

Addressing the Interface between Patents and Technical Standards in International Trade Discussions

UNCTAD – ICTSD Project on IPRs and Sustainable Development



Introduction

Tensions between standards and patents first surfaced in the United States in the 1990s. Several high-profile cases in the information and communications technology (ICT) sector targeting the implications for competition of “submarine” or “hidden” patents in standardization processes were brought before the Federal Trade Commission. Although international standardization bodies have recently taken some measures to address such concerns, a number of countries now face problems in this area. In 2005, China, for instance, requested the World Trade Organization (WTO) Committee on Technical Barriers to Trade to explore and address the overlap between patents and standards, including how patents and other intellectual property rights might become technical barriers to trade. Members of the World Intellectual Property Organization’s (WIPO’s) Standing Committee on Patents have also advocated for further research on the matter.

These potential conflicts between patents and standards occur when the implementation of a technical standard calls for the use of technology covered by one or more patents. The main problem arises when compliance with a particular standard requires access to technologies that may be intellectual property protected. In such situations, the potential of anticompetitive practices, exclusion of competitors and high licensing costs increases. While there is in the literature a great deal of analysis over the links between patents, copyright protection and standards in software, the objective of this note is to provide a clearer perspective of the problem from the point of view of standards setting, manufacturing and trade, and suggest policy options.

Background

Patents grant exclusive rights over the exploitation of inventions for a limited period. Such rights cover a wide range of acts, including the use of the patented subject matter (whether production processes or products), as well as the prohibition to sell, offer to sell or import products obtained by the process without the consent of the rights holder.

Patents are territorial (i.e. they are granted by government agencies and have effects only within the boundaries of that country) and can only be obtained for inventions that meet certain criteria. These include “novelty” (new products or processes), “inventive step” (non-obviousness for someone skilled in the art), and being “capable of industrial application” (usefulness).



The fact that both processes and products may be patented is particularly relevant with regard to technical standards, since they often include both elements.

Technical standards consist of “rules, guidelines and characteristics for products or related processes and production methods (technical specifications) approved by a recognized body” for which “compliance is not obligatory”. (See WTO Agreement on Technical Barriers to Trade - TBT Agreement - annex 1, para. 2.) When established by Governments, the standards must comply with the TBT Agreement, but private actors, such as business associations, often require standards that far exceed those required by government agencies. The purpose of standardization is to facilitate the harmonization of design and production processes for products and services, and ultimately facilitate international trade. It allows economies of scale, easier understanding among producers and providers, as well as compatibility and interoperability among products and components. Examples of such standards include country telephone codes and passenger safety equipment.

The above objectives could be at risk by some patent holders’ practices. In certain countries, the increase in offensive and defensive patent applications and legal reforms - sometimes pushed by interest lobbies - have led to an expansion of the notion of “invention” to include scientific discoveries, research tools, life forms, software and business methods. In some cases, the criteria have been relaxed in ways that the legal scope of the patentable subject matter and related exclusive rights has become unpredictable¹.

Patents in complex fields of technology, such as electronics and computers, often have relatively poorly defined boundaries, leading to high litigation costs and uncertainty among users and competitors. In the United States, for example, patents tend to protect minor inventions, and the legal costs of filing and defending them are rising faster than the amount of research generated². In parallel, controversial judicial decisions have narrowed the scope of the “research exemption” (*Madey v. Duke University*)³, limiting the margin of scientific research and follow-on innovation.

These developments have placed additional demands over the patent system, such as extensive searches of prior art and effective examination of the patentability criteria, as well as of claims made in patent applications.

The current patent landscape in sectors such as ICT is particularly dense and complex, and it has become

extremely difficult to innovate without risking to stepping on someone’s patent, even when serious patent searches have been undertaken.

Recent trends augur changes in this area. Calls for higher patent quality examination by academia, civil society and some business groups has been taken on board in recent United States Supreme Court decisions and in the examination practice of some patent offices. A landmark case related to ICTs reflecting this new trend is the 2006 United States Supreme Court decision (*E-bay v. Merck Exchange L.L.C.*)⁴ in which the legal effects of business methods patents were significantly restrained by making it harder for patent holders to obtain injunction relief.

Objectives and functions

While standards seek to harmonize the way in which we design and produce goods or provide services, patents seek to promote innovation and investment.

Standards are meant to provide a public, free and collective tool for producers and consumers. They seek to facilitate a common understanding of qualitative and technical aspects of particular products and services, and to facilitate convergence, adaptability and interoperability among them. There are several examples of historical standards that have set the way we use products. QWERTY, for instance, became a universal standard first for typewriters and subsequently for computer keyboards. Standards also have an important economic function through the so-called “network effect”, which allows the benefit of a single user to be extended to an unlimited number of users, thus reducing the cost of the learning process and affording economies of scale when targeting consumers⁵.

In contrast, patents seek to reward inventors for their intellectual and economic efforts. Their most important social function is the promotion of technology diffusion, disclosure of technical information on the invention, and encouragement of technological innovation by allowing the recovery of investments on research and development.

While standards are not meant to promote innovation, they can affect it in various ways. For instance, it may be possible to innovate above or around the standards and thus set a path for new, better ones. But standards can also freeze innovation if they become universal and, as a consequence, discourage investment in the area (e.g. while QWERTY is not the fastest typing method, it is impossible to change keyboard layouts worldwide without consumer rejection).

An important effect on innovation, manufacture and subsequent trade is that standardization processes may be influenced or “captured” by industries that enjoy a leading position in the market (being the first to design and market a particular product) and possess strong IP portfolios in the sector in question. In many cases, access to technologies is a “must” to comply with the agreed standards. When those standards are overly influenced or even captured, it becomes almost impossible for new entrants to participate in the market. This could defeat the purpose of promoting innovation, competition and the use and potential benefits of technical standards.

Typology

In general terms, standards can be mandatory or voluntary. Mandatory standards are known as “technical regulations” and are issued by Governments based on health, safety, security and environmental grounds, for example, or to prevent deceptive or fraudulent practices. Voluntary standards apply to any economic activity, and are usually adopted by private associations known as standard-setting organizations (SSOs) and sometimes by independent public regulatory authorities. Some voluntary standards can become *de facto* “mandatory” if their fulfilment is linked to a technology that is dominated by one or just a few private rights holders, or when they are required by public procurement regulations.

A distinction can be made between *de jure* and *de facto* voluntary standards. The former are developed by SSOs

at the national (e.g. the American National Standards Institute) or at the international level (such as the International Organization for Standardization (ISO))⁶. *De facto* standards usually result from a successful marketing strategy that makes a particular product or process the most economically relevant standard for any competitor in a given field, as has happened with batteries for electronic products and Windows XP for software.

Standards can also be designed as, or may become, open or closed. Open standards fall more readily into the realm of public goods. They are made available to the general public, and are developed and maintained through collaborative and consensus-driven processes⁷. They tend to facilitate interoperability among different products or services and are intended for widespread adoption. Closed standards couple the natural advantages of a company or group of companies in the market (i.e. lead time advantage or important market concentration) with the protection of core technologies needed for their effective use, thus limiting access to the standard itself.

Currently, there is a heated debate on standards among stakeholders in the ICT sectors over the use of open instead of closed standards (see box 1) These stakeholders include Governments, hardware industries and software producers, users and civil society actors. The debate is particularly relevant to software developers, due to the difficulty of setting boundaries for patents in this area⁸.

Box 1. The Open Office controversy

Microsoft Corporation, which has championed the proprietary software model and participated in the creation of several closed standards, has faced a number of challenges linked to anticompetitive practices in the United States and the European Union (EU). The most recent controversy involves Open Office XML, a file format for representing spreadsheets, charts, presentations and word processing documents.

In 2004, European competition authorities ruled that Microsoft Corporation was abusing its dominant position in the market by including the Media Player software in all its Windows operating systems and therefore generating damage to rival software developers⁹. This decision, other subsequent rulings, as well as continuous criticism by competitors and civil society, led Microsoft

to announce that it would standardize the new version of its XML-based formats through Ecma International (an international standards body on information and communication technologies). Although Ecma and ISO approved the Open Office Standard, many businesses and civil society actors remain critical or sceptical about the level of openness, interoperability and the possibility of document exchange among different software. In 2008, the European Commission announced that it would open another investigation into whether Open Office “effectively allowed better interoperability and consumers to process and exchange their documents with the software product of their choice”¹⁰. Recently, Brazil, India and South Africa have questioned the ISO decision on the Open Office XML standard.

Sources of tension

The overlap between patents and standards became an issue only recently. It was not until the ICT boom of the early 1990s - and the attendant proliferation of patent filings and standards - that the problems became apparent.¹¹ Tensions arise when the implementation of a standard calls for the use of a technology covered by one or more patents. On the one hand, the objective of SSOs, which often consist of companies interested in the development of the technology in question, is to establish standardized technology that can be used as widely as possible. On the other hand, patent owners in the area in question may have an interest in the adoption, within the standard, of their own, patented technology in order to reap economic benefits at a later stage¹². Three sources of tension may be found considering the particularities of international standard-setting, manufacturing and international trade.

International standard-setting

WTO Members are encouraged to use voluntary international standards as the basis for their mandatory technical regulations, and to participate in international SSOs, within the limits of their resources (see art. 2.6. of the TBT Agreement). There is a presumption that government regulations based on legitimate objectives in accordance with international standards do not create “unnecessary” obstacles to trade, even when they do have trade-distorting effects. Due to the value given to standards, Governments need to pay attention to what is happening in the relevant institutions, especially in areas

of public interest. However, many developing countries (and occasionally industrialized ones) lack the resources and technical capacity to follow developments in these organizations in any detail.

Several technologies may apply to a new set of technical norms being developed by an SSO, and many of the areas where standards are set are subject to intense patent activity, particularly in high-tech fields such as ICTs, electronics and the like¹³. Due to the complexity of the patent landscape and the wide scope of many claims, it is not easy to determine exactly how many patents are involved. Patent searches are time- and resource-consuming, and sometimes not fully accurate. The difficulty of assessing the level of patented technologies applicable to a standard under development leads to uncertainty over who can actually use it.

In the standard-setting process, all private participants will naturally try to incorporate in new standards as many technologies and practices controlled/used by them as possible. In the past, companies have deliberately omitted to inform SSOs about potential patents applicable to the new standard or have “innovated” inside the standard in order to capture rent. Depending on the number and the importance of the patent(s), such behaviour can generate economic advantages in terms of royalties, a potential capture of the standard, and barriers to competitors and new entrants wishing to use the standard. This type of behaviour has been considered as unfair or anticompetitive in some instances. (See box 2 on two cases before the United States Federal Trade Commission (FTC)).



Box 2. Standards and anticompetitive practices: selected cases under the United States FTC

The VL-BUS and JEDEC-RAMBUS cases before the United States FTC and courts exposed the difficulties of addressing the interface between patents and standards, and tried to provide some legal answers. Both disputes addressed the issue of “hidden” patents in standard-setting processes, situations of inappropriate and insufficient disclosure of patents, and problems surrounding the scope and effectiveness of SSOs’ disclosure rules. Competition issues also arose in relation to the complexity of the patent landscape, burdensome licensing, misrepresentations and omissions to SSOs, *de facto* refusals to deal, and abusive licensing practices. In 1995, the FTC challenged Dell’s claim, alleging that Dell’s conduct unreasonably restrained competition by hindering adoption of the standard, raising the costs of adopting the standard, and by exerting a chill on legitimate standard-setting activity¹⁴. The long litigation process in the JEDEC-RAMBUS case started in 2002. More recently, the FTC found that RAMBUS unlawfully obtained monopoly powers through misrepresentations and omissions to SSOs in standard-setting processes. Nevertheless, in

early 2008, the United States Court of Appeals for the District of Columbia Circuit overturned the FTC decision by indicating that the FTC failed to demonstrate that RAMBUS inflicted any harm on competition. The court remanded the matter back to the FTC for further proceedings consistent with the court’s opinion.

Another case where similar situations occurred was the FTC complaint against UNOCAL in 2003. The main ground for the complaint was that this company acquired illegal monopoly power in the technology market for reformulated gasoline. Such monopoly power arose as the consequence of several misrepresentations by UNOCAL over the non-property status of its technologies in the standard-setting process for reformulated gasoline in California’s Air Resources Board. The licensing fees to UNOCAL could have cost about \$500 million to Californian consumers for the use of reformulated gasoline. The complaint was resolved by a settlement with the FTC by which the company would cease the enforcement of relevant patents and will not collect royalties or damages arisen from these patents¹⁵.

Manufacturing

The interplay between patents and standards in the manufacturing process is similarly beset by problems, including burdensome licensing procedures, legal uncertainty, high or abusive fees that in many cases can be considered tantamount to refusal to deal, as well as discriminatory pricing.

As pointed out above, assessing the number of patents and intellectual property rights (IPRs) applicable to standards is often complex and expensive, and searches may be insufficient or inaccurate. In addition, reaching licensing agreements can take a fair amount of time and resources, particularly when many title holders - sometimes several hundred - are involved. Manufacturers who believed in good faith that they had obtained a license to use a certain standard may face legal uncertainties (for example, through injunctive relief sought by unknown patent holders), thus jeopardizing their chance to recoup investments already made. For instance, patent licensing and disputes delayed the manufacture and commercialization of new products using 3G-band technologies for mobile phones for two years.¹⁶

When a standard has become closed (or captured) by a limited number of producers with a high level of market control, there is the potential for title holders of relevant technologies to discriminate among licensees, and charge abusive or differential prices. This type of likely anti-competitive behaviour could be brought to the attention of national competition authorities.

Most of today’s technological industries are patent-intensive, and many manufacturers have faced intolerably high licensing fees as a consequence of patents.¹⁷ Additionally, there might be situations where price discrimination among licensees, while optimal for patent holders, can be considered tantamount to price abuses/refusal to deal, especially if the price difference is such that it makes it impossible to engage in normal business operations and obtain some reasonable profit from the license. Abusive and discriminatory licensing fees could become a disruptive factor in business planning and manufacturing, due to their potential power to affect cost allocation and prices, and ultimately sales and commercial success. (See box 3 reviewing recent cases in Taiwan, Province of China.)

Box 3. Abusive licensing terms and compulsory licensing in the CD-R case

One relevant competition case linked to overpricing and unreasonable terms for licensing in the field of ITC was the CD-R (Compact Disk-Recordable) licensing case in Taiwan, Province of China. In the late 1980s and early 1990s, Phillips Electronics, Sony and Taiyo Yuden agreed on a *de facto* standard for CD-Rs by jointly pooling their relevant patents.¹⁸ This joint patent pool permitted these companies to enjoy monopoly power in the licensing (technology) market for the CD-R patents¹⁹.

In the early 2000s, the Fair Trade Commission of Taiwan (FTCT) charged several companies (Phillips Electronics, Sony and Taiyo Yuden) with the violation of local fair trade law. In this case, the FTCT found that Phillips, who was acting on behalf of the three companies under a joint licensing arrangement, was taking advantage of its dominant position to compel licensees to accept licensing agreements that were considered abusive. The practices that were called into question included joint licensing packages of all key patented

technologies, methods for setting royalties, and refusal to disclose important information²⁰. The TFTC fined Phillips and requested it to cease illegal practices.

Subsequent to the latter case, Gigastorage - a company in Taiwan Province of China - requested the Taiwanese Intellectual Property Office (TIPO) to issue a compulsory license for the use of the CD-R technology. The claim was based on Taiwan Province of China patent law, which includes the failure "to reach a licensing agreement under reasonable terms and conditions under a reasonable period of time" as one of the grounds for granting compulsory licenses²¹. The compulsory license was granted in 2004. The case caused deep concerns in the European Union and threats were made to bring the case to WTO²². In 2008, an administrative high court of Taiwan Province of China ruled against the compulsory license. In late 2008, Gigastorage and Phillips withdrew the original application of compulsory license and the subsequent appeals.

License fee barriers are usually easier to overcome for companies with a patent portfolio that allows them to engage in cross-licensing and patent pool schemes. This, however, is rarely an option for developing country firms.

To make matters worse, a new business model has emerged in which many companies are involved in the development of a patentable invention that conforms to an existing or future standard for the sole purpose of generating licensing fees. Such practices contribute to "patent thickets" (i.e. areas of intense patent activity)²³ and increase chances of overlap between patents and standards.

A "tragedy of the anti-commons" (i.e. the inability to use common/public goods) arises when multiple gatekeepers (patent holders), each of whom must grant permission before a resource can be used, make it nearly impossible for people to enjoy what should be open to the public. With such extensive property rights, the resource is likely to be underused, innovation is stifled and the manufacturing process slowed down²⁴.

Competition policy and law could be used in markets such as the EU and, to a limited extent, the United States to allow third parties to access technologies protected by IPRs. The "essential facilities" doctrine can provide a way to ensure or facilitate access to technologies

needed to implement standards. As mentioned above, under this concept, denying "reasonable terms" for licensing a technology needed to use a standard or charging abusive/discriminatory licensing fees could be considered as "refusal to deal"²⁵. When coupled with a dominant position in the market, such actions may raise competition issues that could be brought before the relevant authorities.

These tensions are not new. They initially affected several businesses in the United States, especially those in the hardware manufacturing and software development sectors. In these fields, the ability to use others' knowledge is essential for further innovation and the application of existing technology to new products and processes.

Almost no developing country company has initiated legal action based on refusal to deal of access to "essential facilities" in the ITC field. The inaction is most likely due to lack of experience of both firms and national competition authorities in this area.

Responding to some of the above concerns, a number of SSOs not only require the disclosure of patents involved in a future or existing standard, but also the application of the so-called FRAND principle (or some variation thereof). This principle requires all participants in a

standard-setting process to grant fair, reasonable, and non-discriminatory (FRAND) licensing terms to other members of the SSO. An example of this type of approach is the common patent policy adopted by ISO, the International Telecommunications Union (ITU) and the International Electrotechnical Commission (IEC) in 2007. While welcomed as a landmark by many countries and transnational business, the FRAND principle is still considered unsatisfactory by several businesses, activists, scholars and a number of developing countries²⁶, due to its non-binding nature, the broadness of its definitions and the post-approval obligations required by SSO members.

International trade

According to WTO, “technological sectors with higher propensity for standardization tend to be more patent-intensive and export-intensive”²⁷. This suggests a strong correlation between standardization and patents on the one hand and downstream control over manufacturing and international trade on the other. Those who are able to set national and international norms can introduce their processes, practices and technology into new standards. This allows for lower transaction and production costs and increases control over who manufactures and who trades. Thus, whoever sets the standards gains facilitated access to international markets.

Obviously, transnational corporations are in the best position to set such standards, since they are generally the ones leading technological change and have an important position in the market, as well as the resources and technical capacity necessary to influence both national and international standardization. This presents a significant challenge for many developing country firms, which cannot participate effectively in international standard-setting processes and struggle to meet the criteria originally set by more competitive and well-established firms.

While meeting international standards is *per se* difficult for many developing country entrepreneurs, the fact that they have to engage in complex and burdensome processes to obtain licenses for the relevant technology to meet the applicable standards makes it even more challenging for them to integrate in international trade. When coupled with patent issues in standardization processes, the links between standards and patents essentially serve to secure the advantages of existing global trade players²⁸. In this context, standard-setting processes can be characterized as a political and economic race in which all firms are jockeying for the leading position in the use of future standards. Patents are just one tool that could be misused for attaining unfair advantages.

A recent report on the international patent system prepared by the WIPO secretariat found that from a policy standpoint the main objective appeared to be how to strike a balance between the interests of rights holders in exploiting their patents, the producers who want to license and produce the goods covered by the standard at a reasonable price and the public, which seeks the widest possible choice among interoperable products²⁹. WIPO member States have requested the secretariat to prepare a study on this subject to be released in 2009.

Finally, it has to be highlighted that the sources of tension arising from the particularities of standard-setting, manufacturing and international trade can be subject to competition law, but involve policy consideration which can be illustrated in the following case of China.

Concerns over patents, standards and trade: the case of China³⁰

DVD players illustrate the power that standards can have in determining who can produce, trade and, ultimately, receive economic returns. While China has a strong manufacturing sector in this field, DVD players incorporate standards that require special decoder chips - the rights to which are owned by the DVD license holders - as well as other foreign-owned technologies.³¹ According to *China Daily*, patents linked to this and other standards translate into Chinese DVD player manufacturers paying royalty fees that represent about 20 to 50 percent of production costs³².

Some Chinese firms could sell many of their DVD players in the domestic market without always having to pay license fees³³, due to the fact that some technologies might be off-patent or the technology is available through reverse engineering. However, attempting to do so abroad would expose them to lawsuits³⁴, as well as border measures, which in many cases could affect a significant part of the output of certain sectors, such as the electronics industry.

To address these challenges, China has embarked on a two-track strategy. The first, while mostly internal, will have important international repercussions. It consists of developing domestic standards based on low-cost or indigenous technologies and adaptations. In the words of a paper by the China Electronics Standards Institute:

“China has been forced to develop its own standards solely because developed foreign countries, through their own non-tariff trade-barrier tactics (including the use of intellectual property), have made it imperative for the

country to change its economic stance from defensive to offensive. We need to use the patent system to promote our technological advancement. Owning our own intellectual property is the only way we can cross over the technology barriers set by the developed countries.”

As part of this strategy, China developed national standards for wireless authentication and privacy infrastructure security for local area networks, which temporarily excluded the popular Intel Centrino chips due to non-compliance. However, application of the standard was suspended after intervention by United States authorities, who considered that such standard was affecting the interest of foreign competitors and prospects for future investments in the area.

This strategy aims at making China’s society a more innovative one, especially in areas of strategic interest. The major difference with other developing countries is that the market size of China may facilitate success in achieving such a high goal.

Some observers consider that efforts toward the development of national standards in China could be influenced by a technological protectionism, as it includes several policy objectives linked to national technological development, competitiveness and national security. In that sense, a think tank has suggested that the best approach for China in setting its own standards policy should be one of improving the innovation environment for services providers³⁵. Such a suggestion implies wide stakeholder participation, inter-agency coordination, intellectual property strengthening and investments in education and research and development. Nevertheless, while the suggestion has merits, one should always take into account the need, first, of developing pro-competitive and participatory standard-setting processes nationally and internationally and, second, not to underestimate the factual basis and complexities of the problem and the limitations of national solutions in a global market.

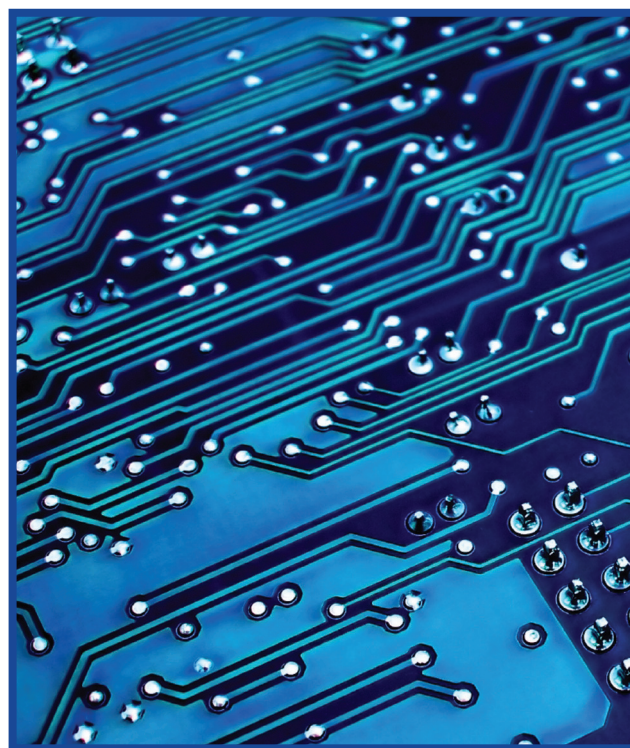
The second Chinese strategy has been spelled out in two communications to WTO’s TBT committee³⁶. The papers laid out the nature of the problem, its impact on international trade, the main international actors in this field, and the need to find a balance when there is an overlap between patents and standards.

China has argued that there was a need to improve the implementation of article 2.4 of the TBT Agreement, which directs members to use relevant international standards as a basis for their technical regulations. It commended standard-

setting bodies such as ISO for encouraging concerned parties to disclose IPR information related to proposed standards in a timely manner and for calling on IPR holders to negotiate licensing terms with potential applicants in a reasonable and non-discriminatory manner. However, China noted that more concrete measures were needed to encourage disclosure, since SSOs still refuse to take responsibility over IPR-related information in their standards. Technologies protected by IPRs in standards should be given “sufficient and reasonable protection” to safeguard rights holders’ interests, according to China, but a balance should be struck between standardization needs and IPR protection.

China has suggested that members take advantage of the triennial review of the TBT Agreement so as to develop proper approaches and policies to promote the development and implementation of international standards, as well as more effective implementation of the agreement itself. Reactions from WTO members have so far been not been conclusive. The proposals have been shared and supported by several developing countries, such as Brazil, that might have systemic concerns that go beyond the ICT field and include a wider technological range.

Finally, Governments and industries from developed countries and leading SSOs need to emphasize a cooperative approach in further integrating China into the international standards community³⁷. The same should apply to other developing countries as they increase their capacities in the value added production chain of many products and services, and in their participation in international trade.



KEY CONCLUSIONS AND RECOMMENDATIONS

- With the view of advancing policy-orientated discussions on how to deal with these important developments, the following recommendations capture some of the policy options being put forward on tackling the complex issues raised by technical standards and patents:
- The content and extent of patent and standard policies of SSOs could be clarified through, for instance, the establishment of binding obligations to effectively disclose among participants all relevant patents and related IPRs. Such obligations may also apply to ongoing research and not only to protected inventions. This would imply a precise definition of what the FRAND principle means and to what extent it must be included in contractual relations among participants. This might also include arbitral mechanisms in and out of the SSOs.
- In cooperation with competition authorities, national standards authorities could facilitate or broker collective licensing agreements in standards in areas of relevance to the public interest or where the interest of important national and transnational business may be in conflict. For instance, patent pools, innovative cross-licensing schemes, open standards, manufacturing and marketing cooperation agreements among the owners, manufacturers and traders of a technology could be of assistance. If handled in an open and pro-competitive manner (including avoidance of local protectionism), this type of arrangement could reduce transaction costs, allow for reasonable and non-discriminatory fees, reduce opportunities for abuse and provide legal security.
- National regulation could be developed through guidelines on minimum standards for SSOs with regard to patents and standards from a pro-competitive perspective. Regulators in, for example, the EU, Japan and the United States have already elaborated specific guidelines for dealing with licensing agreements involving know-how, intellectual property and standardization.
- The participation of developing countries' Governments and firms in SSOs should be promoted and facilitated. This should include capacity-building and assistance on how to effectively participate and engage in discussions.
- The WTO TBT committee could identify a set of best practices for addressing the overlap between patents and standards, and incorporate it into the TBT Code of Good Practice for the Preparation, Adoption and Application of Standards, which is open to acceptance by private sector bodies such as SSOs, as well as governmental authorities.
- Adoption of open standards and interoperability among products and services could be promoted in areas where relevant technologies have a networking effect or are essential to the delivery of public knowledge goods such as education or scientific research. One instrument that still is in the hands of Governments is to provide preferences to products and services that follow those open and interoperable standards in government procurement processes.
- Finally, in international deliberations, for example in WIPO's Standing Committee on Patents, it might be opportune to consider, among other things, the value of wide research exceptions and other limitations in patent law. It might also be relevant to consider the importance of having a better understanding on how to address abusive pricing, unreasonable terms and conditions, and other anticompetitive practices. The involvement of competition authorities could contribute to this debate, particularly on how these issues could be resolved through the effective use of competition policy and law, including remedies such as the use of a license of right or the non-enforceability of relevant IPRs.

Endnotes

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- 6 ISO is an independent body setting international standards and is administered by 157 member States. Decisions are subject to appeal.
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- 27 See WTO. World Trade Report, 2005.
- 28 See Basu, 2006.
- 29 WIPO, 2008.
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- 31 See Basu, 2006.
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- 33 Idem.
- 34 Idem.
- 35 See National Bureau of Asia Research (2008). *Standards, stakeholders and innovation*.
- 36 See China's submissions to the TBT, 2005 and 2006.
- 37 See National Bureau of Asia Research, 2008.

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