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**Council for Trade-Related Aspects of
Intellectual Property Rights**

**EXTRACT FROM MINUTES OF
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COUNCIL FOR TRADE-RELATED ASPECTS OF
INTELLECTUAL PROPERTY RIGHTS**

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ITEM 13 INTELLECTUAL PROPERTY AND INNOVATION

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13 INTELLECTUAL PROPERTY AND INNOVATION

254. The Chairman said that this item had been put on the agenda at the written request by the delegations of Brazil and the United States.

255. The representative of the United States said that his delegation was pleased to join with Brazil in sponsoring this item on the agenda. Innovation was a common objective shared by all whether as innovators or consumers or as governments. Innovation offered tremendous potential not only to build businesses, to generate revenue and to create jobs but also to address critical global questions and challenges as innovation could improve living standards. The objective of the two delegations was to have an exchange of information on national innovation strategies and the role of IP protection played in fostering innovation. Their hope was that by sharing national experiences Members might contribute to the mutual goal of providing stable and predictable environments to promote and benefit from innovation.

256. Innovation policy in the United States focused on investing in the building blocks of innovation and promoting market-based innovation. It recognized that private sector was the engine for innovation and that government played an important role in supporting such innovation. US resources were thus directed at educating students with 21st century skills, strengthening and broadening fundamental research, building and maintaining physical infrastructure and developing an advanced information technology eco-system. The US Government might make investments in R&D to encourage basic research whose commercial potential might take decades to be realized. For example, the first fully electronic digital computer was funded in the 1940s by the US Government, while the first commercially successful computer with modest sales of 1,800 units was sold only in the 1950s. The rewards of this investment were still being enjoyed.

257. The development and commercialization of IP in connection with government-funded R&D had been significantly enabled by US federal legislation known as the Bayh-Dole Act, which had been studied and emulated by many other jurisdictions. Regarding the promotion of market-based innovation, the United States employed a variety of mechanisms to reduce the risk inherent in the innovative process. Those mechanisms included tax credits for research and experimentation, support and tax incentives for entrepreneurs, streamlining regulatory review processes, innovation incentives such as funding of prizes and instituting a stable, predictable, and transparent system for the protection of intellectual property rights (IPRs). Those and other policies were designed to mobilize inventors, whether working in government laboratories, office parks or home garages.

258. The US National Aeronautics and Space Agency's (NASA) experience on fostering innovation to address specific challenges was instructive. NASA had launched an innovation competition to develop a forecasting logarithm to protect astronauts from radiation exposure in space. Over 500 participants from 53 countries had entered the competition. NASA had received a solution that exceeded its requirements from a retired radio frequency engineer in New Hampshire. The winner had never worked for NASA nor responded to past government requests for proposals. However, his winning approach forecast solar proton events with 85% accuracy.

259. Fostering market-based innovation was not only about advancing innovation through promoting capitalization and a supportive regulatory environment, but also about driving commercialization. Without a marketplace of ideas that catalyzed commercialization, the social benefits of innovation to consumers would not be fully realized. Stable and predictable IP protection provided another indispensable incentive to innovation by rewarding the risk investors take. Too many ideas fell prey to inadequate funding, theft and failed commercialization and diffusion. IP provided a critical safeguard, particularly in economies that relied heavily on innovation.

260. He explained the case of a farmer and business man working in Kampala, Uganda who used IP to promote innovation and capture the value addition of roast coffee, so that his community benefitted from selling high value roast coffee rather than unprocessed raw beans. To provide such a new product to the community, many new services and practices had been introduced, including banking services, terracing to conserve water, pulping machines to clean the beans and a new organizational structure of purchasing beans from farmers. Those improved business processes alone had yielded additional returns for the coffee growers, but in addition, this entrepreneur marketed the product with a brand, which would develop a reputation that appreciative consumers

could seek out for future coffee purchases. The protection of this individual's innovation, and those of his community, by IPRs such as trademarks and unfair competition protection, helped to ensure that the community could continue to benefit from these innovations.

261. He said that to maximize such innovation, IP systems also benefitted from refinement and improvement, including through promoting recognized best practices. The recent US enactment of the America Invents Act (AIA) exemplified several best practices. Under the AIA, the US Government had taken steps to significantly reduce patent application backlogs and otherwise streamline the patent application process. Other important best practices included promoting patent quality and licensing to enable IP systems to optimize innovation. By ensuring the registration of high-quality patents, IP authorities preserved the integrity of the public domain and promoted well-defined patents to foster continued innovation. Disclosure of innovations through high-quality patents combined with patent licensing allowed inventors to lawfully borrow and cross-fertilize knowledge in order to advance additional innovation. To ensure that the benefits of a modern system of high-quality patents were broadly available, the AIA also included a pro bono programme designed to assist financially under-resourced independent inventors and small businesses. Through the programme, the US Patent and Trademark Office worked with and supported IP law associations around the United States to provide advice on patent applications to inventors and small businesses within certain income thresholds. Additional best practices for pro-innovation patent systems included a first-to-file system which had long existed in major jurisdictions around the world. With the adoption of the AIA, the United States had now joined the international consensus. Patent grace periods represented another innovation best practice. After innovation often came the critical step of securing funding to actually grow a business, which meant showing investors what had been developed and putting out that information while also preparing a patent application. In the United States, IP was often a core asset of these innovative start-up companies. Thus, a grace period was one example of an innovation-friendly patent system feature that was critical to 21st century innovation.

262. The US Government had another initiative called the Patents for Humanity Programme. This initiative was part of the President's global development agenda and provided business incentives to spur increased participation by the patent community in confronting global challenges by rewarding those who applied their patented technology to address humanitarian issues among impoverished peoples around the world, including with respect to medical technology, food and nutrition, clean technology and information technology.

263. Finally, he said that while governments could significantly enhance national innovation, including through IP awareness and an emphasis on quality, it was necessary to avoid the temptation of policies that degraded national innovation environments rather than fostered innovation itself. Innovation policies were best when they provided stability and predictability, including through IP systems. However, measures such as domestic manufacturing requirements and other industrial policies, whether implemented through or alongside IP systems, could add to the risk inherent in innovation, deter capitalization, imperil the rule of law and ultimately undermine the goal of promoting innovation.

264. Localization and barriers to trade could take a variety of forms, including, among others, local content requirements, subsidies contingent upon the use of local goods, mandates to purchase domestically manufactured goods, preferences to domestic IP right holders, and measures to force technology transfer. Countries were putting these measures into place in order to meet other domestic objectives but these requirements had harmful consequences for trade and investment as well as for an economy's long-term economic growth goals, including innovation. And many countries had recognized the negative impact that such policies could have on innovation. For example, in November 2011, leaders of the economies of the Asia-Pacific Economic Cooperation Forum in Honolulu committed to implement policies that promote effective non-discriminatory and market-driven innovation policies in the Asia-Pacific region. Specifically APEC Members had agreed to actively enforce IPRs, refrain from imposing technology transfer mandates, promote adoption of global standards, implement transparent and non-discriminatory government procurement policies and minimize the trade-distorting impact of information and communication technology policies, including privacy and security. The US delegation commended these principles for study by interested WTO Members; they could be found on the website: www.apec.org as Annex A to the 2011 APEC leaders' declaration.

265. In conclusion, he said that the US delegation had outlined a variety of components of an innovation strategy, including, but not limited to, IP protection. With the assistance of the IP system, US scientists and researchers could see their important innovations develop into new medical treatments, plant varieties, energy efficient technologies and communications equipment that would be needed in the future. He said that his delegation looked forward to hearing from others as to what measures they were taking to help innovation flourish and the role of IP in supporting innovation. He said that he hoped that Members could learn from each other's experiences and could all benefit from the resulting innovation.

266. The representative of Brazil said that when Brazil had asked for an item on "Intellectual Property and Innovation" to be included in the agenda of this session of the TRIPS Council, together with the US delegation, its primary intention had been to help set the stage for a debate, without prejudging any outcome. That debate was, in his view, necessary and timely. The interface between innovation and IPRs was being increasingly discussed in the press, in universities, and in parliaments, particularly in developed countries. The issue was also being hotly contested in the courts. The general public were also voicing opinions, and public policy makers were reconsidering the broader question of the scope and depth of disciplines for protection of IPRs, especially, but not only, in the area of enforcement of copyrights in the digital environment.

267. These issues were not being properly discussed at the WTO, or in WIPO. It was time to do so as possibly the only certainty, in the current time of persistent uncertainties about the world economic outlook, was that sustained global economic growth would depend on the quick and effective conversion of innovation into gains in productivity and welfare. In a new book recently published by the Peterson Institute of International Economics entitled "Private Rights and Public Problems: the Global Economics of Intellectual Property in the 21st Century", Professor Keith E. Maskus said "We live in a global knowledge economy and the key to 'winning the future' is to excel at turning what we discover and learn into marketable new products and technologies. Innovation, adaptation, and the use of new technologies are the primary drivers of growth within economies and across international borders."

268. He said that this agenda item had been phrased in broad terms, "Intellectual Property and Innovation", in order to allow any Member to bring its own perspective to the debate. The Brazilian delegation saw the term "intellectual property" as referring to the full body of provisions of the TRIPS Agreement. The concept of innovation seemed less clear. The Agreement itself referred to innovation only once, in its Article 7 (Objectives), in which the noun "innovation" was qualified by the adjective "technological". Thus, the text of the Agreement did not refer to other forms of innovation.

269. The Agreement used invention instead of innovation several times in Section 5, (Patents), especially in Article 27 (Patentable Subject Matter) and Article 29 (Conditions on Patent Applicants). This implied that invention was a more clearly circumscribed and stricter category than innovation, and that inventions alone were eligible for patent protection. Indeed, innovation was a much broader concept as recognized, for example, in the definition contained in the 2012 issue of "The Global Innovation Index", a joint report and ranking published yearly by the INSEAD Business School and the World Intellectual Property Organization (WIPO). That report recognized that the definition of innovation had broadened; it was no longer restricted to R&D laboratories and to published scientific papers. Innovation was more general and horizontal in nature, and included social innovations as well. Currently, innovation capability was seen more as the ability to exploit new technological combinations and embraced the notion of incremental innovation and innovation without research.

270. He said that any in-depth discussion on this topic must be based on the realization that the granting of exclusive IPRs could only be justified to correct a potential failure in the markets for technology and knowledge. That correction of market failure entailed costs for society. By establishing monopolies, however provisional they might be, protection of IP could impair market efficiency in allocating factors of production and other resources. To compensate for the possible costs of misallocation, the IP system demanded, in return for the granting of exclusive rights, full disclosure of the know-how of the protected invention in such a way that society as a whole might benefit from it and build upon it. This essential trade-off in the patent system had another component: that inventions accorded such rights must be, according to Article 27 of the TRIPS Agreement, novel, useful and non-obvious. However, the manner in which these three conditions

were transposed into national legislation and regulations remained one of the most intractable and divisive issues in the current international patent system.

271. Against this background, the greatest challenge for public policy makers was arguably the design for a theoretically "optimal" system that would be capable of generating incentives for investment in innovation while at the same time minimizing losses caused by the granting of IPRs. The challenge was compounded by the fact that IP was far from being the single element driving innovation. It was only one in a larger mix of different tools to promote innovation. The Global Innovation Index, for example, referred to the importance of linkages, the right infrastructure for innovation, and collaboration among different innovation players. Along with access to knowledge, these were ever more important ingredients of innovation. It also referred to innovation ecosystems that had become more complex and were now built on more internationalized, collaborative, and open innovation models and knowledge markets. Finally, the report recognized that experiences and lessons in designing policies to promote innovation were still scarce.

272. Innovation was heavily influenced by factors other than IP, such as the industrial capacity of a country, the quality of its education, and access to raw materials. Similarly, the level of protection afforded by the IP system was not the only element stimulating technology transfer to developing countries. The importance of the receiving country's capacity and skills to absorb that technology could not be underestimated. It followed that the mere increase in the degree of IP protection and enforcement rules did not, in and of itself, result in higher levels of innovation output. Thus, IP must be placed within the overall framework of public policies for innovation.

273. He said that exceptions and limitations had a key role to play in calibrating national IP systems in such a way that individual goals of each country could be realistically pursued and eventually met. Other mechanisms to mitigate the potentially adverse impact of IP protection had to do with containing its effects on key areas such as public health and in the interface with competition policy. If it was true that a properly calibrated IP system was likely to play a positive and indeed key role in promoting the technological and social development of a country, then a dysfunctional system might prove an impediment to innovation. The granting of frivolous patents might do enormous harm to R&D activities and disrupt the necessary flows across innovation chains. This was especially true at present, when most meaningful inventions were the combined result of the integration of a series of small innovations increasing efficiency or productivity only incrementally. Patent protection granted to a series of incremental innovations could in fact create uncertainty and thereby prevent breakthrough inventions from being made. An unbalanced IP system was particularly negative in the area of public health and access to medicines, in which the preservation of the flexibilities contained in the TRIPS Agreement, as reaffirmed in the Doha Declaration on the TRIPS Agreement and Public Health, was more important.

274. From the perspective of developing countries, the Development Agenda approved by WIPO in 2007 was a valuable input into the debate on the relationship between IP and innovation. Its recommendations established, for example, that any new norm-setting activity in the field of IP must be preceded by an assessment of its impact on national development policies and strategies.

275. In Brazil, the IP system had been largely aligned, over the past two decades, with the overall set of public policies to promote innovation and increase the competitiveness of the business sector. One of the Government's stated aims was to make it possible for companies, as well as research and technological institutions, in Brazil to take full advantage of IP protection as one of the pillars to support innovation. The importance of patents for scientific and technological advancement had been repeatedly stressed by President Dilma Rousseff. The same perspective was to be found in statements by leaders and relevant players in Brazil's industrial sector, in particular in the agenda of the Business Movement for Innovation ("Mobilização Empresarial pela Inovação - MEI) that was put in place by the National Industry Confederation.

276. He said that government policies targeted at science and technology were to be found in the National Strategy for Science, Technology and Innovation for the period 2012-2015. The restructuring and modernization of the National Institute of Industrial Property (INPI) was part of the strategy. More information on the modernization of the INPI could be found in a recent issue of *The Economist*, the UK newspaper. Priority sectors within the National Strategy for Science, Technology and Innovation were information and communications technology, pharmaceuticals, oil and gas, aerospace and segments related to the green economy and social development. Around 1.2% of Brazil's GDP was currently invested in R&D. This percentage was to be increased to 1.8%

of GDP by 2014. In South America, Brazil had contributed to disseminating a culture of IP and to promoting cooperation among national patent offices. The regional IP co-operation project called PROSUR was one example of such efforts by Brazil.

277. In concluding, he said that at the approach of 20 years from the adoption of the TRIPS Agreement, it was timely to undertake an assessment of its implementation and of its real benefits for all countries. As Professor Maskus had put it in his new book: "Anyone who thought a decade ago that the TRIPS agreement would settle international debates once and for all on the wisdom of increasing global intellectual property rights standards was sorely mistaken". That debate was arguably more live today than ever, especially in developed countries themselves.

278. The representative of Egypt said that discussions sometimes referred to what had been termed "the innovation consensus", according to which innovation was increasingly becoming the foundation of economic success and the most important means of establishing political advantage. In this regard he noted with concern the international trends that were revealed by the Global Innovation Index 2012 which stated that a deep innovation divide continued to persist between countries and regions, most importantly between countries at different stages of development. On average, high-income countries outpaced lower-income countries by a high margin across the board in all measures of innovation performance. Such a divide also existed across geographic regions, especially between high-income countries and other countries in Africa, large parts of Asia and Latin America. The report identified three groups of countries: the innovation leaders, the innovation learners and the innovation under-performers. Many developing countries fell in the third category.

279. He said that in Egypt's view, this deep innovation divide between countries and nations should not be allowed to persist and that innovation consensus should in fact mean innovation for all. A fundamental objective of innovation consensus should comprise creating the common platform for all to grow, to benefit and to mutually exchange the fruits of innovation. In this way such innovation consensus could be egalitarian and serve all and could be geared to support public policies and local needs, and to guard from the risks of reinforcing the divide between those who could innovate and those who remained mere consumers of others' innovations.

280. At the national level, Egypt sought to promote sound innovation eco-systems, and a tailor-made IP policy to encourage innovation activity. He shared some initiatives taken recently by the Egyptian Academy of Scientific Research and Technology. Egypt had good IP laws consistent with the TRIPS Agreement and had tried to strengthen national innovation agencies, the national innovation council, and innovation initiatives for schools, universities, scientific research centres and enterprises under the project INNOVALL that handled all innovation matters. Egypt also tried to capitalize on the unique status of the Egyptian Patent Office as a WIPO/PCT international search and preliminary examination authority from 2013. He said that it was important that more capacity building and technical assistance from relevant international organizations such as the WTO and WIPO and other Members should aim at bridging this innovation divide to level the playing field in the international IP landscape and to diffuse more development in developing and least-developed Members.

281. He said that, as stated by proponents, this agenda item was for general discussion only, and did not prejudge the outcome or divert the Council from fulfilling its mandate.

282. The representative of Chile said that the agenda provided a very relevant topic for discussion in the Council, on the understanding that it was an exercise only for the exchange of information.

283. The Government of Chile had declared 2013 as the year of innovation. In budgetary terms alone, this meant that 8.9% of the Government's general budget, or one-third of the budget of the Ministry of the Economy, would be devoted to projects in this area. This could be a turning point which could enable Chileans to develop their innovative capacity to generate a better quality of life. More than 20 ministries and government agencies had been working on a full agenda of projects that reinforced the importance of innovation. This work had focused on three main areas: first, an active pro-business, pro-innovation government; second, a relevant group of public and private emblematic projects; and third, a cultural change to move towards the values of creativity and a global vision.

284. More than 100 initiatives were being considered for 2013, including eight new technological consortia that create value through aligning market needs with technological knowledge. This was done through long-term R&D projects doing basic fundamental research, which was, however, industry-led and was strongly focused on the creation of technologies and marketable products. An attempt was being made to attract at least four new centres of excellence; the first stage in this project had already been completed successfully. The objective was to have centres that were world leaders in research in their respective areas. Similarly, the Government would take steps to attract at least two corporate centres of R&D excellence.

285. He said that a new competition in the Millennium Scientific Initiative Programme was being considered to add at least two new centres or institutes. The focus of this programme was based on cutting edge scientific and technological research and the training of young researchers in networking and in dissemination of science. Likewise, there was a programme from the National Innovation Council for Competitiveness, where more than 1,200 school children would be able to participate in workshops for the development of entrepreneurship and the design of professional careers related to science and technology. Other initiatives included making the Santiago Planetarium the first Chilean centre for astronomy. New academic partnerships would be set up with the world class universities to enable Chilean researchers to apply for research capital together with the researchers from the best universities in the world. Chile already had agreements signed with MIT and Harvard University.

286. Resources were being allocated to a germplasm bank, which would be under the control of the Ministry of Agriculture, in order to improve and strengthen the preservation and genetic resource interchange systems, which would benefit scientists who were working on the decrease of pollutants and bioremediation and the breakdown of cellulose for biofuels, to benefit inter alia the biofertiliser and biopesticide industry. Innova Chile would develop a new programme that aimed at transforming Chilean engineering schools to the highest standards of quality and make them centres of excellence.

287. All the foregoing called for an IP system that was robust and balanced, and one that could be a tool for development, for transfer of knowledge and an incentive for the development of new technologies. IP also had an important role to play to preserve knowledge and technology that was already in the public domain. In this area a series of projects were being promoted which would further strengthen Chilean institutions and legislation, facilitating the use of the international patent system. For example, the national IP institute of Chile had been designated as an international search office in the context of the WIPO Patent Cooperation Treaty. And the Institute for Agrarian Innovation had been identified as an international authority for the deposit of microorganisms under the Budapest Treaty. Joint work was also undertaken with other regional offices in South America in the context of the Pro-Accesso initiative.

288. Following a public-private effort of over two years, new industrial property legislation was being sent to the Chilean Congress to replace the current text. This reform sought to promote innovation, strengthen industrial property rights, regulate new types of protection and streamline and improve procedures for registration and enforcement standards. And finally in the creation of a pro-innovation environment, Chile had created a new electronic tool called "Inapi Proyecta". This was a platform which was set up in early 2012 with an aim to create opportunities for business, innovation and creativity through the use and management of industrial or IP. This was to be accomplished through a series of technological services that was free of charge and available on the website: www.inapiproyecta.cl. In 2013, there would also be new e-learning courses on industrial property, and talks and workshops would be broadcast through the national video conference network of Chilean universities.

289. He said that he hoped that the information he had provided would contribute to the debate on the relationship between innovation and IP. It was evident that each country had its own reality and that there was no overall recipe in this area. However, through the exchange of countries' experiences, Members would be able to learn about useful elements to improve their own innovation strategies and also understand better the role that the IP system could play.

290. The representative of India said that he understood from the proponents that the agenda item was a stand-alone one. He said that the word innovation appeared just once in the TRIPS Agreement in Article 7 which stated that IPRs "should contribute to the promotion of technological innovation and to the transfer and dissemination of technology" and not for the sake of innovation

itself but "to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations". Thus the Agreement made it clear that the purpose of the IP system was not solely to protect the commercial interests of the IP holders but that it was one of the many tools available to the society to achieve technological development, social and economic welfare and innovation.

291. He said that the relationship between innovation and IPRs was rather complex. The TRIPS Agreement did not define what innovation meant but left it open for appropriate interpretation depending on the public interest each country would like to achieve with IP. Empirical evidence on the role of IP protection in promoting innovation and growth remained inconclusive. Divergent views persisted on the impact of IPRs on development prospects. Some pointed out that the protection of IP could bring benefits to developing countries by creating an incentive structure necessary for knowledge creation and diffusion, and encourage technology transfer and private investment. Others stressed that IP, especially some elements of the patent regime, would adversely affect the pursuit of sustainable development strategies by raising the price of essential drugs to levels that were too high for the poor to afford, by legitimizing the piracy of traditional knowledge and by undermining the self-reliance of resourceful farmers.

292. The question therefore remained whether a higher level of IP protection could provide innovation. A key related question was how to frame a patent regime in a country where innovation was centred on minor incremental technical changes. One view was that if the criteria of patentability were kept low, companies may be encouraged to seek patents on minor innovations and thus further develop existing technologies. On the other hand, it was proven that such a patent regime got manipulated mostly by large companies that had the financial and technical capacity to exploit the patent system and not by small and medium enterprises in the developing countries. The domestic companies in developing countries were deterred by the high patent litigation costs and therefore preferred to remain out of the patent system.

293. The second question was whether the thousands of patents granted, for example in the field of pharmaceuticals, in many developed and developing countries, reflected real innovation. Ironically, in the last two decades, despite the TRIPS Agreement and advances in research tools, the number of real innovations in pharmaceuticals, namely new chemical entities, had dramatically fallen while the number of patents had dramatically increased. An increasing number of patents was granted for simple changes in chemistry and new formulations of existing products, such that the market entry of generic products, which could provide affordable access to quality products, was delayed.

294. Further, very few patents were granted to the domestic companies in developing countries. This meant that the national IP regime was geared not for promoting domestic innovation but to protect the IPRs of the big companies of some of the developed countries. Thus, the IP system, for example in the pharmaceutical industry, failed to fulfil the interests of the society to provide quality drugs, or to develop new drugs to treat the diseases of the poor or to provide access to medicines at an affordable cost, thus defeating the basic purpose of the TRIPS Agreement.

295. He said that while society had gained tremendously through innovation in the information and communication technology sector, this was not due to the IP system, but due to open innovation models, joint development, cross licensing, and other such strategies. He said he doubted if the sector could have achieved that stage of development if patent holders could have prevented others from using their inventions for long periods of time.

296. Further, many other sectors important to the society, including defence, education, and fashion, succeeded not by protecting the core interests of the inventor but by using the flexibilities in the IP regimes. In order to resolve the tensions between innovation and access, and to accommodate sequential innovation, governments could choose to use the flexibilities in the TRIPS Agreement. In addition to the flexibility of withholding protection entirely for some areas of innovation, governments also had the option of compulsory licence on reasonable terms. For example, the European Union provided for mandatory cross-licensing of both patents and sui generis plant variety protection for cases involving follow-on innovations involving new plant varieties, where the new innovation represented significant technological progress of considerable economic interest.

297. In both Europe and the United States, there were a number of cases where governments had intervened in licensing decisions involving patents on computers and mobile computing technologies, in order to ensure that licences were available on fair, reasonable and non-discriminatory terms. Further, in order to ensure that patents on stem cell technologies did not block follow-on innovation, both the United States and the European Union had considered a number of strategies to reduce the negative impact of patents on innovation. These included decisions to deny patents or to limit patent claims or to require licensing of patents developed with common funds.

298. He said in conclusion that no direct correlation could be made between IP and innovation. In fact, technological progress, even in developed countries, had been achieved through government interventions like compulsory licensing, cross-licensing, government funding and those made through competition policy, but not through the IP system alone that only secured the investment of inventors. It was unfortunate that some of the developed countries would like to use IP to perpetuate their hold on innovation and thus block further development. It was therefore essential for developing countries to use the flexibilities provided by the TRIPS Agreement if they wanted their societies to benefit from innovations.

299. The representative of China said that she understood that the intention of the proponents of this agenda item was to bring a new subject to the Council. While she appreciated their efforts and good intentions, she hoped that the new initiative would not dilute or divert Members' attention from long-pending issues. China believed that innovation was the main impetus driving economic development and that the IP system was the basis to promote innovation for developing and utilizing knowledge-based resources. By reasonably determining people's rights and obligations to certain knowledge and other information, the IP system adjusted the interests among different groups of persons in the process of creating and utilizing knowledge and information, encouraged innovation, and promoted economic and social progress. As a developing country Member, China fully recognized the critical role of IP in promoting innovation and attached great importance to both IP and innovation.

300. In order to improve its capacity for innovation, China had begun to implement the national IP strategy since 2008, which aimed to promote its capacity in the creation, protection, commercialization, utilization, and administration of IP. China had expedited the development of legal systems for IP, improved IP enforcement, strengthened the administration of IP, developed intermediary services for IP, developed intellectual human resources, promoted IP culture, and expanded international exchange and co-operation in the area of IP.

301. While recognizing the important role of IP protection in current innovation, China also recognized that IPRs provided exclusive rights for the right holders that could limit the availability and utilization of the knowledge by other persons and entities. If the protection of IPRs was not appropriate or the rights were abused, the dissemination of knowledge, innovation and social progress could be hindered. Article 7 of the TRIPS Agreement recognized that the protection and enforcement of IPRs should contribute to the promotion of technological innovation, and to the transfer and dissemination of technology. Article 8 of the Agreement further allowed Members to adopt measures necessary to promote the public interest in sectors of vital importance to their socio-economic and technological development and recognized that appropriate measures may be needed to prevent the abuse of IPRs by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology.

302. She said that preventing abuses of IPRs was one among the five strategic focuses of China's national IP strategy. Considering the relationship between IP and innovation, China believed that IP systems should be comprehensive and balanced and could contribute to the promotion of innovation by appropriate level of intellectual protection and enforcement. However, in addition to IPRs, other kinds of measures - such as enhancing education, improving the collaboration between academic circles and industrial sectors - were also essential to encourage and promote innovation.

303. The representative of Switzerland said that he welcomed the opportunity to discuss the topic of IP and innovation in the Council. Innovation and the promotion of technology to achieve economic development were key objectives of the TRIPS Agreement, as highlighted in its Article 7. Those should also be the objectives of any national IP system, through the provision of a fair, stable and non-discriminatory regulatory framework.

304. He said that he wanted to highlight the efforts to promote and to facilitate access to the IP system for small and medium-sized enterprises (SMEs) in order to maximize their important contribution to the innovative process. He appreciated the previous day's event on innovation strategies, sponsored by Canada, the EU, Turkey and the US, where entrepreneurs from Africa, Brazil and the US had spoken of their professional activities and successes. They reported that it was sometimes difficult for SMEs to know what the IP system was really about, what potential and benefits it might hold for supporting them in their business activity. The challenge of how to make the IP system more accessible for SMEs was thus faced both by developed and developing countries. It seemed thus appropriate to see how Members responded to this challenge.

305. Awareness of and access to the IP system could depend on the size of a company. Larger firms and right holders tended to be in a stronger position to profit from the IP system because they had more resources and were better informed about their rights and thus also in a better situation to enforce these rights as compared to smaller competitors. At the same time, SMEs often had just as much if not more to lose if they were not sufficiently aware of and did not use the IP system for their own benefit. For example, investors often required legal protection for designs and patents before they were willing to provide venture capital for start-up financing. A solid and enforceable IP right portfolio could act as an important asset in the critical phase of business development. IP was also an important asset for SMEs because it could be bought, sold, or licensed out to partner businesses. It thus provided not only a source of income, but also a basis for growing one's business through building partnerships with companies that had a related or different technological expertise, allowing otherwise fallow ideas to be effectively monetized. SMEs were much more likely to be dependent on a single design, patent, or trademark for their entire revenue stream, thus turning IP protection from a mere strategic issue into an existential one.

306. SMEs were also the backbone of the Swiss economy. In order to be competitive globally, innovation was a key prerequisite for them – and thus also using the IP system in an informed manner for their own, and for the economy's, benefit. Accordingly, Switzerland had, over the last few years, implemented a number of simple measures to make the IP system better accessible to SMEs and to put them on a level playing field with bigger companies.

307. Based on three studies examining the state of play of the use of the IP system by SMEs and their special needs in this context, Switzerland had taken a number of steps, including setting up a network of patent attorneys who agreed to offer free preliminary consultations on IP matters to SMEs. This lowered the entry threshold for SMEs to make use of the IP system and allowed them to get a first impression of how IP could work in their favour. Through that the Government had thus raised awareness of how the IP system could work for small innovative businesses without resorting to tax-payer funds. There was also a free IP hotline operated by the Swiss IP office where SMEs could get expert advice to their questions. Switzerland had implemented revenue-neutral patent, design, and trademark fees that still covered the cost of the IP system but did not cross-subsidize other government branches. One-on-one research information to inventors was available at the IP Office from patent experts for a nominal fee. Public and in-house seminars that informed SMEs on how they could protect and leverage their IP were regularly held. He said that his delegation saw a lot of potential for policies and measures that raised innovation output and efficiency by putting existing government services more proactively at the service of SMEs.

308. He said that Brazil had in its intervention already referred to the in-built balance in the patent system by requiring inventors to disclose their invention, thus making available a unique body of information on the state-of-the-art of technology to the public and promoting further development in technological sectors. He said that his delegation looked forward to continuing this dialogue in the Council with the other Members to explore ways and means on how IP and the implementation of TRIPS might promote innovation best in order to make IP work for an ever wider segment of the economy, in particular SMEs, whether based in developed or developing countries.

309. The representative of Japan said that in order to promote technological innovation and its diffusion, the protection of IPRs was critical. It promoted the diffusion of new technologies rather than hindered it, and made it possible to secure a higher level of investment in R&D, which itself led to promoting innovation and combining outcomes of the innovation in various fields. This mechanism contributed to the promotion of sustainable global economic development.

310. In this context, the "IP Advantage database" (www.wipo.int/ipadvantage) under WIPO featured over 100 case studies explaining how inventors, creators, entrepreneurs and researchers throughout the world had used IP to differentiate their products, gained a competitive advantage and contributed to the development of their businesses and regions. The database, launched in September 2010, was based on a proposal from the Japanese Government and was implemented through a financial contribution of the Japan Funds-in-Trust of WIPO. He said that his delegation would like to reiterate that the IP system served as a basis for direct investment and technology transfer from developed countries and, therefore, was both an effective tool as well as an essential infrastructure for the sustainable development of developing countries.

311. The representative of the Korea said that it was crucial for Members to have a clear understanding of how IP laws and policies, including public awareness on IPRs, helped innovators and creators, as well as created new businesses, generated income and provided jobs. He described briefly the major IP policy practices undertaken by the Korean IP Office (KIPO).

312. To promote IPRs that would help shape and drive future markets, Korea was continuously striving to build the capacity of researchers and businesses to create and utilize IP more effectively. Accordingly, his Government supported R&D projects that provided patent analysis at the critical research planning stages. In addition, it provided assistance for IP creation by SMEs at 31 regional IP centres nationwide, as well as various policies to foster the enhancement of IP manpower. In order to avoid duplication, KIPO investigated the patent technology trends of governmental R&D. It performed patent analysis at the research planning stage, confirmed the projects and tasks and then provided the investigation results to the relevant ministries at an early stage of the research project so that they could alter the direction of their research, if necessary, to follow the most effective and competitive path.

313. He said that in order to enhance the efficiency of the governmental R&D projects, it was also important to enhance the IP capacity of researchers participating in the projects. Thus KIPO provided IP consulting support to develop customized R&D strategies for research institutes.

314. In order to provide support to SMEs, KIPO had set up 31 regional IP centres where patent brand and design experts provided consultations on various IP issues. In addition, with a view to creating both a broader and deeper understanding of the IP system, KIPO provided IPR training courses for SMEs. In order to maximize the promotion of transfer of innovative technologies from universities and research institutes to SMEs, KIPO sent IP management experts to universities and public research institutes. Only experts with ample experience in the area were selected from the private sector and sent to universities and institutes to improve their IP management capacity.

315. In September 2010, KIPO had created a special judicial police squad in the three regional offices for trademarks to crack down on counterfeit goods. The squad had caught 180 individuals guilty of producing or selling counterfeit goods and confiscated 57,218 counterfeit goods during the 16 months after its launch. The criminal arrests and confiscation of counterfeit goods represented a more focussed and strengthened effort to address those issues.

316. Due to the growth of the e-commerce market, online transactions of counterfeit goods had been rapidly increasing. In December 2001, KIPO had established an online police squad based in Seoul and equipped it with digital forensic equipment to formally crack down on online transactions of counterfeit goods. In addition, it had launched various projects to raise international awareness of the protection of IPRs in the public. KIPO had collaborated with several consumer groups to launch campaigns nationwide urging consumers to refuse to buy counterfeit goods. In addition, KIPO had conducted a training session to encourage all consumer groups to voluntarily participate in the eradication of counterfeit goods distribution.

317. In addition, KIPO had used various media channels, including TV advertisements and social media networks, to educate the public on the damaging effects of counterfeit goods. Moreover, KIPO had produced and distributed educational videos on the protection of IP for children and held classes comparing genuine and counterfeit goods. KIPO had also held a competition on the theme of the protection of IP for college students.

318. He stressed that the Korean Government's efforts were grounded in a firm commitment to the protection of IP and a belief about its contribution to innovation. It would continue working

with all stakeholders to find the most appropriate and effective means for addressing these important issues.

319. The representative of Mexico said that the innovation policies promoted by Mexico constituted steps towards economic development. While it was true that there was still some way to go, there had been improvements in programmes relating to innovation. It was necessary to follow a model of development that allowed for the constant encouragement of innovation. Mexico had public bodies that were able to generate and transfer knowledge. The new law on science and technology sought to improve the link between the production sector and technological R&D institutions. There was a close relationship between economic development and the ability to generate scientific and technological research.

320. The main focus of her Government's efforts were in technology areas such as: advanced manufacturing systems; health technologies; agrifood; biotechnology; nanotechnology; mobile technologies and multimedia; and clean technologies and renewable energy. Mexico sought to enhance its development by implementing policies aimed at boosting innovation and improving the link between the government, the academic sphere and industry, thus making the most of the knowledge generated by an entity through IP, with a view to improving and addressing the problems and challenges that arose in the national and international context.

321. The representative of Chinese Taipei said that his delegation also fully recognized the importance of IP and its valuable contribution to society. The development of an innovative economy was currently one of his Government's key policy objectives. Therefore, in pursuit of this goal, he had taken some practical steps to encourage the creation and commercialization of IP. For example, it had established a website, the "Technology Marketplace", to bring together rights holders and potential users, who could explain to each other their IPRs, their requirements, and the technology they were looking for. In short, this website (www.twtm.com.tw) provided a platform for information exchange and technology transactions. More than 2,000 cases of patents had been presented on this website, generating more than 3.5 million US dollars of industrial investment. He said, in conclusion, that much of what his Government was doing was to facilitate the circulation and usage of IP in the firm belief that this would help to stimulate the development of the economy.

322. The representative of the European Union said that in the present day's knowledge society, innovation was a key asset. For many countries, it was a more valuable source of growth and wealth than natural resources, which were increasingly scarce. The impressive development and growth of many countries, many in Asia, relied to a large extent on innovation and technology. An effective IP system was crucial to promote innovation, as it made it possible to protect intellectual assets such as inventions and brands, but also music, literature and agricultural products, which were as relevant for developing as they were for developed countries. Therefore, insofar as IP regimes were concerned, right holders - but also investors and consumers - needed a level playing field, so as to operate effectively across the borders, thereby benefiting better from international trade and promoting it. Legal certainty was important to encourage innovation and investment, which meant a need for stable and predictable IP regimes, both domestically and internationally.

323. He said that it was clear that IP regimes needed to be properly balanced, and that had been a central concern throughout the history of IP, with frequent controversies regarding how exactly to achieve such balance. But there was a broad agreement about the central role of IP in a knowledge-based society to ensure competitiveness, scientific progress or access to culture. He said that he would quote from an important policy document on "Innovation and IPRs" being debated in one developing country WTO Member, which stated: "The underlying basis of knowledge as a source of productivity gain and competitiveness has ensured a central place for Intellectual Property Rights. Compared with the traditional factors of land, labour and capital responsible for production, it is the generation and management of knowledge and corresponding intellectual property rights, which is increasingly playing an important role in the economic development of the country. This increasing importance of intellectual property rights has started to change the way the national and the sub national governments view intellectual property and Innovation system as a whole, making it a policy driven initiative in both developed and developing economies. Most developed economies already have strong systems and policies in place to encourage and protect intellectual property rights, and developing economies are slowly but steadily moving towards creating similar ecosystems most suitable to their national needs."

324. Further, he said that the same document stated "In the knowledge economy, creation of intellectual property and its incorporation in designs, products and production techniques are increasingly becoming important for commercial competitiveness and economic growth. Credible national intellectual property system thus calls for social awareness amongst the people about the stakes involved in intellectual property rights. More particularly, the [...] academia, industry, the innovator/entrepreneur community ought to be increasingly made aware of the value of intellectual property rights both from national and global contexts".

325. He said that, referring to education, the document stated: "From a fundamental long term perspective an intervention in the mainstream education system is needed. Basic concepts of intellectual property creation and respect for intellectual property needs to be introduced as a component of formal education at school, college, university and at vocational level thereby fostering a culture of creativity in future generations. Such education should focus on the economic as well as the social aspects of intellectual property."

326. Referring to "Strengthening Protection of Intellectual Property", the document stated "Protection of Intellectual Property is both a scope and a depth issue. While establishing new instruments and addressing gaps in the available instruments is a scope issue, efficiency and strength of institutions that grant/protect IPR and extent of protection available is the depth issue. Therefore strengthening of IP protection regime would involve improvement in the institutions that grant intellectual property rights and in those that were responsible for its enforcement as also expansion of rights to include new intellectual property rights."

327. Finally, when referring to "Facilitating Commercialization of intellectual property rights", the document stated: "For Innovation to create any impact, it is imperative to take the idea/innovation from mind/laboratory to the market, where their true intrinsic value is realized – through products and services. While larger organizations have the intent and capabilities to take their technology/intellectual property to markets, several others do not. Hence, it becomes imperative to establish facilitative mechanisms that could address such limitations of several SMEs and individual innovators and thus help put knowledge into practice in a big way. Hence, policy interventions are needed to create strong and transparent national systems that encourage and facilitate (i) licensing of rights to another entity for commercialization (ii) Cross-licensing agreements where two or more companies could exchange rights to their IP (iii) leveraging the Intellectual assets for future R&D growth and improved products/services; (iv) sale/merger/acquisition of either the IPRs or the entire business distinguished and appropriately valued by their intellectual capital; (v) patent pooling which allows two or more companies to pool their technologies/IP and join in common interest to create some product that was to their combined benefit and (vi) reinforcing the stability of IP license contracts."

328. He said that the policy statements he had just cited could have been written by the European Union, but were taken from a National IPR Strategy being adopted in a developing country WTO Member. He said that this document was a perfect illustration of the extent to which Members had a common view on the subject, particularly the importance of IPRs as an instrument to achieve innovation.

329. The essential concept of "balance" in IP had led to a number of exceptions and flexibilities being introduced in various pieces of legislation, for example in the TRIPS Agreement and in EU IPR legislation. Exceptions and limitations clearly had their role to play; however, where they became the dominant discourse, the underlying IPR regime became unsustainable, uncertainty grew for innovators and investors and ultimately the citizens were deprived of the benefits of access to the most advanced and high-quality products.

330. He said that he wanted to focus on certain practices that had become serious obstacles to the effective functioning of an IP system and ultimately hindered innovation. This was the case for local working requirements, in particular when implemented as an obligation upon the right holder to produce the IP bearing good in the country or lose the IP right protection. He said that this was opposed to the very concept of free trade because, if all WTO Members imposed local working requirements, there would be no international trade of IP-protected goods. Requiring companies to produce locally in every country where they had obtained a patent, a trademark or a design went against business sense and might well discourage the entry of foreign operators on such market. He said that there were on-going efforts to clarify this bilaterally with India. He said that Members might be tempted to consider such measures to provide short-term gains for domestic competitors

or users, but overall they were not conducive to long-term innovation and growth since they resulted in a regulatory environment that deterred innovation, transfer of technology and foreign investment in innovative sectors. Innovators logically took account of such local IPR factors when making investment decisions.

331. In conclusion, he said that his delegation stressed the importance of striving to achieve a fair balance in the substance of the EU IPR regimes, including the implementing of necessary flexibilities, but doing so without turning the exceptions into the rule, and ensuring that the EU continued to incentivize and promote innovation, to the benefit of society as a whole. He said that his delegation believed that this subject should be discussed further in the framework of the TRIPS Council.

332. The representative of New Zealand said that innovation played a key role as a driver of economic growth and prosperity. She said that her delegation agreed that IPRs could play an important role in promoting innovation and creativity in the economy. The question of how IP affected innovation was complex and based on multiple variables. IPRs alone would not necessarily foster economic development and growth. There were many other important variables that affected economic growth, such as macroeconomic stability, market openness and technology infrastructure. In order for IP systems to function as intended, they must form part of a coherent and broad set of complementary policies in areas such as strengthening human capital, education and skills, and ensuring a transparent non-discriminatory and effective competition regime.

333. She said that her Government had recently launched a business growth agenda, which was an ambitious programme to create jobs and improve New Zealand's standard of living. One of six work streams under the business growth agenda focused on building innovation in order to grow New Zealand's economy. Working to improve New Zealand's IP settings was one of many initiatives under this work stream. Other initiatives included strengthening research institutions, building international linkages, and developing innovation infrastructure.

334. It was important to take a holistic view in looking at policies and settings to increase innovation. Balanced IP protection was important but it formed just one part of the innovation equation. It was well known that there were two central objectives in any system of IP protection. The first was to promote investments and knowledge creation and innovation through providing a period of limited monopoly. In the absence of such rights, individuals and firms would be reluctant to invest in the R&D needed to develop new innovation. The second goal was to promote the widespread dissemination of new knowledge by encouraging right holders to place their inventions on the market. Society gained from access to these new innovations and this in turn assisted in fostering the development of additional follow-on innovation. There was a careful calibration between these two objectives. An overly protective IP system could limit the social gains from innovation by reducing access to those innovations, including the opportunities for follow-on innovation. However, an excessively weak system could also reduce innovation by failing to provide an adequate return on investment. It was for these reasons that a policy balance needed to be found that was appropriate to market conditions and this balance would be very different, depending on the circumstances in each country.

335. She said that the negotiators of the TRIPS Agreement had foreseen the need for such a balance. Her delegation considered that the Agreement contained a careful balance between rights and obligations and that Members could use this in tailoring their IP systems to suit their particular circumstances to foster innovation and economic growth within their societies. The pillar of the Agreement was Article 1.1 which made clear that Members were free to determine the appropriate method of implementing the provisions within their own legal systems and practices. TRIPS also contained important objectives and principles to prevent the abuse of IPRs. These provisions ensured that the protection and enforcement of IPRs contributed to technological innovation, the dissemination of technology and other socially desirable outcomes and to a balance of rights and obligations.

336. She said that for her delegation it was important to focus on optimizing IP protection to encourage innovation. Her Government ran a high-quality and efficient IP regime which sought to balance the interests of innovators, follow-on innovators and consumers in a way that supported innovation across the economy. This was backed up by a range of policies that sought to promote innovation, as well as rigorous but fair competition in the market.

337. The representative of Canada said that he supported a discussion on this agenda item to aid in demonstrating how IPRs promoted innovation. Since economic activity and human wellbeing were increasingly based on knowledge creation and innovation, a discussion on ways to help stimulate innovation was beneficial to all countries. Knowledge, which could be defined as the combination of technology, ideas, message and techniques, was quickly becoming one of society's most important economic assets.

338. The growth of knowledge as a tradable asset was a feature of all economies. It could take many forms in its creation and movement across borders. An effective IP regime was central for any growing knowledge-based economy in order to remain competitive and foster an environment that promoted innovation and creativity to attract new investment and stimulate economic growth in addition to ensuring development and dissemination of technology.

339. He said that his delegation recognized that the TRIPS Agreement was a driver to help promote innovation. Domestically, Canada continued to support innovation as was evident in the Canadian Government's budget of 2012. This budget contained a number of elements to foster the commercialization of R&D such as providing tax incentives, funding for research assistance, and access to risk capital. An effective IP regime helped to aid the successful commercialization of R&D and to attract more investment. For example, Canada's national investment promotion agency, "Invest in Canada", promoted Canada's IP regime as one important element to attract foreign investment into the country.

340. The Government of Canada had recently passed copyright reform legislation in order to create a modern legislative framework that strengthened Canada's ability to compete in the global digital economy by balancing the rights of the creators and the interests of the consumers and to promote innovation and attract new investment. He said that national innovation systems across all countries must adapt to a changing world and embrace the new challenges and opportunities provided by globalization. IP protection was an important part of this process of adaptation. His delegation encouraged other countries to promote and uphold laws, regulations and procedures to strengthen effective IP protection and to use transparent and predictable judicial proceedings, policies and guidelines related to IP protection. He said that his delegation believed that IP and innovation were linked in such a way that effective IP regimes would foster more attractive investment environments that would contribute to future global growth and prosperity for all.

341. The representative of Australia said that the subject of the agenda item helped Members remember one of the key reasons why TRIPS, and domestic IP regimes, had been introduced. IP was an integral part of international trade and its importance was increasing as the effective use of knowledge contributed ever more to national economic prosperity. In Australia the value of IP in 2011 was AU\$182.5 billion. Trade in royalties for IP for Australia was AU\$1.1 billion for exports and AU\$5.2 billion for imports. These figures showed that Australia was a trading nation with a strong innovative research tradition but that it also had a need for access to new technologies and content. She said that innovation was critical to the growth of the economy and made it more competitive and created investment. The innovation necessary to keep growing the economy could not occur in isolation. Investment in innovation required a strong and balanced IP system that provided investors with an opportunity to recoup the investments necessary to bring ideas to the market place. It ensured that innovators could obtain the rewards from their R&D and fund further research. It promoted further innovation to access information, new technologies and content.

342. Australia's creative and innovative research tradition was well established. For example, in 1996 the Australian Government's science and research organization, which was called the CSIRO, invented and patented wireless LAN technology, a technology that gave the freedom to work wirelessly in homes and offices, using devices such as laptops and smart phones. CSIRO's wireless invention laid at the heart of what was now the most popular way to connect to the Internet without wires. The technology was likely to be in over 5 billion devices worldwide by the time the patent expired at the end of 2013. But of course this innovation had built on and added to many other ideas and in turn it had inspired further innovative thinking. Thus, strong and balanced IP ideas helped to create an environment for this idea to be developed, just as they supported the development of many other new ideas, including breakthrough pharmaceutical technologies and environmental technologies.

343. A net IP importer, Australia needed access to the creative works and inventions of her trading partners and its IP laws supported this need. In this increasingly linked and competitive

world, innovative firms and foreign investors generally opted for locations with relatively strong IP laws, which could have a long-term beneficial impact. The converse was also true. Countries with weak IP protection were less likely to attract foreign investment and technology transfer. The Australian Government was committed to high-quality and balanced IP laws, both domestically and internationally, to support innovation in Australia to ensure that Australians had access to the innovations of others and to enable Australians to contribute to the global pool of innovative and creative ideas. Her delegation believed that the same should be true for other countries, recognizing that effective systems in other countries were mutually supportive and helped create conditions for improving lives in all countries.

344. The representative of Bangladesh said that it was obvious from the subject of the agenda item that it covered a vast area and was also subject to different interpretations by Member countries. Though IP and innovation were two distinct branches of the same subject, both of them were associated with investment, economic growth, prosperity, as well as social and cultural development. He said that, unfortunately, all countries were not in a position to benefit equally from these concepts due to historical reasons. Some countries got political independence only in the last 50 years, and most of the developing countries were not in a position to develop IP regimes according to their specific legal requirements, nor were they able to sufficiently innovate to achieve development. As a result, developing countries, especially the LDCs, seriously lacked institutional capability and human resources to utilize IP and innovation for sustainable development.

345. He said that LDCs in particular faced greater challenges in developing and protecting their valuable IP assets and in developing their own IP regimes suitable to their needs, particularly in the sectors such as agriculture, food security, rural development, human and social development, trade and technology. Innovation was a continuous process, and needed to move forward. IP and innovation, and IP regimes and innovation were two different issues. IP regimes did not provide a level playing field to facilitate innovation in all countries in the same way. While the existing IP regimes favoured innovation and its commercial returns in some countries, they might do the opposite in developing countries. In most developing countries and in almost all of the LDCs, the private sector did not have the capability to invest heavily in R&D. It was the public sector that filled the gap of the private sector. So the approach and objectives of IP regimes in developing countries must be different from those of developed countries.

346. While IP was property, it was also a privilege. Thus there must be a proper balance between rights and obligations to effectively use both IP and innovation. Developing countries needed special and differential treatment and must be eligible to receive assistance, in addition to technical assistance, which must be development-oriented, demand-driven and transparent. He noted that WTO Members had already recognized this under Articles 66 and 67 of the TRIPS Agreement and hoped for their continued engagement.

347. The representative of Peru said that the subject of the agenda item was closely related to development, employment and education. Peru had the National Council for Science, Technology and Innovation, which was under the Council of Ministers and reported directly to the President. This was intended to create, promote, coordinate, supervise and assess any action taken nationally in science and technology, guiding private sector policies and supporting policies that would promote scientific development and IP in the country.

348. In August 2012, the Peruvian Institute for Business Administration was created with an innovation centre aligned with the social policies implemented in Peru. This was proof of joint efforts between the academic and private sectors in the promotion of initiatives to improve the IP system in terms of innovation, in favour of businesses and people. For example, Peru held a public competition for inventors, which was now in its eleventh session. Prizes were also won by these successful inventors in the Salon of Inventions in Geneva. One winner was Mr Ramos who had been blind for 63 years and yet invented a force multiplier system that won the bronze medal in Class A for mechanics, motors, machinery and metallurgical technology. These were some examples of the efforts undertaken in Peru, reflecting the State's concern for bringing the academic and private sectors together to promote innovation. It was clear to his delegation that the strengthening of the IP system was a key element and his Government worked with WIPO to design its IP structure. He said that this agenda item should continue to be addressed and that the Council could become a forum to support states' efforts to close the knowledge gap.

349. The representative of Tanzania said that it was true that there was high correlation between IP protection and innovation. No innovator would appreciate investing in a country where his IPRs would be abused, be it in a competitive environment or even in an LDC. However, he feared the abuse of the requirement to have a higher level of protection of IPRs. He said that such higher level was only appropriate in some cases. Where there was no competition, as in LDCs, he found it difficult to find a correlation between a higher level of IP protection and the dissemination of technology. Thus, there must be a balance of where it was necessary to have a higher protection system of IPRs and where there was no fear of losing control over technological information.

350. The representative of WIPO said that the face of innovation was changing as seen in WIPO's first World Intellectual Property Report, 2011 (WIPR). This report had carefully considered studies that had been done in the field of innovation and relevant data in order to summarize dispassionately, and in a manner accessible to policy makers, the evidence on global innovation. He said that the report set out that innovation accounted for as much as 80% of economy-wide productivity growth in developed countries and that, while there was less evidence available for developing countries, studies had shown that if one took a broader view of innovation to include incremental product and process innovation, innovation played a similarly important role in less developed economies.

351. Data on R&D expenditures showed that global investments in R&D had almost doubled in real terms from 1993 to 2009 and global R&D expenditures had grown more rapidly than global gross domestic product, which led global R&D intensity to grow from 1.7% in 1993 to 1.9% in 2009. At the same time, it was important to point out that 70% of global R&D spending still took place in high-income countries. Developing countries had increased their global R&D share by 13% between 1993 and 2009. China alone accounted for more than 10% of this increase, which propelled it to second place as the world's second largest R&D spender in 2009. Some data were also available on broader investments in intangible assets that went beyond pure R&D activities and considered investments in marketing and branding as well as in skills development. Data were limited to some developed countries but they uniformly showed that firms' investments in intangible assets had grown more rapidly than their investments in tangible assets. And in some countries firms invested more in intangible assets than they did in tangible assets.

352. Many analysts had pointed to the rising importance of non-technological innovation, including organizational, marketing, design, and logistical innovation, but it remained difficult to empirically assess the true importance of non-technological innovation. One had to make a clear distinction between non-technological and technological innovation because many non-technological, organizational, and logistical innovations ultimately relied on improvements in technology, for example, improvements in information and communication technologies.

353. Another important point was that innovation was increasingly international in nature. There had been a sharp increase in the share of peer-reviewed science and engineering articles with international co-authorship and a rising share of patents that listed inventors from more than one country. There had been greater geographical diversity of multinational firms' R&D operations that invested in R&D facilities in a greater number of countries and also increasingly in emerging economies.

354. Many analysts had pointed out that innovation had become more collaborative and open. The WIPR had described the process of open innovation, whereby firms who practice open innovation strategically managed inflows and outflows of knowledge, so that they collaborated horizontally with other competitors and vertically with suppliers, as well as with customers. Looking at the economy-wide significance of this phenomenon, he said that it remained difficult to assess its true extent. There were signs of greater co-operation in inventing as reflected in greater co-patenting activity. There was also an upward trend in R&D alliances, though that mainly happened in the 1990s. There was also a rise in knowledge markets, for example in the form of IP exchanges and brokerages. However, it was important to point out that those were still nascent, and relatively small in size. So it remained difficult to assess the true scale and systemic importance of some of the innovation models that business analysts had written about.

355. With regard to the role of IP in the innovation process, it was recognized that IP was just one of the many policy instruments that existed to support innovation. The demand for patents had risen from around 800,000 applications per year worldwide in the early 1980s to close to two million patent filings in 2010. This increase had occurred in different waves with Japan driving the

filing growth in the 1980s, joined by the United States, Europe and the Republic of Korea in the 1990s, and more recently by China. He said that one equally saw rapid growth for other IPRs. Trademark filings had increased from around one million in the early 1990s to 3.5 million in 2010. WIPO's research had shown that over the last 15 years around half of the growth in patent filings had been due to first filings of patents, which approximated the filings of new inventions, and the other half was due to subsequent filings, namely patent filings for the same inventions in additional patent offices.

356. He said that from the writings of economists on the patent system, the WIPR highlighted a number of ways in which views on the IP system had changed. A traditional view that was still valid, based on evidence from survey of companies, suggested that patents were of greatest importance for appropriating investments in innovation in the pharmaceutical and chemical industries, reflecting the long R&D cycles in these industries as well as the ease with which new chemical compounds could be copied once they were on the market. In many other industries product life cycles were shorter and companies had other means of appropriating their investments in R&D, such as being the first on the market or rapidly moving down the technology learning curve. Interestingly though and somewhat puzzling for some economists, most of the growth in patenting had actually not occurred in the pharmaceutical and chemical industries but in other industries, especially in information and communication technologies. And answers to those empirical patterns were quite complex. While it did reflect the rapid technological progress that had occurred in that industry, it also reflected considerations of strategic patenting and patent portfolio races that had emerged between companies.

357. An often under-appreciated role of the patent system was that of facilitating specialization. Firms might be good at innovating but they might not necessarily be good at manufacturing. The patent system allowed firms to specialize in innovating and then licensing their innovations to other companies. One of the fundamental insights in the history of economic thought was that specialization was an important source of efficiency and ultimately economic growth. On the role of IPRs in harnessing public research for innovation, he said that universities and public research organizations held substantial shares of overall R&D spending, especially in developing countries where they often accounted for the great majority of R&D expenditures. Many countries had developed frameworks to incentivize patenting by these institutions and subsequent commercial development of their inventions through technology transfer offices. It was important to note that public-private knowledge exchanges occurred through a number of channels, not only through the licensing of patented technologies but also through scientific publishing, research collaborations, conference attendance and other forms.

358. At the same time, evidence had shown that patenting and the activities of technology transfer offices could widen opportunities for commercializing university inventions. It was obvious that institutional design mattered and establishing a successful technology transfer framework took time and resources. But in principle those important organizations could contribute to the commercialization of scientific knowledge that often came out of the public sector.

359. Another representative of WIPO continued that the continuing debate on the link between innovation, creativity, IP and economic development increasingly underscored the need for more empirical analysis and research on the topic. Upon a request from its member States, WIPO had developed a methodology to measure the economic contribution of the copyright-based industries. Studies carried out in 35 WIPO Member States suggested that 5.4% of the GDP in the countries surveyed and 5.8% of the employment in them came from the industries that were based on copyright and related rights protection. The studies also suggested that these industries were characterized by higher productivity levels, multipliers and growth dynamics – on average 2.5 times higher than the average growth rate in the countries that had been surveyed. Both developed and developing countries had shown that the creative sector had a remarkable growth potential. WIPO was looking into developing new methodologies that would deepen and broaden the analysis in the field of economics of copyright, namely on issues like the direct impact of copyright protection, some of the non-economic impacts of creativity in copyright, the effect of non-compliance and other issues.

360. The representative of African Intellectual Property Organization (OAPI) said that OAPI had 16 member States from Central and West Africa. OAPI had just celebrated its 50th anniversary in its headquarters at Yaoundé in Cameroon. On that occasion, there had been a Ministerial Conference with Ministers for industry and culture who discussed IP at the service of African development. The

regional IP system of OAPI had a single IP law, the Bangui Agreement, which governed patents, utility models, trademarks, industrial models, geographical indications, plants, integrated circuits, copyright, neighbouring rights, and unfair competition. There was only one office for filing and granting patents in Yaoundé and these certificates were awarded on demand and were valid in all the 16 member States. OAPI was responsible for TRIPS implementation as well as filing, and granting of these IP certificates on behalf of its member States that did not have any national systems outside OAPI.

361. He wondered whether OAPI was covered by Articles 66.2 and 67 of the TRIPS Agreement, in terms of the provision of technical and financial assistance from developed country WTO Members. He said that IP must serve development needs, and it was therefore linked to innovation funding that valorized research contained in IP. At the last OAPI Ministerial Conference, in a statement at the conclusion of the conference, Ministers had encouraged States to draft national development programmes with a view to the better inclusion and coverage of IP in programmes and policies. The slogan was "IP serving development in Africa". He said that Ministers believed that there was a clear link between IP and development.

362. He said the IP protection system had its advantages. Apart from certain specific features of IP protection, there was also the way in which there were limits from a territorial point of view and also over time. He said that the Council had heard that there were two million patents filed in 2011. However, only fewer than 1,000 of these were filed with OAPI. In other words, two million minus 1,000 inventions were inventions from other territories that were capable of being exploited freely in OAPI countries. Even when patents had been granted, they were limited in time as their validity was only 20 years, or less when patent protection was not renewed. Thus, IP allowed the public to learn technical information available in patent documents filed at other patent offices. There was counterfeiting only if there was a certificate that had been awarded and it was in force.

363. Some LDCs that were Members of OAPI had submitted their priority needs assessments. They would like to have digital information available so that they could access information on knowledge and know-how which was available in IP office systems. The question was not whether or not IP protection should be granted, but what could be done in order to best benefit from the IP system. Access to information by researchers was the first step towards the creation of partnerships for development. Ministers had encouraged the States to fund innovation to obtain new products on the market. He said that his understanding of innovation was that these were new products because they were the result of newly patented inventions, or had been improved. Ministers had encouraged the use of the results of research and knowledge embedded in patent documents to add value to the processing of local raw materials, including mineral ores, farming and cultural activities. He added that there was more information available on the OAPI website: www.oapi.nt.

364. The Council took note of the statements made.