

**Dual Use of Standardization Strategies:  
Promoting Regional Integration and/or Global Markets**

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**Abstract**

This paper discusses how the instruments of standards and standardization, international trade agreements, and government or public policy could collectively help foster economic growth, enhance prosperity through productivity increase, and drive innovation, without raising new protectionist barriers. These instruments should be used in an effective way to empower innovation across borders for an ecologically and socially sustainable prosperity, as - in the same time - the technological, social and economic landscapes are undergoing tectonic shifts through:

- the rapid rate of technological development and convergence, particularly in the ICT sector;
- increased competition and blurring of boundaries in the digital economy, driven by extensive global connectivity as well as the emergence of global innovation networks and new innovation hubs;
- national and regional policies having moved to coordinated broader digital approaches aiming at integrating social and economic priorities; and
- growing challenges affecting cross border goods and information flow and their impact on individuals' rights to a minimal respect of their private sphere in a world of data-driven innovation.

The paper will illustrate a potential path for improvement, taking into consideration the current state-of-play of standards regimes, of international and mega-regional trade agreements, and of government policies paradigms. One example that this paper will discuss is that open technology platforms, such as standards developed in a globally open and inclusive, collaborative, and consensus manner, that could be voluntarily adopted and be thus applicable globally, should be explicitly considered in mega-regional agreements. Temptations to use mega-regional dynamics to promote "regional standards" and "export" them globally or use them as a tool to seal the regional market from competition, would create counterforces and could eventually lead to the end of the current globalization era.

So, while mega-regionals could pose a threat for the openness of future ICT platforms, including open compatibility, and interoperability standards, they offer also an opportunity for the above mentioned types of standards and processes to be recognized. They could foster an evolution in the definition of what constitutes an "international standard" and "international standards body". The current definitions stem from an era where only a nation-centric standardization model existed, perpetuating thus a concept that predates and is not adequate for the Internet era, and which may lead to national or regional industrial policies with new forms of structural discrimination and protectionism.

The paper will discuss how international and mega-regional trade agreements could be used to promote globally open standardization processes and their outcome, as well as supportive regulations, as means to increase economic activity and social inclusiveness in several regions by enhancing cross-border innovation and trade without - at least formal - discriminations across regions.

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## List of Abbreviations

AFNOR	Association Française de Normalisation
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization.
ETSI	European Telecommunications Standards Institute
EU	European Union
GATT	General Agreement on Tariffs and Trade
ICT	Information Communications Technology
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ITU	International Telecommunication Union
NGO	Non-government organization
NTB	Non-technical barrier (to trade)
OECD	Organisation for Economic Co-operation and Development
SDO	Standards Developing Organization
SPS	Sanitary and Phytosanitary (agreement)
TBT	Technical Barrier to Trade
TAFTA	Trans-Atlantic Free Trade Agreement
TPP	Trans Pacific Partnership
TTIP	Transatlantic Trade and Investment Partnership
UN	United Nations
US	United States
USTR	United States Trade Representative
WTO	World Trade Organizations
W3C	World Wide Web Consortium

## Introduction

Today, the technological, social, and economic landscapes are experiencing tectonic shifts. The world is witnessing unprecedented technological development and convergence, particularly in the Information Communications Technology (ICT) sector. There is increased competition and blurring of boundaries in the digital economy, driven by extensive global connectivity, as well as the emergence of global innovation networks and new innovation hubs. National and regional policies have moved to broader digital approaches aiming at integrating social and economic priorities. Moreover, in a world of data-driven innovation there are growing challenges affecting cross border goods and information flow and their impact on individuals' rights to a minimal respect of their private sphere. These driving forces are compounded by the transition to a knowledge economy and society, with increasing market inequality and exclusion trends, and by concerns regarding the potential for more frequent financial crisis and destabilization in the world economy. These forces and the rise of mega-regional agreements are fueling increasingly complex technological, economic, and socio-political ecosystems that are impacting standardization, public policy, and trade agreement development systems and resulting strategies for the use of these instruments.

In the 21<sup>st</sup> century we are witnessing a shift to an economy dominated by the production and consumption of intangibles, such as the trade in know-how and ideas on a global scale. We are also experiencing 21<sup>st</sup> century regionalism, which underpins this complex trade environment and where regulation economics come into play.

As the world stands on the threshold of significant opportunity for addressing and realizing sustainable development goals<sup>1</sup> also through the use of ICTs, through the diffusion and development of innovative technologies, and through engagement of developing economies in the trade ecosystem, there must be caution regarding protectionist practices using mega-regional dynamics to promote "regional standards" and "export" them globally or use them as a tool to seal the regional market from competition, as this can create counterforces and eventually lead to the end of the current globalization era.

A fresh examination of the current instruments and an eye toward new institutional frameworks that help to spark and sustain socio-economic change, productivity growth, and sustained economic development are therefore critical. We must consider how the instruments of standardization, public policy, and trade agreements could evolve coherently, promoting the capacity to innovate and adapt as well as pluralism, transparency, and openness. Further, as the integration and deepening of global markets are accelerated, we must acknowledge the range of cultural values and contextual circumstances that underpin the search for ways of balancing cooperation with market competition and state sovereignty.

The creation of national and regional spaces for the optimal flow of goods, services, finance, and technology benefit long-term growth. Extending globally such positive dynamics can improve the allocation of resources and the generation of ideas that are foundational to knowledge societies. However, the use of the current instruments of standards, public policy, and trade agreements and their current frameworks may impose undue constraints, including how international standards are defined and used.

This paper puts forth considerations that promote the need for a new way of thinking about these instruments so that they foster economic growth and drive innovation, without raising

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<sup>1</sup> Sustainable Development Goals are an inter-governmentally agreed set of targets relating to international development. <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

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protectionist barriers, and suggest how to use these instruments in a more effective way to empower innovation across borders to achieve sustainability and reduce nationalistic and mercantilist tensions. It purports that it is time for a collective effort to identify new ways to improve the current paradigms and strategic interplay of standards, public policy, and trade agreements.

### **State of Play**

21<sup>st</sup> century international commerce involves basically 20th century trade practices overlaid by complex cross-border flows related to international production and innovation networks. It includes almost unlimited trade in intermediate goods, services, ideas, know-how, capital, and strictly regulated relocation of knowledge workers. It encompasses a combination of technology and other productivity enhancing factors across nations, where one nation's exports can become competitive based more on the easier cross-border movement and combination of several nations' technology, labor, and capital versus on the easier movement of goods (Baldwin 2014). The complexities and externalities triggered by this new paradigm of more interconnected exchange, coupled with 21<sup>st</sup> century trade agreements being keystones in many nations' development strategies, are impacting standardization and public policy systems and instruments. Further, with the substantial decrease in trade barriers over the past few decades, technical barriers to trade (TBT), such as standards, have become increasingly important determinants of international trade flows. Unlike tariffs, standards have the potential to decrease, but to also expand trade (Clougherty and Grajek 2012).

### *Standards and Technical Regulations*

The World Trade Organization (WTO),<sup>2</sup> with its focus on the avoidance of unnecessary obstacles to trade, has created provisions and general terms for standardization that are defined by the United Nations (UN) system and by international standardizing bodies. Of particular importance is the WTO agreement on Technical Barriers to Trade (WTO TBT)<sup>3</sup>, which addresses standards<sup>4</sup> and technical regulations<sup>5</sup> and compliance to these instruments.

The WTO TBT Agreement recognizes that access to markets can be impeded by the use of technical regulations and standards that can vary from country to country and, if set arbitrarily, can be used or perceived as disguised market protection in the form of non-tariff barriers (NTBs) to trade<sup>6</sup>. In this regime, some standards bodies work to bridge technical regulations with standards by promoting that countries consider the use of international standards as one way of describing how to implement technical regulations. In some standards development processes, such as the ISO, which is a federation of national standards bodies of over 160 countries and each member is a body

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<sup>2</sup> WTO is a global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to help producers of goods and services, exporters, and importers conduct their business. <https://www.wto.org>

<sup>3</sup> For full text of the WTO TBT please see: [https://www.wto.org/english/docs\\_e/legal\\_e/17-tbt\\_e.htm](https://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm).

<sup>4</sup> Standards are defined as the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.

<sup>5</sup> Technical regulations are defined as those that governments specify are mandatory (legal) requirements that (1) must be met under specific laws and (2) implement general agency objectives. These requirements typically address health, safety and environmental issues, consumer protection, and packaging and labeling. A regulation may consist of agency-developed technical specifications or requirements, or may permit use of particular private sector standards as a means of compliance.

<sup>6</sup> Non-tariff measures (NTMs) are policy measures that have an effect on trade flows. They can be imposed at a border, for example on imports or exports, or applied in a domestic economy. When NTMs have a protectionist effect they are referred to as non-tariff barriers.

that most broadly represents matters of standardization in its country, standards are developed as voluntary documents where they distil international consensus from a broad base of stakeholder groups. Members propose new standards and participate in their development (where ISO members appoint national delegations to standards committees). When the standard has reached consensus through technical experts the draft standard progresses to ISO members for final vote or approval. Once an ISO standard is approved, it may be adopted as a national standard by ISO members.

In parallel with this model, a new standards development paradigm has emerged in the past few decades. Unlike the country-driven one, it is from the very beginning of the process globally open and market-driven, embodying thus both cooperation and open competition for innovation. Participation is open to all materially interested persons and experts from all around the world, there is no nation-centric (regional or national) membership, neither passport nor permission is needed<sup>7</sup>. In short, it is independent of representation of countries' standardization or technical regulation matters or agenda, and the standards produced avoid unnecessary national or regional specifications. Standards bodies working in this paradigm reach consensus and approval of standards developed through transparent procedures in which the participants and the broader stakeholder community comment and vote on the standards based solely on technical merit. Upon approval, via respective organization processes, the standards have a virtually global potential, where their ultimate global designation is determined by market adoption.

However, in some cases, for these standards to be recognized as "international" by national regulators and governmental agencies, they must go through a joint development or adoption process with one of the traditional, Geneva-based international standardization organizations. This is by all accounts a redundant and expensive process, tantamount to an unnecessary tax on innovation. Moreover, it creates other issues and complications in the context of intellectual property rights, of in-country modifications, and of coordination of standards revision or update cycles. This is a strange anachronism in a time where there is ample evidence of examples of voluntary standards that are globally relevant and deployed on international scale that were developed outside of nation-centric processes and that have enabled tremendous innovation and economic and social benefit. These include the collective of standards that form the foundation of the Internet and many of those that have transformed the way the world connects via wireless technology.

This brings to light the challenge of what defines an "international standard" and how standards developed outside the traditional nation-centric model are recognized in the current standardization ecosystem, and by extension recognized in the public policy and trade agreement ecosystems and their resulting instruments. Unlike in the WTO Agreement of Sanitary and Phytosanitary Measures (SPS Agreement)<sup>8</sup>, where international standards are defined as those developed by the Codex Alimentarius Commission, the International Plant Protection Convention, and the World Organization for Animal Health, there are no such definitions of international standards as a result of the WTO TBT agreement and no organizations have been named as developers of international standards under the agreement. There has been discussion within the WTO TBT committee<sup>9</sup> about the need to provide greater clarity around the definition of international standards so that countries, in particular developing countries, can decide where to

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<sup>7</sup> USTR Michael Froman speech, Brussels 2013: <http://www.gmfus.org/events/ustr-froman-gives-first-major-address-brussels-transatlantic-trade-agreement-gmf>

<sup>8</sup> For full text of SPS Agreement see [https://www.wto.org/english/tratop\\_e/sps\\_e/spsagr\\_e.htm](https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm)

<sup>9</sup> WTO TBT Committee provides the opportunity of consulting on any matters relating to the operation of the Agreement or the furtherance of its objectives

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channel financial and technical resources to participate in the work of international standardizing bodies. If defined narrowly as those organizations that have nation-centric processes, this will be limiting and negatively impact innovation and market growth. The nation-centric concept of standardization embodied in current WTO rules implies namely often significant government influence, and this may lead to the temptation to pick national or regional winners (Karachalios and McCabe 2013). There should be thus caution on dialogues drifting in the direction of international standards being defined exclusively as those developed by specifically named organizations, leaving out of the context the thriving bottom-up, globally open collaboration platforms in the field of standardization and their impact on innovation and trade.

As Sean Heather, Vice President, Center for Global Regulatory Cooperation and Executive Director, International Policy and Antitrust Policy notes in his article *TTIP and Flawed Policies on Standards Don't Mix*, "In the context of trade, standards aren't important, but the way a government uses a standard is very important."<sup>10</sup> Although written from the perspective of TTIP (Transatlantic Trade and Investment Partnership)<sup>11</sup> and in response to a CEN/CENELEC<sup>12</sup> paper regarding TTIP and the Europe Single Digital Market<sup>13</sup>, the concepts outlined resonate on a broader scale in regard to recognition of a range of standards that objectively meet regulatory requirements that facilitate trade, and having such standards is not a barrier or risk. Standards, including those developed outside of the nation-centric paradigm, can also meet regulator's requirements, increase competition, and offer a greater choice for consumers (Heather 2015).

#### *Standards, Trade Agreements, and Public Policy*

Trade and standards are not policy objectives onto themselves. They do, however, become priority as a means to promote economic development. As we have observed, there is a strong interplay between trade agreements and standards, and this extends to public policy. Standards role, specifically in public policy, includes fostering increased innovation and productivity; enhancing competition in open markets through open standards; supporting international trade; and helping reinforce trust among trade actors. Standards can provide support to many kinds of policy actions, including trade and competition policy, investment policy, technical regulation, and consumer, security, and safety and environmental protection. They are powerful instruments of governance because of the effects their use can have on goods, services, and on quality of life. These effects are evident whether standards are employed by the private sector or by the public sector. In the private sector, they create market incentives for actors to follow internationally accepted practices by applying competitive pressure (while allowing fair competition) and also encourage innovation and growth by fostering technological development when based on broadly available and open technology platforms. In the public sector, they can enable greater transparency and competition in public procurement and provide essential requirements for industry via their referencing into regulations and laws. In either context, standards can considerably improve efficiency and cost-effectiveness, and reduce transaction costs (Hufbauer, Kotschwar, and Wilson 2001).

Today, governments continue to be subject to pressures to assist domestic firms and industries,

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<sup>10</sup> <https://www.uschamber.com/issue-brief/ttip-and-flawed-policies-standards-don-t-mix>

<sup>11</sup> TTIP is a proposed trade agreement between the U.S and the EU to promote economic growth.

<sup>12</sup> European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC); <http://www.cenelec.eu/aboutus/Pages/default.aspx>

<sup>13</sup> The Digital Single Market strategy aims to open up digital opportunities for people and business and enhance Europe's position as a world leader in the digital economy. (<https://ec.europa.eu/digital-agenda/en/digital-single-market>)

especially in difficult times. As incentives to use traditional trade policies such as tariffs and quotas have become more difficult to use, other types of non-tariff policies, such as standards and technical regulations, have become more attractive. While tariffs constitute an important source of distortions and economic costs, the relative role of tariffs in shaping international trade has declined, due in large part to successful rounds of multilateral tariff reductions in the WTO and its predecessor, the General Agreement on Tariffs and Trade (GATT 1947), as well as further reductions in tariffs achieved through mega-regional agreements (Role of Trade Barriers in SME Internationalization 2006).

In the consideration of NTBs and why governments may prefer them over tariffs, suggestions in a 1997 OECD<sup>14</sup> working paper on *Measurement of Non-Tariff Barriers* (aka Non-Tariff Measures, NTM), include salient reasons that hold today, including: institutional constraints built into tariff-related WTO rules in national constitutions and in trade policies; the role of industry or private enterprise in influencing policy; considerations of reaction to the policies of trading partners; and uncertainty about the ways in which different policies may perform (Deardorft and Stern 1997).

As Pascal Lamy, former WTO Director General, commented in the forward to the *World Trade Report 2012*, “NTMs have acquired growing importance as tariffs have come down, whether through multilateral, preferential, or unilateral action. Secondly, a clear trend has emerged over the years in which NTMs are less about shielding producers from import competition and more about the attainment of a broad range of public policy objectives. You could say we are moving from protection to precaution. This tendency is discernible in practically every economy, as concerns over health, safety, environmental quality, and other social imperatives gain prominence. Moreover, issues such as these take on a more central role in policy as economies develop and incomes grow”.<sup>15</sup>

## Response

The significance of technical barriers to trade has increased considerably over the past years, as tariffs steadily decline and governments worldwide introduce more regulatory requirements to address health, safety, security, or environmental concerns. With this, public policy concerns find greater expression in trade relations than they did in the past. Experts believe that the expansion of the public policy agenda will mean that NTMs will not follow a path of diminishing relevance like tariffs have done, and NTMs will instead continue to rise (“World Trade Report 2012”). Significant drivers of this include the rapid rate of technological development, the introduction of resulting new and emerging business models, the engagement of developing economies in the global trade system, and the need for governments to address their nations’ economic health while addressing national and global issues of health, safety, and climate and environmental issues. This collectively has established not only an increasingly complex global trade system, it has increased the complexity of the interplay of standards, public policy, and trade agreements. Subsequently, it has also brought to the forefront challenges regarding capacity to implement trade agreements, particularly those on TBTs, which can constitute a hindrance to trade. Considering emphasis on trade as a means to underpin economic development, especially in developing countries, there is a crucial need to address the issue of standards and technical regulations to allow countries to participate effectively in the multilateral trading system.

## Standards Arena

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<sup>14</sup> OECD: Organisation for Economic Co-operation and Development; <http://www.oecd.org>

<sup>15</sup> For full text of the World Trade Report 2012, see: [https://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/world\\_trade\\_report12\\_e.pdf](https://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report12_e.pdf)

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When a geographically defined community must solve a community-wide coordination problem whereby all parties can realize mutual gains, but only by making mutually consistent decisions, it can adopt an existing standard or produce a new one. In the traditional standardization ecosystem, the geographic choices are a national standard, developed by national standards organizations, such as the AFNOR; a regional standard, developed by regional standards organizations, such as CEN or ETSI; or standards developed by the Geneva-based international standards organizations ISO, IEC, and ITU. In the context of trade, there are positions that national, regional, or international standards are one way of overcoming technical barriers in inter-local or inter-regional commerce caused by differences among technical regulations and standards developed independently and separately by local (national) standards organizations.

However, by all its merits, this concept ignores and excludes standardization platforms and organizations that produce very successful global standards outside of the nation-centric standards development model. The traditional mental model further perpetuates the current limited definition and perception of international standards, primarily as those developed through country-centric processes. There is thus an urgent need to expand the concept of “international standardization” to include globally open standardization processes and standards produced through standards bodies adhering to principles of universally open and collective empowerment to strive to develop standards that are chosen and defined on technical merit. In particular, as these standards are made globally accessible to all for implementation and deployment, and their adoption by the market is voluntary. It is ultimately this voluntary market adoption that determines their success, promoting thus economic growth through innovation, free choice, and development of new markets. When a country trades more intensely and is exposed to a variety of standards and standardization processes, its firms are exposed to a wider range of new products and new processes. This is where growth prospects are advanced. Firms that are exposed to world markets and global standards are quicker to adopt best practice techniques, increasing their own profits and also raising the productivity of their work force (Hufbauer, Kotschwar, and Wilson 2001). A relevant case in point is illustrated in M.H. Sherif’s paper, *ICT Standardisation strategies and interactive learning spaces—the case in China*. Using the concept of interactive learning spaces, Sherif explores how active participation in SDOs enhanced China’s technical expertise and know-how. As there is an immense push worldwide to use technological innovations as an economic base for development learning, innovation, and technology development operates within a National System of Innovation that defines how the various actors learn to interact, assimilate, develop, and leverage technological and market opportunities (Sherif 2015).

#### *ICT Sector: An Example*

Standardization in the field of ICT is a complex discipline the parameters of which are constantly changing as the industry underneath it evolves rapidly. The ICT industry has seen massive evolution in the past decade as the very nature of information use and sharing by customers has been changing in an accelerating pace. The ICT sector has been credited with making economies much more productive. Harmonizing the various forms of standardization by allowing equivalency, in legal as well as in economic settings, could enhance the industry.

Mega-regional agreements could theoretically pose a threat for the openness of future ICT platforms, including open compatibility and interoperability standards. In particular, if the temptation prevails to use the regional integration as a tool to defend the new internal market against imports from “outside”. However, as both developing and developed economies are relying

on an ICT infrastructure and often global industry players not defined by the nationality of their incorporation or residence for improving quality of life, stimulating economies, and meeting global market needs, these agreements also offer an opportunity for the new generation of global standards and processes, those developed outside of the nation-centric model, to be recognized and implemented, which in turn can help advance the adoption of ICTs on a global scale.

### *Cautionary Tale*

Of caution is the use of protectionist practices that may get played out in standards setting processes. Trade barriers, specifically NTBs including TBTs, can sometimes be useful, even vital, but they can miss their mark and simply be an attempt to protect the interests of a given group at the expense of the wider community. TBTs, technical regulations, and standards that set out specific characteristics of a product such as its size, shape, design, functions, and performance, or stipulate the way a product is labeled or packaged before it enters the marketplace, may also include measures of technical procedures for confirming that products comply with the requirements stipulated in regulations and standards. Many of these measures serve legitimate goals of public policy, such as protecting the environment or human health and safety. At the same time, product standards and other TBTs have an important influence on market access and the export performance of businesses. They can be costly and burdensome by design, or effect, create a “Galapagos syndrome”<sup>16</sup> and restrict international trade. Coined to refer to Japanese 3G mobile phones, which developed specialized features and dominated Japan, but were unsuccessful abroad, the “Galapagos syndrome” illustrates how developing indigenous technologies, standards, or products that don’t mesh with the global norm or other nations’ requirements can result in it being more expensive for foreign competitors to sell products within a country because they would have to develop versions of a product that incorporates the indigenous technology or complies with the localized standard at added costs. This can advantage domestic producers at the expense of foreign ones. If technologies or products are developed for use in a particular country’s market only it will be difficult to be exported as well, also hindering cross-border trade.

In addition to these types of compliance procedures that are implicit in trade agreements is also the opportunity for trade agreements to address other regulatory factors, such as how products are produced. For example, trade agreements provide the opportunity to address a range of environmental issues as they strive to find balance between supporting open trade and ensuring governments can respond to growing environmental issues. In doing so, however, protectionist measures may purposefully or inadvertently be introduced. International trade can be a pathway for the transmission of weaker environmental policies from one country to another. For instance, a country’s lax environmental standards that fail to internalize the social costs of environmental harms, such as pollution from the production of goods, can provide an unfair competitive advantage to its exports, raising concerns that this will create economic and political pressures in the importing country to also lower their environmental standards (Meltzer 1). An example of how some trade agreements are addressing this challenge can be found in the KORUS Agreement, whereby it is stated that “it is inappropriate to encourage trade or investment by weakening or reducing the protections afforded in its environmental laws”<sup>17</sup>.

A related concern that adds to the complexity of the standards, trade, and public policy interplay in the context of increases in trade and overall economic activity among countries comes from environmentalists. They often point to trade increase as a cause for concern as a greater scale of economic activity likely means increases in transportation, shipping, production, and consumption,

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<sup>16</sup> For an example, see <http://www.eurotechnology.com/2013/08/05/galapagos-2/>

<sup>17</sup> KORUS art 20.3.2: <https://ustr.gov/trade-agreements/free-trade-agreements/korus-fta/final-text>

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which are all pollution-emitting activities. Countering this concern is the position that higher productivity is associated with higher real incomes and greater prosperity, which in turn, can benefit the environment in multiple ways. Latter include the creation of opportunities for investment in R&D in clean technology. Higher real incomes can also generate greater ability and willingness to adopt, enforce, and pay for higher standards of environmental quality (“Economic Benefit of U.S. Trade 2015”). But how environmental protection measures get incorporated into trade agreements, with a downstream effect in standards development and technical regulation is an area for deeper exploration and research. In the EPO’s *Scenarios for the Future* “Whose Game?” scenario, a trend where Western businesses caught between the need for increased environmental protection and the pressure of low-cost Asian competition is noted. In this scenario Western governments respond creatively, and barriers in TAFTA<sup>18</sup> negotiations are eventually defined by social and environmental protocols denoting that only products meeting the highest standards of environmental care and good working practice would be admitted to the US and the EU<sup>19</sup>. Extending this scenario to standards development, where product standards that include measurements and test methods are being considered, one can see how a standard can serve a dual purpose; that of addressing an environmental concern but also potentially raising a protectionist wall. This opens the question of how industry-driven global standards bodies will address protectionist behavior, when some actors may try to influence or manipulate the development of their standards. In addition, it presents the dilemma and opportunity for standards bodies to explore and prepare for new categories of actors that may become engaged, such as privacy and civic right experts, environmental NGOs, etc.

In addressing open standardization, most actors claim the high ground of openness and acting in the public interest. These claims deserve examination and thought, given the policy decisions that governments, standards organizations, and private parties or enterprise are now being called upon to make in reshaping and redirecting the course of national, regional, and international policies and institutions. Technical standards will continue to help define the future of the information and knowledge society, and help define what and how technologies and markets of the future will be (Standardization and Digital Enclosure 2009). There is a need for the study of standardization to include also a framework of analysis of public policy aspects in the global economy and trade systems. The analysis should include also the related issues of technical innovation, access to information, intellectual property, small and medium enterprise needs, and emerging economic development and engagement of developing countries in international economic and trade frameworks.

### *Framework Considerations*

The instruments of standards, trade agreements, and public policy are functioning in a new era of 21<sup>st</sup> century regionalism and rise of mega-regional trade agreements, where a significant focal point in negotiations centers on trade facilitation, advancing regulatory best practices, and removal of technical barriers to trade within the target region. The application of product regulations and standards is becoming increasingly contentious as an implicit non-tariff barrier to trade. There has been increasing use of technical regulations as instruments of commercial policy in the context of multilateral, regional, and global trade, as well. Non-tariff barriers are of special concern to developing countries, which may bear additional costs in meeting mandatory standards. Moreover,

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<sup>18</sup> TAFTA Transatlantic Free Trade Agreement, also known as TTIP (Transatlantic Trade and Investment Partnership)

<sup>19</sup> <http://www.epo.org/news-issues/issues/scenarios/download.html>

many industrial and developing countries express frustration with regulations that vary across their export markets, require duplicative conformity procedures, and are continually revised to exclude imports. Further, in this mix is acknowledgement that among the most important policy tools advanced in regional trade talks are the use of mutual recognition of testing and certification procedures and related efforts to harmonize standards, including settling on one international standard (Maskus and Wilson 2001).

On 4 October 2015, Ministers of the 12 Trans-Pacific Partnership (TPP) countries<sup>20</sup> announced conclusion of their negotiations, resulting in what some have coined as a “21<sup>st</sup> Century trade agreement” since it focuses on services trade, e-commerce, and intellectual property rights and not just physical goods, and it sets a new standard for global trade while addressing next generation issues. In short, it has a broad agenda to reflect the complex international trade ecosystem including new trade challenges brought on by the digital economy and the engagement of developing economies in global markets. In the TPP Agreement Chapter Eight on Technical Barriers to Trade, the TPP Parties have agreed on transparent, non-discriminatory rules for developing technical regulations, standards, and conformity assessment procedures and to cooperate to ensure that technical regulations and standards do not create unnecessary barriers to trade. Per the US Trade Representative *Summary of the Trans-Pacific Partnership Agreement*,<sup>21</sup> specifically on the Technical Barriers to Trade Chapter:

“TPP Parties agree to rules that will facilitate the acceptance of the results of conformity assessment procedures from the conformity assessment bodies in the other TPP Parties, making it easier for companies to access TPP markets. Under the TPP, Parties are required to allow for the public to comment on proposed technical regulations, standards, and conformity assessment procedures to inform their regulatory processes and to ensure traders understand the rules they will need to follow. They also will ensure a reasonable interval between publication of technical regulations and conformity assessment procedures, and their entry into force, so that businesses have sufficient time to meet the new requirements.”

As noted in this paper, with the lowering of tariff rates, the behind-the-border measures of technical standards come to the forefront as one of the most significant barriers to trade. The TPP Agreement in the Articles of Chapter Eight<sup>22</sup> call out measures to meet the objectives of facilitating trade, eliminating unnecessary barriers to trade, enhancing transparency, and promoting greater regulatory cooperation and good regulatory practice. As elements of frameworks for an effective interplay of standards, trade agreements, and public policy are explored, examining the TPP Agreement’s measures can provide potential insight notably in the context of reform of the governance of standardization.

In TPP Article 8.3 (Scope), it states:

“Each Party shall take such reasonable measures, within its authority, to encourage observance by local government bodies on the level directly below that of the central

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<sup>20</sup> Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States, and Vietnam

<sup>21</sup> <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2015/october/summary-trans-pacific-partnership>

<sup>22</sup> The scope of Chapter Eight applies to the preparation, adoption and application of all technical regulations, standards and conformity assessment procedures of central government bodies (and, where explicitly provided for technical regulations, standards and conformity assessment procedures of governments on the level directly below that of the central government) that may affect trade in goods between the Parties, except as provided in paragraphs 3 and 4.

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government within its territory which are responsible for the preparation, adoption, and application of technical regulations, standards, and conformity assessment procedures with Articles 8.5 (International Standards, Guides and Recommendations), 8.6 (Conformity Assessment Procedures), 8.7 (Compliance Period for Technical Regulations and Conformity Assessment Procedures), and each of the Annexes to this Chapter.”

There are specific measures within the respective Articles of 8.5, 8.6, and 8.7 that acknowledge the important role that international standards, guides, and recommendations can play in supporting greater regulatory alignment, good regulatory practice, and reducing unnecessary barriers to trade (8.5). Article 8.7 (Transparency) specifically calls out that “Each Party allow persons of the other Parties to participate in the development of technical regulations, standards, and conformity assessment procedures by its central government bodies” and that a Party may satisfy this obligation by providing interested Parties a reasonable opportunity to provide comment on the measures it proposes and taking those comments into account in the development of the measure. It further denotes that “Each Party is encouraged to consider methods to provide additional transparency in the development of technical regulations, standards, and conformity assessment procedures, including public outreach or consultation.”

Chapter Eight Article 8.5 acknowledges the WTO TBT Agreement and in its rules reference Articles 2.4 and 5.4 and Annex 3 of the WTO TBT Agreement “in determining whether an international standard, guide, or recommendation within the meaning of Articles 2 and 5 and Annex 3 of the TBT Agreement exists, each Party shall apply the Decision of the TBT Committee on Principles for the Development of International Standards, Guides and Recommendations With Relation to Articles 2, 5 and Annex 3 of the TBT Agreement (G/TBT/1/Rev.10), issued by the WTO Committee on Technical Barriers to Trade.” It further states that the “Parties shall cooperate with each other, where feasible and appropriate, to ensure that international standards, guides, and recommendations that are likely to become a basis for technical regulations and conformity assessment procedures do not create unnecessary obstacles to international trade.”

The TPP impacts development of international standards by building trust and developing habits of cooperation among TPP regulators which can help make future cooperation in the setting of international standards more likely. Although in a spirit of cooperation and collaboration its provisions in Chapter Eight, notably those in the context of the WTO TBT, do not necessarily address the inclusion of SDOs who develop global standards outside of the nation-centric standards development model. Although the TPP has no stringent commitment to harmonize domestic standards to international standards, a caution is observed in that TPP Parties could seek to harmonize standards among themselves, which can be costly for some TPP countries if such standards diverge from international standards or cover areas not yet addressed by international standards. On the other hand TPP can lead to improved coordination among public (mandatory) and private (voluntary) standards bodies to cooperate to develop standards. Some argue that TPP could be used to facilitate greater cooperation among domestic standards setting bodies that underpin the development of international standards. But this level of cooperation and coordination, coupled with commercial conditions changing in the main markets abroad and the potential for private or voluntary standards to become mandatory when public standards reference private standards, in short, bringing compliance with private standards within their scope, calls for regulators, policy makers, and standards developers to prepare for such conditions emerging in the markets of TPP economies (Meltzer 2015).

As a fresh examination of the instruments of standards, public policy, and trade agreements is initiated in the context of forging new frameworks for effective interplay of these instruments, consideration of the TPP Agreement Article 8.11 provision for the formation of a Committee on Technical Barriers to Trade comprised of representatives of each Party to intensify their joint work in the fields of technical regulations, conformity assessment procedures, and standards with a view to facilitating trade between and among the Parties is suggested. The Committee's scope includes considering proposals for new sector specific or other initiatives; encouraging cooperation between and among the Parties in matters pertaining to Chapter Eight, including the development, review, or modification of technical regulations, standards, and conformity assessment procedures; encouraging cooperation between and among non-governmental bodies in the Parties' territories, as well as cooperation between governmental and non-governmental bodies in the Parties' territories in matters pertaining to Chapter 8; facilitating the identification of technical capacity needs; and encouraging the exchange of information between and among Parties and their relevant non-governmental bodies, where appropriate, on the development of common approaches regarding matters under discussion in non-governmental, regional, plurilateral and multilateral bodies or systems that develop standards, guides, recommendations, policies, or other procedures relevant to Chapter Eight.

With an increasingly complex trade ecosystem, coupled with rapid technology advancement and the drive for sustainable development around the globe, all of which are impacting the interplay of standards, trade agreements, and public policy, a fresh perspective is warranted on how these instruments and the paradigms in which they are developed can enhance innovation and drive economic growth without inserting unnecessary barriers or protectionist measures. A new integrated framework that takes into account 21<sup>st</sup> century facts, the anticipated future state of technology advancement, and the entry of developing countries onto the trade scene is needed.

Such a framework has not yet emerged. However, it is useful in the formation of such a framework to take the following into account to inform research agenda and discussion, and to ensure that diverse needs and conditions are reflected and durable and reasonable solutions are proposed:

- Innovation supporting trade in the 21<sup>st</sup> century depends on many factors, including modern, open standards development systems. Today, many standards bodies are high stakes forums for techno-political decision-making, going beyond mere technical optimization. Commercial stakes, as well as those related to environmental, safety, and health considerations, but also cultural values such as privacy and ethics, are bringing to the forefront a new era of standardization, which needs to be both global and inclusive. In addition, the standardization processes must have sufficient clear rules, also regarding the inclusion of privately owned technologies in the standards. Finally, they must be sufficiently nimble to effectively address the development and commercial application of fast evolving technologies with increasingly shorter life-cycles, outpacing traditional consensus-decision making processes. Only then would formal standardization frameworks have a chance to keep pace with these developments and cope with rapidly evolving global trade landscapes and an extending public policy agenda. Otherwise they will inadvertently be replaced by fast moving private consortia or fall prey to practices of forced localization and "indigenous innovation" strategies or protectionist measures.
- Viewed in the context of current mega-regional agreements in negotiation, an opportunity exists to do more on regulatory cooperation, including with regard to standards when those standards are used to comply with government or technical regulation. Such cooperation would also facilitate market development by promoting diffusion of enabling technologies,

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could improve production efficiency, foster interoperability, and address needs such as safety, security, and accessibility at a scale beyond national and regional boundaries. Standards developed outside of the traditional country-centric paradigm have a bigger role to play here and should be formally recognized with a refined definition and open perspective of what constitutes an “international standard”. Such an approach would put on equal standing standards developed in a traditional country-centric mode with the ones that are globally open and inclusive from the beginning, supporting thus the availability and use of more than one standard that can meet technical regulatory objectives. This broader definition would lean on the criteria of the WTO TBT agreement that standards bodies must meet in order to have their standards qualified to be considered international in nature.

- From a research agenda perspective, the dynamics, governance issues, strengths and vulnerabilities of standards development processes that run on open processes and which are inclusive of all stakeholders is suggested. A point of reference is the creation of the W3C that was formed out of concern and realization that it would be challenging for any standards setting body to keep up with the rapid pace of technical developments related to the Web, and in response Tim Berners-Lee developed the W3C to meet this need (Simcoe 270). Analysis of such processes or systems can potentially provide insight that can benefit new models that take a multi-pronged, multi-stakeholder, collective approach in addressing challenges that arise during the pursuit of new frameworks.
- The forms of standardization serve purpose, especially in the ICT sector. There is the need for stability (provided by the arena of formal standards bodies), a need for coping with fast change (provided by ephemeral consortia and alliances), the need for specific intellectual property and marketing environments, and the need for robust community involvement (provided by Open Source). To tackle the vast emerging standardization needs for mega systems, such as Internet of Things, 5G, smart cities and other smart “Xs” (homes, vehicles, connected person, e-health, etc.) the groups within each arena will need to more effectively work together also in order to achieve a public good character of standards through open systems and noting that open standardization is preferred compared to closed proprietary solutions (Schoechle 2009).
- Due to the proliferation of various non-tariff rules and regulations affecting international trade, trade policy has become complex and multifaceted. Understanding the uses and implications of these trade policy instruments is essential for the formulation and implementation of effective development strategies, as well as standardization strategies. A better understanding of non-tariff measures will help policymakers to formulate appropriate policy responses and direct the necessary technical and financial resources to where they are needed (Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries 2012).
- Further, programs to help policy makers understand and use standards to support public policy initiatives would be beneficial, inclusive of such insight into referencing standards in legislation or regulation, as well as leveraging standards to support public decisions or actions. Engagement in standards fora would allow policy makers to stay informed of developments in global standardization they may find useful to support or inform policy goals. Vice versa, standards bodies engaged with public policy can collect feedback on experiences of policy makers in using standards and gain insight into public policy challenges that could be addressed by development of global standards.
- Finally, trade policy takes into account of and is adapted to specific development needs and situations of trading partners. Today’s era of globalization depends on sound trade policies

to reflect markets evolution, to establish fair trade practices, and expand the possibilities for international trade. With this, policy makers should work toward standardization policies facilitating global partnerships that support developing countries in building capacity to implement technical standards, notably as developing countries are beginning to overcome some major obstacles in their efforts to expand trade with industrial countries. As noted in this paper, traditional trade protection measures such as tariffs and quotas are falling away, but to some extent they are being replaced by domestic technical regulations permitting countries to ban products from entering markets if the products do not meet certain standards. This may be more prevalent in the SPS space, but as standards and public policy broaden their respective agenda, these types of protective measures can carry over to TBTs.

### **Conclusion and Recommendations**

Standards, public policy, and trade agreements are strategic instruments with similar objectives to create value and aggregate markets, facilitate technology diffusion, promote production efficiency and product interoperability, enhance competition, reduce costs, address safety, and enable the communication of important information among buyers and sellers. These instruments are functioning in the context of political, economic, social, technical, and other forces that are rapidly reshaping the global economy, Mega-regional dynamics add to this complexity and have the potential to significantly influence the direction and shape of the emerging regional and global trade architectures.

Increased economic growth and expansion of exports in the 21st century will depend on many factors. These include efficient and modern open standards systems and effectively managing technical barriers to trade. There are indeed proponents for regional efforts as an efficient way to modernize standards systems. To illustrate this, in the paper *Trade Policy, Standards, and Development in Central America*, a regional rather than a national approach is suggested to setting up accreditation, testing, and metrology infrastructure to share equipment, experts, and information so as to optimize limited funding, and to promote regional bodies as venues to develop common positions in international discussions of the development of standards (Hufbauer, Kotschwar, and Wilson 2001). From the mega-regional perspective, the opportunity for promotion and use of globally open standardization processes and their outcome, as well as supportive regulations, can serve as means to increase economic activity and social inclusiveness in several regions by enhancing cross-border innovation and trade without, at least formal, discriminations across regions.

Governments create technical regulations by mandating technical requirements, which may include procedures for testing, conformity assessment, and ongoing compliance. These requirements may embrace internationally recognized procedures or standards or they may be unique to a country or region. It is with great caution that technical regulations should be considered as they can limit manufacturing flexibility, inhibit innovation, delay time to market, and distort product design. With this, the objectives for technical regulations should be to ensure safe and legal products and not to promote certain technologies (where there are alternatives) or promote “national champions”. Technical regulations should never be more trade-restrictive than necessary and governments should consider alternatives whenever possible. If technical regulations are necessary, governments should fairly consider the costs and time to-market delays associated with implementation and enforcement.

As we look at trade agreements and regulatory coherence, particularly in the recently agreed upon TPP agreement, some positive elements emerge for consideration in formulating improved frameworks. These include easing the conditions and costs of trade between TPP countries while

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affirming the rights of TTP countries to regulate their economies to promote legitimate policy objectives. According to the USTR, this initiative stems from the proliferation of regulatory and NTBs, which have become a major hurdle for business gaining access to foreign markets. Some of the goals are to “improve regulatory practices, eliminate unnecessary barriers, reduce regional divergence in standards, promote transparency, and conduct regulatory processes in a more trade-facilitative manner” (“Trans-Pacific Partnership Negotiations and Issues for Congress” 2015).

Overall, there are many questions that still need to be unpacked in order to understand how current standards and technical requirements are today interacting with public and government entities, policy frameworks, and public-policy making processes. This includes an examination of the relationships during standards and standards systems’ development as well as of standards implementation and oversight, and in measuring their respective impacts. By developing a clear understanding of these issues, an additional piece of the puzzle of today’s challenges may be addressed. A framework that builds upon both existing public- and private-sector-led processes and new multi-stakeholder initiatives to the benefit of all has the potential to significantly advance governance models, frameworks, and the creation of policy and implementation tools that can effectively address the complexity of today’s interlinked issues in global trade.

Innovation and economic growth do not come with a unique model. They can be achieved through different combinations of standards, agreements, and public policy, and collectively working toward a new framework to identify ways to improve the current paradigms and strategic interplay of these instruments.

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