Balancing barriers to trade and technical standards: Potential impact on ICT industries

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BALANCING BARRIERS TO TRADE AND TECHNICAL STANDARDS: POTENTIAL IMPACT ON ICT INDUSTRIES

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Abstract

Barriers to Trade — Technical Standards — Impact on Information and Communications Technology Industries — International Trade Law — Protectionism — Agreement on Technical Barriers to Trade — Standardisation

This paper investigates the connection between technical standards, information and communications technology industries and international trade law to demonstrate how standards can be used as potential barriers to trade. There has been less attention paid to the role of standards as a form of protectionism, despite the introduction of the Agreement on Technical Barriers to Trade on 15 April 1994. Stated as an objective, the Agreement on Technical Barriers to Trade is to ensure that no unnecessary obstacles to international trade are created. While governments in the past have relied upon high tariffs and quotas imposed on imports to protect local industries or discriminate against foreign-produced goods, less transparent measures — referred to as non-tariff barriers — are now becoming more prominent. On one hand, it signals the growing significance of proprietary technologies in standards, demonstrating that public policy must embrace these concerns. On the other hand, the continued tensions between two significant trading partners — China

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and the United States — demonstrate the complexity of international trade law in this area.

I INTRODUCTION

Technical standards (‘standards’)¹ are playing an increasingly significant role in trade disputes between developed nations seeking to gain a commercial advantage for their local industries.² Part of the explanation lies with the fact that standards have also become an important feature of the global economy ever more dependent on information and communications technology (‘ICT’).³ In the case of mobile telephony, for example, standards ensure the compatibility between individual communication devices and components manufactured by different suppliers, allowing for increased economies of scale and network effects.⁴ A good illustration of this was the adoption of the Global System for Mobile communications (‘GSM’) standard in Europe, which facilitated a rapid penetration of mobile phones across the continent, and then prompted an expansion into other regions such as Asia.⁵

¹ Technical or compatibility standards have commonly been categorised on the basis of how they are developed: a de jure or formal standard is developed by industry participants through a voluntary, consensus-driven process facilitated by a particular Standard-Setting Organisation (‘SSO’), such as the International Organization for Standardization (‘ISO’) or Standards Australia; whereas a de facto or informal standard is one that has, through widespread use, acquired recognition (which may be limited to a specific industry) in the absence of being officially endorsed by an SSO. For the purposes of this paper, any reference to standards signifies a de jure standard unless indicated otherwise.


In addition to these direct network effects, further benefits are provided to consumers when complementary goods and services, such as eBooks or Wireless Fidelity (‘Wi-Fi’), are supported by an upstream technical platform. But as ICT industries require standards to fully exploit the economic advantages of networked environments, their obstacle to trade rather than a tool for knowledge diffusion is becoming an emerging policy concern for national governments.

At the same time, there has been a proliferation of proprietary technologies incorporated in ICT standards. One important category of exclusive rights in this context is known as Standard Essential Patents (‘SEPs’). An SEP is, by definition, necessary for the implementation of a standard. Therefore, if the particular standard is adopted by a SSO, and becomes the industry standard, new entrants to the market and downstream companies must adhere to licensing terms that may attach to the patent rights incorporated in the standard. The result is that companies wishing to manufacture goods implementing the standard would be required to seek authorisation from the patent holder.

While governments in the past have relied upon high tariffs and quotas imposed on imports to protect local industries or discriminate against foreign-produced goods, less transparent measures — referred to as non-tariff barriers (NTBs) — are now becoming more prominent. In relation to standards, the concern lies with the use of incompatible national standards for ICT in different countries. As a

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7 See Gibson, above n 3, 1405.
9 See, eg, Patents Act 1990 (Cth) s 13(1) which in Australia ‘gives the patentee the exclusive rights, during the term of the patent, to exploit the invention and to authorise another person to exploit the invention’.
consequence, these NTBs may be used in such a manner as to protect domestic industries from global competition.\(^{11}\)

A General Agreement on Tariffs and Trade (‘GATT’) Working Group was established in the 1970s to evaluate the impact of NTBs on international trade, which concluded that technical barriers were one of the greatest challenges facing exporters.\(^{12}\) Amongst the challenges, was a ‘need to strike a balance between the prevention of protectionism and the right of a country to implement specific product regulations for its legitimate public policy purposes’.\(^{13}\) GATT members agreed that an institutional mechanism to administer new trade agreements was needed, and as a result the Uruguay Round of trade talks established a permanent multilateral trade institution called the World Trade Organization.\(^{14}\) During this time, the Agreement on Technical Barriers to Trade\(^ {15}\) was negotiated, including a ‘Code of Good Practice’.\(^ {16}\) An objective of the TBT Agreement is to ensure no

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15 Marrakesh Agreement Establishing the World Trade Organization, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995) annex 1A (‘Agreement on Technical Barriers to Trade’) (‘TBT Agreement’). The TBT Agreement purports to address any trade barriers arising from national standards and regulations.

16 While the principles for the adoption of technical regulations and standards are the same in the TBT Agreement, the latter are referred to separately in annex 3 ‘Code of Good Practice for the Preparation, Adoption and Application of Standards’. Since 1 January 1995 Australia, along with 121 other members of the WTO, have accepted the Code of Good Practice: List of Standardizing Bodies that have Accepted the Code of Good Practice for the Preparation, Adoption and Application of Standards Since 1 January 1995, WTO Doc G/TBT/CS/2/Rev.19 (18 February 2013).
unnecessary obstacles to international trade are created.\textsuperscript{17} It broadly recognises the important contribution that standards make towards improving efficiency of production, while guarding against the creation of unnecessary barriers to trade. One instance where this aspiration has been thwarted was with China’s focus on the development of domestic standards for wireless devices sold or imported into China.\textsuperscript{18}

By investigating the connection between standards, international trade law and ICT industries, this paper will demonstrate how standards can be used as potential barriers to trade. This will partly address a deficiency in the standards literature, which predominantly examines standards in relation to patented technologies and anticompetitive issues.\textsuperscript{19} As a consequence, there has been less attention paid to the role of standards as a form of protectionism.\textsuperscript{20}

The rest of the paper is organised as follows. Section 2 provides a brief description of standards, and their role in technological development. Recently, the adoption of proprietary technologies in standards has raised a number of concerns in relation to ICT industries. At the same time, the TBT Agreement seeks to encourage the development and harmonisation of international standards, despite

\textsuperscript{17} See the fifth recital of its Preamble.
\textsuperscript{18} Gibson, above n 3, 1434.
\textsuperscript{20} There are, however, some notable exceptions, see Gibson, above n 3; An, above n 2; Bransislav Hazucha, ‘Technical barriers to trade in information and communication technologies’ in Tracey Epps and Michael J Trebilcock (eds), \textit{Research Handbook on the WTO and Technical Barriers to Trade} (Edward Elgar, 2013).
being described as an imperfect remedy.\textsuperscript{21} These two roles will be examined further in Section 2. Section 3 then highlights the recent experience between China and the United States (US) involving the standardisation of Wireless Local Area Networks (WLAN) technology. Although the dispute concluded in 2004, China has continued to pursue an aggressive strategy towards adopting domestic ICT standards in the face of international opposition.\textsuperscript{22} Finally, Section 4 offers some concluding remarks.

II TECHNICAL BARRIERS TO TRADE AGREEMENT AND TECHNICAL STANDARDS: UNITING THE TWO ROLES

The economic importance of standards and standardisation has significantly increased in the past decade.\textsuperscript{23} Standards are now viewed as one of the main alignment mechanisms that technology owners use to negotiate and coordinate the direction of technological change.\textsuperscript{24} According to Blind and Pohlmann, firms achieve this by promoting their ‘best and most innovative solution to be accepted as an industry wide standard’.\textsuperscript{25} Furthermore, a number of developments specific to SEPs have provided additional impetus to the area of standards.\textsuperscript{26}

\begin{itemize}
  \item \textsuperscript{21} See, eg, Arkady Kudryavtsev, ‘The TBT Agreement in context’ in Tracey Epps and Michael J Trebilcock (eds), Research Handbook on the WTO and Technical Barriers to Trade (Edward Elgar, 2013) 17, 18.
  \item \textsuperscript{23} See, eg, Knut Blind and Tim Pohlmann, ‘Trends in the Interplay of IPR and Standards, FRAND Commitments and SEP Litigation’ (2013) 48 les Nouvelles 177.
  \item \textsuperscript{25} Blind and Pohlmann, above n 23, 180.
  \item \textsuperscript{26} Concerns relating to SEPs have, for example, recently become the subject of prominent litigation in the United States and Europe: see Christopher Pleatsikas,
time, in traditional patent-intensive industries (for example, mobile telephony) where you would expect to see standards play a significant role, there has been an increased incidence of valuing SEPs as a business asset. A related concern is that ownership of SEPs may provide companies with a degree of market power, which if left unchecked, may result in patent ‘hold-up’, and a loss in consumer welfare. It is important to emphasise that concerns surrounding SEPs are not entirely new, although their significance has grown with the ‘prevalence of communication technology in our society’.

The TBT Agreement, on the other hand, is concerned with WTO member responsibilities towards the preparation, adoption and application of standards and technical regulations. Notably, the agreement contains an emphasis on harmonisation that creates a duty between contracting states to avoid unnecessary obstacles to international trade. However, the latter purpose has created some unwanted consequences.

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Patent hold-up may occur when a patentee can obtain royalty payments at a higher level than the competitive rate, or where there is an overall increase in licensing payments and transaction costs due to the existence of numerous independent rights holders (commonly known as ‘royalty stacking’).


See Articles 2–4 of the TBT Agreement. It should be noted that the WTO does not have any standard-setting capacity itself, nor does it adopt standards.

Gibson, above n 3, 1455.
Under art 2.4 of the TBT Agreement, WTO members have a duty to adopt any existing international standards as the basis for their technical regulations, unless it is inappropriate to do so. The potential concern for developed countries arises when patented technologies are incorporated in international standards, resulting in local companies being subject to the licensing regime of foreign patent holders. Partly in response, several countries have attempted to develop their own national standards by incorporating indigenous technologies and mandating their use. The most prominent of these examples was China’s challenge to the international ICT standards regime, which is discussed in the next section.

While the TBT Agreement is concerned with standards, it is silent on the issue of proprietary rights in standard-setting. As Gibson explains, ‘there is a “disconnect” between TBT Agreement responsibilities to use international standards and the IP rights that are embedded in those standards, particularly in the ICT sector’. This raises an important question: given that three major international SSOs have already adopted a ‘Common Patent Policy’ — addressing the disclosure of patent rights and declaration of licensing of those rights — towards standard-setting, does the TBT Agreement now need to integrate similar guidelines for the preparation, adoption and application of standards?

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33 Article 12 of the TBT Agreement permits deviations from such standards in cases of ‘fundamental climatic or geographical factors or fundamental technological problems’, and takes into account the special trade needs of developing countries.

34 See Hazucha, above n 20, 545.


36 Gibson, above n 3, 1475.


38 Similar suggestions have been expressed by Gibson, above n 3, 1481 stating that there’s a ‘gap in the current WTO standards framework’.
III China and the United States: Rising Trade Concerns or Local Strategy?

Concerns over the development of ICT standards have involved two significant trading partners. Tensions have been rising between China and the United States surrounding China’s approach to standard-setting in ICT environments.39 For instance, China’s move to mandate its own domestic WLAN standard — WLAN Authentication and Privacy Infrastructure (‘WAPI’) — instead of adopting an existing and widely accepted international standard40 has caused much unrest with manufacturers and officials in the United States.41

In May 2003, China’s state-run standard-setting body approved the WAPI security standard for wireless devices, and decreed that WAPI be incorporated into all wireless devices sold or imported into China by December 2003.42 WAPI was introduced in competition with the security standard for Wi-Fi, an international standard developed by the global Wi-Fi Alliance and adopted by the Institute of Electrical and Electronics Engineers (‘IEEE’).43 Both technologies are compatibility standards designed to facilitate wireless communication, however, WAPI employed a proprietary encryption algorithm, which meant that the IEEE and Chinese standards were incompatible for users.44

The core concern to emerge during this period had to do with the proprietary technology incorporated in the WAPI standard and it being made available only to a select group of Chinese companies.45

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39 See An, above n 2, 182.
40 Such as the Institute of Electrical and Electronics Engineers (‘IEEE’) 802.11 standard.
42 Gibson, above n 3, 1436.
43 See An, above n 2, 178.
44 See Hazucha, above n 20, 549.
45 Hazucha, above n 20, 549. Another dispute arose over the Chinese 3G standard, TD-SCDMA, but since it was already adopted as an international standard, it could not be challenged under the TBT Agreement.
As a consequence, foreign firms had no direct access to the WAPI specifications. It meant that if foreign manufacturers wanted to sell computers or handheld devices with wireless capability in China, they would have to negotiate with one of the Chinese rights holders. As a sign of the seriousness of these measures, the matter was discussed between the highest levels of government. The impasse was eventually resolved at a meeting of the US-China Joint Commission on Commerce and Trade (JCCT), a consultative group formed to address bilateral trade issues. It resulted in China’s indefinite suspension of the ‘implementation of WAPI as a mandatory wireless encryption standard’.

China has continued, however, to pursue an aggressive strategy towards adopting indigenous technologies into ICT standards amidst opposition. In November 2004, China refused to accept the final verdict by choosing to submit the WAPI standard for adoption as an international standard before the ISO. In effect, China was inviting ISO to choose between the incompatible standards, WAPI and IEEE 802.11i (amended). By 2006, ISO members consequently voted to reject the proposed WAPI standard and adopt the IEEE’s 802.11i security specification.

However, to frame the WAPI dispute as purely a financial opportunity to exploit royalties is perhaps too simplistic. One set of commentators have argued:

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46 On 15 March 2004, a letter expressing the US government’s concerns over the WAPI regulations was sent to China’s Vice Premier, Zeng Peiyan from three US representatives — US Trade Representative Robert Zoellick, Secretary of Commerce Donald Evans, and Secretary of State Colin Powell.
48 Ibid.
50 DeLacey et al, above n 41, 13.
51 Ibid 14.
understanding of the dynamics and outcomes of China’s technology standard efforts we must understand both what are the various goals for the development of technology standards in China, as well as the particular political-economic dynamics unleashed by the specific policy actions followed by the government.  

One of the key differences in standard-setting between China and the United States that the authors allude to is the different business models for intellectual property rights (‘IPRs’) and standards. A simple example of this is the divergent views on revenue. Whereas the United States place emphasis on the intrinsic value of IPRs and maximising revenue through patent licensing or sales, the Chinese view IPRs ‘as a factor of production’. According to Breznitz and Murphree, ‘Chinese firms are interested in incorporating technology into standards as a means of decreasing the costs of goods they produce’.

Two other factors may have also motivated China’s behaviour at this time. It has been reported that the WAPI dispute was merely a strategy to win trade concessions from the United States. Around the same time of the WAPI dispute, the two nations were negotiating an agreement on semiconductor royalty payments that China owed to US-based companies. Another suggestion relates to China’s security fear towards the United States gaining access to its telecommunications network. In defence of its actions, China relied on the justification authorised under the TBT Agreement of

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54 Ibid 17.
55 Ibid 18.
56 See DeLacey et al, above n 41, 11.
57 See Gibson, above n 3, 1462.
protecting national security for the deviation from an international standard.  

IV CONCLUSION

The WAPI case highlights the potential strategies available to national governments to gain a competitive advantage in ICT industries. It illustrates how the development of standards can lead to potential measures of protectionism. On one hand, it signals the growing significance of proprietary technologies in standards, demonstrating that public policy must embrace the concerns discussed above. On the other hand, the WAPI dispute demonstrates the complexity of international trade law in this area.

Recent commentary looking at standards and ICT industries has been focused on a narrow set of recurring themes. Absent, for the most part, in these discussions is a consideration of the trade-related aspects of standards and standardisation. Despite the increasing number of international standards, coupled with the growth in trade in ICT industries — which has been enabled by the use of standards — only a few studies have attempted to determine the impact of the TBT Agreement on standards, or standards on international trade. Since advances in technology have played a central role in reshaping ICT industries, further research into these NTBs as trade facilitators now seems appropriate to understand how the different national

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58 The seventh recital of its Preamble states ‘no country shall be prevented from taking measures necessary for the protection of its essential security interests’.
59 According to Hazucha, above n 20, 563–4, the debates have centered on the ‘creation of coalitions between competing entities, the private and legal regulation of information and communication technologies, as well as the competition aspects’.
61 Of the small number of studies, the focus has primarily been on product standards as they relate to agricultural goods: see G M Peter Swann, ‘International Standards and Trade: A Review of the Empirical Literature’ (Working Paper No 97, OECD, 2 June 2010).
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approaches to standardisation will influence global competition in the future.