Intellectual Property Rights in Information and Communications Technology Standardization: High-Profile Disputes and Potential for Collaboration Between the United States and China

BAISHENG AN*

Abstract

China and the United States have been involved in difficult discussions—both high-profile disputes and silent confrontations—on information and communications technology (ICT) standards and related policies. While the United States is trying to maintain its lion's share of the digital economy in global markets, China wants to increase its own share in proportion to its growing capacity for manufacturing and innovation. Conflicts are unavoidable, but at the same time neither nation can afford a full-fledged standards race. Systematic and meaningful solutions to this clash are needed in order to sustain ICT industries in both countries and in the global digital market. To achieve a solution, both sides need to reevaluate their positions in previous discussions, taking into consideration the other side's views. While solutions are not easy to find in the available international rules and practices of the World Trade Organization (WTO) and other international organizations, it is still desirable for both parties to refrain from disputes and enter into theoretical and policy discussions aimed at exploring interest-maximizing mechanisms.

SUMMARY

* Baisheng An, Deputy Director, WTO Affairs Department, Chinese Ministry of Commerce (MOFCOM). All the ideas are the author's own and do not necessarily reflect the official positions of MOFCOM or relevant Chinese government agencies.

The author has benefitted greatly from intensive discussions with Dr. Xiangchen Zhang, former Director General of WTO Affairs Department at MOFCOM, and current Minister and Deputy Head of Chinese Mission to the World Trade Organization (WTO). The author is also grateful for the comments by William Davey, Dieter Ernest, Richard Suttmeier, Scott Kennedy, and others. However, the author assumes all responsibility for any mistakes and omissions.

I. INTRODUCTION

In 2004, disputes suddenly arose over information and telecommunication standards between the United States and China and escalated to an unexpectedly high level. These disputes concerned both the underlying policy issue of intellectual property rights (IPRs) in information and communications technology standardization and specific standards, such as the standard surrounding wireless local area networks (WLAN). The wireless-device security standard favored by the Chinese, known as WAPI (WLAN Authentication and Privacy Infrastructure), and 3G (the third-generation mobile standard) were two of the eight major issues discussed in the Vice-Premier-level bilateral dialogue of the Joint Committee for Commerce and Trade (JCCT) in 2004.[1] WAPI was also intensely negotiated in the World Trade Organization (WTO). China later submitted the IPR standardization issue to the WTO in 2005, but it encountered resistance from the United States.[2]

1. Press Release, Office of the United States Trade Representative, The U.S.-China JCCT: Outcomes (Apr. 21, 2004), *available at* http://www.america.gov/st/washfile-english/2004/April/20040422145000BPuH0.8467981.html [hereinafter U.S.-China JCCT: Outcomes].

2. Committee on Technical Barriers to Trade, *Intellectual Property Right (IPR) Issues in Standardization—Communication from the People's Republic of China*, G/TBT/W/251 (May 25, 2005); *see* Committee on Technical Barriers to Trade, Minutes of the Meeting of 2 November 2005, para. 111, U.N. Doc. G/TBT/M/37 (Dec. 22, 2005) (The United States noted that it did not see a relationship with the

These discussions have caused unrest not only in the trade arena, but also in the political arena. Although both the United States and China criticized each other initially, the storm has seemingly abated. While discussions on the same issues continue, there are also new discussions on issues such as the Chinese mandatory conformity regime, brought to the attention of the WTO in 2007, and the Trusted Computing Modem (TCM) standard.[3]

Though the American concerns over these new standards are no less than the concerns over previous standards, they fall short of outspoken disputes. However, this change in tone does not necessarily mean these issues are becoming less important or less contentious. In fact, the opposite may be true. Since the emergence of the WAPI issue, Chinese industries and academics have expressed great frustration with the American approach to the U.S.-China disputes on ICT standards, as well as distrust of the sermon-style arguments used by the United States to persuade China to change its policies.[4] From the U.S.'s perspective, the concern over Chinese standards initiatives might have been more substantial since Chinese standards awareness has been entrenched. Since both sides have noticed the difference yet resisted change, the situation may be worsened.

The next question is whether the United States and China will enter into a full-fledged standards race in which China will pursue its go-alone standards game and the United States will try to force China back to the current regime so as to maintain a dominant share of the global digital economy. It is obvious that the changing international trade landscape and the global nature of ICT standards will remind both sides that a vehement standards race is neither practical nor beneficial for either party. The question then remains: What strategies will each country pursue in the context of a multilateral policy scenario in which other countries are also showing great interest in ICT standards?

This article aims to answer the above questions. Part II of this article describes the U.S.-China disputes on ICT standards. In Part III, the focus shifts to an examination of the underlying policy disputes on the issues. Part IV explores the issues in the global context. Building on Parts III and IV, Part V discusses possible solutions to current U.S.-China disputes on ICT standards.

II. UNEXPECTED DISPUTES ON STANDARDS BETWEEN THE UNITED STATES AND CHINA

Technical standards have been an important part of trade disputes in recent years, but they are mainly related to food safety, environment, and product quality. At the same time, standards-related disputes are normally dealt with by trade

provisions of the TBT Agreement. The U.S. representative also mentioned that "for a topic to be considered as an element of the Triennial Review, there needed to be consensus among Members" and that the "Committee's work related to the Review needed to be kept within the framework of the TBT Agreement.").

3. *See an quan dian nao fa zhan na ru biao zhun gui dao TCM biao zhun jiang chu tai* [Developing Computer Security Standards Track for TCM Will Be Introduced], Sept. 24, 2007, http://www.chinagb.org/Article/news/hot/200709/22004.html (last visited July 16, 2009).

4. *See* Zhang Qin, *Patent Power*, CHINA DAILY, (Mar. 14, 2007), *available at* http://chinawto.mofcom.gov.cn/aarticle/cd/ch/200703/20070304457564.html (recalling an interview describing the U.S.'s one-sided approach to IP discussions).

officials.[5] However, in 2004, the United States' Secretary of State, the Secretary of the Department of Commerce and the Trade Representative of the U.S. Office of Trade Representatives (USTR) wrote to two Chinese Vice Premiers on the WAPI standard.[6] To the Chinese, who tend to evaluate the gravity of an issue according to the level of the officials involved, WAPI was perceived as an unusual issue for the United States to contest. While most trade disputes are discussed under the agenda item of Specific Trade Concerns in the Committee of Technical Barriers to Trade (TBT Committee) in the WTO,[7] WAPI went beyond the TBT Committee and became an item in bilateral trade talks in the JCCT, headed by the Chinese Vice Premier for Trade and two U.S. ministers.[8]

The WAPI standard was sponsored by IWNCOMM, a small Chinese software company.[9] WAPI is a competing standard to WIFI (Wireless Fidelity), the international standard sponsored mainly by Intel.[10] China decided to mandate WAPI standard throughout the country in 2004 and defended this decision during the U.S.-China dispute with the argument that WAPI was more effective in terms of assuring information security than WIFI.[11] The United States considered the mandatory WAPI policy as "an example of mandating a locally developed standard for protectionist purposes,"[12] and therefore inconsistent with WTO obligations. According to the United States, the Technical Barriers to Trade Agreement (TBT Agreement) of the WTO requires members to adopt international standards as the basis for national technical regulations or mandatory standards.[13] Therefore, the United States believes that even though China may be justified in using its own standard to ensure national security, the implementation should be limited to military and relevant government agencies. For that reason, mandating the

5. *See, e.g.*, Panel Report, *European Communities—Trade Description of Sardines*, WT/DS231/R (May 29, 2002) (illustrating the role of trade officials in resolving the dispute arising from Peru's complaint that European Communities regulations prevented exporting its products under the trade name *sardines*).

6. RICHARD P. SUTTMEIER & YAO XIANGKUI, NAT'L BUREAU OF ASIAN RES., CHINA'S POST-WTO TECHNOLOGY POLICY: STANDARDS, SOFTWARE, AND THE CHANGING NATURE OF TECHNO-NATIONALISM 28 (2004), *available at* http://www.nbr.org/publications/specialreport/pdf/SR7.pdf.

7. *See* Committee on Technical Barriers to Trade, Specific Trade Concerns Raised in the TBT Committee, Note by the Secretariat—Revision, G/TBT/GEN/74/Rev.2 (June 12, 2009), *available at* http://docsonline.wto.org/GEN_highLightParent.asp?qu=G%2FTBT%2FGEN%2F74%2FRev%2E2&doc=D%3A%2FDDFDOCUMENTS%2FT%2FG%2FTBT%2FGEN74R2%2EDOC%2EHTM&curdoc=4&popTitle=G%2FTBT%2FGEN%2F74%2FRev%2E2.

8. U.S.-China JCCT: Outcomes, *supra* note 1.

9. Mike Clendenin, *WAPI Battle Exposes Technology Rifts with China,* EE TIMES ASIA, June 12, 2003, *available at* http://www.eetimes.com/news/semi/showArticle.jhtml?articleID=183700631 (last visited Oct. 6, 2009); China Broadband Wireless IP Standard Working Group, *Result Came Out of Years of Hard Work*, Jun. 12, 2003, http://www.chinabwips.org/en/act-10.htm (last visited Oct. 6, 2009).

10. Indrajit Basu, *China Forges Ahead with Homegrown WAPI Standard Instead of Wi-Fi*, GOV'T TECH., Sept. 26, 2006, *available at* http://www.govtech.com/gt/articles/101267.

11. *See* SUTTMEIER & XIANGKUI, *supra* note 6, at 27–28 (stating that China invoked national security concerns as an exception to Annex 3 of the TBT Agreement in order to defend its decision to mandate WAPI).

12. *See China, Europe, and the Use of Standards as Trade Barriers: How Should the U.S. Respond?: Hearing Before the Subcomm. on Environ., Tech., and Standards*, 109th Cong. 52 (2005) (statement of David Karmol, Vice President, Public Policy and Government Affairs, American National Standards Institute).

13. Agreement on Technical Barriers to Trade, LT/UR/A-1A/10, art. 2.4, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Multilateral Agreements on Trade in Goods, Legal Instruments—Results of the Uruguay Round, para. 2.4, *available at* http://www.wto.org/english/docs_e/legal_e/17-tbt.doc.

implementation throughout China, including commercial sectors, was "more trade-restrictive than necessary to fulfill a legitimate objective."[14] After several months of high profile disputes, it was decided in the 2004 JCCT meeting that China would suspend the mandatory implementation of the WAPI standard and that in return the United States would promise to support China in promoting the WAPI standard as an international standard.[15]

Around the same time as the WAPI dispute, there was another dispute between the United States and China over the Chinese 3G standard. Unlike the WAPI, the Chinese 3G standard TD-SCDMA, the European WCDMA standard, and the U.S. CDMA 2000 standard are all international standards.[16] Therefore, Chinese adoption of its own 3G standard could not be challenged under the WTO/TBT Agreement. Already in fierce competition with the EU, the United States did not want China to be another competitor, especially since China possesses one of the largest potential markets for mobiles under the 3G standard.[17] This time, the United States invoked the doctrine of technical neutrality during its discussions with China.[18] The term "technical neutrality" can be understood as the concern that rulemaking "would hinder the emergence of new products and services."[19] Though initially puzzled at the invocation of technical neutrality in the context of 3G standardization,[20] China responded that they would also remain technically neutral in the licensing of 3G mobile operations.[21]

---

14. *Id.* para. 2.2.

15. In the official announcement by USTR, it was mentioned that "China announced that it will . . . . Participate in international standards bodies on WAPI and wireless encryption for computer networks." U.S. promises to support China in that effort were not mentioned. U.S.-China JCCT: Outcomes, *supra* note 1, at 4.

16. *See* MISCHA SCHWARTZ, MOBILE WIRELESS COMMUNICATIONS 307–34 (Cambridge University Press 2005) (discussing the three international standards which have evolved from 2g mobile technology standards).

17. *See* David Barboza, *China Plans to License 3 Wireless Standards*, N.Y. TIMES, Jan. 1, 2009, at B9 ("[China] is already the world's biggest market for wireless services. . . . By some estimates, China could have 150 million 3G cellphone subscribers by 2010, which would mean bigger revenue and profits for mobile operators."); U.S. COMMERCIAL SERVICE, CHINA'S EMERGING MARKETS: OPPORTUNITIES IN THE TELECOM INDUSTRY 1 (2006), *available at* http://www.export.gov/china/ATC/Snapshot_Telecom.pdf (stating that China has the world's largest wireline and wireless networks).

18. OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, CHINA: TRADE SUMMARY 90 (2009), *available at* http://www.ustr.gov/sites/default/files/uploads/reports/2009/NTE/asset_upload_file868_15464.pdf.

19. *TIA Submits Net Neutrality Comments to FCC*, 9 TIA NETWORK, Feb 11, 2008, http://network.tiaonline.org/2008/Feb11/global_policy.cfm. With regard to Chinese 3G policy, it may have the implication that the "decision to provide 3G services should be a commercial one and that the regulator should be agnostic regarding technology choice." Letter from Matthew J. Flanigan, President, Telecommunications Industry Association, to Ms. Gloria Blue, Executive Secretary, Trade Policy Sta1ff Committee (Dec. 16, 2005), http://tiaonline.org/gov_affairs/issues/trade/documents/TIADecember 20061377Submissionv3.doc.

20. While the concept of technical neutrality has merits, it is not clear to the author if it has been part of Chinese multilateral obligations. So far, the author has identified a WTO document that seemingly endorses technical neutrality, where it is decided that "basic telecom service listed in the sector column: . . . may be provided through any means of technology (e.g., cable, wireless, satellites)." Group on Basic Telecommunications, *Report of the Group on Basic Telecommunications*, at 6, S/GBT/4 (Feb. 15, 1997), *available at* http://www.wto.org/english/news_e/pres97_e/finalrep.htm. However, the author doubts this document has any legal relevance to the disputed 3G standard and licensing policy.

21. U.S.-China JCCT: Outcomes, *supra* note 1.

The disputes between the United States and China over the WAPI and 3G standards concluded in 2004. The USTR claimed great success for the results of the discussions, and stated that it would "enable American firms to participate fully in China's growing market for information technology."[22] However, losing on the WAPI issue upset many Chinese and aroused pro-Chinese sentiment against the United States.[23] Though China postponed mandatory implementation of the WAPI standard and concentrated its efforts on WAPI promotion in the International Organization of Standardisation (ISO), WAPI was not accepted by the ISO. The Chinese WAPI delegation to the ISO blamed this failure on U.S. interference.[24] Afterwards, widespread government support for WAPI was mobilized and WAPI compliance products were given a priority in government procurement.[25] With regard to the TD-SCDMA, U.S. industries remain concerned that it will be given unfair advantages even though the Chinese government has committed to technical neutrality.[26] The U.S. government warned China that separation of its standard from the world would only backfire.[27]

The standards disputes between China and the United States are far from limited to these two issues.[28] The United States has also expressed concern in both

22. *Id.* American industries were also satisfied with the results of the WAPI dispute. For example, an industrial association testified that "We appreciate that decisions by key Chinese central-government trade officials alleviated several problems that arose, and recognize the important roles of USTR, Commerce, State and Congress in contributing to the progress. For example, China's government delayed indefinitely the imposition of the Wireless LAN Authentication and Privacy Infrastructure (WAPI) technology standard, though its ultimate resolution remains uncertain." Mark Bohannon, General Counsel & Senior Vice President, Software & Information Industry Association, Prepared Statement of the U.S. Information Technology Office (Sep. 23, 2004), *available at* http://siia.net/index.php?option=com_docman&task=doc_download&Itemid=48&gid=2192.

23. *See* Sumner Lemon, *Chinese Group Vents Anger over "Unfair" WAPI Vote*, IDG News Service (Mar. 14, 2006), http://www.infoworld.com/d/networking/chinese-group-vents-anger-over-unfair-wapi-vote-215 (noting that much of China's ire toward the US was in fact targeted at Intel Corp.).

24. *Id.*

25. *Guan yu yin fa wu xian ju yu wang chan pin zheng fu cai guo shi shi yi jian de tong* zhi [Implementation of Rules Dealing With Government Purchasing of WLAN Technology] (promulgated by the Ministry of Finance, the National Development and Reform Commission, and the Ministry of Information Industry, Dec. 30, 2005.), http://www.ndrc.gov.cn/zcfb/zcfbtz/zcfbtz2005/t20060104_55881.htm (last visited Sept 2, 2009).

26. *See, e.g.*, Flanigan, *supra* note 19 (In its policy recommendations to the US Trade Representative, the Telecommunications Industry Association (TIA) wrote, "We urge the Chinese government to subscribe to the principle of technology neutrality on the part of the regulator. In virtually all discussions of the launch of third-generation mobile services, slated for 2006, MII has linked the issuance of 3G licenses to the 'maturity' of the government's preferred standard, TD-SCDMA. TIA believes that the decision to provide 3G services should be a commercial one and that the regulator should be agnostic regarding technology choice.").

27. Christopher Padilla, Under Secretary of Commerce for International Trade, Openness or Isolation: China's Quest to be an Innovative Society, Address at U.S. Chamber of Commerce (May 8, 2008), *available at* http://trade.gov/press/speeches/padilla_050808.asp ("China's policy of reform and opening up—of encouraging and welcoming foreign participation in its economy—is responsible for one of the most remarkable economic and social transformations in human history. Unfortunately, however, we are seeing signs that China may be slowly turning away from the very openness that has served it so well . . . Our message must be clear: first, that a technology-neutral position on standards by China's government would give all competitors an equal opportunity in the marketplace, allowing China to be part of the innovative global economy rather than isolated from it. Secondly, that an industry-led, market-driven standardization system leads to increased innovation, competition, and economic growth.").

28. *See* Ying Zhan & Xuezhong Zhu, *Intellectual Property Right Abuses in the Patent Licensing of Technology Standards from Developed Countries to Developing Countries: A Study of Some Typical Cases from China*, 10 J. OF WORLD INTELL. PROP. 187 (2007) (discussing several representative cases in China

bilateral talks and in the WTO/TBT Committee over the Chinese compulsory certification regime for information security products.[29] At the same time, the Chinese information security standard, TCM, is also a source of great concern to the United States. TCM is competing with the Trusted Platform Module (TPM) standard developed by the Trusted Computing Group (TCG) whose membership includes Compaq, HP, IBM, Intel, Microsoft, Nokia, and Sony.[30]

While these issues have already caused problems between U.S. and Chinese trade authorities, the Chinese government raised the central issue of IPRs in standardization to the WTO. In its submission, China criticized the misuse of IPR standards and sought a fair and equitable solution to the tension between protecting the IPRs and implementing ICT standards according to the TBT objectives.[31] Even though China was determined, the United States blocked this issue from WTO discussions from 2005 until the end of 2006.[32] Nevertheless, China is making renewed efforts to push forward discussion of IPR standards in both bilateral and multilateral

---

that demonstrate IPR abuses in the licensing of technology standards from developed countries to developing countries).

29. Committee on Technical Barriers to Trade, Minutes of the Meeting of 20 March 2008, at 8, U.N. Doc. G/TBT/M/44 (June 10, 2008).

30. Susan Landau, *Security and Privacy Landscape in Emerging Technologies*, IEEE SEC. & PRIVACY, July/Aug. 2008, at 74, 77, *available at* http://research.sun.com/people/slandau/Emerging_Standards_final.pdf.

31. *Intellectual Property Right (IPR) Issues in Standardization*, *supra* note 2.

32. The Chinese submission caused nervous attention and some speculations. For example, one speculation was whether China intended to overthrow the currently well-established international rules and practices which the Chinese may have found unfavorable. Emma Barraclough, *Winning the IP Standard Game,* 151 MANAGING INTELL. PROP., (2005) 24, 24–27. The reason for these nervous speculations might be that, while IPR and standards have been sensitive issues, China strongly demanded international discussions on IPRs in standards without mentioning how this issue should be dealt with and what the proposed Chinese solutions would be. This was different from normal WTO practice, since Members always bring up an issue with proposed solutions. Therefore, the questions frequently presented to this author, as the negotiator of IPRs in standardization, include: What are the Chinese objectives of raising this issue in the WTO? What are the envisioned solutions on the part of China? And, how are the solutions to be pursued? The author responded that the Chinese government, in its submission, had not proposed a complete version of solutions simply because China had not yet developed complete and detailed solutions. Furthermore, this author explained that the proper understanding of the official Chinese position was that WTO/TBT should take up this issue, so the TBT Committee would explore solutions with input from all Members and stakeholders. China also held this position in another submission on the issue. Communication from the People's Republic of China, *Background paper for Chinese Submission to WTO on Intellectual Property Right Issues in Standardization*, paras. 19–22, G/TBT/W/251/Add.1 (Nov. 8, 2006), *available at* http://docsonline.wto.org/DDFDocuments/t/G/TBT/W251A1.doc.

As for the purposes of raising this issue, the author has been trying to convince relevant stakeholders, especially those with strong IPR protection interests from developed countries, that the intention of Chinese government was not to simply lower IPR protection levels, though if it has been legally decided that unlawful conducts warranted such remedies as compulsory licensing it might have a negative effect on the exclusive rights of IPR owners. The intention is, as stated in the WTO submission "to strike balance between IPR holders and standard implementers for a win-win situation." *Id.*

The reason why the Chinese government is not raising this issue after the last discussion on IPRs in standardization in November of 2006 is that after a hard debate between essentially China and the United States, this issue of IPRs in standardization has finally been written into an official WTO document. At the same time, the Chinese government has realized that due to the rule-based nature of the WTO, it might be helpful to have more in-depth communications outside of WTO before going back to the WTO for rule-orientated discussions.

talks. For example, China has proposed that this issue be addressed in the Asia-Pacific Economic Cooperation (APEC) forum, and China has also started talking with the United States about this issue at the JCCT. Within China, IPRs in ICT standards have recently been greatly discussed,[33] and China has also actively participated in global discussions on the matter.[34]

III. WHAT IS AT STAKE?

Standards and related measures such as technical regulations and conformity assessments have been one of the most contentious trade concerns across the globe,[35] where technical issues are taken as trade protectionism.[36] Furthermore, ICT standards are more heavily contested than trade concerns caused by food safety or product quality standards. ICT standards have profound strategic implications for international competition due to their status as a winner-take-all competition, and the outcome is crucially important for the industries involved.[37] They are also an

33. The Chinese government, especially the Ministry of Science and Technology, has started to pay great attention to standards since Chinese accession to the WTO in 2001. *See Three Major Strategies for International Competition in the Ministry of Science and Technology*, 306 CHINA SCI. & TECHN. NEWSL., Sept. 10, 2002, *available at* http://www.most.gov.cn/eng/newsletters/2002/200411/t20041130_17701.htm. The Chinese Standardization Administration (SAC) already had a draft ready. *See* Barraclough, *supra* note 32, at 28 (providing the Chinese drafted rule). The Chinese Ministry of Commerce and other government agencies have been organizing several seminars on IPRs in standardization. *See, e.g.*, Manuel Loausada Soares, Brazil Deputy Secretary for Industrial Technology, *IPRs Issues in Standardization International Forum,* Address at Building Economic Strength and Social Benefit: Openness as a Collaborative Advantage (Apr. 17, 2007), *available at* http://thebolingroup.com/collaborativeadvantage/index2.html; Symposium, *Standards, IPRs and Competition* (Oct. 31, 2007), *available at* http://www.etsi.org/WebSite/NewsandEvents/IPRSymposium/IPRSymposiumHome.aspx. In most of the law schools at top Chinese universities, such as Beijing University, Tsinghua University, and Fudan University, there are professors doing research on IPR in standards, and academic seminars are held from time to time.

34. Some of the international seminars in which the author has participated include: *Standardization and Law: Developing the Golden Mean for Global Trade*, Stanford Law School (Sept. 22–23, 2005), http://sun.systemnews.com/articles/90/3/Standards/14951; *Open Standards International Symposium,* Yale Law School (Feb. 3, 2007), http://www.law.yale.edu/intellectuallife/7088.htm (description of symposium is located near the middle of the page); *IPR and ICT Standardization One-Day Workshop,* European Commission (Nov. 19, 2008), http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3371. Chinese scholars, industries and officials maintain good discussions on this topic with Japan, the EU, and other nations.

35. For example, the WTO has devoted a substantial part of its 2005 World Trade Report to standards related trade issues. *See* World Trade Organization, *World Trade Report 2005: Exploring the links between trade, standards and the WTO*, (2005), *available at* http://www.wto.org/english/res_e/publications_e/wtr05_e.htm (listing reasons for disagreement within or among societies including concerns about the level of protection, the link between tradable goods and objectives, or the effectiveness of a given policy).

36. For example, U.S. industries have testified that standards were a formidable barrier to entry in the Chinese market. *See The Future of United States-China Trade Relations and the Possible Accession of China to the World Trade Organization: Hearing Before the Subcommittee on Trade of the H. Comm. on Ways and Means*, 105th Cong. 108–110 (1997), *available at* http://ftp.resource.org/gpo.gov/hearings/105h/52839.pdf (statement of Michael Wootton, Director of Federal Government Affairs, Sunkist Growers, noting that China had not implemented WTO agreements regarding technical barriers to trade).

37. *See generally* Jane Winn, *Diverging National Regulatory Strategies in Global ICT Standards Competition*, 2 SUNGKYUNKWAN J. SCI. & TECH. L., Spring 2008 (S. Korea) (describing the economic and political benefits enjoyed by the United States as a result of its current dominance of global ICT standard

integral part of national strategies involving innovation, business development, and even national security.[38] Normally, the United States would list China's interest and progress in global ICT standard competition as one of its top trade concerns, perceiving Chinese progress as an erosion of U.S. technological leadership in the world. Taking into consideration residual Cold War thinking, this erosion could easily be understood as a threat.

In this section, the issue of standards competition and the underlying policy concerns will be examined in order to provide a clearer idea as to whether U.S.-China disputes on ICT standards are real and substantial.

A. Standards Race: Life or Death of Corporate Empires

As an article in *The Economist* noted, "The noisiest of those competitive battles will be about standards. . . . [I]n the computer industry, new standards can be the source of enormous wealth, or the death of corporate empires. With so much at stake, standards arouse violent passions."[39] Though they go back nearly two-thousand years, standards seldom catch such attention.

The importance of standards derives from strategic considerations in the digital economy and information society. The digital economy has brought society into a new technical-economic paradigm in which all digital products and services have the *possibility* and *necessity* of interoperability.[40] This interoperability has profound implications for competition dynamics characterized by network effects.[41] Standards sponsors normally control the standards by including their own IPRs, mostly patents and sometimes software copyrights or trade secrets, into the standards.[42] These exclusive rights, amplified by the network effects of standards, give sponsors and IPR owners enormous competitive advantages.

In business practice, winning a standards race requires the sponsor to secure a critical mass of users, with the goal of locking the whole global market into that standard.[43] While firms may have to cooperate in those cases where an individual

---

developing processes and the challenges faced by both the EU and China in their current efforts to challenge that dominance).

38. *E.g.*, Scott Kennedy, Richard P. Suttmeier & Jun Su, *Standards, Stakeholders, and Innovation: China's Evolving Role in the Global Knowledge Economy*, NBR SPECIAL REPORT, Sept. 2008, at 1, 8–9, 11, 18.

39. *Do It My Way*, ECONOMIST, Feb. 22, 1993, at 11.

40. An Baisheng, *Initial Thoughts on Legal Arrangements for Intellectual Property Rights in Standardization, in* STANDARDS EDGE: THE GOLDEN MEAN 93, 93–101 (Sherrie Bolin ed., 2007).

41. For literature on network effects of standards, see, e.g., Michael Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, AM. ECON. REV., June 1985, at 424, 434–40 (discussing the incentives for network compatibility); Nicholas Economides, *The Economics of Networks*, 14 INT'L J. INDUS. ORG. 673, 678–91 (1996) (discussing the externalities of networks).

42. *See* Christopher S. Gibson, *Globalization and the Technology Standards Game: Balancing Concerns of Protectionism and Intellectual Property in International Standards*, 22 BERKELEY TECH. L.J. 1403, 1418–19 (discussing the number of components and patents that standards developers must deal with).

43. *See* CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 270–301 (1998) (stating that control over an installed base of users is a key asset to winning a standards war).

firm cannot afford the construction of an installed base for a standard,[44] firms generally desire to have sole control over a standard. Once they have secured control over the standards and consequently the control of the markets, they stand to receive great profits through the advantage of their first move and the high volume of royalties based on their IPRs.[45] Sometimes the sole control of a standard will enable the sponsor to use this monopolistic position to leverage another market.[46]

ICT standards competition has a profound impact on the business strategies and lobbying behaviors of private firms. To illustrate, one can examine the interaction of Microsoft Windows and IBM. The Microsoft Windows operating system emerged as complementary product to IBM's PCs.[47] Utilizing the market advantages of IBM PCs, Windows gained a critical mass of users and at last became a *de facto* standard for desktop operating systems. Once its position in the desktop operating system arena had been secured, Microsoft started to leverage this monopolistic position into the server market,[48] threatening the advantages IBM had been enjoying. IBM, who had been squandering profits from software and had been a generous host for Microsoft's parasitic behavior, realized the seriousness of its mistake and had to fight an ICT standards race for operating systems and word processing software.[49] However, IBM was forced to pay a high price in order to enter this race, with little assurance of actually achieving success.[50] If IBM is to succeed, it will need to take advantage of competition policies and other public initiatives. Due to the lock-in effect, IBM will be hard-pressed to win through its business strategies alone. The competing parties have all realized the importance of public policy in ensuring their critical mass of users and success in the standards race, and they are increasing the amount of policy lobbying accordingly.[51]

---

44. *See, e.g.*, Rudi Bekkers, Geet Duysters & Bart Verspagen, *Intellectual Property Rights, Strategic Technology Agreements and Market Structure*, 31 RES. POL'Y 1141, 1142 (2002) (providing an example of how strategic technological alliances are of crucial importance in the adoption of a standard for the European GSM network).

45. IPRs in standards will normally lead to exorbitant royalties forced upon the licensees. *See, e.g.*, Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992–93 (2007); Mark Lemley & Carl Shapiro, *Reply: Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 2163, 2164 (2007). *But see, e.g.*, Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?*, 4 J. COMPETITION L. & ECON. 535 (2008); John M. Golden, *Commentary, "Patent Trolls" and Patent Remedies*, 85 TEX. L. REV. 2111, 2115 (2007); Gregory J. Sidak, *Holdup Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley and Shapiro*, 92 MINN. L. REV. 714, 718 (2008); Gregory J. Sidak, *Patent Holdup and Oligopsonistic Collusion in Standards-Setting Organizations*, 5 J. COMPETITION L. & ECON. 123, 123–24 (2009).

46. For instance, by refusing to license key interface information indispensible to develop Windows-compatible products to its competitors, Microsoft leveraged its monopoly in the desktop operating system into the server market. Commission Decision, COMP/C-3/37/792, 2004 O.J. para. 779 (relating to a proceeding under Article 82 of the EC Treaty) *available at* http://ec.europa.eu/competition/antitrust/cases/decisions/37792/en.pdf.

47. *Id.* para. 462 (PCs include IBM compatible computers).

48. *Id.* paras. 772–79.

49. *Id.* paras. 457, 462.

50. *Id.* paras. 456–57.

51. *See* Standards Wiki & Discussions, http://www.research.ibm.com//files/standards_wikis.shtml (last visited Oct. 8, 2009) ("We [IBM] will advocate governance policies in standards bodies that encourage diverse participation."); *see also* Suzanne Tindal, *ICT Companies Using More Lobbyists*, ZDNET AUSTL., July 2, 2009, http://www.zdnet.com.au/news/business/soa/ICT-companies-using-more-lobbyists/0,139023166,339297196,00.htm (last visited Oct. 8, 2009) (explaining how "Australian telecommunication are making more use of lobbyists.").

B. Standards as National Strategies for Innovation and International Competition

The standards race is no less competitive among nations than it is among corporations. Further, at a national level the importance of standards goes far beyond corporate considerations. Governments' attention to standards and relevant initiatives are not necessarily documented since standards are considered market activities where governments are not supposed to intervene. However, this has not prevented governments from being either directly or indirectly involved.[52] In effect, standards have become an integrated part of national strategies for innovation and international competition.

The Japanese government has made it clear that research and development (R&D) activities should have a clear vision including writing results into standards, preferably those that are international in nature.[53] The EU is also promoting ideas that "better link ICT standardization and ICT R&D . . . at the research planning stage."[54] In its National Mid-Term and Long-Term Science and Technology Development Plan (2006–2020), the Chinese government highlights its support to R&D yielding self-owned IPRs and the need to include these IPRs into national and international standards.[55] With regard to international standards competition, the United States and the EU have been quietly competing for influence. While the EU is enjoying better institutional collaboration with international standardization organizations such as the ISO and the International Electrotechnical Commission (IEC),[56] the United States has been trying to promote private-led standardization to secure U.S. advantages in the international standardization arena.[57] At the same

52. *See, e.g.*, Rajiv C. Shah et al., *Lessons for Government Adoption of Open Standards: A Case Study of the Massachusetts Policy*, 5 J. INFO. TECH. & POL. 387, 388 (2009) ("An array of governments and organizations . . . have all called for policies that either strongly encourage or mandate the outright implementation or further evaluation of open standards.").

53. GOV'T OF JAPAN, SCIENCE AND TECHNOLOGY BASIC PLAN (PROVISIONAL TRANSLATION) 53–55 (2006) (English translation last revised, Sept. 2006), *available at* http://www8.cao.go.jp/cstp/english/basic/index.html.

54. European Commission Enterprise and Industry Directorate-General, *ICT for Competitiveness and Innovation: 2009 ICT Standardisation Work Programme*, at 12 (June 19, 2009), *available at* http://ec.europa.eu/enterprise/sectors/ict/files/wp2009_en.pdf.

55. *Guo jia zhong chang qi ke ji fa zhan gui hua* □2006–2020) [The National Mid-Term and Long-Term Science and Technology Development Plan (2006–2020)] (promulgated by the St. Council), *available at* http://www.gov.cn/jrzg/2006-02/09/content_183787.htm (P.R.C.).

56. *See* Int'l Org. for Standardization (ISO) and Eur. Comm. for Standardization (CEN), *Agreement on Technical Cooperation Between ISO and CEN (Vienna Agreement)*, http://www.cen.eu/BOSS/supporting/reference+documents/vienna+agreement/vienna+agreement.asp (discussing the agreements on technical cooperation between the ISO and the CEN) (last visited Oct. 8, 2009); *see also* Int'l Electrotechnical Comm'n (IEC) and Eur. Comm. for Electrotechnical Standardization (CENELEC), *Agreement on Common Planning of New Work and Parallel Voting (Dresden Agreement)*, http://www.iec.ch/about/partners/agreements/cenelec-e.htm (describing the agreements between the IEC and the CENELEC to work towards common international standards) (last visited Oct. 8, 2009).

57. This position of the United States has been consistent in recent years and is especially obvious in a recent WTO submission. *See* Submission by the United States, *Decision of the Committee on Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement (G/TBT/1/Rev.9 Annex B):The Experience of the United States,* G/TBT/W/305 (Mar. 12, 2009), *available at* http://www.puntofocal.gov.ar/doc/w305.pdf (discussing how the U.S. has promoted private led standardization).

time, the U.S. government has been supporting its domestic firms' competition in international standardization through more indirect means.

As a result, many standards—such as those for 3G mobiles and digital TVs[58]—are more or less defined by national boundaries (or regional boundaries with regard to the EU). These disputes between nations, such as the China-U.S. disputes on the WAPI standard, have even been depicted as techno-nationalism by political professors.[59]

C. Policy Concerns on Standards Beyond Firm and National Competition

For many stakeholders, standards are paramount considerations because "standards are the foundation of interoperability."[60] Some governments are concerned about the transparency ensured by free information flow between governments and citizens due to the interoperability of IT systems. For example, the Netherlands and Denmark have mandated an open standards policy in public information systems to ensure interoperability for public IT systems at reasonably low costs.[61] The U.S. government has invested heavily in standards for the purpose of interoperability in communications systems.[62] Arguably, ICT standards and licensing practices for the IPRs included in these standards are necessary for developing countries to establish their ICT infrastructure and advance their informational development objectives.[63] Standards policies need to be arranged in such a way that

58. Europe is promoting its Digital Video Broadcasting (DVB) standards while the U.S. has mandated the Advanced Television Systems Committee (ATSC) standards. *See* DVB PROJECT, DVB FACT SHEET, INTRODUCTION TO THE DVB PROJECT (2009), http://www.dvb.org/technology/fact_sheets/DVB-Project-Fact-Sheet.0409.pdf (discussing Europe's promotion of DVB standards) (last visited Oct. 8, 2009); *see also* Press Release, Advanced Television Systems Committee, ATSC Salutes the "Passing" of NTSC (June 12, 2009), http://www.atsc.org/communications/press/2009-06-12-NTSC_End_Final.php (tracing the 68 year history of NTSC analog television) (last visited Oct. 8, 2009). China is also actively promoting its own digital TV standards; *see, e.g.*, SUTTMEIER & XIANGKUI *supra* note 6, at 8 (discussing the promotion of China's own technology standards by Chinese technology policy leaders).

59. *E.g.*, SUTTMEIER & XIANGKUI, *supra* note 6, at 10–11.

60. Neelie Kroes, Eur. Comm'r for Competition Policy, Speech at OpenForum Europe—Breakfast Seminar: Being Open about Standards (June 10, 2008), http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/317&format=HTML&aged=0&language= EN&guiLanguage=en (last visited Oct. 8, 2009).

61. *See* MINISTRY OF ECON. AFFAIRS, THE NETHERLANDS IN OPEN CONNECTION: AN ACTION PLAN FOR THE USE OF OPEN STANDARDS AND OPEN SOURCE SOFTWARE IN THE PUBLIC AND SEMI-PUBLIC SECTOR 5 (2007), *available at* http://www.scribd.com/doc/3345990/The-Netherlands-in-Open-Connection-an-Action-Plan-for-the-Use-of-Open-Standards-and-Open-Source-Software-in-the-Public-and-Semipublic-Sector (discussing how the Dutch open standards policy aims to ensure interoperability for public IT systems at reduced costs); THE NAT'L IT AND TELECOM AGENCY, MINISTRY OF SCI., TECH., AND INNOVATION, MEASURES TO PROMOTE INTEROPERABILITY VIA COMMON OPEN STANDARDS, REPORT FROM THE COMMITTEE ON BETTER INTEROPERABILITY 6 (2006), *available at* http://en.itst.dk/the-governments-it-and-telecommunications-policy/file-archive/interoperabilitet_EN%20.pdf (discussing Denmark's goal of using an open standards policy to promote interoperability in the public sector).

62. U.S. GOV'T ACCOUNTABILITY OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, FIRST RESPONDERS: MUCH WORK REMAINS TO IMPROVE COMMUNICATIONS INTEROPERABILITY 16 (2007), *available at* http://www.gao.gov/new.items/d07301.pdf.

63. Xuan Li & Baisheng An, *IPR Misuse: The Core Issue in Standards and Patents*, SOUTH CENTRE, June 2009, at 5, *available at* http://www.southcentre.org/index.php?option=com_docman&task=doc_download&gid=1405&Itemid=69.

the interests of small and medium enterprises (SMEs) and consumers can be ensured.[64] Some advocates also link standards and interoperability with equality and freedom of speech,[65] while some standards have even had national security implications.[66]

IV. HOW STANDARDS ISSUES ARE ADDRESSED AT THE POLICY LEVEL: A GLOBAL SCENARIO

ICT-related concerns, including IPRs in standards, are the subject of much consternation throughout the world. Therefore, the U.S.-China disputes on standards and their possible solutions need to be viewed from a global perspective.

Currently, there are several efforts being undertaken at both the national and international level by competition authorities, standards setting organizations (SSOs) and industries, in order to address concerns related to ICT standards.

A. Patent Policies in SSOs

Both international SSOs, such as the ISO, IEC, and ITU-T (the International Telecommunication Union—the Telecommunication Standardization Sector), and many national and regional SSOs have already formulated patent policies to address the inclusion of IPRs in standards.[67] Often these policies require IPR owners who are members of these SSOs to disclose their IPRs, while other SSOs require different conditions, such as royalty-free licensing, that eliminate the need for disclosure.[68] IPR owners are also required to commit to free licensing or to negotiating licensing terms in a reasonable and non-discriminatory (RAND) manner.[69] The rationale for these requirements is that SSOs need information on available technical alternatives, and their associated costs, in order to make their standards decisions.[70] However,

64. *See, e.g.*, Relevant Presentations at the European Commission Workshop on IPR in ICT Standardization (Nov. 19, 2008), http://ec.europa.eu/enterprise/ict/policy/standards/ws08ipr_en.htm (stating examples of presentations on ICT standardizations for the protection of both SMEs and consumers).

65. *See* Digital Standards Org., The Hague Declaration (May 21, 2008), *http://www.digistan.org/hague-declaration:en* (last visited Oct. 8, 2009) (referring to individual petitioners who equate digital standards with freedom of speech).

66. For example, even the U.S. Department of Defense had security concerns with regard to Microsoft standard OOXML and voted against it in the International Committee for Information Technology Standards (INCITS) ballot with the comment that there was "binary information in the standard that would lead to security concerns." Egan Orion, *OOXML Loses US Vote for Fast-Track ISO Approval*, THE INQUIRER, Aug. 12, 2007, http://www.theinquirer.net/inquirer/news/822/1009822/ooxml-loses-us-vote-for-fast-track-iso-approval (last visited Oct. 23, 2009).

67. *See* Mark A. Lemley, *Intellectual Property Rights and Standard Setting Organizations*, 90 CAL. L. REV. 1889, 1895 (2002) (discussing patent policies).

68. *Id.* at 1904.

69. *Id.* at 1906; *see also* VITA Standards Org., VITA Patent Policy, *available at* http://www.vita.com/disclosure/VITA%20Patent%20Policy%20section%2010%20draft.pdf (discussing some updates on patent policies in SSOs); Int'l Telecomm. Union [ITU], *Common Patent Policy for ITU-T/ITU-R/ISO/IEC*, *available at* http://www.itu.int/ITU-T/dbase/patent/patent-policy.html.

70. Deborah Platt Majoras, Chairman, Fed. Trade Comm'n, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, Remarks at Standardization and the Law:

critics have claimed that those policies are not clear enough, that disclosure obligations are easily circumvented by the IPRs owners, and that the RAND commitment is too vague and subject to arbitrary interpretation in licensing negotiations.[71] The current judicial practice, especially the low threshold for injunctive relief, has placed licensees at an obvious disadvantage, enabling patent hold up and royalty stacking that create excessive royalties for IPRs in standards.[72] Currently, in order to improve the patent policies in SSOs and to address court warnings that a "policy that does not define clearly what, when, how, and to whom the members must disclose does not provide a firm basis for the disclosure duty necessary for a fraud verdict,"[73] it is necessary to address improvements to patent policies for SSOs.[74] However, it should be noted that breakthroughs may be hard to achieve for international SSOs. Given that some issues, most notably commercial licensing negotiations, are considered beyond the mandate of SSOs,[75] substantial progress will be difficult to achieve due to the interconnected nature of the issues. Additionally, current discussions are dominated by big firms from the developed world,[76] and consensus is difficult to achieve due to the conflicting interests and policy position among these firms. Even if consensus is achieved, it is doubtful that it would be acceptable to all the stakeholders, especially those from the developing world.

B. Antitrust Control on IPR Misuse in Standards

ICT standards and IPRs in these standards have raised serious competition concerns. Entities with sophisticated competition jurisdiction, such as the European Commission (EC) and the United States, have been addressing these concerns mainly through policy making. Relevant administrative guidelines have been formulated in those communities and provide detailed guidance.[77] At the same time,

---

Developing the Golden Mean for Global Trade at Stanford University (Sept. 23, 2005), at 5, http://www.ftc.gov/speeches/majoras/050923stanford.pdf (last visited Oct. 8, 2009).

71. *See* Xuan & Baisheng, *supra* note 63, at 8.

72. *See generally* Joseph Farrell et al., *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 636 (2007) (exploring holdups and royalty stacking from an antitrust law perspective); Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2036–46 (2007) (discussing the role of injunctive relief in exacerbating problems with holdups and royalty stacking). *But see* Damien Geradin et al., *The Complements Problem with Standard Setting*, 14 B.U. J. SCI. & TECH. L. 144, 149 (2008) (questioning whether royalty stacking is a systemic problem in standard-setting); J. Gregory Sidak, *Holdup, Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement,* 92 MINN. L. REV. 714, 747–748 (2008) (criticizing Lemley & Shapiro's proposal to remove the presumption of injunctive relief).

73. Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1102 (Fed. Cir. 2003).

74. *See, e.g.*, ITU Telecommunication Standardization Sector, TSB Director's Ad-Hoc Group on IPR, http://www.itu.int/ITU-T/othergroups/ipr-adhoc/index.html (last visited Oct. 8, 2009) (providing ITU members with a venue for discussions on improving IPR policy).

75. *See, e.g.*, ITU Telecommunication Standardization Sector, Common Patent Policy for ITU-T/ITU-R/ISO/IEC, http://www.itu.int/ITU-T/dbase/patent/patent-policy.html (last visited Oct. 23, 2009) ("The patent holder is willing to negotiate licenses free of charge with other parties on a non-discriminatory basis on reasonable terms and conditions. Such negotiations are left to the parties concerned and are performed outside ITU-T/ITU-R/ISO/IEC.").

76. *See* Maija Palmer, *Microsoft Format Fights with Rivals to Intensify*, FIN. TIMES, Aug. 30, 2007, *available at* http://www.ft.com/cms/s/0/0889e884-5726-11dc-9a3a-0000779fd2ac,dwp_uuid=415f51d4-4bc1-11da-997b-0000779e2340.html?nclick_check=1 (describing conflict between Microsoft-backed document format and an alternative format backed by IBM, Sun, and others).

77. *See, e.g.*, U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE

competition authorities are vigorously pursuing solutions for difficult issues, including a rethinking of the IPR regime in the context of ICT standards, as well as rationalizing joint discussion on licensing terms in SSOs.[78] Competition authorities and the courts have decided cases involving obligations on the part of IPR owners for IPR information disclosure and on compulsory licensing for refusal to disclose interface information in standards. For example, authorities have decided that intentional failure to disclose IPR information to SSOs will have a chilling effect on fair competition[79] and will lead to the nullification of exclusive rights to those IPRs.[80] In a 2004 European Commission ruling, Microsoft was compelled to disclose interface technologies essential to fair competition.[81]

Although substantial progress is being made, courts and administrative authorities are still debating remedies for intentional failure to fulfill IPR information disclosure obligations.[82] At the same time, while developed countries may have a strong incentive to work on IPRs in standards, they would be "trapped in a policy dilemma between IPR protection and the control on IPR misuse" in international discussions, naturally discouraging them from pursuing effective solutions.[83]

C. Open Standards and Open Source

Open standards and open source are being employed more frequently to address various concerns such as interoperability and IPR misuse in standards. While open standards focus on interpretable connections, open source starts from a

---

LICENSING OF INTELLECTUAL PROPERTY (1995), *available at* http://www.usdoj.gov/atr/public/guidelines/0558.pdf; Commission Notice, Guidelines on the Applicability of Article 81 of the EC Treaty to Horizontal Cooperation Agreements, 2001 O.J. (C 3) 2, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2001:003:0002:0030:EN:PDF; Commission Notice, Guidelines on the Applicability of Article 81 of the EC Treaty to Technology Transfer Agreements, 2004 O.J. (C 101) 2, *available at* http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2004:101:SOM:EN:HTML; JAPAN FAIR TRADE COMM'N, GUIDELINES ON STANDARDIZATION AND PATENT POOL ARRANGEMENTS (2005), *available at* http://www.jftc.go.jp/e-page/legislation/ama/Patent_Pool.pdf.

78. *See* Neelie Kroes, European Comm'r for Competition Pol'y, Address at Breakfast Seminar at OpenForum Europe: Being Open About Standards (June 10, 2008), http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/317&format=HTML&aged=0&language=EN&guiLanguage=en (last visited Oct. 23, 2009); Majoras, *supra* note 70, at 5; U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS 53 (2007), *available at* http://www.usdoj.gov/atr/public/hearings/ip/222655.pdf.

79. *See, e.g.*, Press Release, Fed. Trade Comm'n, Dell Computer Settles FTC Charges (Nov. 2, 1995), http://www.ftc.gov/opa/1995/11/dell.shtm (describing charges and settlement terms resulting from non-disclosure of IPR) (last visited Oct. 8, 2009).

80. *See, e.g.*, Qualcomm Inc. v. Broadcom Corp., 548 F.3d 1004, 1027 (Fed. Cir. 2008) (directing a partial unenforceability remedy in a failure-to-disclose dispute).

81. Commission Decision, s*upra* note 46, at 298–300.

82. *See, e.g.*, Fed. Trade Comm'n, *In re* Rambus Inc., Docket No. 9302, http://www.ftc.gov/os/adjpro/d9302/index.shtm (administrative docket) (last visited Oct. 8 2009) (showing the long-lasting and substantial Rambus litigation before the U.S. Federal Trade Commission (FTC), and the subsequent judicial review of the final decision); *In re* Rambus Inc., Docket No. 9302, 2007-1 Trade Cas. (CCH), 75,585 (Feb. 2, 2007) (final order); Rambus, Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 469 (D.C. Cir. 2008) (vacating FTC order based on insufficiency of evidence).

83. Xuan & Baisheng, *supra* note 63, at viii.

code source that is shared,[84] aimed at the creation of a community mechanism and new software business models distinct from proprietary software.[85] Open standard and open source are valued for various reasons. For one, they can directly address the interoperability concerns involved in information systems. In practice, open standards could be used as a bypass solution to the problem of IPR misuse in standards. Much like Denmark and the Netherlands have done, governments could enumerate several standards they believe to be open and mandate those standards in government procurement, bypassing reasonable licensing requirements for IPRs in standards.[86] Open source is also considered to be an alternative innovation mechanism.[87]

Open standards have gained worldwide unanimous acceptance. Though the definition of open standards is still a subject of debate, it is widely recognized that open standards should include both open standard development processes and open licensing for IPR in standards, similar to a free royalty or RAND.[88] Open source is itself supported by both well-established IT firms, such as IBM, and also by many small and medium enterprises.[89] Many developing countries have also endorsed open standard and open source because they provide the countries with the ability to develop their own software industries and are a valuable tool for assisting in the construction of their own IT infrastructure.[90]

---

84. There are various forms of IPR licensing models with regard to open source sharing, including: the GNU General Public License from the Free Software Foundation and the BSD License from the Open Source Initiative. *See* Open Source Initiative, http://www.opensource.org/licenses (providing full text of licenses).

85. Ken Coar, Open Standards Requirement for Software—Rationale (Sep. 19, 2006), http://www.opensource.org/osr-rationale (last visited Oct. 23, 2009).

86. For example, by making standards freely implementable without economic constraints, the government of Denmark's mandate may in effect mean that IPRs included in the standards should be licensed at reasonably low costs. *See* THE NATIONAL IT AND TELECOM AGENCY, MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION, GUIDE ON HOW TO USE MANDATORY OPEN STANDARDS 6–10 (2007), *available at* http://en.itst.dk/the-governments-it-and-telecommunications-policy/file-archive/Guide%20on%20Mandatory%20Open%20Standards.pdf. The government of the Netherlands states in a straightforward manner that "[b]oth open standards and open source involve . . . few or no intellectual property restrictions . . ." and that "[o]pen standards comply with the definition by the European Commission (IDABC programme) . . . the intellectual property—regarding and patents that may be present—of the standard or parts thereof is irrevocably made available on a royalty-free basis." MINISTRY OF ECONOMIC AFFAIRS, THE NETHERLANDS IN OPEN CONNECTION: AN ACTION PLAN FOR THE USE OF OPEN STANDARDS AND OPEN SOURCE SOFTWARE IN THE PUBLIC AND SEMI-PUBLIC SECTOR 6, 27 (2007), *available at* http://appz.ez.nl/publicaties/pdfs/07ET15.pdf [hereinafter NETHERLANDS OPEN CONNECTION].

87. *See* Lawrence Lessig, Lessig Blog, http://www.lessig.org/blog (last visited Sept. 1, 2009) (describing relevant perceptions and practices on open source as an alternative innovation mechanism).

88. For the discussion on the definition of open standards, see Ken Krechmer, *Open Standards Requirements*, 40 INT'L J. IT STANDARDS & STANDARDIZATION RES. 43, 44 (1996); *see also* Global Standards Collaboration [GSC], *Resolution on Open Standards (reaffirmed)*, GSC Res. 12/05 (July 12, 2007), *available at* http://www.itu.int/ITU-T/gsc/gsc12/index.html.

89. Rachel King, *Cost-Conscious Companies Turn to Open Source Software*, BUS. WK., Dec. 1, 2008, *available at* http://www.businessweek.com/technology/content/nov2008/tc20081130_069698.htm.

90. For relevant government initiatives on open standards and open source, see Malaysian Public Sector Open Software Program, http://www.oscc.org.my/ (last visited Oct. 24, 2009); DEP'T OF PUB. SERV. & ADMIN., POLICY ON FREE AND OPEN SOURCE SOFTWARE USE FOR SOUTH AFRICAN GOVERNMENT (2006), *available at* http://www.info.gov.za/view/DownloadFileAction?id=94490; BRAZILIAN GOV'T EXECUTIVE COMM. OF ELEC. GOV'T, E-PING ELECTRONIC GOVERNMENT INTEROPERABILITY STANDARDS (2007), *available at* https://www.governoeletronico.gov.br/anexos/versao-3-0-e-ping-ingles [hereinafter ELECTRONIC GOVERNMENT].

However, despite their advantages compared to proprietary standards, open standards and open source suffer from lack of widespread application.[91] Misuses of IPRs in proprietary standards exacerbate the challenges open standards and open source software face when competing with proprietary standards which have already gained a lock-in position in ICT systems. While open source and standards are designed to break down the lock-in effect of proprietary standards, they still do not remove the competitive advantage of proprietary standards with an existing lock-in effect. Therefore, to break this deadlock, efforts must be focused on controlling misuses of IPRs in proprietary standards.

D. Policy Initiatives in International Organizations

While international standardization organizations have long been working on ICT standards related issues, such as patent policies for standardization, their efforts are inherently constrained. China commented in its 2005 WTO submission that "limited by their functions and due to the complexity of the issue itself, there are still many issues which could not be solved efficiently with the above IPR policies in standardization."[92] Therefore, China requested that the WTO examine this issue based on the efforts undertaken by international standardization organizations.[93] In 2006, the World Intellectual Property Right Organization (WIPO) decided to take up the issue of "Standards and Patents."[94] The WIPO Secretariat released a prepared report, and formal discussions took place from June 23 to June 27 of 2008.[95] South Centre, the intergovernmental organization among developing countries, released a report to the WIPO meeting.[96] Additionally, ITU provided a forum for patent policy discussions in public seminars.[97]

At the same time, the OOXML standard triggered intense debates on the standards development process in the ISO.[98] OOXML was a word processing standard sponsored by Microsoft and submitted to the ISO for international adoption.[99] Many members and stakeholders, including the U.S. Department of Defense, had worried about the openness of this standard with regard to the

91. NETHERLANDS OPEN CONNECTION, *supra* note 86, at 27–31.

92. Communication from the People's Republic of China, *Intellectual Property Right (IPR) Issues in Standardization*, G/TBT/W/251 (May 25, 2005), http://sms.mofcom.gov.cn/table/0527_wto_en.doc.

93. *Id.* at 2.

94. World Intellectual Property Organization, Standing Committee on the Law of Patents, Twelfth Session, *Summary by the Chair*, SCP/12/4 Rev. at 4 (June 26, 2008), *available at* http://www.wipo.int/edocs/mdocs/scp/en/scp_12/scp_12_4_rev.doc.

95. World Intellectual Property Organization, Standing Committee on the Law of Patents, Twelfth Session, *Report*, SCP/12/5 (Mar. 23, 2009), http://www.wipo.int/edocs/mdocs/scp/en/scp_12/scp_12_5.doc.

96. South Centre, *Knowledge Ecology International (KEI) IPRs and Standardization: A Perspective from the Internet Governance Forum, the WIPO SCP and the WIPO Development Agenda* (June 30, 2008), http://www.wipo.int/patent-law/en/developments/standards.html (providing a link to the report under the heading "Studies and Article").

97. *See, e.g.*, International Telecommunication Union, *Intellectual Property Rights and ICT Standards Implementation*, http://www.itu.int/ITU-T/worksem/ict-ipr/index.html (last visited Apr. 6, 2009).

98. Palmer, *supra* note 76.

99. Press Release, International Organization for Standardization, Ballot Resolution Meeting Addresses Comments on Draft ISO/IEC 29500 Standard (Mar. 5, 2008), http://www.iso.org/iso/pressrelease.htm?refid=Ref1117.

standard's IPR policy and had rejected OOXML during the first round of standard balloting.[100] However, during the second round of balloting, a number of small ISO members who seldom participated in ISO ballots showed up and voted in favor of this standard, elevating OOXML to an ISO international standard.[101] Naturally, OOXML's success was highly controversial.[102] Brazil, India, South Africa, and Venezuela filed complaints against the result.[103] The European Commission was also concerned with whether "Microsoft's new file format Office Open XML, as implemented in Office, [was] sufficiently interoperable with competitors' products."[104]

V. RECOMMENDATIONS ON THE WAY OUT: HOW CAN THE UNITED STATES AND CHINA TURN THE DISPUTES INTO GLOBAL COLLABORATIONS?

The current multilateral rules may not be the best mechanism for addressing ICT standards disputes. Due to the strategic implications of ICT standards for digital competition, both parties will be tempted to pursue their own interests. In this situation, disputes are unavoidable, especially when one considers the feverish nature of industrial lobbying and the sensitive national security arguments in play. However, ICT standards are a global issue necessitating bilateral and multilateral collaborations. No party stands to benefit from an ICT standards dispute. The United States and China need constructive and innovative solutions for dealing with standards competition in a systematic manner.

100. For example, even the U.S. Department of Defense had security concerns regarding Microsoft standard OOXML, voting against it in the International Committee for Information Technology Standards (INCITS) ballot and noting the Department's intent to discuss, in future technical comments, "[b]inary information in the standard that would lead to security concerns." InterNational Committee for Information Technology Standards [INCITS], *Vote for INCITS 2212 by US Department of Defense*, July 20, 2007, http://ballot.itic.org/itic/tallyvote.taf?function=detail&response_id=113266.

101. Melanie Chernoff, *ISO Approval: A Good Process Gone Bad*, RED HAT MAG., Mar. 24, 2008, http://magazine.redhat.com/2008/03/24/iso-approval-a-good-process-gone-bad/.

102. *See, e.g.*, Palmer, *supra* note 76, at 19 (describing the format war between Microsoft and a coalition of companies led by IBM and Sun regarding Microsoft's effort to obtain certification of its file formats by the ISO); Daniel Goldberg, *Microsoft Pressed Partners in Sweden to Vote for OOXML*, ABOUT.COM, Aug. 30, 2007, http://pcworld.about.com/od/companynews/Microsoft-pressed-partners-in.htm (describing Microsoft Sweden's offer to provide extra marketing contributions to its business partners to encourage them to vote for the adoption of Mircrosoft's Office Open XML format as an ISO standard).

103. International Organization for Standardization [ISO], *Appeals on ISO/IEC DIS 29500 Open Office XML*, at 3, TMB Secretariat Vote/Information3Form Number: 078/2008 (July 4, 2008), *available at* http://www.groklaw.net/pdf/ISOAppealRecommendationTMB.pdf (listing Brazil, India, South Africa, and Venezuela as four countries that filed appeals and more information about OOXML).

104. Press Release, EUROPA, Antitrust: Commission Initiates Formal Investigations Against Microsoft in Two Cases of Suspected Abuse of Dominant Market Position (Jan. 14, 2008), http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/19&format=HTML&aged=0&language=EN&guiLanguage=en.

A. Accountability of Current International Governance for ICT Standards and Relevant Policies

Relevant WTO rules serve as the primary source of legal guidance in a standards dispute. The WAPI dispute raised the question of whether national security is a valid justification for deviation from an international standard. When the United States agreed that the Chinese government could mandate WAPI standards within the military and other affected government agencies, it was implied that both parties recognized the validity of national security as a justification for deviating from international standards authorized under the WTO/TBT Agreement and the General Agreement of Trade and Tariff 1947 (GATT).[105] However, a strict application of the WTO/TBT Agreement by the WTO Appellate Body will not recognize national security as a valid justification for deviating from national standards. In other words, the agreement between China and the United States is not necessarily agreeable to the Appellate Body. If WAPI or other cases are brought to the Dispute Settlement Body (DSB), the disputing parties will surrender their diplomatic control of these issues and be forced to accept the DSB's interpretation.[106] With this in mind, resorting to the WTO dispute-settlement mechanism might not be the best choice for either party. [107]

It is highly unlikely that the current negotiations in the WTO will cover the disputed issues, such as the U.S.-China telecommunications disputes. Although technical neutrality is an underlying principle of the General Agreement on Trade in Services (GATS),[108] it is doubtful whether it is relevant to 3G disputes or not. China may have been confused as to why the United States invoked the technical neutrality argument in the 3G debate; however, China did not object when the United States requested that it give industries free choice among the three standards of TD-

105. *See* Stacy A. Baird, *Government Role in the Interoperability Ecosystem*, 5 J.L. & POL'Y INFO. FOR SOC'Y, 219, n. 167 (2009) ("... China mandated WAPI (which includes encryption) for all Chinese government use; under pressure from the U.S. and international community (as a political matter, most significantly concerned about the incorporation of a Chinese encryption standard), the Chinese government revised the mandate to make it a procurement priority, and has refrained from setting it as a national mandatory standard.").

106. Understanding on Rules and Procedures Governing the Settlement of Disputes, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, art. 17, para. 14, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1125 (1994) ("An Appellate Body report shall be adopted by the DSB and unconditionally accepted by the parties to the dispute unless the DSB decides by consensus not to adopt the Appellate Body report within 30 days following its circulation to the Members. This adoption procedure is without prejudice to the right of Members to express their views on an Appellate Body report." (footnote omitted)).

107. With regard to understanding and perceptions on the relationship between ICT industries and national security in a wider context, see Peter Lichtenbaum, Assistant Secretary for Export Administration Dep't of Commerce, Remarks delivered at Washington Law Society Luncheon: National Security and U.S. Trade and Investment Policy (Oct. 18, 2005), http://www.bis.doc.gov/news/2005/foreignlawsociety.htm (last visited Apr. 21, 2009). *See also* JAMES K. JACKSON, FOREIGN INVESTMENT, CFIUS, AND HOMELAND SECURITY: AN OVERVIEW, CONG. RESEARCH SERV., RS22863 (2008), *available at* http://fpc.state.gov/documents/organization/104704.pdf.

108. Sacha Wunsch-Vincent, *The Internet, Cross-Border Trade in Services, and the GATS: Lessons from US-Gambling*, 5 WORLD TRADE REV. 319, 329–34 (2006) (discussing findings on technological neutrality and likeness of electronically supplied services).

SCDMA, WCDMA and CDMA 2000.[109] Ultimately, China was not opposed to free choice for companies.[110]

If international rules are to be followed, the 3G disputes may be governed by Article 6 of the GATS, which addresses domestic regulations and standards.[111] The Telecommunication Reference Paper under GATS might also be a relevant source of legal authority. However, Article 6 and the Telecommunication Reference Paper are difficult to apply to the 3G disputes. Also, the ongoing negotiations on GATS Art. 6 cannot be altered, nor can the Telecommunication Reference Paper be extended to provide a possible competition rule for ICT standards and related issues such as IPRs in standards. Since the TBT Agreement is not part of the Doha round negotiations, the uncertainty and ambiguity of the ICT standards will not be clarified through the Doha round. Though potentially desirable, negotiations on ICT standards and IPRs inclusion in standards under GATS or other WTO rules are not necessarily feasible in the short run. Therefore, the current WTO rules might not be adequate to efficiently address the U.S.-China disputes on ICT standards.

The challenges international standardization organizations face seem unprecedented. It might be an insurmountable challenge for these organizations to reconcile three separate standards for 3G mobiles. The OOXML controversies challenged the organizations not only in terms of procedures, but also in terms of maintaining their proper operations and possibly its integrity. At the same time, the international standardization organizations were under the pressure of big firms and their governments. Technology-oriented organizations, big firms and governments are limited in their expertise and mandates with regard to the issue of IPRs in standardization.[112] Furthermore, initiatives for improving governing mechanisms for international standardization—including potential extension of the mandates—may well be necessary but are highly unattainable at the present.

B. Feasibility and Affordability of the Standards Race Between the United States and China

Under the ambiguity of multilateral rules, both parties may pursue their own IT standards policies. Even though China apparently yielded on some issues after years of hard negotiations, the disputes between the United States and China on ICT standards and the overarching issue of IPRs in standardization still remain

109. Barboza, *supra* note 17, at B9.

110. *Id.*

111. General Agreement on Trade in Services art. VI, Apr. 15, 1994, 1869 U.N.T.S. 183, 33 I.L.M. 1167 (1994).

112. Stephen Oksala, *The Changing Standards World: Government Did It, Even Though They Didn't Mean To*, 1–5 (2000), http://www.ses-standards.org/associations/3698/files/WSD 2000 - 2 - Oksala.pdf (expressing the view that the number of individuals with actual expertise in the standards is extremely limited). Standards developing organizations are likewise facing challenges due to: "(1) the need for an alternative revenue source for the standards developing organizations; (2) the emergence of management systems standards; and (3) the increased use of standards in regulatory contexts." *Id.*

unsolved.[113] The situation may actually be worse in the sense that both sides have noticed the difference but continue to head in their own directions.[114]

The mandatory implementation of WAPI was suspended.[115] However, according to a 2007 *China Daily* article, posted on the Chinese Ministry of Commerce website, WAPI "is gaining the industry support needed to speed up the system's commercialization which could continue to cause a rift between China and the United States. . . . [T]he Chinese government issued a notice in 2005 asking all government bodies to make WAPI a priority in government procurement."[116]

Current discussions on the TCM standard and the issue of IPRs in standards could be perceived as tacit aggression by China. However, China has not backed off from its stance. China has learned not to make low-level mistakes such as failing to fulfill the WTO notification obligations.[117] China has also learned of the need to better prepare for disputes in order to avoid unnecessary ones. The United States has also been approaching Chinese authorities on these issues in a low-profile manner with clear indications that pragmatic solutions are preferable to high-profile disputes. However, the United States has by no means withdrawn its interest in Chinese ICT policies.[118] If the current discussions do not provide the United States with satisfactory results, it may lead to heated trade discussions with China.

Among Chinese industries and scholars, there is deep frustration with the U.S.-China standards discussions and distrust in the sermon-style arguments propagated by the United States. According to Cao Jun, General Manager of the WAPI sponsor IWNCOMM, the United States has not upheld its promise to support the WAPI as an ISO standard and has been actively trying to undermine this process.[119] An example of a sermon-style argument from the United States was pointed out by Zhang Qin, Deputy Commissioner of the State Intellectual Property Office (SIPO). Recalling how at least one U.S. official emphasized only China's IP protection, but not its prohibition on IP abuse, Zhang Qin said in an interview that "[a U.S. Department of Justice official in charge of IP abuse and anti-monopolistic practices's] words reflect the US's preference on the IP issue. . . . In their opinion,

113. *See* Indrajit Basu, *Looming Standards War in China*, ASIA TIMES ONLINE, Oct. 25, 2006, http://www.atimes.com/atimes/China_Business/HJ25Cb03.html (last visited Oct. 9, 2009) (discussing the ISO's rejection of WAPI as an international standard).

114. *See* Tam Harbert, *China Bares Technology Standards*, ELECTRONIC BUS., June 1, 2004, *available at* http://www.edn.com/article/CA420994.html?text=China+bares+technology+standards (last visited Oct. 9, 2009) (noting China's continued development of new standards, following the ISO's rejection of WAPI).

115. Roy Mark, *China Backs Down on WAPI Deadline*, INTERNETNEWS.COM, Apr. 22, 2004, http://www.internetnews.com/article.php/3343781 (last visited Oct. 9, 2009).

116. Li Weitao, *Companies Throw Weight Behind WAPI*, CHINA DAILY, May 23, 2007, at 13, *available at* http://www.chinadaily.com.cn/bizchina/2007-05/23/content_878572.htm.

117. *China and the WTO: Compliance and Monitoring: Hearing Before the U.S.-China Economic and Sec. Rev. Comm'n.*, 108th Cong. 15 (2004) (statement of James J. Jochum, Assistant Secretary of Commerce for Import Administration), *available at* http://www.uscc.gov/hearings/2004hearings/transcripts/04_02_05.pdf (discussing China's previous difficulties with making annual notifications under the WTO subsidies agreement).

118. *See, e.g.*, U.S. Trade Rep., Executive Office of the President, 2008 Report to Congress on China's WTO Compliance (2008), http://www.ustr.gov/sites/default/files/asset_upload_file192_15258.pdf.

119. Implementation of Rules Dealing With Government Purchasing of WLAN Technology, *supra* note 25.

China only needs to protect IP and fight against piracy. Prohibiting monopolistic abuse seems to be a minor thing since it mainly targets multinational corporations, especially the US companies. . . . But from China's own standpoint, we shall keep a sober mind that a prohibition on IP abuse is urgently needed."[120] Having undergone such intensive disputes with frustration and suspicion,[121] yet not assured of the accountability of multilateral rules, China cannot be easily persuaded to give up pursuing its interests in its own way.

Increasing manufacturing capacity in emerging countries makes it "even more urgent for OECD countries to move up the value chain, many of them face difficulties in strengthening innovation performance,"[122] and the United States will be expected to retain its share of profits in ICT value chains. China, with its growing manufacturing and innovation capacity, will continue to secure its internal market and attempt to open international markets for its ICT industries.

China is well aware that it is not yet in a position to challenge the U.S.'s leadership in digital technologies. The only ambitious objective on the part of China would be to secure a relatively fair share of gains proportionate to its expanding manufacturing capacities. China may simply want to fulfill this objective by utilizing its membership in the multilateral organizations, for which China has already paid quite a high price. An attempt by China to pursue its own standards in isolation will cause great concerns for the United States and many other players such as the EU and Japan. Nevertheless, this would almost certainly not be the optimal choice for China. Practically speaking, the international ICT market has been so complicated that national boundaries are no longer clear. In ICT standards markets, domestic firms are often working with foreign firms in competition with other domestic and foreign firms.[123] The coalition dynamics among firms are under constant and rapid change, and it is hard for either side to assemble enough domestic support to initiate a full-fledged standards race.

C. The Way Out of the Disputes

Expedient settlements such as those in previous WAPI and 3G disputes may no longer be viable. These settlements came, more or less, out of negotiations decided by unequal strength and experience.[124] If the United States continues to rely on this approach, it can expect China to defy outright or tacitly resist. Therefore, both parties must seek systematic and sustainable solutions. To achieve this objective, the parties need to address the relevant issues with full commitment, especially the

120. Zhang Qin, *supra* note 4.

121. With or without academic merit, some comments by third-party observers may be helpful to understand perceptions and sentiments among some Chinese with regard to the U.S.-China standards disputes. *See, e.g.*, Basu, *supra* note 113; Don Tennant, *Standard Procedure*, COMPUTERWORLD, Mar. 20, 2006, http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyName=Government&articleId=109633&taxonomyId=131&pageNumber=1 (last visited Sept. 7, 2009).

122. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, INNOVATION AND GROWTH: RATIONALE FOR AN INNOVATION STRATEGY 9 (2007), *available at* http://www.oecd.org/dataoecd/44/50/40908171.pdf.

123. Scott Kennedy, *The Political Economy of Standards Coalitions: Explaining China's Involvement in High-Tech Standards Wars*, 2 ASIA POL'Y 41, 47 (2006).

124. *Id.* at 52–53.

underlying and overarching policy issue of IPRs in ICT standards. This article does not detail how governments will push forward the discussions on IPRs in standardization and other related issues. Rather, it suggests that truly meaningful discussion requires harmonization of opposing viewpoints, in addition to shared policy experience among governments on fundamental issues related to ICT standards.

While it is true that U.S. standardization activities have been based on a market mechanism, it should also be noted that in other countries government intervention in standardization has been the normal approach for various reasons, including insufficient private investment in standards that are considered to be quasi-public goods.[125] If ICT standards are different from other standards in the sense that private firms have enough incentive to contribute, government intervention is still warranted because of concerns related to competition, innovation, and interoperability.

Placing the U.S.-China disputes on standards in a global context, China is at a clear disadvantage, since most big players do not have enough confidence in China's commitments to IPR protection.[126] However, China is trying to secure more sympathy and support from the developed world by stating their commitments on IPR protection and explaining their intention to raise the issue of IPRs in standardization in the WTO.[127] With that support, China will be more confident in pushing forward its policy for a fair and reasonable global rule for ICT standards. At the same time, if China's legitimate concerns are not addressed, it may feel more justified in pursuing a domestic standard.

The solution to the ICT standards dispute should be to increase good faith communications concerning policy recommendations. While it will take some time to find a systematic and complete set of solutions, a step-by-step approach is needed. Where justifications for government intervention are still highly suspect, a market-led approach should prevail. If governments find it necessary to intervene in the absence of sound theoretical support or clearly defined international rules, well-restrained bilateral dialogues are preferred to outspoken disputes.[128]

VI. CONCLUSION

While China has been considering the feasibility of operating alone and formulating domestic standards, the United States has actually been considering the same idea. If the United States currently claims more faithful adherence to international rules, those claims are only valid because those international rules were first and foremost designed by, and therefore already in line with, the interests of the United States. The United States has not hesitated to criticize those organizations such as the ISO that are not considered to be in line with U.S. interests. With regard

125. Charles Kindleberger, *Standards as Public, Collective and Private Goods*, 36 KYKLOS 377, 388 (1983) (discussing a "free-rider problem that inhibits the production of public goods").

126. Dongguan, *Time to Change the Act*, ECONOMIST, Feb. 19, 2009, *available at* http://www.economist.com/businessfinance/displaystory.cfm?story_id=13145129.

127. But the Chinese may also have difficulty clearly explaining their position due to language and cultural barriers, and internal coordination rivalries.

128. While this article promotes good faith communications for sustainable solutions, it should be pointed out that a prisoner's dilemma may warrant vigilance for betrayals on the part of partner(s).

to government intervention in ICT standards, while the United States has promoted a market-led standardization approach and criticized Chinese government interventions,[129] the U.S trade authority has also aggressively intervened in standards issues through less than honorable means not entirely attributable to private lobbying.

Due to the complex dynamics of ICT standards, policy consensus is not easy to obtain.[130] Currently, academics are unable to persuade governments, especially those interested in leap-frog strategies, to avoid intervening in standards.[131] In all likelihood, policy recommendations will continue to favor government intervention in standards in order to foster innovation and to ensure international competition.[132] Even if the U.S. argument possesses some merits in and of itself, it may not be easy for the United States to persuade its trade competitors to accept its argument. This difficulty likely arises because it is not easy for the United States to provide convincing theoretical and empirical evidence for its argument. Furthermore, this U.S. argument may be considered deferential and protectionist toward industries that are capable of influencing and manipulating U.S. negotiation authority.

The U.S. views on the roles of international SSOs in discussing IPRs in standards remain confusing. First, the WIPO takes the position that standardization is particularly important considering international connectivity,[133] which differs from the argument made by some U.S. firms and the U.S. government that IPRs in standards, as an issue, do not constitute a crisis and do not warrant policy efforts at an international level. Second, when the United States was blocking the discussions on IPRs in standards at the WTO, it was in favor of discussing the issue at the ISO. However, when the ITU, ISO, and IEC state that they are collaborating to address the issue of IPRs in standards, why should the United States be limited to discussion

129. Christine Zhen-Wei Qiang, *China's Information Revolution: Managing the Economic and Social Transformation*, at 73 (2007), *available at* http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1176738081732/China-ch4.pdf (criticizing Chinese government interventions).

130. *See* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 65, 80 (Univ. of Chicago Press, 1st ed. 1962) ("Significant scientific novelty so often emerges simultaneously from several laboratories."); *id.* ("Normal science . . . must continually strive to bring theory and fact into closer agreement, and that activity . . . [is] a search for confirmation or falsification."); Giovanni Dosi, *Technological Paradigms and Technological Trajectories*, 11 RES. POL'Y 147, 157–58 (1982) (explaining that new technologies are selected by the interaction of the search for new profit-making opportunities and the interest and structure of existing firms). While standards codify those progresses by converging them, standards could harm innovation when they codify the wrong technical paradigms. *See* J. S. Metcalfe & Ian Miles, *Standards, Selection and Variety: an Evolutionary Approach*, 6 INFO. ECON. & POL'Y 18 (1994) ("[S]tandards and paradigms are proposed as structuring devices which help channel innovation and restrict variety."). Governments, with limited information, may standardize the wrong technical paradigms if they are overbearing in their attempts to achieve strategic innovation and international competition.

131. *See, e.g.*, Carlota Perez & Luc Soete, *Catching Up in Technology: Entry Barriers and Windows of Opportunity*, in TECHNICAL CHANGE AND ECONOMIC THEORY 458, 459–60 (1988) (making theoretical arguments).

132. *See, e.g.*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 122, at 24–25 (recommending enforcement of piracy laws in order to prevent its negative effects on innovation).

133. World Intellectual Property Organization [WIPO], Standing Comm. on the Law of Patents, *Standards and Patents*, para. 45, WIPO Doc. SCP/13/2 (Feb. 18, 2009), *available at* http://www.wipo.int/edocs/mdocs/scp/en/scp_13/scp_13_2.pdf.

only in the ISO?[134] Therefore, the U.S. position that this issue should be discussed in the ISO would simply be taken by Chinese trade negotiators as a forum-shifting strategy aimed at misleading the discussions.

By examining both high profile disputes and subsequent lower level disputes concerning ICT standards between the United States and China, one can conclude that both parties have an incentive to explore meaningful collaboration. However, some issues will be difficult to overcome due to the complex competition dynamics associated with ICT standards. To achieve meaningful collaboration, both parties need to re-evaluate their strategies and relevant policy perceptions and adjust them in accordance with current global trends. Although this article has focused on critical commentary concerning the U.S. position, it should be noted that several other papers address what China should do in order to achieve meaningful international dialogue.[135]

134. Press Release, Int'l Telecomm. Union, IEC, ISO and ITU, The World's Leading Developers Of International Standards Agree On Common Patent Policy (Mar. 19, 2007), *available at* http://www.itu.int/newsroom/press_releases/2007/05.html.

135. *See, e.g.*, SUTTMEIER & XIANGKUI, *supra* note 6, at 28; Zia K. Cromer, *China's WAPI Policy: Security Measure or Protectionism?*, 2005 DUKE L. & TECH. R. 18 (2005).