TECHNOLOGY AND EXPORT COMPETITIVENESS

Society for the Advancement of
Technology Management in the Philippines

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AND
EXPORT COMPETITIVENESS

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Organized in October 1996, the Society for the Advancement of Technology Management in the Philippines (SATMP) is a tripartite alliance of leaders in the government, industry, academe, who are committed to accelerating the technological development of the nation. In pursuit of this goal, SATMP shall:

- Act as an information resource center on new technologies, products and processess;
- Advocate policies that give priority to the development of human resource, science and technology;
- Support the commercialization of indigenous technologies and local adaptation of imported technologies;
- Initiate research cooperative ventures with the industry, goverment and academe as partners;
- Sponsor national and local forum to promote technology management; and
- Link with various local and international science and technology organizations.

The present membership of SATMP comprises of more than 100 individuals and 18 institutions, affiliated to industry, academe, and government.

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Preface

A major factor that accounts for the success of developed countries and the Asian Tiger economies is an effective management of science and technology in tandem with sound fiscal, monetary and competition policies. In the case of post-war Japan, a national innovation system that undertakes technology assessment, selection and forecasts, reverse engineering and incremental innovations, was instrumental in attaining long-term goals of improving quality in products and processes. The government nurtured corporations to achieve competitive advantage through incentives, financial and technical support, and worldwide marketing intelligence services. Korea, for her part, laid a wager on large, diversified and hierarchical chaebols, sheltered by a strong and interventionist state. Taiwan's strategy was to develop small and medium enterprises (SMEs) so that the major manufacturers can rely on them for parts and intermediate inputs.

A common feature of the development strategies in these countries is the high priority given to R&D by both private and government sectors, with the former determining the market focus and the latter providing stimuli by means of incentives and infrastructure. Competitive intelligence was used as a tool to develop products, processes and markets. The educational systems were geared towards providing the scientists, engineers and technical manpower required by the expanding industries. The investments in technology, i.e., accumulation of hardware (machinery and equipment) and software (methods, processes, systems, etc.), resulted in significant improvements in labor productivity and product quality. These developments helped define niches, expanded markets and, in turn, provided feedback mechanisms for further improvements and innovations.

Against this background, the Policy Forum on Managing Technology for Export Competitiveness explores the development challenges and options for the Philippine government and business. The imperatives are made more critical in the face of tightening competition in the global market and increasing pressure from various multilateral agencies for developing countries to open their protected markets.

This compendium contains papers presented during the Policy Forum, held on the 3rd June 1999 in Makati City, Philippines, and organized by the Society for the Advancement of Technology Management in the Philippines (SATMP) and the Philippine Exporters' Confederation (PhilExport), through the support of the United States Agency for International Development (USAID). There were five main papers presented: *Technology Management for Exporters* by Meneleo J. Carlos Jr.; *Technology Management and Export Competitiveness: Lessons from Korea and Taiwan* by Roger Posadas; *Securing Global Competitiveness through Accelerated Quality Improvement* by Nestor O. Raneses; *Some Proposals towards Improving Efficiencies in Technology Transfer and Adaptation Process in the Philippines* by Serafin D. Talisayon; and

TRIPS Y2K: Managing Intellectual Property Rights in the Third Millennium by Ma. Rowena R. Gonzales.

The compendium also includes the *Conference Overview* presented by SATMP Chairman Magdaleno B. Albarracin Jr., and the *Keynote Address* delivered by Congressman Leandro B. Verceles Jr., Vice-Chairman of the Committee on Science and Technology of the House of Representatives. Albarracin notes that the rigors of global competition are forcing local industries to face new market challenges which include: increasing rate of innovation, widening application of new technologies, shorter life cycles, diminishing role for unskilled labor, and constant changes in the organization of production. Critical to a firm's survival in the global market is its ability to manage technology. Verceles suggests that the government consider shifting its promotion from resource-based goods to knowledge-based services. He points out that the country has the resources that can be honed to develop comparative advantage in IT-based goods and services. But domestic technological activity in this area is sparse, hence the need for the government to stimulate it.

In his exposition, Carlos discusses the rapid changes in consumer demand and how technology can be made to respond to these changes. He highlights the importance of managing technology as an economic resource, of promoting a technology-oriented culture in the country, and of adapting technology to the demands of the consumer. Carlos notes that successful companies are those adept at selecting technology and not necessarily those that create them; and that time-to-market factor is critical to competitiveness. He calls on the private sector to invest more in R&D, and for the State to open government laboratories for collaborative research.

Posadas reviews the development experiences of Korea and Taiwan from where he culls some lessons on technology management that may be relevant to the Philippines. He elucidates on the major features of the export-led development strategies that transformed these countries into economic tigers. He places importance on the close linkages forged between the government, industry and academe, as he claims that such linkages facilitated the growth of industrial clusters — instrumental to the rapid industrial development of these two economies.

Talisayon tackles the issue of technology transfer from what he calls a "market" instead of a public policy perspective. He focuses on the motivations of technology buyers and the options available to them so they can obtain the technology they need at the most efficient manner. He notes the basic problem is that many local inventors produce technologies that do not address market demand or the requirements of technology users. Hence the challenge is to bridge the gap between what the market needs and what local technology producers generate. Towards this end, he proposes: (a) the establishment of a technology market or clearinghouse; (b) the enactment of legislation on business incubators; and (c) local adaptation of the Swedish Inventschool Model.

Raneses' paper on product quality stresses the importance of developing local standards that are aligned to global standards. He examines the strategic options for improving product quality: superior product and package designs, world class manufacturing technologies and services, including cycle time and delivery performances, total quality management, alignment to world class product and quality system standards, benchmarking of best practices, and improvement and acquisition of new technology. But there are institutional barriers to improving product quality.

To address these concerns, he recommends: (a) obtaining international accreditation of testing laboratories through ISO, IEC, and other foreign accreditation standards; (b) proliferating "best practices" to exporters; (c) "incentivizing" the cost of getting new technology; (d) removing protectionism and exposing mature industries to competition; and (e) setting up a clearinghouse of standards for manufacturers.

On the issue of Intellectual Property Rights (IPR), Gonzales raises alarm on the lack of preparedness of the country for the 1 January 2000 deadline when the Philippines has to abide by the WTO agreement on the protection of IPR. She forewarns local users of foreign creations on possible legal complaints from foreign holders of IPR and the forthcoming US Super 301 Review early next year. At the same time, she urges the government to undertake extensive information campaign on the possible impact of the IPR agreement to local users.

In a rejoinder paper, *Refocusing IPR Regimes in Developing Countries*, Adelardo Ables and Ma. Felisa Batacan relate the issues of reforming IPR regimes with concerns to generate investments and trade. They stress that as the country strives to comply with international treaties and agreements on IPR protection, it should, at the same time, ensure that adequate protection is accorded to locally produced intellectual property. They also point out a number of institutional problems that hamper the enforcement of IPR in the country.

Indeed there are critical institutional problems that have to be addressed so that the private sector can better utilize technology to attain market competitiveness. However, as the contributions in this compendium clarify, much of the work has to be done by the private sector. But given their limited resources, there is a need for greater collaboration with the government and academe to draw in more resources and help them overcome the technological constraints that weaken their competitive position.

SATMP and PhilExport believe that bringing together various sectors in a forum to discuss issues and exchange views on possible approaches to solve the problem, is a step in this direction.

ABOUT THE AUTHORS

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Ma. Rowena Gonzales is a Senior Researcher at the Institute of International Legal Studies, University of the Philippines Law Center. She is one of the Philippines' leading authorities on the subject of intellectual property rights, and has acted as editor for the World Bulletin's January-June 1996 and May-August 1997 issues regarding IPR matters.

Adelardo C. Ables is the Chief Economist of the Economic Intelligence and Investigation Bureau under the Department of Finance, and a member of the recently-formed Philippine Chapter of the Association of Certified Fraud Examiners based in Austin, Texas, USA. He is a member of the Secretariat of the Society for the Advancement of Technology Management in the Philippines (SATMP).

Ma. Felisa H. Batacan is a policy researcher for the Economic Intelligence and Investigation Bureau under the Department of Finance. She was a former investigative journalist for ABS-CBN's 'Assignment' and won the grand prize for the English novel in the 1999 Palanca Memorial Awards for Literature.

Overview of

The Policy Forum on Managing Technology for Export Competitiveness

Magdaleno B. Albarracin, Jr.

The Society for the Advancement of Technology Management in the Philippines (SATMP), the Philippine Exporters Confederation (PhilExport) and the United States Agency for International Development (USAID) are privileged to host the Policy Forum on Managing Technology for Export Competitiveness.

This forum is a venue for ventilating ideas on how best to harness technology as a strategic economic resource. It has well been recognized that the key resource in attaining competitiveness in the global marketplace is technology. The rigors of competition are compelling firms to faithfully commit to applications of new technology, to new ways of managing production, and to new approaches to understanding the market.

Competitiveness ceases to be a function mainly of price. Quality, delivery time, services and capacity to adapt rapidly to user needs have increasingly become crucial in capturing markets. Indeed the link between cheap labor and export competitiveness has weakened.

Those who have been exposed to the rigors of global competition know too well that the real market challenges come from the increasing rate of innovation, widening application of new technologies, shorter life cyces, diminishing role for unskilled labor, and constant changes in the organizational paradigm of production, among others. It is how well a firm adapts and responds to these challenges that will determine its survival in the marketplace. To these daunting challenges, the appropriate response is effective management of technology.

As most technology advocates, SATMP believes that it is high time for the Philippines to strive to compete in more sophisticated industry segments, where value-added is generally higher, but where also the productivity requirements are more rigorous. To succeed, however, we need to create an economic environment that is open, flexible and conducive to innovation.

It is of course not the intention of this forum to develop a national technology development paradigm, that would be a tall order requiring a series of consultations. Our goal is relatively modest: to build a working base of strategies and policy proposals that can be brought to the attention of decision- and policymakers.

In developing such a base, we can debate on the approaches and strategies that best suit our present condition. Surely, there is a wide range of development models to choose from. Some may opt for incremental change in existing structure; others may choose radical institutional and policy change. In the end, however, we need to draw up some consensus if only for the public and private sectors to get their acts together.

The urgency of forming some consensus, at least in the direction that we want to take as a nation, stems from the realization that many of our neighbors have long ago bypassed us in technological development. New forms of technological cooperation are evolving even among competing firms. New modalities of competitive cooperation are thus evolving. Process niche-ing is becoming a byword of our neighbors and competitors, and yet, we have not even developed roots in product niche-ing.

It is our firm belief that in the final analysis, global competition will favor those who have learned to manage technology well. The likely survivors in the global marketplace are:

- Those who correctly recognize the needs of the market and develop product or process technologies that address such needs;

- Those who can perform a proficient technology foresight or forecast and direct resources to such technological path;

- Those who can devote resources to R&D and use them efficiently and effectively;

- Those who can conduct technology intelligence and have the information for faster dissemination than their neighbors-competitors;

- Those who can build on and perform incremental innovations to existing products or processes in order to exploit unrecognized demand and deliver products to the market before obsolescence and competitors set in; and

- Those who can muster the resources of the state, industry and academe in a symbiotic resource cooperation.

This forum brings together leading technology advocates, industry leaders and key government personalities. Cognizant of the imperatives of global competition, the goal is to identify key technological concerns that bear heavily on the capacity of local producers to compete. We will attempt to identify these issues and to draw up a list of policy options to address them. We hope that these could serve as inputs in rethinking policy directions and in crafting new strategies.

Technology Management for Export Competitiveness: How About Knowledge-Based Products?

Keynote Address

Leandro B. Verceles, Jr.

I am honored to be part of this select group of some of the best minds and key movers of the country in business, government and the academe.

This forum is a recognition of the growing impact of technology and the imperative of exploiting it to promote the national development agenda.

The increasing influence of technology in our export markets cannot be ignored, and this is why our efforts to formulate a technology management framework is laudable and deserves fullest consideration .

You may have observed that presently, technology management in relation to trade does not figure too prominently in our country's development agenda. The Philippine Medium Term Development Plan of the Estrada Administration, for instance, puts emphasis on agriculture as key to promoting our country's global competitiveness. There is merit to this. But let me go on. Aside from this, pre-identified potential sources of incremental growth in exports, according to the Philippine Export Development Plan from 1991 to 2001, are dominated by resource-based products and industrial manufactures. To cite some figures, agricultural resource-based products constitute about US$1.3 billion or 4.5% of the total US$29.5 billion Philippine Export Market. Food-based agricultural products constitute another US$1.2 billion, or 4.3%, of our export market.

In a country of 76 million people by the year 2000 with 40% of the national workforce in the farms, it is but logical that our economic policies focus on agriculture- at least from the standpoint of livelihood, employment and food security. After all, we cannot simply let our people starve. But, whether due to inherent limitations, miscalculated policies, uncontrollable world events, protectionist policies, or furies of nature, agriculture has not produced much economic value-added, nor the value of our agriculture export products been stable.

Other resource-based products, while giving short and medium-term revenue to the country, are slowly stripping the Filipino nation of its patrimony. Together with heavy industries, we are left with the "environmental trash" in terms of soil erosion, deforestation, air and water pollution and other wastes.

Our local market is also small, not enough to maintain economies of scale needed for successful world class industrial ventures. In fact, to rely on the export market may be a daunting challenge considering the enormous costs of shipping industrial goods to the bigger markets abroad. This simply does not make Filipino products very competitive abroad. Our problems could be exacerbated upon the implementation of the GATT-WTO agreements. Do we have the competitive niches to survive in the new economy?

I believe we need to undergo a reality check, reexamine our strengths and weaknesses as a nation, and if found imperative, change gears and consider a two-pronged strategy approach to exports development -- one that is not solely agriculture or resource-based, but rather, one that is also anchored on technology butressed by a strong knowledge-based services sector.

This shift in emphasis will rely on our gradually increasing comparative edge in information technology, as contrasted with our basic dependence on agriculture, from which Filipinos are still deriving low and unstable incomes; or in natural resources that are easily depleted; or, moreover, in big industries that are highly capital-intensive.

Dr. Craig Barrett, Chief Executive of Intel, was right when he observed that "natural resources and labor rates are no longer the only factors needed for a country to remain competitive. One must have the knowledge that can be put to use to create new products."

A high value-added service economy, sustained by a strong information technology program, will open new trade opportunities. And we have all the people we need to be tapped: 60 percent of our population working outside of the farms, the non-agricultural sector. Moreover, our people have relatively good English skills that are required for I.T. work.

The demand abroad is staggering. Electronic commerce, or e-commerce, for instance, is estimated to become an annual trillion dollar industry worldwide by the year 2003. In the Asia-Pacific region alone, there will be a US $200 billion I.T. market per year. Relate this to our 1998 total export revenue of only US$29.5 billion, equivalent to 14.8 percent of the potential regional I.T. market.

To pump-prime e-commerce, a potential export winner for the country, I recently filed House Bill 7104, which serves as a counterpart measure of a similar bill filed in the Senate. Clearly, this will be as challenging as the recent Y2K measure that we also authored, and which was recently signed into law.

Tough issues on e-commerce will have to be resolved. There is the problem of security of transactions, digital signatures, satisfaction of the notarial legal requirement of personal presence before the notary of the affiant and witnesses under a state of own volution and free will. How do you comply with this if you are transacting online and you do not get to meet face to face with the affirming authority? And then there is the issue of admissibility and weight of electronic evidence, and the probative value of electronic documents. Most likely, we will have to reengineer our rules on evidence, our commercial laws, our laws on sales and the notarial law, among others.

The forthcoming convergence of telecommunications, information technology and the media in the world arena will also bring more opportunities as countries, by sheer necessity, will now have to be more liberal with their municipal laws if they are to promote cross border commerce. New international agreements like the GATT-WTO are also creating new trade paradigms. Moreover, nation states are now merging into one global village that is rooted on

ubiquitous electronic networks and driven by a new set of economic rules - the rules of a connected world manifested by the Internet.

Indeed, the active participation by Filipinos in the future global economy would not be far-fetched given a sound technology policy framework that encompasses a national agenda toward developing a knowledge-based service export industry. We will have to create a regime where the intellectual property rights of Filipinos as well as those of other countries in relation to I.T. are truly respected and protected. This is needed if e-commerce is to thrive.

Bringing about this change, however, would require strong advocacy support, particularly from the private sector. A recent study has shown, in fact, that while technology policies are important, technological progress in East Asia must be led mostly by the private sector. David Osborn and Ted Gaebler in their thesis *Reinventing Government* argue that the government should only steer and let the private sector do the rowing in bringing about economic progress.

As a tripartite group, the Society for the Advancement of Technology Management in the Philippines could very well take up this challenge to advocate a change in focus in trade and export development to one that recognizes the huge potential of knowledge-based enterprises.

Various publications have also emphasized the importance of indigenous sources of technological capability, which could initially start with simple innovations and graduate to consequent masteries in research and design.

In the Philippines, semi-conductor and electronics offer some potential. In 1998, exports of these products constitute US$19.8 billion, or 67 percent of the total value of Philippine exports. But at present, there is only assembly activity in these sectors, with very limited knowledge input.

For the medium-term, offshore sourcing of knowledge projects offers considerable promise, such as Y2K or millennium bug remediation, web page design, computer graphics, testing of hardware and software applications, and software programming.

In the long-term, Filipino industries can engage in software design and research. Alongside these initiatives, however, our telecommunications and information infrastructure must be improved. Without such facilities, our economy will surely fail in the new information century.

The directions mentioned thus far would lack the necessary teeth if not backed up by financial resources through allocations in the national budget. The shift to an export development strategy must be reflected in the government's budget for technology promotion and development vis-a-vis other appropriation items .

In 1998, P931.1 million of the government budget was allocated to technological research and development. This represents merely 0.3% of GNP that is far below the minimum prescribed level of R&D expenditure by UNESCO. UNESCO prescribes 1.0% of GNP. In comparison, industrialized countries are allocating as much as 3 to 5% of their GNP to scientific research and development. The UNESCO minimum standard is meant for developing countries like the Philippines, which is necessary to prevent stymied economic growth. Economist Robert Shaw claims that technology has been responsible through the ages for 80% of economic growth.

This representation has filed a bill in Congress requiring the government to allocate a minimum of two percent of the total GNP for scientific and technological research and development. This will hopefully generate for R&D some P18.6 billion per annum. Even at 1% of GNP, the minimum requirement under UNESCO, the allocation will increase to P9.3 billion- still a respectable amount, not just for I.T. but for all of technologies.

With sound policy environment, necessary infrastructure, and technology management efforts firmly in place, I believe we can elevate our knowledge-based industries, and information technology most especially, to a higher level as a primary export development strategy for the country.

REFOCUSING IPR REGIMES IN Developing Countries: An Overview

Adelardo C. Ables and Ma. Felisa Batacan

Developing countries must learn to negotiate internationally for IPR regimes that consider the urgent need to narrow the knowledge gap, while maintaining incentives for knowledge producers to invest in research. The matter of protecting developing nations' patents in the developed nations should be a key issue in the negotiation table. So are indigenous or traditional knowledge that may be susceptible to piracy. These concerns must be balanced with the recognition that despite initial enforcement pains, a well functioning IPR regime provide, a conducive environment for foreign direct investments and for the transfer of technology.

Mention intellectual property rights and the first things that come to mind are primarily economic and commercial in nature: patents, brand names and trademarks, piracy and counterfeiting. It is no accident that the last two decades have seen the emergence of a primarily commercial view of intellectual property, as the more developed nations of the world have sought to protect their commercial and economic interests from losses incurred from violations of IPR laws.

These losses may not be monetary: in many cases, they include loss of consumer goodwill for the genuine product, health risks from counterfeited health and medical products, and loss of jobs. In the European Economic Community, for example, an estimated 100,000 jobs are lost annually to IPR violations against EEC goods and products. In the Philippines, the estimate stands at 20,000 jobs lost.

Throughout the world, therefore, it is more common to find regulatory efforts of governments, industries, academe and non-governmental or consumer-related organizations focused on intellectual property violations relating to commercial, industrial or scientific literature, products, processes and techniques. These violations include patent and copyright infringement and deceptions practiced on unsuspecting purchasers who buy goods in the belief that they are genuine. The rise of computer use worldwide has also seen the growth in computer software counterfeiting.

The Philippine Legislative Environment and Efforts to Comply with TRIPS Provisions

In 1997, President Fidel V. Ramos signed the Berne Convention on behalf of the Philippines. The Berne Convention for the Protection of Literary and Artistic Works was established in Berne,

Switzerland in 1886. It is the world's oldest and most widely adopted international copyright treaty. The text has been revised, and the current edition dates back to the 1971 Paris text. In signing the convention, the Philippines has become a party to calls for concerted aggressive action against all forms of violation of IPR. Among other things, the Convention binds signatory countries to adhere to the Convention's provisions, and threatens countries that fail to act on the Convention's major points. The United States, in particular, is the most active enforcer of the Convention, and often threatens violators with the loss of development aid.

The Philippines is also a signatory to the following international conventions, agreements and treaties:

1. The Paris Convention for the Protection of Industrial Property (since 1965);
2. The Budapest Treaty on International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (since 1951);
3. The Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (since 1984);
4. The ASEAN Framework Agreement on Intellectual Property Cooperation; and
5. The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights.

On January 1, 1998, Republic Act No. 8293, entitled *An Act Prescribing the Intellectual Property Code and Establishing the Intellectual Property Office*, took effect. Among other things, the Act institutes an Intellectual Property Code, abolishes the Bureau of Patents, Trademarks and Technology Transfer in favor of an Intellectual Property Office transforms the Copyright Section of the National Library into a Division of the Intellectual Property Office. The National Library however, continues to have the power to collect fees in connection with copyright registration.

RA 8293 aligns existing laws on patents, trademarks and copyrights with the WTO TRIPS agreement. The Trademark Law as contained in the same Republic Act provides also for the protection of geographical indications. The protection of undisclosed information or trade secrets, on the other hand, is provided for in the Contract Law under the Civil Code of the Philippines.

Emerging Views on IPR Protection

For many developing countries like the Philippines, the threat of trade sanctions, loss of development aid and other retaliatory measures undertaken by developed nations in relation to non-compliance with international IPR conventions is daunting, to say the least. For the last few years, the focus of the Philippine government with regard to IPR protection has been to strengthen the legislative and administrative compliance infrastructure to avoid such sanctions. And certainly, these efforts have been necessary; stricter IPR protection regimes allow greater access to foreign markets and technology for countries which enforce international IPR standards, compared with those whose lack of legislation deters investors.

However, as international treaties progressively tighten intellectual property rights (IPR) protection regimes in developing countries, there has been a backlash against developed countries which stand to benefit most from such treaties. In *Knowledge for Development*, the 21st report in the World Bank's annual series on World Development, the bank argues that stronger international IPR legislation risks "shifting bargaining power towards the producers of knowledge, and increasing the knowledge gap" between industrialized and developing countries.

It has called on developing countries to take a more proactive and hard-line stance in international IPR negotiations.

The 1994 TRIPS agreement has set minimum standards for IPR protection, as well as an international legal mechanism, through the World Trade Organization's dispute settlement procedure, to sanction countries that fail to abide by the legislation. The World Bank report, however, points out the need to strike a balance between providing incentives for generating new knowledge, and creating conditions for its dissemination. It warns that there is now a risk of excessively strict IPR protection regimes adversely affecting follow-thru innovations that draw on patents, and actually slowing the pace of technological development. Of particular concern is the current tendency for patents to cover not just products but broad areas of technology, in particular in biotechnology. "So many industrial-country firms are acquiring strong IPR positions, often covering fundamental research tools as well as marketable products, that it may prove hard for new firms and researchers to elbow into this new global industry," says the report.

The report also argues that IPR often fails to stimulate research in many areas of health and medicine, such as AIDS or malaria, where, as it points out, the "social returns" of an innovation "to all those benefiting from it." — far exceed the returns to investors. Here, it says, public authorities have a responsibility to subsidize research or to provide financial incentives to the private sector, as recently proposed for development of anti-malarial drugs.

Developing countries like the Philippines, must learn to negotiate on the international forum IPR regimes that consider the pressing need of narrowing the knowledge gap, while maintaining incentives for knowledge producers to invest in research. They should also keep up with "new issues for negotiation, such as biotechnology and information technology". For example, they need to aggressively defend their rights in negotiations with companies seeking access to their resources. In 1990, world sales of medicines derived from plants discovered by indigenous peoples amounted to $43 billion, with hardly any financial return to these groups.

The Philippines is not the only country in the world whose indigenous peoples are struggling to find a voice above the din of "progress." And the problems that indigenous peoples go beyond the purview of cultural and intellectual property rights. The ongoing Human Genome Diversity Project or HUGO, for example, seeks to collect genetic material from the different races of the world for nebulous scientific and commercial purposes, while its moral, ethical, socio-economic, physical and political implications have yet to be thoroughly discussed, understood and approved by indigenous peoples.

The Costs of Reforming IPR Regimes in Developing Countries

Despite already tight IPR protection provisions imposed on developing and least-developed countries, there are increasing pressures to further improve IPR implementation (TRIPS+). These measures have been proposed in fora like the Free Trade Area of the Americas (FTAA) and other bilateral trade negotiating processes. Lost in the argumentative duress is the fact that many developing countries lack even the most basic information on the economic costs and benefits of accepting TRIPS+ provisions.

This brings forth the important issue of determining who should pay for the costs of these regulations. One answer to this question comes from the software industries, which propose that consumers should be charged. Powerful software manufacturers in the US and other developed countries lobby for domestic legislation requiring enterprises to publish their software licenses

along with their financial statements. Other sectors suggest that IPR enterprises should be more interested in expanding their markets and accepting their share of the cost of IPR protection i.e, that information enterprises should invest in developing protected versions of their products for different markets. This latter approach considers consumer interests and the benefits of developing competitive positions in expanding markets. An adequate balance of IPR protection costs between consumers and enterprises is required for these markets to keep growing.

While TRIPS compliance is a step forward for many developing countries in terms of enabling their integration into an established global IPR environment, the matter of protecting developing nations' patents in the developed nations is also a great fiscal burden for developing nations. It has to be pointed out that patents are territorial, and for many researchers, scientists, inventors and even entire R&D institutions in developing countries, the cost of obtaining patents in countries other than the country of origin is too prohibitive to make adequate protection possible. In many cases, multinational corporations purchase these patents along with the domestic companies. In the case of software, this is particularly true, and hardware developments tend to follow the same pattern. This is also true of biotechnology where the development and testing costs often exceed the budgets of developing nation's companies or R&D institutions.

Database ownership is another difficult issue. If that data crosses international borders, a source or sender may own the data initially, but through the process of being collected and organized, this ownership can be brought into dispute because the data in its new form is often considered a product of intellectual creation. The object here seems to be the preservation of the freedom of information and technological exchange for developing nations, while protecting the rights of patent and database owners in developed countries. The laws probably need to be modified to allow for some sort of legal consultation which does not imply loss of ownership.

What about the need for developing countries to narrow the knowledge gap? The imitation model may not be a feasible alternative for small developing economies that need to be fully integrated to international markets. Reverse engineering practices of countries like Japan, or Korea, both of which relied heavily in the past on strategies such as incremental innovations, may no longer be a valid strategy for other developing countries who must keep up with the rapid pace of technological development and increasing cost of capital and machinery. Here the real issue is how to integrate the proprietary approach with the need to promote domestic competitive and efficient markets that benefit national consumers.

These considerations are equally important in answering the challenges for developing countries' agricultural sectors caused by the advent of biotechnology. One example is Peru, a country in which agricultural patents or breeder's rights have been accorded insufficient IPR protection. Agricultural research centers in national universities are filled with successful experiments that have never gone into the market and have never benefited domestic producers. Agricultural producers that have developed new varieties were very frustrated when they realized that it was very easy for their customers to benefit from illegal sales to other producers. In such cases the promotion of IPR protection will generate real domestic markets for the varieties that already have been developed, more resources for research in biotechnology and new incentives for private producers to invest in the development of new varieties for export markets. This is the positive role that IPR protection plays in promoting indigenous innovation in sectors where market mechanisms need to be developed.

The traditional system of transmitting knowledge in the native communities needs to be preserved and new resources have to be generated for helping these communities to maintain natural biodiversity. The proposals for sui generis protection for the knowledge of native

communities and for the access to genetic resources play an important role in developing new efficient markets for research activities in developing countries. These schemes should not be considered only from income distribution perspectives, but mainly from the point of view of the need to design adequate market mechanisms that will promote domestic R&D activities consistent with sustainable development and distributive considerations.

How can bilateral and multilateral organizations assist developing countries in reforming their IPR regimes?

The WIPO and other developed countries international cooperation organizations are interested in financing strategies for reforms of IPR laws and enforcement procedures taking into account the "TRIPS standards of protection" or training IPR officials in developing countries. These efforts are very important for reforming IPR regimes in developing countries, and it is more important that they should be adapted to the specific needs of each country. For example, the fact that small countries should be more interested in cost-saving IPR administrations does not imply that some kind of international division of labor needs to be developed especially in some activities that will help to finance sustainable development efforts (e.g., biodiversity or biotechnological patents). This is a very strong argument for supporting re-engineering efforts in the IPR offices in developing countries, according to their national R&D strategies.

One area of concern is the protection of IPR from developing countries in developed countries. The pressure usually comes from the north to the south for improving IPR enforcement mechanisms. But the truth is that IPR administrations in developed countries do not pay much attention to title-holders from developing countries. One case cited to illustrate this is a creation that originated in Peru and has been granted a patent in that country. Subsequently, another individual was able to obtain patent for the same creation in a developed country. Now this may be a rarity but is certainly a valid cause for concern.

Another important area pertains to the adoption of adequate competition policies that will help promote markets for information, goods and services from developing economies. This is one of the best incentives program for domestic IPR enterprises and calls for thorough review of existing regulatory and technological governance, an area wanting scholarly attention especially in developing countries like the Philippines.

Protection of Digital IPR

One key area of IPR protection is in the IT/digital sphere. In the 1998 annual independent study on global software piracy conducted by the Business Software Alliance (BSA) and the Software & Information Industry Association (SIIA), the two leading trade associations for the software industry, it is estimated that, of the 615 million new business software applications installed worldwide during 1998, 231 million or 38% were pirated. This represents an increase of 2.5 million more applications than were pirated in 1997. The BSA is composed of such member-firms as Adobe, Attachmate, Autodesk, Bentley Systems, Corel, Lotus Development, Macromedia, Microsoft, Network Associates, Novell, Symantec and Visio, while the SIIA is the principal trade association of the software code and information content industry. SIIA represents more than 1,400 leading high-tech companies that develop and market software and electronic content for business, education, consumers and the Internet. Hundreds of these companies look to SIIA to protect their intellectual property around the world.

Revenue losses to the global software industry due to piracy were estimated at US$11 billion. North America, Asia and Western Europe accounted for the majority (80%) of revenue losses. The ten countries with the highest dollar losses due to software piracy are (in rank order): the United States, China, Japan, Germany, the United Kingdom, France, Brazil, Italy, Canada, and Russia. Total losses for these countries were US$7.3 billion or 67% of worldwide losses. In terms of piracy rates, the study estimates that more than nine in ten business software applications in Vietnam (97%), China (95%), Indonesia (92%), and Russia (92%) are pirated.

Due to the economic weaknesses in 1998, Asia/Pacific is now ranked as the region with the second highest dollar losses, after North America. Total losses of US$3 billion were estimated for 1998, down from US$3.9 billion in 1997. The countries with the highest rates were Vietnam (97%), China (95%), and Indonesia (92%). Countries with the highest dollar losses were China (US$1.2 billion), Japan (US$597 million) and Korea (US$198 million).

Clearly, further education and effective enforcement is necessary, but the BSA also calls on governments throughout the world to take a position of leadership when it comes to software ethics and legislation efforts. Proper software management will lead to reduced piracy and an increase in jobs and global productivity.

The US-based BSA has already flexed its global muscle in a number of software piracy cases worldwide. In 21 June 1998, it reached a settlement with a Kyoto-based manufacturer over alleged illegal copying of software of Adobe Systems Inc, Apple Computer Inc, Inprise Corporation, Justsystem Corporation, Microsoft Corporation, Symantec Corporation, and Visio Corporation. The settlement consisted of the following points: 1) complete elimination of all illegal copies of software; 2) purchase of authorized software products; 3) payment of a settlement, 4) implementation of software controls; 5) agreed-upon penalty should the company be found again to be using illegal software; and 6) the right for BSA to audit the company in the future. According to the settlement, the manufacturer agreed to pay a settlement sum of 100,578,318 yen.

In Copenhagen, it has shut down the largest software counterfeit and Internet sales operation in the European Union. The operation, based in Denmark, had produced 125,000 CD-ROMs containing US$237 million worth of several BSA members' software. The CD-ROMs were manufactured in the EU and advertised on the Internet. The 125,000 CD-ROMs contain illegal copies of various Adobe, Autodesk, Corel, Microsoft and Symantec software programs. The Internet was used as the key tool to advertise the sale of the counterfeit CD-ROMs. BSA is working to reduce the distribution of illegal software programs on the Internet, and has an investigation team devoted exclusively to stamping out Internet piracy - another key issue in the IT/digital IPR protection field since a huge number (about 85,000) of so-called 'warez' sites offer copies of various software programs downloadable from the Internet for free or for the merest fraction of their licensed versions.

The issue of "fair use"

The question of software and digital piracy often brings up the issue of fair use. Under Philippine law, fair use of a copyrighted work includes criticism, comment, news reporting, teaching, the making of copies for classroom use, scholarship and research. If the original material object of a work is in a fragile state - such as a book - and cannot be lent in its original form to a legitimate user, the making of copies is perfectly legitimate and does not constitute an infringement of a copyright. It has been aired in IPR fora that the government's current policy of raiding computer

schools using pirated software was questionable, both on legal grounds and on the grounds that the government itself, as an enforcer of IPR protection legislation, is not blameless in the use of pirated software. It has been argued that for many developing and least-developed countries, the use of pirated software is only a method of narrowing the huge IT/digital knowledge gap in the interim.

The good news is that many software companies are working to address this knowledge gap, recognizing perhaps that broadening the access of developing countries to legal software in both price and service terms is good business. Licensed software is becoming easier to purchase as software companies are increasing their sales and service presence in many parts of the world. Users support of software products is increasing outside of the United States. Governments are more supportive of protecting and enforcing intellectual-property rights. And best of all, software prices continue to tumble, making legal software more affordable.

IPR and Exports

IPR's correlation to trade (and investments) can be summarized in two ways: (i) IPR is meant to provide global protection to locally-developed and indigenous knowledge, goods and processes leading to enhanced international trade and consumer protection; and (ii) a robust IPR regime provides a conducive environment where foreign investors can bring in technology, set up local operation, and market their products locally and abroad. Improved investment environment and foreign infusion of technology lead to upgrades of local industry processes, positive multiplier effects and ultimately increasing global competitiveness. An even playing field demands reciprocal treatment of IPRs across economies. Moreover, investors should feel confident that proprietary assets are given adequate protection against counterfeiting or other forms of rights infringements; otherwise, investors would seek other locations. Prospective host economies thereby forfeits trade benefits in favor of IPR-friendly hosts.

According to the Office of the Presidential Adviser for Information Technology and Communications, IT investors look at three factors in deciding where to invest: (a) educational level; (b) infrastructure, especially tele-communications; and, (c) intellectual property rights. Philippine revenue from software exports program is reported at US$ 250 Million or a mere 2% of India's US $2 Billion comparable income. A more focused IT investment program is strategically important because of a 100% value added in software development; for semiconductors, value added is at 30%, and for other industries, 15%. A soft IPR regime may not be conducive to IT investment, and would therefore lead to opportunity gains for Philippine competitors in the region. Given a projected US$300 billion investment by US firms in Internet content creation, marketing and sales, and professional services, it is logical that economies with qualified IT professionals partake of this huge potential.

In the case of automotive and vehicle parts manufacturing, increasing competition, made more acute by a debilitating crisis, is redefining global production systems and market alliances. Because of the large multiplier effects in the automotive and parts business, countries are increasingly competing for the privilege to host automotive manufacturing facilities. Of strategic import, however, is automotive parts, a global business, where longer term income streams translate to sustained development of ancillary sectors and to increasing employment. However, counterfeiting of brand names (and even of whole cars) and unauthorized use of industrial designs and other IPR infringements not only lead to reduced confidence in automakers and the manufacturers of genuine parts but also impede the sound development of the replacement parts

market. IPR violations thus lead to foregone trade and impede technology transfer where otherwise a stronger IPR regime could provide encouragement to the development and growth of complementary sectors. Given a strong regulatory regime and sound technology governance, the entry of foreign players in local industries can lead to a situation where even small and medium scale enterprises can benefit from the spread of new technology.

In the agricultural sector, the advent of biotechnology poses serious IPR challenges for resource-rich developing countries. It is worth reiterating the case of Peru, where agricultural patents or breeder's rights borne out of a rich bio-diversity, have been accorded insufficient IPR protection. Successful R&D experiments that are lacking in trade support have never gone into the market and have never benefited domestic producers. New varieties developed were being sold illegally in the market, thus depriving local institutions of additional resources for biotech research. It also dampens incentives of the private producers to invest in R&D of new varieties for the export markets. In such cases the promotion of IPR protection will generate real domestic markets for the varieties that already have been developed. Such is the positive role that a strong IPR regime can play in promoting indigenous innovation especially in sectors where modern market mechanisms need to be developed.

In the race to become globally competitive, developing countries are thus confronted not only with relatively high R&D operating costs but also an additional fiscal burden of providing IPR protection to their nascent knowledge sectors. Developed countries enjoy some competitive advantage in these activities, and do employ scientists from less developed countries to pursue their R&D missions. For tactical considerations, it is important for governments of developing countries to provide access to an adequate network of technological knowledge services (domestic or foreign) that can benefit their enterprises. IPRs are very important for these services to operate according to economic efficiency considerations.

Implementation and Law Enforcement Problems of IPR

Certain problems are to be expected in the implementation of the IPR, the Law being a recent creation. These problems range from inadequacies in the law itself to conflicting regulations in its implementation. The Economic Intelligence and Investigation Bureau (EIIB), one of a few government agencies conducting operations against IPR violations, traces the problems to the following factors:

1. *Inadequate pool of IPR-trained judges.* While the Supreme Court has started training and designating judges to preside on IPR cases, there is still a dearth of competent RTC judges to handle IPR cases especially in the provinces. Having to study the new IPR law, judges are often reluctant to issue search warrants for suspected IPR violators. "Chambering", a practice where judges seek the opinion of trial lawyers in the interpretation of the law within the confine of judge's chamber, is not unusual for IPR.

2. *Procedural flaws in the raffle of IPR cases.* The tradition of raffling cases to judges includes those who have not received training on IPR cases. The Inter-agency Committee on IPR has already recommended that IPR cases be raffled only to IPR-designated judges instead of including all judges. This recommendation has yet to be acted upon.

3. *Conflicting regulations.* The Bureau of Food and Drugs has been issued a Temporary Restraining Order for issuance of seemingly conflicting regulations in the case of a liquor

importation. An earlier BFAD regulation that limits importation of branded liquor to authorized distributors has been countermanded by a more recent directive allowing "parallel importation" or the importation of the same product by anybody. The authorized distributor went to court and a TRO was issued.

4. *Bilateral resolution of IPR cases through "amicable settlements".* An illustrative case pertains to the Philippine Association of Recording Industries (PARI). Armed with a power of attorney by affiliated companies, PARI may enter into an amicable settlement with the offending parties in resolving IPR violations, sometimes without consultation with government prosecutors. A number of EIIB cases have been settled in this manner. This practice does not contribute to jurisprudence and leaves government law enforcers and prosecutors demoralized.

5. *Absence of regulation in cases where there are no complainants.* In the course of EIIB intelligence activities, a number of IPR violations have been uncovered but cannot be pursued in the absence of complaints. One recommendation to address such cases is to empower the Inter-Agency Committee on IPR, a Presidential creation, to initiate a complaint against violators;

6. *Inadequacies of the Law.* In a recent case, EIIB operatives apprehended a wholesale buyer of fake liquor. The presiding judge ruled that the buyer cannot be prosecuted because he acted in good faith having had no knowledge that what he purchased was a fake. It turned out that the fake liquor came from the authorized distributor itself. It seems this case is internal to the firms and should be settled within the ambit of their bilateral contract. However, it is apparent that the law has been violated and something ought to be done about it.

7. *Loss of interests on the part of offended parties.* There are cases where complaining companies lose interest in the prosecution of cases and simply do not appear in court proceedings. The reason(s) for such behavior range from a forging of amicable settlements between contending parties, to a simple loss of interest to prosecute.

8. *Delay in the publication of IRRs.* Until now, the Implementing Rules and Regulations on Copyright Law has not been published. Accordingly, prosecution of cases is held in abeyance.

9. *Issue of moral ascendancy of government.* Although being addressed, the issue of government agencies using pirated software still hound the bureaucracy and is invoked by some sectors as argument to support such malpractice. The government's current policy of raiding computer schools using pirated software has been questioned along such arguments

Conclusion

This paper points out that while compliance to international treaties and agreements on IPR protection is necessary on many fronts – protecting consumers, building goodwill with trading partners, creating jobs and so on – developing countries must simultaneously ensure that the same mechanisms for protecting intellectual property produced outside of their countries are equally applied to the protection of locally produced intellectual property. A common complaint is that the Philippine government does not provide sufficient support, to local scientists, inventors

and artists even in terms of mere access to information on copyright or patent procedures The legal, administrative, procedural and enforcement infrastructure must therefore be drastically improved to encourage the development and protection of local IPR.

Legislative initiatives in defining the extent of IPR in the case of patents, for example, should contribute to follow-thru innovations instead of legally estopping further product and process improvements whose social returns are much higher than those accruing to patent holders. Clear and definite laws contribute to better adjudication of court cases whilst contributing to effective law enforcement. On the part of the executive branch, accelerating the learning process calls for rationalizing the mandates of various agencies conducting IPR-related activities, (to wit: the National Bureau of Investigation, Department of Trade and Industry, Economic Intelligence and Investigation Bureau, and Intellectual Property Office) and unifying the prosecution aspect under the Department of Justice. Improving court administration requires continuous education and training of specialized courts and judges on the dynamics of IPR.

The private sector must also bear responsibility for bringing themselves up to date on IPR. An IPR education and training could generate effective results if focused on the peculiarities of related industries. This would call for specialized teams with adequate sectoral expertise to conduct such an education campaign that would dwell on intellectual property rights and obligations. The academe can make contributions in juxtaposing IPR governance with technology management, the dynamics of technological change and industrial organizational growth.

In this regard, tripartite consultations among industry, government and academe should enhance IPR-related issues such as competition policy and regulatory governance. Institutional support for scholarly research and studies on emerging best practices and problem-solving approaches can contribute to a better elucidation and resolution of issues. Moreover, a tripartite initiative free from the baggage of sectoral interests would be ideal for developing a technology database that could serve as a clearing house for IPR-related inquiries and/or monitoring functions.

A local technology database is a positive step towards the clamor of developing nations for a universally applicable patent that should provide equitable IPR protection across countries, developing and developed. A universal patent provides equitable protection to intellectual innovations by unbinding territorial conditions on patents. A sustained campaign on the part of developing nations should lead to standardization not only of products or process but also of concepts. There is a growing awareness in many developing countries, that even the concept of what constitutes intellectual property must be redefined. In a number of fora, developing countries have begun to insist on the inclusion of the protection of folklore, which includes a wide range of traditional knowledge including pharmacologies, ethnobotanies, weaving and dyeing techniques, building techniques, cultural expressions, resource substitution and technologies for protecting the environment, in international negotiations on trade-related IPR issues. The fact is that much of what is considered folklore has potential commercial value and any profit that can be made from its commercialization must be shared or returned to the communities that produced it.

The significance of these issues is obvious for Philippine exporters; they must aggressively pursue the protection of any intellectual properties born of their enterprise, whether they may be in terms of product design, products, technologies and techniques, and so on. They must lobby for a domestic IPR protection regime that strives not only for local compliance with

international IPR conventions but which provides adequate and equitable protection for domestic IPR.

On the other hand, it must be noted that respecting the IPR of other nationalities facilitates and contributes to more robust trade. A more developed trade opens better opportunities or possibilities for further follow-thru innovations that can redound to the local economy. In a secure environment where products, processes, ideas and information can flow unhampered by threats of piracy and discourteous behavior, the multiplier effects of an IPR-friendly regime can outweigh the costs of protectionism and IPR infringements. Foreign investors that would otherwise be driven away by IPR violations would be encouraged to set up shops to mount and operationalize globalization strategies. Foreign exchange earned reinforces the dynamics of domestic economy in terms of providing funding support to strengthen local industries to make them more internationally competitive.

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APPENDIX
INDIGENOUS OR TRADITIONAL KNOWLEDGE WITH POTENTIAL COMMERCIAL AND EXPORT VALUE

At present, the primary defense against violations of cultural and intellectual property rights rests with copyright laws which are obviously inadequate to defend the rights, knowledge and expressions of indigenous peoples.

Republic Act No. 8293 is a case in point. For one thing, the law is so phrased as to effectively exclude communal cultural and artistic expressions. When the law discusses 'authorship' or 'work', it does so in the conventional Western sense, meaning an individual person or persons who 'created' an artistic work. Little in the law provides for collective expressions that have evolved naturally over time; and although it speaks of collective work, the definition is so narrow as to involve merely individual persons who for one reason or another have come together to produce one 'work'. How does this narrow definition encompass expressions, for example, which change "as they often do in traditional art forms" with each performance, or which have not yet been written down? How does it encompass traditional knowledge which is not collected into any shape or form that is recognizable as a 'work' in the conventional sense?

The concept of 'ownership' under the law is also inadequate. Do indigenous peoples actually conceive of ownership as we do, much less of ownership over expressions that have evolved over time and are not 'created' by one person? Obviously these questions are not addressed by existing legal frameworks for the protection of cultural and intellectual property rights. The primary reason for this is that our conception of intellectual property is still very much rooted in Western ideas and legal frameworks.

The creation of the Intellectual Property Office of the Philippines manifests this mindset clearly. A few years ago, when the IPO had just been newly established, an advertisement appeared in the Manila Bulletin announcing vacant positions in that agency. Almost all of the positions advertised called for professionals in the field of engineering, natural sciences, medicine, computer science, law, finance or economics. The IPO was organized by the Department of Trade and Industry. Is government then of the view that intellectual property is limited to that which is conventionally commercial and marketable, like software and cough syrup? Clearly some adjustments - and fundamental ones at that — need to be made.

Furthermore, this view of the commercial nature of intellectual property results in a misconception that most intellectual property has its provenance in the developed nations of the world. Effectively, thanks to inadequacies in domestic laws, the Philippine state may extend greater protection to, say, a Microsoft computer game than to the traditional pharmacology of the Ibaloi, if such a pharmacology exists. Therefore, the issue of reciprocity raises its ugly head and forces us to confront some fundamental questions: first, whether or not we are able to recognize the rich lode of intellectual property that resides among our indigenous groups; and second, whether or not we are able to protect that intellectual property against all comers. Numerous cases have been documented of indigenous works taken from developing countries and subsequently peddled as art works or museum pieces commanding exorbitant prices.

In March 1996, Senator Juan Flavier filed Bill no. 1467, which subsequently became Republic Act 8371, or An Act to Recognize, Protect and Promote the Rights of Indigenous Cultural Communities/Peoples. The Act, approved in July 1997 by the Senate and the House of Representatives, aims to address the issue of indigenous peoples' survival, their rights to ancestral domains, social justice, human rights, self-determination and empowerment, and cultural integrity.

The State, through this legislation, has declared that it shall protect indigenous cultural communities' and indigenous peoples' ancestral domain to ensure their economic, social and cultural well-being. The ancestral domain referred in this bill includes ancestral lands, titled properties, forests, pasture, residential, agricultural and other lands individually owned. These could also be lands which may no longer be exclusively occupied by indigenous cultural communities or indigenous peoples, but which they traditionally had access to for their subsistence and traditional activities, including home ranges for groups which are still nomadic and/or shifting cultivators.

The protection of ancestral domains, however, which is the focus of the above law, is only indirectly beneficial to the cultural and intellectual property rights of indigenous peoples and indigenous cultural communities. RA 8371 also contains provisions for the protection of cultural integrity, recognizing community intellectual rights and the right of indigenous peoples to the "restitution of cultural, intellectual, religious and spiritual property taken without their free and prior informed consent, or in violation of their laws, traditions and customs".

Moreover, the law recognizes that indigenous peoples are entitled to the recognition of the full ownership and control of their cultural intellectual rights, citing special measures to "control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, including derivatives of these resources, traditional medicines and health practices, vital medicinal plants, animals and minerals, indigenous knowledge systems and practices, knowledge of the properties of fauna and flora, oral traditions, literature, designs and visual and performing arts".

Traditional knowledge systems are practiced by indigenous and rural peoples all over the world, and involve the knowledge they have established through their close connection to the lands on which they live. Although much discussion on this topic focuses on traditional knowledge as it relates to the environment and ecology, it is important to note that it is a form of knowing that permeates the spiritual, political and social elements of life as well. Indigenous people around the world may possess traditional knowledge which, if not in conflict with their local cultural norms, could provide them with a competitive advantage. An example is the Aboriginal Business Canada (ABC), a program within the Canadian Federal Department of Industry. Aboriginal environmental firms affiliated with ABC have put forward sustainable solutions and technologies to Canada's environmental problems in the fields of fisheries and forestry management, to recycling and alternative fuel development. But as always, questions quickly arise as to the cultural conflict resulting from registering and commercially benefiting from these practices.

In June 1983, the First International Conference on the Cultural and Intellectual Property Rights on Indigenous Peoples was held in New Zealand. The Conference was attended by 150 delegates from fourteen countries, including Ainu (Japan), Australia, Cook Islands, Fiji, India, Panama, Peru, Philippines, Surinam, USA and Aotearoa.

The landmark conference was in preparation for the 1993 celebration of the United Nations International Year for the World's Indigenous Peoples. Over six days, the delegates of the conference were asked to consider a wide range of significant issues, including the value of indigenous knowledge, biodiversity and biotechnology, customary environmental management, arts, music, language and other physical and spiritual cultural forms. On the final day of the conference, the delegates produced a document now known as the *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*.

The Mataatua Declaration was specifically directed toward scientific studies based on the traditional knowledge of indigenous peoples. It stated that any commercialization of such knowledge (e.g. traditional plants and medicines) must be managed by the indigenous peoples who have inherited such knowledge. It proposed a moratorium on the commercialization of indigenous medicinal plants and human genetic material must be declared until indigenous communities have developed appropriate protection mechanisms.

Moreover, it argued that companies and institutions, both governmental and private, must not undertake experiments or commercialization of any biogenetic resources without the consent of the appropriate indigenous peoples. It recognized the value of strengthening current scientific and environmental research by means of increasing the involvement of indigenous communities.

The Declaration did not focus exclusively on the scientific knowledge held by communities. It also dealt with the matter of cultural objects. Among its prescriptions are that human remains and burial objects of indigenous peoples held by museums and other institutions must be returned to their traditional areas in a culturally appropriate manner. The delegates also proposed that museums and other institutions provide, to the country and the indigenous peoples concerned, inventories of any indigenous cultural objects still held in their possession

Highlights of the IPR Open Forum

Government efforts. The Philippine government has undertaken several measures to comply with international IPR laws:

a) Creation of the Inter-Agency Committee on IPR;
b) Issuance of Memorandum 115, series of 1995 mandating all government offices to legalize their computer software;
c) Enactment on June 6, 1997 of Republic Act No. 8293 otherwise known as the Intellectual Property Code of the Philippines to update the old laws provided for under Republic Act No. 165 and 166 of 1947 as amended;
d) Participation in and organization of seminars, training programs and symposia with the World Intellectual Property Organization, the Japan International Cooperation Agency, the Japan Patent Office, the European Patent Office and the Korean Industrial Patent Office;
e) Modernization of the Bureau of Patents, Trademarks and Technology Transfer office and their facilities;
f) Designation by the Supreme Court of special courts to hear cases on the violation of IPR,
g) Organization of seminars with the law enforcement agencies, the prosecution service office, the special courts judges and the non-government offices to enhance awareness of the existing agreement on trade-related aspects of IPR.
h) Organization of IPR task forces such as the NBI, the DOJ, Customs, EIIB, Videogram Task Force, National Telecommunications Task Force and several other task forces which are tasked to undertake enforcement of property rights of intellectual property owners

Copyright Law guidelines. The final draft of the copyright safeguards and regulations to implement the Copyright Law and other provisions of Republic Act 8293 is ready for publication. These safeguards and regulations will cover the copyright functions of the National Library and other provisions of RA 8293.

Recommendations on Trips. The speaker proposed the following recommendations in dealing with the problem of compliance to the TRIPS provisions:

a) First, awareness is more than half of the problem and is a major part of management. Hence, people in government and in industries using materials with copyright content should familiarize themselves with TRIPS Agreement provisions;

b) Second, government agencies and the judiciary should develop guidelines on what constitutes fair use of material with copyright content. Jurisprudence should help evolve further refinements.

c) Third, broadcasting networks should make an inventory of their audio-visual collections to determine which contain unauthorized copyright material. They should negotiate with the copyright holders for the use of such creations.

d) Fourth, the formation of collecting societies cum clearinghouses should be encouraged and supported by the government.

Scope of patent protection. Patents remain territorial; a Filipino who wants to protect his invention has to file a patent application in every country. This process is definitely a very expensive undertaking for most Filipino inventors, and makes it difficult for them to assert their intellectual property rights.

Reciprocity in IPR protection. It was pointed out that the paper presented too much emphasis on Philippine compliance to international IPR conventions to protect the first-world's intellectual property rights, but there is not much emphasis on how to protect intellectual property coming from the domestic sphere, such as indigenous technologies and cultural expressions. It is ironic that the country can be forced to protect the rights of large corporations like Microsoft but the same protection cannot be extended to, say, an Ibaloi ethnobotany or pharmacology. The paper presenter responded that there was a diplomatic conference recently which resulted in two new copyright-neighboring rights treaties forged in Geneva by the WIPO. The developing and least-developed countries representatives wanted to include in the discussions the protection for folklore in exchange for the desire of most developed countries to give sui generis protection for databases. Regional consultations on protection of expressions of folklore are also being conducted by the WIPO because of that move by the developing and least-developed countries to balance the equation somehow. Thus, Filipinos should also be prepared to defend their intellectual property rights in the context of international conventions. It was pointed out that industry associations (e.g. composers, writers, etc.) in the arts that are already addressing the problem of protecting domestic IPR, may be tapped to increase awareness of international IPR conventions.

Bio-prospecting or collection of biological and genetic materials. As far as bio-prospecting is concerned, the academe and the Department of Science and Technology are developing measures to protect indigenous materials from foreign poachers. Foreign scientists/prospectors have to obtain permission from the government before they can collect organism from a certain site and to provide reason why. A public hearing was held last May 19 on a legislative bill concerning plant variety protection. DOST is working for the enforcement of sui generis activity before December 31, 1999.

Fair use. Regarding the subject of fair use, the issue of police raids against pirated software in schools was discussed. It was argued that if IPR were to be purely enforced, then government must set the example. At present only a few agencies use licensed software.