transforming public perceptions is never an easy task. However, Lebanon can draw encouragement from the experience of the United Arab Emirates (UAE). The UAE is the only emerging economy which figures in the BSA's list of countries with the lowest incidence of software piracy. The BSA attributes UAE's success to "deliberate attempts to adopt stronger intellectual property protections during the 1990s, when a new generation of policymakers came into power and began luring foreign investments."

Policymakers in Lebanon are clear that IP protection is not only about respecting international agreements, but is fundamental to fostering Lebanese enterprise and creativity, to attracting foreign investment and to protecting the country's consumers. The Ministry of Economy and Trade is therefore moving forward with determination.



Photos: Courtesy Lebanese Ministry of Tourism

Copyright Industries in Lebanon

At the regional level, Lebanon is regarded as the country offering the best environment for cultural industries. The main components of the cultural sector in Lebanon are the publishing industry, including software publishing, the motion picture and sound recording industries, the broadcasting and telecommunications industries and information technology industries. Following is a brief overview:

- ▶ Lebanon is the center for the advertising industry in the Middle East, with an estimated annual turnover of US\$20 million.
- ▶ Lebanon's music industry is growing and generating substantial investment from abroad; it has the potential to become one of the leading music industries in the Arab world. However, though revenues from live and broadcast performances are growing, sales of recorded music are estimated to be in a decline, most of which can be attributed to piracy.
- ▶ The high-tech industry in Lebanon emerged in the early 1980s and the country now has a well-developed software sector with potential for growth. The information technology industry reported a 23 percent growth from 1998 to 2003, showing that the market is still immature and has place to grow, but the spread of piracy in Lebanon has reduced the contribution of the sector to national output.

Source: *Performance of Copyright Industries in Selected Arab Countries*, WIPO Publication No. 916(E)

Towards an Integrated Management of
Intellectual Property

Punjab University College of Art and Design

Pakistan has made significant achievements in updating its intellectual property (IP) system in recent years. However, policy-makers in this South Asian country of 161 million view them as only first steps, necessary but not sufficient. They have recently turned their focus to a sweeping, institutional approach to better centralize and modernize their IP system, with an eye toward more fully integrating it into the country's development objectives and policy planning.

In recent years the country carried out a wide ranging review and revision of its IP laws to better align them with international instruments. While this effort was successful, those involved in the work came to realize that it was adversely affected by the fragmented nature of the institutions dealing with IP in Pakistan. Until recently, three different IP offices (Trademarks, Patent Office, Copyright Office) existed; these offices came under three different ministries (Ministries of Commerce, Industries, and Education, respectively). In addition, another government agency was responsible for initiating and coordinating IP activities with external partners.

This institutional arrangement led to a less than optimal functioning of the IP system. First, it made it difficult for the government to take an integrated, strategic view of IP. As management of IP issues was spread over several offices and ministries, proper consideration could not be given to developing an effective means to promote a broad use of IP tools to enhance trade and investment, promote technology development, foster cultural industries or leverage IP to achieve crucial social objectives, such as in the areas of health and education.

Second, the lack of an "IP hub" in the government resulted in difficulties in analyzing issues which cut across various IP disciplines, such as the protection of software, traditional medicines and folklore. These and other issues often require assessment in a broader IP context rather than from a specific patent, trademark or copyright perspective. A more "holistic" approach was clearly necessary, but this was not easily carried out by a collection of offices dealing exclusively in their own areas of IP. Third, even the traditional services to be provided by the three IP Offices – receiving applications and granting rights – were negatively affected. As these offices were not integrated into overall development planning – and therefore not seen to be contributing directly to socio-economic goals – their activities were perceived to be of an esoteric and technical nature. As a result, they had difficulties in securing the necessary means to upgrade their operations. Rights holders were

not fully satisfied, and potential users of IP had little incentive to actually use the system.

To overcome these shortcomings, Pakistan earlier this year took the bold decision to establish a unified IP Organization called the "Intellectual Property Organization-Pakistan (IPO-P)." The new organization has an autonomous status (allowing it to determine its own financial and personnel regulations), reports directly to the Cabinet, and has the mandate to deal with all IP matters. The three existing IP Offices are now part of this unified Organization. A Policy Board, comprising representatives from the private and public sectors, has also been set up. It is mandated to meet at least twice a year and to provide guidance to IPO-P on policy issues.

The positive effects of the establishment of IPO-P are already evident. IP issues have greater visibility, and figure higher on the policymakers' agenda. Additional financial resources have been secured for the operation of the IP system. Equally important, the revenues generated by the IP Offices are now retained by them in their entirety. This means that more highly-qualified personnel may now be recruited by the IP Offices because of upward revision of pay scales.

New initiatives are being taken at the policy level as well. An exercise is under way to formulate a comprehensive national IP strategy. This would identify measures required for effective utilization of the IP system in achieving developmental goals, including



Photos: Laurent Koglin

recommendations for policies to promote innovation, to strengthen intellectual asset development and management, to support protection and management of research results and to stimulate cultural industries.

WIPO is actively cooperating with IPO-P in a number of these areas. A technical assistance project, largely financed by the European Union, has been undertaken to strengthen IPO-P's operations. The project includes the following activities:

- ▮ Preparation of an advisory report on "Integrated Management of IP in Pakistan," with a focus on the organizational aspects of managing IP.
- ▮ A Roundtable, held in August, on challenges and best practices pertaining to the management of "unified" IP Offices. Participants to the Roundtable included senior officials of selected, "unified" IP Offices as well as a broad range of users of the IP system from within the country.
- ▮ Preparation of a working paper on a National IP Strategy, which will serve as an input to IPO-P's exercise in formulating such a strategy.

- ▮ Formulation of a comprehensive automation plan for IPO-P and its constituent IP Offices. The plan offers recommendations for integrating the automation systems of the hitherto separate offices and building common information technology platforms for further services. In line with the plan, some automation equipment is also being provided.

- ▮ Technical advice in certain priority areas, including measures to prepare for accession to the Madrid system and the establishment of a viable system for the protection of geographical indications.

A notable feature of this project is that it is being implemented in close cooperation with the European Commission and a United Nations agency, the International Trade Center. This is in keeping with WIPO's goal of establishing partnerships among different developmental agencies in order to pool resources, work together and reap greater benefits. The ultimate objective of WIPO, and all project partners, is to ensure that Pakistan's endeavors to strengthen its IP system meet with continuing success.

PAKISTAN

Area: 796,095 km²

Population: 161.1 million

Capital: Islamabad

Official language: Urdu
(English widely spoken)

Main industries: construction materials, food processing, paper products, pharmaceuticals, textiles and apparel

Strategically situated between Afghanistan, China, India and Iran, Pakistan follows the Indus River, stretching from the Himalayas down to the Arabian Sea. The major cities are Islamabad, Karachi, Lahore and Rawalpindi, which served as Pakistan first capital while Islamabad was being built.

The state of Pakistan, a part of British India until 1947, originally had two parts: east (became Bangladesh in 1971) and west. The country experienced decades of internal political disputes, resulting in low levels of foreign investment. However, foreign assistance and renewed access to global markets since 2001 have generated solid macroeconomic recovery over the last three years. GDP growth, spurred by double-digit gains in industrial production over the past year, has led to less dependence on agriculture.

Sources: The United Nations,
www.infopak.gov.pk,
www.nationsonline.org

IP SUMMER SCHOOL ON THE BANKS OF LAKE GENEVA



Still smiling after a four week diet of IP.

The July sun shone through WIPO's windows on a lively gathering of young professionals and students. It included trademark attorneys from Eastern Europe; science graduates from Africa and Australia; a Russian economist; a specialist in traditional Chinese medicine; a Chilean telecommunications executive; Ph.D. law students from Egypt, Kenya and Kazakhstan.

These were the 37 young achievers who had successfully applied to spend the summer of 2005 immersed in the study of intellectual property (IP) at WIPO's Worldwide Academy Summer School in Geneva.

For four weeks they lived – at least by some accounts – on a diet of IP and Swiss chocolate. They heard lectures from WIPO experts, they conducted intensive research into chosen topics, they presented their findings, and they talked – often late into the evening.

WIPO Magazine met the students, exhausted but still ebullient, on the final day of the course to hear what they had to say about the experience.

The group were unanimous in their appreciation of the opportunity that the Summer School had given them to learn, not only from the WIPO experts, but – perhaps even more importantly – from each other. By comparing their experiences and discussing IP issues among themselves they were able to build beyond the lectures, to learn about the differing IP practices in each other's countries and, as one student put it, "to understand just why harmonization is such a challenge."

"We learned a lot and we laughed a lot," said Maria Gomez from Venezuela. She urged the Academy to consider running similar summer schools in Spanish in Latin America, or in Africa, so as to spread the opportunity as widely as possible.

Adam Flynn had flown across the world from Australia, having wanted to attend the Summer School for several years. "Being together with colleagues from developing and developed countries, from the old world and the new, has given me a different understanding of IP," he commented. He singled out presentations from guest speakers from the Swiss IP Office and from WTO as particularly instructive. Enthused by the research projects, he wished

that it had been possible to pursue these in greater depth.

Adam's regret on this score was shared by Swiss law student, Alexandra Zachman. "I feel as if I only scratched the surface," she said. "I came away with certain issues that I really want to study further."

Broadening horizons

Several participants spoke of having been motivated to apply for the course by the challenge of broadening their horizons. Galatea Kapellakou, a Greek patent lawyer, reflected that she now felt ready to look beyond patents to other areas of IP, such as copyright or new plant varieties. Deepa Vohra from India described how she had felt herself stagnating in her work as a trademark attorney. "Now I have another dimension." She announced that she had just received an offer of a teaching post. She looked forward to being able to spread better awareness of IP in her new role, and would be looking to WIPO for help with information materials.

The scope for all the participants to act as future "IP ambassadors," able to aid greater understanding of IP, was a recurring theme. "We will be able to use tools from WIPO to put together seminars, for example with chambers of commerce, in our home countries," said Rosa Castro, a graduate in law and economics from Venezuela. Thomas Roy Kadichini, a patent attorney who had already



been actively involved in talking to schools about IP, endorsed the importance of outreach.

A number of the participants had several years of IP-related professional or academic experience under their belts, albeit in some cases within a specific field. Others were relatively new to the world of IP. While all were expected to have at least attained the level of the Academy's free distance learning course, the DL-101 General Course on Intellectual Property, the differing levels of IP expertise among the students was a challenge for the teaching staff. Not that it was necessarily always those with the most experience who shone. "Some people with backgrounds in, say, chemistry or mathematics performed really highly," remarked Carlos Mercuriali, who works for a law firm and is writing a book about IP and the Internet.

"The first time I really heard of IP was less than a year ago, when I did some work for a pharmaceutical firm," said Susan Bergin, who had just graduated with a degree in medicinal chemistry from Trinity College, Ireland. Realizing that, without IP protection,

research-based companies like the one she had worked for would be unable to afford to innovate, she decided that she needed to know more. Research on the Internet had led her to the WIPO Summer School, "and now I've been accepted for a Masters in IP."

Justine Cresswell, coming from a background in journalism in Capetown, South Africa, brought yet another perspective to enrich the group, and offered constructive feedback. She also reminded the course organizers that the participants – some of whom had never before traveled to Europe – had faced the challenge of getting quickly to grips with daily life in a foreign city at the same time as plunging into full time study at the Summer School.

High standards

"Having reduced the course from six to four weeks, we put the students under a lot of pressure," commented Tshimanga Kongolo, Head of the professional training section of the Academy, who was responsible for the Summer School course. "But they all rose to that challenge. This was an impressive group, who produced research projects of a very high standard."

As he presented them with their course certificates, the Academy Director Mpazi Sinjela encouraged the students to keep in touch with WIPO and with each other: "You arrived as 37 individuals; you leave as a network," he concluded.



Applause all-round as the students receive their certificates.

The objective of the **WIPO Summer School on Intellectual Property** is to provide an opportunity to senior students and young professionals to acquire greater knowledge of intellectual property, to conduct research at an advanced level and to gain an appreciation of the role and functions of WIPO. More details are available at: www.wipo.int/academy/en/courses/summer_school/index.html

For further information on the **WIPO Worldwide Academy**, including the full range of courses offered, see: www.wipo.int/academy/en/



ARCHIVES AND MUSEUMS

Balancing Protection and Preservation of Cultural Heritage



Museums, archives, libraries, anthropologists and ethnologists play an invaluable role in preserving the rich cultural heritage of our planet. By recording and making available the music, arts, knowledge and traditions of indigenous communities, such institutions help to spread a broader understanding and respect for different cultures. However, some traditional communities are beginning to voice concerns that sometimes activities by museums and cultural specialists do not take adequate account of their rights and interests; and that documenting and displaying, say, a traditional song or a tribal symbol, make them vulnerable to misappropriation.

How can museums strike a balance between the *preservation* and the *protection* of cultural documentation? And how can the wider public have greater access to the rich collections housed by archives and museums? Traditional communities and cultural institutions have begun to seek intellectual property (IP) information and advice in relation to these questions. Greater clarity on how to identify relevant IP issues and options could benefit all stakeholders. This article outlines a few of the key questions and describes WIPO activities aimed at addressing them.

The ethnographic collections of museums and other institutions often include invaluable, even unique, records of ancient traditions, lost languages and community histories, which are vital to indigenous peoples' sense of identity. The handling of secret and sacred materials within such collections can be a source of particularly acute concern. Indigenous peoples also cite numerous cases in which commercial users have exploited cultural heritage collec-

tions without seeking the consent of the relevant community, let alone acknowledging the source or sharing the commercial benefits. Some popular world music albums, such as "Return to Innocence," included samples of traditional music that had originally been recorded and made publicly available for heritage preservation purposes.

In the words of expert Henrietta Fourmille, (Centre for Indigenous History and the Arts, University of Western Australia), the crux of the problem from an indigenous perspective is that the "information collected about us is simply not owned by us."

This introduces questions about the role of IP law, policy and practice in activities aimed at preserving cultural heritage. Such questions arise for museums, libraries, archives and galleries in relation to their collections of original works, as well as derivative databases, catalogues, coffee-table books and postcards, etc. IP issues become more pressing as they set up digital libraries of their collections.

Traditional cultural materials

The "public domain" character of traditional cultural expressions (folklore), which has been the subject of criticism especially by indigenous peoples, raises interesting and challenging issues. For example, while a traditional song may be treated by IP law as in the public domain, recording that song creates IP rights in the recording. To whom do these new rights belong, and how should they be managed in ways that take into account the interests of the community in whom the custody of the song had been entrusted under customary laws?

Further questions to consider include:

- ▶ What IP rights do researchers and cultural institutions hold? And how can these rights be best managed in the interests of safeguarding culture, promoting cultural diversity, fostering creativity and cultural exchange, and facilitating the public's access to and enjoyment of diverse cultural expressions?
- ▶ Which existing IP rules and practices can assist researchers and cultural institutions in fulfilling their mandates? (This might include tailored licensing approaches, or use of specific copyright and related rights exceptions and limitations.)



These issues arise frequently in practice. The *Toulumne* tribe of California recently used copyright laws to stop the sale of CDs and videos of its sacred dances. There are other cases in which recording a piece of traditional art, and exercising IP rights in that recording, has helped to protect the original work against misuse (see box).

But exercise of IP rights may not always be the answer. The point is to step back, identify objectives and determine an overall strategy which takes into account the range of IP-related issues and options.

Developing resources

WIPO is working with the stakeholders to respond to a widely-expressed need for technical information on these issues. A current project aims to develop a set of IP-related “good practices,” practical guidelines and other resources for cultural specialists, indigenous communities, creators and users. Such resources may also benefit institutions establishing inventories of intangible cultural heritage, as provided for under the recently-adopted United Nations Educational, Scientific

and Cultural Organization (UNESCO) Convention on Safeguarding Intangible Cultural Heritage. The UN Permanent Forum on Indigenous Issues has recommended development of these kinds of resources.

Many institutions already have policies on research, collection and preservation, as well as codes of ethics. Indigenous declarations also address these questions. Few existing resources, however, address IP issues in detail, nor questions related to the treatment of traditional knowledge and cultural expressions. A first step in WIPO's project, therefore, is to gather and publish, in a searchable online database, examples of existing materials, including relevant copyright provisions.¹

Protecting Indigenous Rock Art

In Australia in 1997, t-shirts began appearing in the market depicting images from indigenous rock paintings found in the Deaf Adder Creek region. These rock art paintings have special cultural significance to Australian indigenous life and custom.

The indigenous custodial group had no remedy under copyright against the t-shirt manufacturers, as the original artist was unknown, and the paintings were so old that any copyright would have expired. However, drawings and photographs of the rock art images had been published by a researcher funded by the Australian Institute of Aboriginal Studies, Eric Brandl, in 1973, thus creating new copyright. It was from this publication that the t-shirt manufacturers had apparently copied the images. With the help of the Institute and the Brandl family, the indigenous group was able to get the t-shirt company to stop production, claiming infringement of copyright in Brandl's drawings and photographs.

To read the full case study, compiled for WIPO by indigenous lawyer Ms. Terri Janke, see *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions*, (WIPO Publication No. 781).

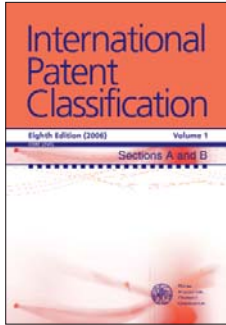
Strengthening synergies

Clarifying IP issues and options in relation to safeguarding cultural heritage should help strengthen synergies between the protection of cultural documentation and its preservation, while contributing towards the respect for traditional cultures. All stakeholders stand to benefit from equitable and secure access to the collections of museums and archives, facilitating a wider exchange of cultural expressions between the peoples and communities of this culturally rich and varied world.

1. For the first examples see www.wipo.int/tk/en/folklore/culturalheritage/index.html.

NEWS
ROUNDUP

Updated IPC now online



A new, updated edition of an international system designed to facilitate search and retrieval of patent information in all fields of technology is now available online on the WIPO website (www.wipo.int/classifications/ipc).

The International Patent Classification (IPC) is a classification system covering all fields of technology and is indispensable for the efficient retrieval of patent information. The IPC is periodically revised to take account of technological developments and to ensure a more

user-friendly patent classification and search tool for specialists and non-specialists alike. The new (eighth) edition is the product of a 6-year process of reform to adapt the IPC to the electronic environment and to facilitate its use. It will enter into force on January 1, 2006, from which date all published patent documents will be classified according to that edition.

"The new edition of the IPC will significantly increase the efficiency of the search and retrieval of patent information," said Mr. Francis Gurry, WIPO Deputy Director General. "The IPC reform process has been extremely fruitful. Industrial property

offices and the general public worldwide now have a universal search tool for patent information at their fingertips."

Improvements include the division of the IPC into two levels (core and advanced) to meet the differing needs of users. Over 1,400 new entries have been added. Five new subclasses have been created relating to new technologies, as has one new main group for traditional medicine based on the use of plants.

The printed version of the core level of the IPC is available from the WIPO electronic bookshop (www.wipo.int/ebookshop).

Scotland Yard: crime and merchandising



Photo: Chris O

The Yard's revolving sign features frequently in films and tv shows.

Scotland Yard, home of the London's Metropolitan Police, is arguably the best known police organization in the world. In an effort to protect its famous name from misuse, while at the same time exploring its income generating potential, the police force has registered the words Scotland Yard and Metropolitan Police, together with their logos, as trademarks with the European Community Trademark Office.

teddy bears sell well at the staff gift shop. And having already negotiated a licensing deal with Corgi Toys to produce models of the squad's cars, the Met' sees scope for more. The trademark registration includes use of the name on perfumes, after-shave lotions, confectionery and clothing.

"We realise that the Metropolitan Police is a really powerful brand," said a Scotland Yard spokesman. She stressed, however, that the main motive for registering the names was to protect them from misuse, and that any licensing deals had to be "commensurate with our core business, which is protecting the public."

While a bottle of vintage Yard Rosé may not be everyone's cup of tea, cuddly Metropolitan Police

UK legislation allows police forces to generate up to one percent of their annual budget through sponsorship.

Designs to improve life

INDEX, which opens its doors in Copenhagen, Denmark, in September, is a new international design event with a difference. Under the banner, *Design to Improve Life*, INDEX showcases designs with the potential to make a significant, positive difference to the lives of large numbers of people.

An international jury will announce the top five INDEX Award winners on September 23 from a shortlist of 118 nominations. Competition will be heated as individual designers and design studios vie with big corporate names. A glance at the following nominations gives an idea of the diversity on display:

- ▶ The LifePort Kidney Transporter, designed by a British/U.S. team from the IDEO Consultancy firm, is already being used by hospitals on four continents. The unit preserves donated kidneys in conditions that simulate those within the body during the jour-



Courtesy of Organ Recovery Systems

The LifePort Kidney Transporter.

ney from organ recovery to transplantation. Designed to be robust, clinically efficient and easy to use, early findings suggest that the device contributes to improved kidney function after transplantation.

- ▶ The Solar Pasteurisation Unit is a portable device by Danish designer Kent Laursen, which uses sunlight to decontaminate drinking water, AIDS-infected breast milk and surgical instruments. It can also cook food without fire. The prototype has been tested in Tanzania with positive results.

- ▶ Japan's Toyota describe their second generation Prius car as "by

far the cleanest production car on the planet," citing its 90 percent recyclability potential, 35 percent reduction in CO² emissions, and fuel consumption overall of only 4.3 liters per 100 kilometers. The car's design and performance has had wide consumer appeal beyond the "green" market.

- ▶ The Hippo Roller, produced by Imvubu Projects in South Africa, was designed to alleviate the burden on the women and children in rural communities, who spend much of their days walking to fetch water. A simple, rolling container, it enables the user to transport 90 liters of water at a time. Some 10,000 Hippo Rollers have been distributed so far. But Imvubu is seeking more business and non-governmental sponsors, as those most in need cannot afford the cost of US\$35 per roller.



Courtesy of INDEX

Imvubu's Hippo Roller.

For more information see: www.index2005.dk

International Day of the World's Indigenous People

Speaking on the International Day of the World's Indigenous People, August 9, 2005, WIPO Director General Kamil Idris welcomed action by the international community to promote recognition of the rights of indigenous peoples and respect for their cultures.

Citing WIPO's involvement in the areas of traditional knowledge, traditional cultural expressions and genetic resources, Dr. Idris underlined the need for an approach which recognizes the concerns and aspirations of indigenous people in order to develop

informed and equitable solutions in these areas. This multi-faceted approach, he said, has "legal, practical, cultural and procedural dimensions, and must be sustained." He welcomed the increased participation of indigenous groups in WIPO's work, which he said has greatly enriched the debate.

WIPO has participated in the work of the United Nations Permanent Forum on Indigenous Issues, and is an active member of the Inter-Agency Support Group on Indigenous Issues.

CALENDAR of meetings

SEPTEMBER 26 TO OCTOBER 5

GENEVA

Assemblies of the Member States of WIPO (Forty-first Series of Meetings)

All Bodies of the Assemblies of the Member States of WIPO will meet in their ordinary sessions.

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

OCTOBER 10 TO 14

GENEVA

Committee of Experts set up under the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks (Twentieth session)

The Committee of Experts will decide on the adoption of proposals for amendments and other changes to the current (eighth edition) of the Nice Classification, which should enter into force on January 1, 2007, along with the authentic English and French versions of the new (ninth) edition of the Classification.

Invitations: As members, the States members of the Nice Union; as observers, all States members of the Paris Union which are not members of the Nice Union, and certain organizations.

OCTOBER 17

GENEVA

Domain Name Panelists' Meeting

A meeting of WIPO panelists to exchange information on precedents and procedures in WIPO domain name dispute resolution.

Invitations: Restricted to WIPO domain name panelists.

OCTOBER 18 AND 19

GENEVA

Workshop for Arbitrators

An annual event for all persons interested in WIPO arbitration procedures, both as potential arbitrators and as potential party representatives.

Invitations: Open to interested parties, against payment of a fee.

OCTOBER 20 AND 21

GENEVA

Advanced Workshop on Domain Name Dispute Resolution: Update on Practices and Precedents

An event for all persons interested in receiving up-to-date information about the trends in WIPO domain name panel decisions.

Invitations: Open to interested parties, against payment of a fee.

NOVEMBER 2

GENEVA

Seminar on the Hague System

A Seminar, in English and French, for all parties interested in increasing their knowledge of the Hague system for the international registration of industrial designs and their practical experience of procedures applied thereunder.

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.

NOVEMBER 3 AND 4

GENEVA

Seminar on the Madrid System

A Seminar, in English, for all parties interested in increasing their knowledge of the Madrid system for the international registration of marks and their practical experience of procedures applied thereunder.

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.

NOVEMBER 14 TO 18

GENEVA

Committee of Experts of the Union Created by the Locarno Agreement Establishing an International Classification for Industrial Designs (Ninth session)

The Committee of Experts will decide on the adoption of proposals for amendments and additions to the current (eighth) edition of the Locarno Classification, which should enter into force on January 1, 2009, along with the authentic English and French version of the new (ninth) edition of the Classification.

Invitations: As members, the States members of the Locarno Union; as observers, all Member States of the Paris Union which are not members of the Committee and certain organizations.

NOVEMBER 28 TO DECEMBER 2

GENEVA

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

The Committee will work on new issues as identified by the SCT at its Fourteenth session.

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

NEW PRODUCTS

The Setting-up of New Copyright Societies

English 926(E), French 926(F), Spanish 926(S)
Free of Charge



Understanding Copyright and Related Rights

English 909(E)
Free of Charge



Understanding Industrial Property

English 895(E)
Free of Charge



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Orders should indicate: (a) the number or letter code of the publication desired, the language, the number of copies; (b) the full address for mailing; (c) the mail mode (surface or air).



EXHIBITION:

INTELLECTUAL PROPERTY IN THE WATCH AND JEWELRY INDUSTRIES

Creators in Perpetual Movement, an exhibition on the watch and jewelry industries organized by WIPO's Small and Medium-sized Enterprises Division, will be showing from September 24 to October 14, 2005 at the Crowne Plaza Hotel in Geneva, Switzerland. The exhibition will be open to the public every day from 10:00 to 18:00.

The Swiss Watch Industry Federation will join forces with WIPO to provide a panoramic view of the development of the industry, focusing on how the tools of the intellectual property system have contributed to innovation, and to the emergence and protection of famous brands. Exhibitors will include well-known Swiss and international companies such as Delancey, F.P.Journe, Hublot, Longines and Tissot. The exhibition will also demonstrate how such enterprises use the WIPO-administered IP registration services as part of their global business strategies. Visitors will be able to see new and familiar products alongside the relevant patent, trademarks or industrial designs (models) registration documents.

For more information on the exhibition, please see www.wipo.int/sme/en and www.webnews-industry.com.

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