ICT Standards Bodies and International Trade: What Role For The WTO?

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Standardization of information and communication technologies (ICT) has become essential for the global economic activity. ICT standards provide for coordination between devices, interfaces, and networks; they support technical infrastructure, bolster e-commerce and rule digital markets. ICT standards also have a profound effect on global trade regulation since they serve both as enablers and barriers for transboundary commercial transactions. Because ICT standards are generally produced by the private sector, their trade-restrictive effects have so far largely managed to escape the purview of the World Trade Organization (WTO). However, due to their growing normative consequences, the status quo of ICT standards and ICT standards bodies in multilateral trade cannot be maintained any longer. This Article argues that the WTO has powerful tools to address trade-restrictive effects of ICT standards, at the very least by giving a normative account to institutional characteristics of ICT standards bodies, but that these tools are not effectively used by Members. Conversely, the current application of the Technical Barriers to Trade (TBT) instruments privileges powerful economic actors, expanding the gap between the developed and developing countries. A new, rule-based approach is required to re-establish the WTO's relevance in standard setting and address power imbalances brought by technological convergence.

Keywords: ICT standards, TBT Agreement, TBT Committee Decision, TBT Code of Good Practice, technical standardization

1 INTRODUCTION

International trade is rapidly evolving. Globalization and digitalization of economic activity, together with data-driven innovations, such as cloud-computing and the use of algorithms and Artificial Intelligence (AI), are gradually transforming the way transboundary commercial transactions are carried out. All this emphasizes the already existing redistribution of economic power from States to global non-State economic actors[1] and urges multilateral trade regulation to address challenges associated with this transformation.

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1 *See* generally, Fabrizio Cafaggi, *New Foundations of Transnational Private Regulation*, 36 J. L. & Soc'y 20 (2011).

Kanevskaia, Olia. 'ICT Standards Bodies and International Trade: What Role For The WTO?'. *Journal of World Trade* 56, no. 3 (2022): 429–452.

A great deal of the current commercial transactions is enabled by technical infrastructure that transmits data across devices and networks, such as telecommunications cables, Internet protocols and software. This infrastructure constitutes powerful rules that govern behaviour of economic actors.[2] The functioning of different infrastructural segments is coordinated by Information Communications Technology (ICT) standards: technical documents codifying characteristics of electronic systems. ICT standards are voluntary, but as enablers of technical interoperability, create normative expectations for commercial stakeholders; they are not merely a technological phenomenon and are of a significant socio-economic importance. In fact, by taking up many societal functions, ranging from traffic management to access to global networks through cellular or wireless connections, imperative for the modern digitalized reality, ICT standards are sometimes contemplated as obstacles for democratic quality and legitimacy of economic regulation.[3]

From the viewpoint of international trade, ICT standards can be classified as non-tariff measures. Akin to quality standards that can be employed both for legitimate concerns and to disguise protectionism,[4] standards for technological interoperability can contribute to trade liberalization, e.g., by facilitating e-commerce through speedy Internet traffic; but they can also create artificial advantages for domestic industry or discriminate against foreign suppliers by imposing certain privacy and security requirements conditional for market access.[5] They even may risk becoming policy instruments to promote national values and norms on the global level[6]: to illustrate, China was recently suggested to attempt centralizing Internet governance by proposing to standardize the New Internet Protocol at the International Telecommunications Union (ITU).[7]

Surprisingly, ICT standards have been rarely addressed, or addressed only marginally, by the World Trade Organization (WTO). Concerns regarding the potentially trade-restrictive effects of ICT standards, such as those related to

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2 Benedict Kingsbury, *Infrastructure and InfraReg: On Rousing the International Law 'Wizards of Is'*, 8 Cambridge Int'l L. J. 171 (2019).

3 Eric Iversen, Thierry Vedel & Raymund Werle, *Standardization and the Democratic Design of Information and Communication Technology*, 17 Knowledge & Pol'y 104 (2004).

4 David A. Wirth, *The International Organization for Standardization: Private Voluntary Standards as Swords and Shields*, 36 B.C. Envtl. Aff. L. Rev. 79 (2009); Panagiotis Delimatsis, *Global Standard-Setting 2.0: How the WTO Spotlights ISO and Impacts the Transnational Standard-Setting Process*, 28 Duke J. Comp. & Int'l L. 273, at 275 (2018).

5 Nan-xiang Sun, *Piercing the Veil of National Security: Does China's Banking IT Security Regulation Violate the TBT Agreement?,* 11 AJWH 395, at 399 ff. (2016).

6 Marta Cantrero Gamito, *Europeanization Through Standardization: ICT and Telecommunications*, 37 Y.B. Eur. L. 395 (2018).

7 Stacie Hoffmann, Dominique Lazanski & Emily Taylor, *Standardising the Splinternet: How China's Technical Standards Could Fragment the Internet*, 5 J. Cyber Pol'y 239, at 244 (2020).

cybersecurity, are frequently raised in the WTO's specialized committees,[8] but mostly end up in bilateral discussions, leaving ICT standardization outside the purview of the multilateral trading regime. This, in part, is due to the failure of the current WTO criteria and, in particular, the substantive and procedural obligations of the Agreement on Technical Barriers to Trade (TBT) to capture a growing body of non-State standards and standard setters in the rapidly evolving technological areas that are critical for global economic activity.

This Article argues that eschewing classification of ICT standards and standards bodies under the TBT Agreement presents a missed opportunity for the WTO to reinforce a rule-based, inclusive multilateral trading regime. While this omission partially stems from the shortcomings of the TBT instruments and their lack of consideration for private standardization, its actors, and institutional facets, it is ultimately the Members' reluctance to stretch the TBT norms to non-State standards bodies that risks undermining the legitimacy and integrity of the multilateral trading system. Subjecting ICT standards to the WTO requirements will allow scrutinizing these powerful rules of the private legal order against the fundamental principles of transparency and non-discrimination,[9] preventing global commerce from being shaped by a few market actors or by rules that are prejudiced and unfair.

This Article proceeds as follows. Section II explains the political economy of ICT standardization and institutional features of ICT standards bodies. Section III presents a first attempt, to the author's knowledge, to classify ICT standards bodies under the TBT Agreement, revealing the shortcomings of the TBT instruments regarding ICT standards and, broadly, technical standards. Section IV explores the possible paths to strengthen compliance of ICT standards bodies with the TBT normative obligations, and ultimately suggests avenues for improving the TBT instruments. Section V concludes.

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[8] *See* in particular of the TBT Committee, G/TBT/W/747, Proposal on Regulatory Cooperation. Cybersecurity of Software-Enabled and/or Network Connected Goods, Submission of the United States of 17 May 2021 for the nineth Triannual Review, referring to cybersecurity voluntary standards and certification schemes that may become mandatory and proposing to increase reliance on consensus-based international standards. G/TBT/M/48, Minutes of Meeting of 25–26 June 2009 paras 36–42, noting the EC, US and Japan concerns regarding China's Green Dam Youth Escort Internet Filtering Software. G/TBT/M/29, Minutes of the Meeting of 19–20 May 2003 paras 54–55, where the US expressed concerns regarding Korea's draft regulation to mandate its domestic standard on Wireless Internet Platform for Interoperability (WIPI).

[9] *See also* Petros C. Mavroidis & Robert Wolfe, *Private Standards and the WTO: Reclusive No More,* 16 World Trade Rev. 1 (2016).

2 THE POLITICAL ECONOMY OF ICT STANDARDIZATION

Typically portrayed as a merit-based, technical process that conveys a sense of neutrality, standardization is nevertheless highly political.[10] Especially in the ICT sector, where competitive powers abound due to the large-scale investments, standardization risks becoming a subject of commercial strategies that are subordinated to the public interest.[11] Since technical contents of standards and their normative position in the global legal order is largely determined by the institutional facets of standard-setters, it is important to unveil the different types of ICT standards bodies.

2.1 ICT STANDARDS BODIES

ICT standards can steer the dynamics of innovation by giving a considerable market advantage for companies implementing successful standards. Standards' networks effects allow for the economies of scale while also increasing their market value[12]; at the same time, market compatibility created by ICT standards also drives their price down, making a joint standards development more attractive than single-actors standards schemes.[13] It is against this backdrop that ICT standards bodies emerge as non-for-profit, voluntary organizations that offer impartial setting for stakeholders to engage in technical deliberations. The political economy of these bodies is however more complicated than that since their high degree of self-regulation elicited fragmentation of their rules and practices that often extend beyond the traditional understanding of international standardization.

While some ICT standards are developed in such well-established institutions as the ITU and the International Organization for Standardization (ISO), most of them are produced outside these international organizations, e.g., in the Third Generation Partnership Projects (3GPP) and the Institute of Electrical and Electronics Engineers (IEEE), characterized by the strong presence of commercial actors; or the Internet Engineering Task Force (IETF), an informal assemblage of Internet experts. More often than not, such standards are legitimized by their market uptake rather than by their formal institutional features: put simply,

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[10] Benedict Kingsbury, Nico Krisch & Richard B. Stewart, *The Emergence of Global Administrative Law*, 68 L. & Contemporary Problems 15, at 29. *See also* the literature review in Johan Swinnen & Thijs Vandermoortele, *Trade and the Political Economy of Standards*, 11 World Trade Rev. 390 (2012).

[11] Panagiotis Delimatsis, Olia Kanevskaia & Zuno Verghese, *Strategic Behavior in Standards Development Organizations in Times of Crisis, 29* Texas Intellectual Property L. J. 127, at 153–171 (2021).

[12] Patrick D. Curran, *Standard-Setting Organizations: Patents, Price Fixing, and Per Se Legality*, 70 U. Chi. L. Rev. 983, at 988 (2003); *see also* Michael L. Katz and Carl Shapiro, *Network Externalities, Competition and Compatibility*, 75 Am. Econ. Rev. 424 (1985).

[13] Joseph Farrell & Garth Saloner, *Coordination Through Committees and Markets,* 19 RAND J. Econ. 235 (1988).

standards created within an internationally recognized standards body may lose to those generated by informal groups due to the consumer or market preferences.[14]

The existence of various institutional alternatives reinforces voluntarism: due to the heavy investments that pertain ICT standardization, stakeholders gravitate towards the environment that is beneficial to their objectives. At the same time, the strong industry pull and commercial set-up in these bodies inevitably results in commercial interests being the prevailing forces in setting global ICT standards.

2.2 Competitive dynamics in ICT standardization

Institutional architecture of ICT standards bodies may spawn power imbalances among stakeholders, leading to domination of some actors and marginalization of others. These imbalances are aggravated by the fact that ICT standardization is an intrinsically competitive venture due to the great variety of vested interests it attracts. Standards bodies compete for hosting standardization projects[15]; their members are often rivals on the downstream or upstream markets, placing standardization processes at the heart of antitrust concerns[16]; and standards may be pitting against each other, as illustrated by the 'standards wars' between the VHS and Betamax technologies.[17]

The most salient issue that separates ICT standards from any other type of standards is their reliance on access to proprietary technologies. These Standard Essential Patents (SEP) are embedded into a standard as its essential functionality elements and can be licensed to device and component manufacturers implementing this standard, against a royalty payment.[18] To a certain extent, then, ICT standards, even if developed collectively, are syndicated by SEP-owners. SEP disclosure and licensing commitments depend on the policies of standards bodies and contractual agreements between the licensee and licensor; still, exploitatory royalty rates are considered abusive business practices by antitrust Courts worldwide.[19] Strategic practices around SEP form the principal discussion point

[14] Andrew L. Russel, *'Rough Consensus and Running Code' and the Internet-OSI Standard Wars*, 28 IEEE Annals of the History of Computing 48, at 55 (2006), on how IETF's Internet protocols prevailed over the ISO's.

[15] Although this competition seems to reduce once standardization work is taken up by a standards body, Delimatsis et al., *supra* n. 11, at 162–64.

[16] For example, *American Society of Mechanical Engineers v. Hydrolevel Corporation*, 456 U.S. 556 (1982).

[17] Michael A. Cusumano, Yiorgos Mylonadis & Richard S. Rosenbloom, *Strategic Maneuvering and Mass-Market Dynamics: The Triumph of VHS over Beta*, 66 Bus. History Rev. 51 (2011).

[18] Academic debate on which level the licensing should place is ongoing, Jean-Sébastien Borghetti, Igor Nikolic & Nicolas Petit, *FRAND Licensing Levels Under EU Law*, 17 Eur. Competition J. 1 (2021).

[19] For example, ECJ, C-170/13, *Huawei Technologies Co. Ltd v. ZTE Corp* (2015) ECLI:EU:C:2015:477; *Unwired Planet Int ltd and Unwired Planet LLC v. Huawei Technologies Co ltd and Huawei Technologies UK Co ltd* (2017) (2018) EWCA Civ 2344; and more recently, Fed. Trade Comm'n. *v.* Qualcomm Inc., 969 F.3d 974, 1005 (9th Cir. 2020).

of academic and policy debates,[20] but have been neglected in the multilateral trade arena, most likely due to the entangled matters of antitrust and contract law and the marginal role that the The Agreement on Trade-Related Aspects of Intellectual Property Rights TRIPS Agreement can play in this debate.[21]

ICT standardization plays a significant role in States' cooperation in developing technologies and critical infrastructure,[22] but also in the national technological advancement and the global competitiveness of national champions. States have been using different policy strategies to promote domestic ICT industry at the global level, ranging from China's attempts to create alternatives to global Western standards for wireless local area networks and cellular communication technologies[23] to the interventions of the last US Administration in semiconductor business.[24] Adding to these geopolitical tensions, China has also expressed discrimination and market access concerns by Australian measures that, citing security reasons, effectively precluded some Chinese companies from building its national 5G infrastructure.[25]

Whereas the extent to which ICT standards enable trade frictions becomes apparent from their nature and effects, standardization outcomes are largely affected by institutional design and competitive forces in standards bodies. Concerns of power imbalances, while inseverable from standards development, risk bringing sub-optimal solutions to the market or 'locking in' consumers by increasing switching costs between devices or interfaces; thunderbolt cable connection that is exclusively compatible with Apple devices being an illustrative

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[20] For example, NIST and USPTO, Policy Statement on Remedies for Standard-Essential Patents Subject to Voluntary F/RAND Commitments (Dec. 2019), https://www.justice.gov/atr/page/file/1228016/download, accessed 10 Mar. 2022; COM (2017) 712 final, Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee, 'Setting out the EU approach to Standard Essential Patents' (Nov. 2017).

[21] Dicky Tsang King Fung & Jyh-An Lee, *Unfriendly Choice of Law in FRAND*, 59 Virginia J. Int'l L. 220 (2019). But *see* Mor Bakhoum & Beatriz Conde Gallego, *TRIPS and Competition Rules: From Transfer of Technology to Innovation Policy*, in *TRIPS Plus 20, From Trading Rules to Market Principles* 529–559, at 532–533 (Hanns Ullrich, Reto M. Hilty, Matthias Lamping & Josef Drexl eds, Springer 2016), suggesting that 40.2 TRIPS can address exclusion from license from the competition law viewpoint if read broadly; and Peter Picht, *From Transfer of Technology to Innovation Through Access*, in the same book volume, 509–527, arguing that refusal to license on FRAND terms may breach TRIPS commitments because it affects technical innovation as an end result. For further discussion on SEP licensing and TRIPS, *see* Wenwei Guan, *Diversified FRAND Enforcement and TRIPS Integrity*, 17 World Trade Rev. 91 (2018).

[22] For instance, the EU proposed to establish a Trade and Technology Council to foster cooperation with the US in 5G and 6G; and technology standard-setting has also played a role in the negotiations on the Regional Comprehensive Economic Partnership (RCEP).

[23] Xudong Gao and Jianxin Liu, *Catching up Through the Development of Technology Standard: The Case of TDSCDMA in China*, 36 Telecommunication Pol'y 531 (2012).

[24] For example, the US Committee on Foreign Investments in the US (CFIUS) prevented the acquisition of Qualcomm by Broadcom, partly on the ground that the acquisition may weaken competition for Huawei's increasing role and technological leadership.

[25] G/C/M/133, WTO Council for Trade in Goods, Minutes of the Meeting of the Council for Trade in Goods 12 and 13 Nov. 2018 (17 Apr. 2019), paras 32 and 33.

example. Considering these tensions, and given the growing normative value of ICT standards, revisiting the WTO rules applicable to global standards could not be more appropriate.

3 CLASSIFICATION OF ICT STANDARDS AND STANDARDS BODIES UNDER WTO LAW

The WTO is a strong enforcer of non-discrimination due to its executive and judicial functions.[26] When it comes to non-tariff barriers, the WTO TBT mechanisms arguably serve as reference point for procedural and substantive guarantees[27] and arrange for transparency through the TBT Committee.[28] Yet, addressing ICT standards under the WTO Agreements is rather controversial, since the WTO regulates governmental measures whereas standardization, and the ICT sector in general, is inherently a private sector activity. Although WTO Members' may sometimes be implicated in private conduct,[29] the TBT's devotion to the specific institutional features of standards bodies makes disciplining most ICT standards developers under WTO law unnecessary problematic.[30]

3.1 TBT's SCOPE AND REACH

The TBT Agreement provides WTO Members with certain flexibility to develop restrictive policies while acting in accordance with their WTO obligations, and covers three types of instruments: *mandatory* technical regulations, *voluntary* technical standards and conformity assessment with these measures. Despite the normative difference between technical regulations and standards, the distinction between the two

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[26] Joseph H. H. Weiler, *The Rule of Lawyers and the Ethos of Diplomats. Reflections on the Internal and External Legitimacy of WTO Dispute Settlement*, 35 J. World Trade 191 (2001).

[27] Delimatsis, *Global Standard-Setting 2.0*, *supra* n. 4, at 286 on WTO being ex post legitimizer of standards.

[28] Uruguay Round Agreement on Technical Barriers to Trade (TBT), Art. 13.

[29] The textbook example is WTO Appellate Body Report, *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef (Korea-Beef)*, WT/DS161/AB/R; WT/DS160/AB/R, adopted 11 Dec. 2000.

[30] This Article treats ICT standards as standards for goods, since they are necessary for product interoperability. An argument can, and has been made, that ICT standards can also be seen as standards for services, for which TBT does not apply. Some evidence suggests however that, while the institutional spectrum of standards bodies is more restricted for services, Members' thinking about the procedural and substantive guarantees for standards bodies under GATS may be similar to the one on TBT, Gabriel Gari, *Is the WTO's Approach to International Standards on Services Outdated*, 19 J. Int'l Econ. L. 589, at 604 (2016). Furthermore, while distinction between goods and services may be blurred in the digital reality, multiple WTO Agreements can apply depending on the measure, Anupam Chander, *The Internet of Things: Both Goods and Services,* 18 World Trade Rev. 9 (2019) and R. S. Neeraj, *Trade Rules for the Digital Economy: Charting New Waters at the WTO*, 18 World Trade Rev. 121 (2019).

instruments is blurred when voluntary standards are converted into mandatory requirements, either by virtue of the law or regulation, or by reason of market forces.[31]

While TBT addresses the application and preparation of technical standards, problems with its coverage arise from the Agreement's definitions, or their lack. Unlike the rather broad characterization of standards by the ISO,[32] a document is a 'standard' within the meaning of the TBT Agreement only if it is voluntary and if it is approved by a 'recognized body'[33] – which the Agreement does not define.[34] The narrative gets even more complicated when it comes to the definition of an 'international standard'. TBT provides WTO Members with a legal incentive to use international standards as a basis for national technical regulations by rebuttably presuming that such regulations do not create trade obstacles.[35] Deviations from international standards are possible where these standards are 'ineffective or inappropriate' for the fulfilment of the Members' legitimate objectives. The designation 'international standard' is accorded to standards that are prepared by an international standardization community and are based on consensus.[36]

The constructive ambiguity of the TBT Agreement regarding its definitions of 'international' and 'recognized' bodies is remarkable, especially since the institutional dimension is crucial for standards' coverage by TBT. During the Doha negotiations round, some WTO Members suggested that, following the SPS example,[37] listing 'covered' standards bodies under the TBT Agreement will prevent duplication of international standards and allow broader participation in international standards bodies.[38] Members opposing this proposal pointed out that Article 2.4 TBT is linked to the standard, and not the body that produces it.[39] It is perhaps as a compromise that in 2000, the TBT Committee adopted a Decision that put forward procedural principles to be followed by standards bodies that are 'international' within the meaning of TBT, namely: transparency, openness, impartiality and consensus, effectiveness and relevance, coherence and considerations of concerns raised by developing

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31 Tim Büthe, *Engineering Uncontestedness? The Origins and Institutional Development of the International Electrotechnical Commission (IEC),* 12 Bus. & Pol. 1, at 2–3 (2010).

32 ISO/IEC Guide 2, Standardization and Related Activities. General Vocabulary (2004) does not distinguish between mandatory and voluntary standards, *see also* the explanatory note to Annex 1 of the TBT Agreement.

33 Annex 1.2 of TBT Agreement.

34 Panagiotis Delimatsis, *Relevant International Standards and 'Recognized Standardization Bodies' Under the TBT Agreement*, in *The Law, Economics and Politics of International Standardisation* 104–136 (Panagiotis Delimatsis ed., Cambridge: Cambridge University Press 2015).

35 TBT Agreement, Arts 2.4 and 2.5.

36 Explanatory note to Annex 1.2 of the TBT Agreement.

37 Uruguay Round Agreement on the Application of Sanitary and Phytosanitary Measures, Annex A.3 .

38 World Trade Report, *Trade and Public Policies: A Closer Look at Non-Tariff Measures in the 21st Century* 199 (2012), referring to restricted documents.

39 *Ibid*.

countries.[40] The Appellate Body later on elevated the status of the Decision to the subsequent agreement under the Vienna Convention.[41]

The Decision however does not apply to bodies producing standards that are not 'international' within the TBT meaning; rather, those are covered by the Members' obligation under Article 4 TBT to ensure that their central government standards bodies accept and comply with the Code of Good Practice (CGP) [42] and take 'reasonable measures as may be available to them' to ensure that the local and non-governmental bodies within their territories do so as well. Article 4 is thus clearly directed to WTO Members, yet its beneficiaries are standards bodies, which pursuant to Article 4.2, are acknowledged to observe the TBT requirements once they have accepted and are complying with the CGP.

3.2 Curbing ICT standards bodies under the TBT Agreement

Intergovernmental character of the WTO does not preclude the application of the TBT instruments to standards bodies that are entirely private: in fact, theoretical voices often suggested that TBT's substantive obligations can be stretched to the various types of standards bodies,[43] while the Appellate Body's broad perspective on a concept of a 'body'[44] allowed categorizing non-governmental bodies as 'recognized'.[45] The negotiation history also reveals that the adoption of the CGP was likely instigated by the European Commission's desire to expand the Agreement to non-governmental bodies.[46] Any classification of ICT standards bodies under the TBT depends on their institutional features and membership composition, and should ideally be performed in a case-by case analysis. This Section, while omitting this exercise,[47] theorizes the likelihood of various ICT standards bodies to be captured by TBT requirements.

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40 Committee on Technical Barriers to Trade, Second Triennial Review of the Operation and Implementation of the Agreement on Technical Barriers to Trade, Annex 4: Decision on Principles for the Development of International Standards, Guides and Recommendations with Relation to Arts 2, 5 and Annex 3 of the TBT Agreement, WTO Doc. G/TBT/9 (13 Nov. 2000) ('Decision').

41 WTO Appellate Body Report, United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products (*US-Tuna II*), WT/DS381/AB/R, adopted 13 June 2012 para. 371.

42 Annex 3 of the TBT Agreement, Code of Good Practice for the Preparation, Adoption and Application of Standards.

43 *See* among others, Mislav Mataija, *Leveraging Trade Law for Governance Reform: The Impact of the WTO Agreement on Technical Barriers to Trade on Private Standard-Setting*, 27 Eur. Rev. Private L. 293 (2019); Enrico Partiti, *What Use of an Unloaded Gun? The Substantive Discipline of the WTO TBT Code of Good Practice and Its Application of Private Standards Pursuing Public Objectives*, 20 J. Int'l Econ. L. 829 (2017).

44 Appellate Body Report, *US-Tuna II*, *supra* n. 41, para. 356.

45 *Ibid*., para. 360.

46 Ming Du, *The Regulation of Product Standards in World Trade Law* 32 (Oxford: Hart Publishing 2020), suggesting that it is single actor standards for their own use that were excluded in the first phase.

47 But *see* Andrea Barrios Villareal, *International Standardization and the Agreement on Technical Barriers to Trade* 189–245(Cambridge: Cambridge University Press 2018).

3.2[a] *International Standards Bodies*

Since most ICT standards are intended for global use, examining ICT standards bodies as 'international standards bodies' is an evident starting point. Recall that international standards are those prepared by the international standardization community. According to Annex 1.4 TBT, such an international body or system offers its membership to the *relevant bodies* of at least all WTO members. The Agreement does not define which bodies are 'relevant', most probably implying that those are national standards bodies that represent States' interests in the global standardization forums.[48] Although most ICT standards bodies do not function according to the national representation model and are usually comprised of private sector stakeholders, they typically enable national standards bodies, or their affiliates, to acquire their membership.

Furthermore, standardization activities of an international standards body should be *recognized* by WTO Members.[49] The Appellate Body in *US – Tuna II*, having established no *de minimis* requirement for recognition, held that a standards body has 'recognized' activities when Members participate in its standards development processes[50] (presumably through their national bodies). Such understanding of 'recognition' arguably adapts the 'membership' requirement to 'participation': it is possible for a national body to be a member of an international standards body and not to participate in its activities. However, such interpretation creates unnecessary duplication of the TBT normative requirements, since to be classified as a standard within the TBT meaning, a document already must be created by a 'recognized body'.[51] Furthermore, 'participation' is ambiguous when it is not concretized: does it mean that Members must effectively contribute to the standards setting activity, e.g., by assuming decision-making roles in standardization committees, or is the mere exercise of their voting rights sufficient? Do the discrepancies in membership fees between different regions or stakeholders categories qualify as 'obstacles for accession'?[52] Alternatively, recognition of a standards body can also be signaled by referencing its standards in laws and governmental documents,[53] or by their approval by an organization that has already gained the

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48 Such reading is supported by the Members-driven character of the WTO.

49 Appellate Body Report, *US-Tuna II*, *supra* n. 41, paras 361 and 376.

50 *Ibid*., para. 390. Mataija suggested that, next to this normative dimension, there is a factual dimension of being aware ('know or expect to know') of the body's standardization activities, Mataija, *supra* n. 43, at 309. The benchmark for awareness is however unclear, especially given the AB's finding that standardization may not be the body's principal activity (para. 362).

51 Annex 1.2 of the TBT Agreement.

52 The Appellate Body however clarified that 'participation by invitation only' would count as an obstacle, para. 398.

53 Du, *supra* n. 46, at 134. Such reading is also supported by the wording of Art. 2.4 TBT, that focuses on standards rather than standards bodies.

acknowledgement of all WTO Members, such as the ISO. For the ICT standards, however, global uptake by industry players outweighs institutional or governmental identification: it is hard to claim that Bluetooth and USB specifications are not internationally recognized, while they have never been endorsed as governmental standards.

Another powerful indication of a body's recognized standardization activities is its adherence to the six principles of the TBT Committee Decision.[54] The Decision requires an international standards body to be 'open on a non-discriminatory basis to the relevant bodies of at least all WTO Members', and demonstrates a striking resemblance to the Appellate Body's interpretation of 'recognition', with similar hurdles to the concepts of 'membership' and 'participation'. However, 'openness' as described in the Decision ignores many institutional facets of standards bodies. While it stipulates that open and unrestricted participation should be guaranteed at all levels of standards development and policy development,[55] the latter most likely referring to the process of drafting organizational rules and procedures, many standards bodies would confine these processes to certain member types.[56] The Decision also nuances the requirement of *meaningful* participation as only applicable to standards development,[57] practically ignoring a large body of processes that are extremely relevant for creating meaningful participation opportunities. Especially in the ICT standards bodies, where participation may already be limited because of commercial considerations, these opportunities are essential to prevent capture by powerful industry players: structural failures to include all relevant voices in network technology standardization date back to 1970s.[58]

Consensus, another principle of the Decision, also replicates the procedural dimension of international standards.[59] The Appellate Body's clarification that for the purpose of the TBT Agreement, international standards do not need to be based on consensus as long as the usual procedure of the body that has adopted the standard follows the consensus-requirement[60] was criticized by commentators regarding its reconcilability with the Agreement as well as the normative implications such interpretation may have.[61] Indeed, such reading of the consensus requirement in principle allows standards that have been approved regardless strong

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54 Appellate Body Report, *US-Tuna II*, *supra* n. 41, para. 376.
55 Annex 4, para. C (6) of the Decision (2000).
56 For example, Bluetooth Special Interest Group accepts only promotors and some associate members to its Board of Directors.
57 Annex 4, para. C (7) of the Decision (2000).
58 Iversen et al., *supra* n. 3, at 104.
59 Explanatory note to Annex 1.2 of the TBT Agreement.
60 Appellate Body Report, *US-Tuna II*, above n. 41, para. 353.
61 Delimatsis, *Global Standard-Setting 2.0*, *supra* n. 4, at 285. Even before the Appellate Body's ruling, similar concerns were raised by Robert Howse, *A New Device for Creating International Legal Normativity: The WTO Technical Barriers to Trade Agreement and 'International Standards',* in

and persistent objections to become 'international' and produce legal consequences for Members through Article 2.4 TBT. The Decision clearly treats consensus as an effort-based obligation,[62] which restates the WTO cautious approach to intervening into private ordering of standards bodies, granting them ample freedom to design their own procedures.[63] The flip side of this approach is that the understanding of consensus is fragmented among standards bodies: only in the ICT sector, it varies from 'rough consensus' in IETF to 75% positive votes of 75% voting members in IEEE to lack of sustained opposition in ISO/International Electrotechnical Commission (IEC).[64] Importantly, consensus is achieved is decided by officials in managerial positions, who are typically affiliates of a standard body's members and may have vested interests in unduly influencing standardization processes.[65] Many ICT standards have been adopted over sustained opposition, reflecting sometimes difficult engineering choices whether to move the work forward despite the opposing views or to stall technical progress but have all views on board.

The Decision's requirement regarding developing countries is perhaps, the most challenging to implement for ICT standards bodies, since most of them are largely dominated by the developed world.[66] Developing countries are traditionally considered as standard-takers rather than standard-makers due to the lack of financial resources and infrastructure.[67] The narrative is currently changing for China, which is rapidly establishing itself as a standard-maker in critical sectors as the ICT,[68] but this transformation may not be well-received by Western stakeholders, in part due to the alleged concerns of security and national

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Constitutionalism, Multilevel Trade Governance and Social Regulation (Christian Joerges & Ernst-Ulrich Petersmann eds, Hart Publishing 2006).

62 Compare 'seek to accord' consensus v. impartiality that 'should be accorded'. For supporting arguments, *see* Ming Du & Fei Deng, *International Standards as Global Public Goods in the World Trading System*, 43 Legal Issues Econ. Integration 113 at 134–137 (2016).

63 The Appellate Body confirmed that its ruling on consensus should not affect standards bodies' internal requirements, which are 'not for [the Appellate Body] to decide', WTO Appellate Body Report, *European Communities – Trade Description of Sardines (EC-Sardines)*, WT/DS231/AB/R, adopted 23 Oct. 2002 para. 227.

64 P. Resnick (ed.), RCF 7282, *On Consensus and Humming in the IETF* (June 2014), https://datatracker.ietf.org/doc/html/rfc7282, accessed 10 Mar. 2022; IEEE-SA Standards Board Operations Manual (Dec. 2020), Art. s 5.4.3.3 and 5.4.3.5; ISO/IEC Guide 2, Art. 1.7.

65 *See* Justus Baron & Olia Kanevskaia, *Global Competition for Leadership Positions in Standards Development Organizations*, Working Paper (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3818143

66 Baron & Kanevskaia, *supra* n. 65, at 33–35.

67 Sherry M. Stephenson, *Standards, Conformity Assessment and Developing Countries*, World Bank Policy Research Working Paper 1826 (1997).

68 Mi jin Kim, Heeijn Lee & Jooyoung Kwak, *The Changing Patterns of China's International Standardization in ICT Under Techno-nationalism: A Reflection Through 5G Standardization*, 54 Int'l J. Info. Mgmt. 102 (2020); Michael Murphree & Dan Breznitz, *Indigenous Digital Technology Standards for Development: The Case of China*, 1 J. Int'l Bus. Pol'y 234 (2018); Jun Xia, *China's Telecommunications Evolution, Institutions, and Policy Issues on the Eve of 5G: A Two-Decade Retrospect and Prospect*, 41 Telecommunications Pol'y 931 (2017).

competitiveness.[69] The continuous lack of diversity in standards bodies exacerbates the divide between Global North and Global South and, arguably, affects distributional effects of the global trade, not least because of the increasing global dependence on ICT standards.

3.2[b] *'Other' Standards Bodies*

ICT standards bodies that do not pass the test of the Decision may still be subjected to the TBT requirements by virtue of their acceptance and compliance with the CGP. As private bodies, they are most likely to be classified as 'non-governmental bodies' since they are typically not under any type of central or local governmental control.[70]

At first glance, such reading of the TBT Agreement suggests that the CGP potentially covers a broader range of standards bodies than the Decision. The CGP indeed makes no demands regarding standard bodies' membership, as long as the essential TBT obligations of transparency and harmonization are fulfilled. However, the CGP does not exempt a standards body from the 'recognition' test since the definition of Annex 1.2 still applies.[71] It is unclear whether such recognition is different from the one that should be accorded to the 'international' standards bodies, and if it is, by which stakeholders should standardization activities of a non-governmental, non-international body be recognized. If the concept of 'recognition' is similar for international a*nd* non-government bodies, it significantly limits the CGP's scope of application.[72]

Let us assume, for the sake of the argument, that the institutional dimension is of a lesser importance to the CGP since the TBT obligations regarding compliance with its provisions are directed to the Members and apply regardless of the CGP's acceptance by standards bodies. As Article 4.1 TBT holds, in case of non-governmental bodies Members shall take 'reasonable measures as may be available to them' to ensure that these bodies within their territories 'are members, accept and comply' with the CGP. Neither the Agreement nor the TBT Committee clarify what those 'reasonable measures' entail, and which consequences would be faced by Members failing to comply with these

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[69] *See* for instance, the recently passed United States Innovation and Competition Act of 2021 (117th Congress 2021–2022), s. 3210 (b) (A)(iii).

[70] Annex 1.6,7 and 8 of the TBT Agreement. The argument of central control is also supported by Mataija, *supra* n. 43, at 302.

[71] Annex 3.A of the TBT Agreement.

[72] By analogy, it has been suggested that for technical regulations, the further they are from central governmental bodies, the less applicable do WTO obligations become, Arwel Davies, *Technical Regulations and Standards Under the WTO Agreement on Technical Barriers to Trade,* 41 Legal Issues Econ. Integration 37, at 44.

obligations.[73] For instance, does the Member ought to consider whether a standards body complies with the CGP before making its standards mandatory under national law?[74]

It is then not surprising that Members have little incentives to promote the CGP's compliance, let alone that its acceptance rate is low among the private sector bodies. The ISO database contains only a few records of private standards bodies and consortia that have notified the CGP's acceptance.[75] There are no records of the CGP's acceptance by the most prominent ICT standards bodies, such as 3GPP, developing specifications for 5G networks. The fact that the CGP was signed to by European Telecommunications Standards Institute(ETSI), the 3GPP's organizational partner responsible for its administration, does not substitute notification of its formal acceptance. In a similar way, the American National Standards Institute (ANSI) has accepted the CGP on behalf of all US-based standards bodies that it accredits, which leaves ANSI with a lot of discretion to interpret and verify compliance with TBT obligations in its internal accreditation procedures; furthermore, the normative power of ANSI's endorsement is questionable since in practice, not all US-based standards bodies appear to actively seek its' accreditation.

That said, some ICT consortia have pledged alliance to the CGP without formally accepting it as prescribed by the TBT rules.[76] Also other ICT standards bodies vouched to comply with the CGP's and sometimes, the Decision's obligations on their websites.[77] These initiatives seem to be driven by reputational concerns rather than any audits or accreditation schemes enforced by governments. Indeed, standards developers that adhere to TBT requirements may have the upper

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[73] Partiti notes that 'reasonable' implies 'a degree of flexibility that involves consideration of all of the circumstances of a particular case' and 'involves consideration of economic and technical feasibilities', referring to the WTO Appellate Body Report, *Anti-Dumping Measures on Certain Hot-Rolled Steel Products from Japan*, WT/ DS184/AB/R, adopted on 24 July 0200 para. 84; and suggests that identifications whether the measure is reasonably available may be costs of enforcement or capacity of member in question. Partiti, *supra* n. 43, at 837. Some scholars have argued that taking 'reasonable measures to ensure compliance' is an empty obligation, or at least just an obligation of process or as a result; Eva Van der Zee, *Disciplining Private Standards Under the SPS and TBT Agreement: A Plea for Market-State Procedural Guidelines*, 52 J. World Trade 3, at 409 (2018).

[74] Mataija argues that in this case, it is the reinforcement of the measure by a Member that should be considered, Mataija, *supra* n. 43, at 301.

[75] For the full list of SDOs that have accepted the Code of Good Practice, *see*, https://tbtcode.iso.org/sites/wto-tbt/list-of-standardizing-bodies.html

[76] *See WTO TBT Standards Code Criteria Applied to W3C*, https://www.w3.org/2009/07wto-std-crit.html (accessed 10 Mar. 2022); and *Impact Assessment Study on the 'Standardization Package. Request for Information from Forums and Consortiums* 2–3, https://www.iab.org/wp-content/IAB-uploads/2011/03/2010-02-05-IAB-Response-Euro-ICT-Questionnaire.pdf (accessed 10 Mar. 2022) (IETF could not formally accept the CGP because it lacks legal personality).

[77] For example, IEEE Position Statement, *IEEE Adherence to the World Trade Organization Principles for International Standardization* (Aug. 2020), http://globalpolicy.ieee.org/wp-content/uploads/2020/08/IEEE20013.pdf (accessed 10 Mar. 2022).

hand in competition with other standards bodies, and even enjoy some sort of prestige.[78] And while self-imposed pledges to TBT adherence will most likely contribute to standards bodies' overall legitimacy, they may as well indicate that the procedural and substantive guarantees of the TBT instruments have created their own normative order in which they are subordinated to standards bodies' practices and cultures, and where they are interpreted outside the context of the WTO and its fundamental obligations.

3.3 Shortcomings of the TBT agreement in relation to ICT standardization

Curbing ICT standards bodies under the WTO requires broad interpretation of the TBT instruments as well as the political will of Members to enforce their TBT obligations. By far the largest challenge lays in the conundrum of private standards and standards bodies: previous attempts to discuss their status in TBT and Sanitary and phytosanitary measures(SPS) Committees were to no avail.[79] It is tempting to claim that ICT standards bodies simply do not pass the TBT tests and therefore, that the WTO presents a wrong forum for addressing institutional and normative concerns stemming from ICT standardization. This Article argues the opposite. The shift in global trade regulation instigated by private actors demands an appropriate response to safeguard the inclusiveness and legitimacy of the multilateral trading system while also catering to the needs of different economic actors, a response that is constrained by the outdated requirements and often, erroneous interpretation of the TBT Agreement.

3.3[a] *Emphasis on Institutional Traits Rather than Normative Features of Standards*

The fact that private standards can create normative implications akin to governmental standards, is not new.[80] The magnitude of these normative effects typically differs per sector and is especially considerable in the ICT due to the market processes. The ITU's approval of China's domestic standards for 3G networks, Time Division Synchronous Code Division Multiple Access technology (TD-SCDMA) did not result in this standard's global use, since the US-driven Code Division Multiple Access

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[78] Steven Bernstein & Erin Hannah, *Non-State Global Standard Setting and the WTO: Legitimacy and the Need for Regulatory Space*, 11 J. Int'l Econ. L. 575 (2008).

[79] 'Private Standards and the SPS Agreement', Note by the Secretariat, G/SPS/GEN/746 (24 Jan. 2007); Fifth Triennial Review of the Operation and Implementation of the Agreement on Technical Barriers to Trade under Art. 15.4, G/TBT/26 (13 Nov. 2009), para. 26. Committee on Technical Barriers to Trade, Minutes of the Meetings, G/TBT/M/69 (15–16 June 2016), para. 3.2.4.3.2.

[80] Robert E. Baldwin, *Nontariff Distortions in International Trade* (Washington DC: Brookings Institution 1970).

(CDMA) and the European Wideband CDMA (W-CDMA) technologies already prevailed in the respective regions.[81] Whereas examining standards' technical contents falls outside the WTO's prerogative, examining their *effects* should be feasible: the Appellate Body had no problem measuring normative effects of a voluntary standard conditional for market access against those of a mandatory technical regulation in US-Tuna II.[82]

Trade-restrictive effects of ICT standards are evident for mandatory security standards; they are clearly present for global standards that fragment the markets, such as regional alternatives to 3G and 4G/LTE; and typically concealed, but equally critical, when it comes to e-commerce and the use of AI and the Internet of Things (IoT) technologies. These sectors are predominantly regulated by private arrangements, such as the design of technology architecture in private standards bodies,[83] and this set-up is unlikely to change any time soon despite various legislative initiatives. The EU proposal for AI Regulation, for instance, stipulates that high-risk AI systems are presumed to meet the necessary legal requirements if they are in conformity with European 'harmonized standards', i.e., standards mandated by the European Commission and produced by the three European standards bodies.[84] However, it can take years before such harmonized standards are prepared, meaning that so far, the industry will have to rely on private alternatives. Similarly, the emergence of the IoT requires new standards, many of which are developed outside the typical international standardization systems in organizations like IETF, Alliance for IoT Innovation and Open Platforms Communication Foundation. The WTO stands much to gain in terms of its role as the gatekeeper of non-tariff barriers if it scrutinizes these private initiatives in the context of global trade. Conversely, it risks losing its function as an arbiter of international standardization if private bodies continue selective application of TBT principles.

Hence, when establishing whether a standard is covered by the TBT Agreement, it is the standard's normative effect that should first be examined,

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81 Dieter Ernst, *Indigenous Innovation and Globalization. The Challenge for China's Standardization Strategy* (2011), https://www.eastwestcenter.org/sites/default/files/private/ernstindigenousinnovation.pdf (accessed 10 Mar. 2022). According to Sun, this meant that domestic regulation based on TD-SCDMA could not be challenged by virtue of 2.5 TBT, *supra* n. 5.

82 But *see* Petros C. Mavroidis, *Last Mile for Tuna (to a Safe Harbour): What Is the TBT Agreement All About?* 30 the European J. Int'l L. 1, at 3 (2019), criticizing the approach of the Appellate Body and reminding that TBT, unlike GATT, is about policy measures and not market access.

83 Lessig famously exposed how computer code (an example of such private arrangement) may impose regulatory constraints, Lawrence Lessig, *Code and Other Laws of Cyberspace* 123 (New York: Basic Books 1999).

84 Proposal of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts, COM (2021) 206 final (21 Apr. 2021), Art. 40.

and only then to the institutional and procedural features of the body that produced it. By tying the concept of 'recognized bodies' and 'recognized standardization activities' to membership, the Appellate Body put the TBT Agreement, and itself, in a deadlock when dealing with the emerging trade barriers. This is even more because the TBT Agreement recognizes the normative power of voluntary standards only when these standards are *international* which, again, depends on the ambiguously formulated institutional traits. Not only does this overlook other types of a regulatory action that transforms voluntary standards into mandatory,[85] but such an understanding also departs from the spirit of the Decision to guide Members in developing standards that facilitate global trade.

3.3[b] *Normative Requirements of the Decision and CGP are Complementary Rather than Substitutionary*

The artificial normative distinction between international and 'other' standards bodies creates another undesirable effect, namely that when it comes to procedural and substantive guarantees, the Decision and the CGP appear substitutes; depending on the institutional nature of the body, either one or the other applies. But their *ratione materiae* is fundamentally different: the CGP provisions mainly address technical harmonization and offer little to ensure that standards are developed in transparent and open manner with due respect to procedural guarantees. To illustrate, the requirement to achieve 'national consensus' by representing a Member's standards bodies that signed the CGP through one delegation, as suggested by the 'openness' principle, contributes only marginally to interest representation in international standardization, since national delegations are generally represented by their industry members.

It is common for standards produced in bodies covered by the CGP to take the route of *international* standards, not least when they are approved by an international standards body within the TBT meaning. Wi-Fi specifications of IEEE-SA were formally transposed into the ISO/IEC 8802–11 standard; the Chinese alternative, WLAN Authentication and Privacy Infrastructure (WAPI), did not get the same approval, in part due to the backlash from some Western Members in the TBT Committee claiming that WAPI's mandatory nature, and its lack of interoperability with the already established ISO/IEEE standard breach Article 2.4.[86] It is also suggested that WAPI was developed in a manner that lacked transparency and gave unfair advantage to Chinese manufacturers through

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[85] Tim Büthe & Walter Mattli, *The New Global Rulers: The Privatization of Regulation in the World Economy* 135 (Princeton: Princeton University Press 2011).

[86] Christopher S. Gibson, *Globalization and Technology Standards Game: Balancing Concerns of Protectionism and Intellectual Property in International Standards*, 22 Berkley Technology L. J. 1401 (2007).

favourable SEP licensing terms.[87] Had WAPI been endorsed by the ISO, it is still highly unlikely that the ISO's 'fast approval' processes would have compensated for these shortcomings. To reduce procedural irregularities that risk protectionism and market exclusion, the CGP and the Decision should be viewed and applied as complementary mechanisms independently from the nature of a standards body.

3.3[c] *The Decision's Neglect of the Institutional Reality*

For an instrument concerned with procedural safeguards, the Decision demonstrates little awareness of standards bodies' different practices and institutional attributes. 'Openness' within the meaning of the Decision almost never manifests in practice and elides reality of standardization processes, where most of the work is carried out by only a few stakeholders and is offered to the membership-wide approval only at the later stages. Even such undisputed international standards bodies as the ITU and ISO are not immune from the critique of favouritism and failure to accommodate all relevant interests.[88]

The Decision also lacks considerations on such matters as impartiality of individuals holding leading positions in standards bodies; availability of dispute resolution mechanisms; and licensing of SEPs. Only the latter pertains to the realm of the ICT; other institutional features are relevant for all types of standards bodies, governmental or not. Even though the WTO understandably lacks the authority over individuals' conduct in standards bodies, taking up these questions in the broader institutional norms may help addressing limitations that arise from power imbalances in global standardization.

Accounting for a certain need for flexibility when regulating private normative orders,[89] there is a risk that many standards bodies will be incentivized to design their processes to fall outside the TBT scope, and that formal bodies will gradually become even less attractive for stakeholders due to their unrealistic procedural expectations, pushing the essential standardization activities towards closed regulatory schemes and jeopardizing joint and inclusive standard setting. This, in turn, may further widen the technology gap between the developed and developing worlds, filling it with selective regional or

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87 Tyrone Berger, *Balancing Barriers to Trade and Technical Standards: Potential Impact on ICT Industries*, XVII Int'l Trade & Bus. L. Rev. 315 (2015), at 338. USTR, *2005 Report to Congress on China's WTO Compliance* 43, https://china.usc.edu/2005-report-congress-china%E2%80%99s-wto-compliance (accessed 10 Mar. 2022); Han Wei Liu, *International Standards in Flux: A Balkanized ICT Standard-Setting Paradigm and Its Implications for the WTO,* 17 J. Int'l Econ. L. 551 (2014).

88 Anna Gross, Madhumita Murgia & Yuan yang, *Chinese Tech Groups Shaping UN Facial Recognition Standards*, Financial Times 1 Dec. 2019.

89 Mavroidis and Wolfe suggest the role of the WTO as a 'meta-regulator' and 'orchestrator' of standards, *supra* n. 9, at 17.

national, rather than global initiatives. For instance, many ICT standards that are promoted by China, while having produced a backlash among Western actors in global standards fora, are increasingly adopted in African countries. Moreover, such regional or domestic initiatives often express preference for indigenous intellectual property.[90] This results in market fragmentation and even more growing division between 'standards winners' and 'standards losers', between global 'private' and selectively pursued 'public' initiatives and the potential neglect of the broader societal needs.

Perhaps not entirely surprising, both WTO Members and private companies appear comfortable with the current system of private ordering in global standardization. This reluctance to change may eventually turn the rules intended for trade facilitation into ritualism.

4 TBT IS DEAD, LONG LIVE THE TBT?

The aforementioned shortcomings do not make the WTO an unsuitable institution to tackle trade-related consequences of ICT standardization, nor do they mean that the advantages of the TBT Agreement, including the recourse to the TBT Committee and WTO adjudication, should be set aside when judging its appropriateness. On a normative level, possibilities exist to extend TBT obligations to ICT standards bodies through other means than directly applying and enforcing the TBT provisions. This Section discusses two of such mechanisms.

4.1 Alternative means of TBT enforcement

TBT instruments are often referenced in Western regional and national standardization policies,[91] and are appealed to by meta-regulators and standards bodies.[92] These two

[90] This was mentioned regarding Chinese security regulation. According to the US Representative: 'the Guidelines required "tests and certification" to be conducted by state regulators and laid out product requirements that were based on design and descriptive characteristics (e.g., equipment that had intellectual property rights (IPR) owned and/or developed by Chinese-invested enterprises or "indigenous IPR") rather than performance requirements'. Sun, *supra* n. 5. quoting Committee on Technical Barriers to Trade, Note by the Secretariat: Minutes of the Meeting of 18–19 Mar. 2015 2.65, WTO Doc. G/TBT/M/65 (28 May 2015). *See also* Piergiuseppe Pusceddu, *Hic Sunt Dracones? Mapping the Legal Framework of China's Innovation Policy: Standardization and IPRs*, 51 Int'l Rev. Intellectual Property & Competition L. 559 (2020).

[91] *See* multiple references in OMB Circular A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (27 Jan. 2016); Rec. 2 in EU Regulation 1025/2012; and in private accreditation schemes that are part of public-private partnerships in the US and Canada, Requirements & Guidance – Accreditation of Standards Development Organizations (13 June 2019).

[92] Yoshiko Naiki, *Meta-Regulation of Private Standards; The Role of Regional and International Organizations in Comparison with the WTO*, 20 World Trade Rev. 1 (2021), arguing that such international organizations may discipline private standards.

mechanisms arguably pass on TBT obligations to standards bodies that are not traditionally captured by the Agreement, evading Members' WTO commitments, but also have deficiencies that cannot be easily overcome by policy or regulatory means.

4.1[a] *TBT Enforcement Through Regional and National Standardization Policies*

Regional and national regulation are particularly concerned with transparency and openness of standards bodies when it comes to antitrust enforcement,[93] linking these procedural features to the anticompetitive effect of standards, rather than the institutional formality of standards bodies. Some of these regulatory instruments typically take form of soft law but are actively used by Courts and antitrust enforcement authorities. While they seem more up-to-date than the TBT instruments drafted in late 90s, they still are often constrained by the TBT formulation and hence tend to imitate its shortcomings: the US policy, for instance, refers to international standards as those which are international under the Decision.[94] Furthermore, these instruments delegate a great share of interpretation and enforcement to national bodies. Strengthening the link of private standards with the State through domestic juridification is also unlikely to bring them closer to the TBT obligations,[95] especially given that this link is not always necessary for ICT standards to have trade-restrictive effects.

Addressing global challenges created by ICT standardization is futile without mutual understanding. Leaving States to solve global problems with their own devices involves the risks of national capture and may even lead to stifling the emerging regulatory possibilities.[96] In the absence of a multilateral mandate, different national policies also risk further splintering global markets: diverging approaches to SEP have already resulted in fragmented enforcement of intellectual property rights.[97] This also leaves no room for solving the problem of inclusiveness, since national policies are rarely concerned with developing countries that have much to lose in being excluded from or by ICT standards.

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93 *See* European Commission, Guidelines on the applicability of Art. 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (2011) C 11/1, para. 280; and Standards Development Organization Advancement Act of 2004 (2004), Public Law 108–237, 188 Stat. 661 (2002), s. 103(8), which offer a safe harbour for standards bodies that follow an open and transparent process.

94 The Office of the United States Trade Representative (USTR), 2011 Report on Technical Barriers to Trade, https://ustr.gov

95 The opposite has been suggested by Mataija, *supra* n. 43, at 306.

96 *See* by analogy Robert Howse, *From Politics to Technology – and Back Again: The Fate of the Multilateral Trading Regime*, 96 Am. J. Int'l L. 94, 115 (2002).

97 *See* Tsang & Lee, above n. 21, discussing the most relevant cases.

4.1[b] *TBT Enforcement Through Standards Bodies*

Having a long history of cooperation with the TBT Secretariat, ISO is likely to be the first meta-regulatory choice through which private standards can be disciplined. Recommendations for implementing the TBT instruments are introduced in the recently updated, ISO/IEC Guide 59 on recommended practices for standardization.[98] Like the CGP, the Guide requires acceptance by standards bodies. But although fine-tuning the TBT requirements to practice, for instance by introducing provisions on licensing obligations, availability of appeals and managerial considerations,[99] the ISO/IEC Guide 59 is limited in scope to national bodies,[100] which it defines, notably more restrictive than the TBT, as 'any current or future national members of ISO and IEC'.[101] Likewise, the document outsources the enforcement to national standards bodies, leaving ample room for organization-specific interpretation of its provisions.[102]

Standards bodies may also implement their own mechanisms to ensure that their standards consider all relevant stakeholders and do not result in favouritism. Apart from different patent policies and membership rules, these mechanisms may range from fiduciary duty and impartiality of officials serving at the governing bodies,[103] to requiring that no single interest category constitutes majority of a standards body membership,[104] to asking officials in leadership roles to obtain support of the new employer once their affiliation changes.[105]

Institutional architecture of standards bodies is usually a result of careful choices, where engineering considerations may prevail over considerations regarding the distributional effects of standards. ITU's operational framework is designed with geographical balance in standardization activities in mind, but recent concerns about Chinese stakeholders leading facial recognition standards put its effectiveness into question.[106] IETF chairs have been suspected of conflict of interest despite the

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98 Introduction, ISO/IEC Guide 59:2019, ISO and IEC Recommended Practices for Standardization By National Bodies (ISO/IEC Guide 59).

99 ISO/IEC Guide 59, Arts 4.4.4, 4.5.8 and 5.12.

100 ISO/IEC Guide 59, Art. 1.

101 ISO/IEC Guide 59, Art. 3.8. To compare, the previous version could be used by '*any* (emphasis added) standardization body, whether governmental or non-governmental, at international, regional, national or sub-national level' Art. 1.4 of ISO/IEC Guide 59 (1994).

102 Introduction, ISO/IEC Guide 59.

103 IEEE Bylaws (Apr. 2021), https://www.ieee.org/content/dam/ieee-org/ieee/web/org/about/corporate/ieee-constitution-and-bylaws.pdf (accessed 10 Mar. 2022), s. I-300.2.

104 ANSI Essential Requirements: Due Process Requirements for American National Standards (Jan. 2021), https://www.ansi.org/american-national-standards/ans-introduction/essential-requirements (accessed 10 Mar. 2022), s. 2.3.

105 3GG Working Procedures (Apr. 2021) (Apr. 2021), https://www.3gpp.org/ftp/Information/Working_Procedures/3GPP_WP.pdf (accessed 10 Mar. 2022), Art. 22.

106 Gross et al., *supra* n. 88.

strict requirements for impartiality.[107] Entities can obtain multiple membership at 3GPP and OneM2M through these bodies' organization partners. And participation in standardization processes requires technical knowledge, effectively precluding a meaningful involvement of societal stakeholders.

National policies or self-regulatory mechanisms of standards bodies undoubtedly strengthen the legitimacy of global standardization. That said, they do not offer plausible alternatives for implementing and enforcing TBT obligations, nor do they provide access to WTO institutions that facilitate consultation and dispute settlement between stakeholders.

4.2 'Fixing' the TBT Agreement

It would be redundant to think that the deficiencies of current interpretation of the TBT instruments can be addressed rapidly, that Members will be willing to rewrite the TBT Agreement and that powerful economic players in the private sector would unconditionally welcome scrutiny by the TBT Committee. However, to stay relevant in the age of e-commerce and digitalization, the WTO should reevaluate its approach to ICT standards.

As a critical first step, prominent global ICT standards bodies should be allowed to participate as observers in the TBT Committee meetings. This is far from impossible: initially, the observer status was only granted to international intergovernmental organizations,[108] but as of mid 90s, the WTO specialized committees have been slowly opening up to the private sector. So far, only ITU, ISO/IEC and some national bodies are represented in the TBT Committee.[109] These bodies do not account for the core technical work on most prominent ICT standards. Furthermore, concluding agreements similar to the one between the WTO and ITU,[110] with private ICT standards bodies would foster collaboration and contribute to transparency.

It is only through the dialogue with standards bodies that the Decision can be updated, clarified, and fine-tuned to cater the needs and demands of private and ICT standardization, as well as of many stakeholders typically marginalized in global standardization activities. It is also through this cooperation that it can be effectively decided on the inclusion of new principles, or different interpretation of

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[107] *See*, https://www6.ietf.org/iesg/appeal/anderson-2007-12-26.txt, https://www6.ietf.org/iesg/appeal/gellens-2007-06-22.pdf and, https://www6.ietf.org/iesg/appeal/masotta-2013-11-14.txt

[108] As appears from G/TBT/1 (22 June 1995).

[109] International intergovernmental organizations granted observer status to WTO bodies, https://www.wto.org/english/thewto_e/igo_obs_e.htm#tbt (accessed 10 Mar. 2022).

[110] Agreement Between the International Telecommunications Union and the World Trade Organization, S/C/11, 21 Sept. 2000.

the current ones. There is an abundance of options to choose from. If the TBT Committee proceeds having in mind democratic legitimacy, it may find inspiration in some earlier principles for governance of technologies, including equality, access, accountability, and contestability.[111] But not all WTO Members may agree with this set-up, making reaching consensus difficult and bringing negotiations back to square one. The TBT Committee can also decide to implement best practices from regional or national standards bodies, adjusting their interpretation to the multilateral cooperation. More concretely, one of the recent proposals suggested to introduce the principles of diversity and stakeholder engagement.[112] Updating the current principles, or introducing an entirely new set, will however be of little help without clarifying Members' role in their enforcement, or recommending tangible enforcement mechanisms that go beyond the Members' obligations.

5 CONCLUSION

ICT standards are powerful elements of the global economic order, and conduits for future advancement of global commerce. The shortcomings of the current interpretation of the TBT Agreement, and the selective enforcement of its instruments by WTO Members, leaves little space for considerations that convergence in technologies has brought to economic globalization. Most importantly, the flexibilities currently offered by TBT are not taken up by WTO Members, on which the enforcement of TBT obligations in private standards bodies ultimately rests. Previous interpretations of TBT definitions by the Appellate Body added to the general confusion of TBT application to different instances of private regulation. Quite paradoxically, the current TBT framework for standards strikes as supporting established economies, or powerful economic actors, rather than bringing openness and inclusiveness into the global trading system. To address these deficiencies, the political will of States and the preparedness of standards bodies to engage in a dialogue is required.

This Article argued that bringing private standards bodies under the WTO scrutiny will increase their chances to open up for public interest,[113] since they are less likely to be prone to lobbying efforts from narrow interest

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[111] Michael Catinat & Thierry Vedel, *Public Policies for Digital Democracy*, in *Digital Democracy: Issues of Theory and Practice* (Kenneth L. Hacker & Jan van Dijk eds, Sage Publications Ltd 2000).

[112] Remarks at the virtual event 'TBT@40. The TBT Committee's Six Principles for the Development of International Standards: Are They Still Relevant', 14 Oct. 2020.

[113] *See also* Walter Mattli & Neil Woods, *In Whose Benefit? Explaining Regulatory Change in Global Politics*, in *The Politics of Global Regulation* 1–43 (Walter Mattli & Neil Woods eds, Princeton: Princeton University Press 2009).

groups or to influences from a handful of companies already controlling global economic activity and digital markets. Moreover, accessibility of the WTO committees to standards bodies will help counterbalancing the interests of limited number of private economic actors influencing the WTO decision-making through their governments.[114]

Admittedly, this may raise more question in the long run, including the legitimacy of 'recognized' bodies as ISO/IEC and ITU. The suggestions presented in this Article should therefore not be considered as a panacea for the challenges of the digital commerce, but rather as the means to an end for integrating new rules for the digital economy into the multilateral trading system.

[114] *See* Panagiotis Delimatsis, *A Theory of Global Trade Law and the WTO*, TILEC discussion paper 2015–010 21 (May 2015), suggesting that the access to WTO decision-making is unbalanced in favour of global firms rather than transnational regulatory bodies.