



The **E15** Initiative

STRENGTHENING THE GLOBAL TRADE AND INVESTMENT SYSTEM  
FOR SUSTAINABLE DEVELOPMENT



**Data Moving Across Borders:  
The Future of Digital Trade Policy**

Amy Porges and Alice Enders

April 2016

E15 Expert Group on the  
Digital Economy

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**Think Piece**

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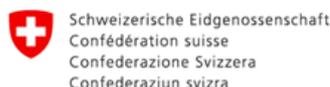
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# ABSTRACT

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This paper examines how trade policy institutions can mobilise to support the new digital economy of the 21st century. The paper begins by outlining the core enablers of the digital economy and the intersection between cross-border data flows and policy measures with non-trade objectives, such as privacy. The main focus is on how digital and digitally enabled businesses operate domestically and across borders.

The paper then examines the WTO's substantial past and present contributions to laying the foundation of digitally enabled trade and investment, including the WTO's established legal acquis in its agreements as interpreted since 1995. Finally, the authors discuss how the WTO could support digital trade going forward, the TPP's significance for digital trade, and the challenges for negotiations on a plurilateral Trade in Services Agreement (TiSA).

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# LIST OF ABBREVIATIONS AND ACRONYMS

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Apps	Applications
B2B	Business-to-business
B2C	Business-to-consumer
BTA	Agreement on Basic Telecommunications Services
CDNs	Content delivery networks
CETA	Comprehensive Economic and Trade Agreement
CPC	Central Product Classification
CRS	Computer and related services
EDI	Electronic data interchange
EU	European Union
F2P	Free-to-play
FTA	Free-trade agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDPR	General Data Protection Regulation
GDP	Gross domestic product
ICT	Information and communication technology
IPR	Intellectual property rights
ISP	Internet service provider
IT	Information technology
ITA	Information Technology Agreement
MFN	Most-favoured nation
NCMs	Non-conforming measures
PC	Personal computer
RTA	Regional trade agreement
SMEs	Small to medium-sized enterprises
TiSA	Trade in Services Agreement
TPP	Trans-Pacific Partnership
TPR	Trade Policy Review
TTIP	Transatlantic Trade and Investment Partnership
UK	United Kingdom
US	United States
USITC	United States International Trade Commission
VAT	Value-added tax
WCO	World Customs Organization
WTO	World Trade Organization

# EXECUTIVE SUMMARY

In the last months of 2015, two trade policy events demonstrated the increasingly central role of the digital economy in the future of trade policy. First, 12 countries, comprising almost 40 percent of world trade, concluded the ambitious Trans-Pacific Partnership (TPP) Agreement, featuring digitally enabled trade and data flows as a central theme. Second, in spite of almost total disagreement at the World Trade Organization (WTO) Ministerial Meeting in Nairobi, all WTO members agreed to renew the WTO's moratorium on tariffs on data — and members representing 90 percent of information technology (IT) trade agreed to expand the WTO's Information Technology Agreement.

This paper examines how trade policy institutions can mobilise to support the new digital economy of the 21st century. Because data flows and digitally enabled trade are essential to global trade and investment, measures to support their growth should be a *sine qua non* for any trade policy and any new trade agreement.

We start by sketching the core enablers of the digital economy — such as the rapid adoption of connected devices and the skills to use them on the consumer side — and the intersection between cross-border data flows and policy measures with non-trade objectives, such as privacy. Our focus is on how digital and digitally enabled businesses operate domestically and across borders, because it is business that drives economic growth and international trade and data flows. We then lay out the WTO's substantial past and present contributions to laying the foundation of digitally enabled trade and investment, including the WTO's established legal *acquis* in its agreements as interpreted since 1995. Finally, we discuss how the WTO could support digital trade going forward, the TPP's significance for digital trade, and the challenges for negotiations on a plurilateral Trade in Services Agreement (TiSA).

Our core focus is on cross-border flows of data, which can be divided into three categories:

- Information data (e.g. financial) and company data to support production, marketing, sales, after-market service, and functionality of goods, including personal data;
- The export and import of digitally enabled services and goods, as well as goods ordered through digital means;
- The export and import of digitised content — including software, music, and audio-visual content.

Our view is that trade policy institutions must address obstacles to cross-border data flows as a priority matter.

In the 21<sup>st</sup> century, all enterprises that trade depend on the ability to move data. Every company that has an office, a customer, a supplier, or a contractor outside its home country depends on cross-border access to data. As Rentzhog (2015) points out, modern manufacturing, most goods trade, and many essential services simply cannot function without a digital component. As a corollary, there is no surer way to stop trade and handicap a national economy than to cripple data flows.<sup>1</sup>

Increasingly, “Internet” means mobile, accessed through smart devices; applications (apps); and broadband. The flourishing app economy, as well as the burgeoning Internet of Things, depends on cloud-based data aggregation and processing, involving data flows to and from data centres, wherever these may be located. The requirement for personal data to be stored in the territory of its collection (Vietnam, Brazil) is a new form of trade barrier.

We ask which obstacles to digitally enabled activities are distinctive to these activities' use of data transfers, the Internet, or software. We then examine the contribution that the WTO has made, and can make, to freeing data flows. WTO rules and institutions have provided essential support for digitally enabled investment and trade to flourish in the past decades, and they must continue to do so.

- The Information Technology Agreement (ITA) agreed in 1996 made personal computer (PC) hardware; mobile phones; and other information and communication technology (ICT) equipment duty-free in most markets; the ITA expansion agreed in 2015 added advanced technology products worth US\$1.3 trillion in trade, facilitating communication, transfer, and consumption of data and further integration of global digital value chains.
- The General Agreement on Trade in Services (GATS) Annex on Telecommunications recognises the importance of data communications to all services. It obligates governments to let service businesses transfer data — to use telecommunications networks and services to move information within and across borders and to access databases or other information stored abroad — in order to supply a service protected by a GATS commitment. The GATS concessions of the 1997 Basic Telecommunications Agreement guaranteed market access and opened markets in digital infrastructure services.
- The WTO has applied the GATS and the General Agreement on Tariffs and Trade (GATT) in disputes to facilitate some digital and digitally enabled trade. Panels and the Appellate Body have correctly understood that GATS commitments are technologically neutral —

<sup>1</sup> See examples in Lee-Makiyama (2014).

indeed, limiting rights under the GATS by tying them to the technology of the early 1990s would condemn the GATS to increasing irrelevance. Cutting off data flows amounts to a rollback of bargained-for market access under the GATS.

As we discuss, important questions remain unresolved in the WTO. Multilateral agreement in the WTO to open more markets and increase competition in services would be desirable, particularly for mobile telecommunications, mobile data, and other infrastructure services for the digital economy. Further work in the WTO to achieve better understanding of the benefits could be very constructive, particularly if it builds agreement on important issues of principle. To the extent that the WTO cannot achieve consensus on these building blocks for digital trade, governments that wish to push ahead can and will do so in plurilateral negotiations or in regional trade agreements, such as the recent TPP.

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# DIGITAL TRADE AND BARRIERS

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## EXPANDED CONSUMER AND BUSINESS CHOICE

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Cross-border digital trade and data flows open novel opportunities in four ways:

- For connected consumers, digitally enabled trade expands choice and allows them to access suppliers from all over the world, both official and unofficial — while regulators seek to apply existing policies to these transactions, including product standards and labelling, e-commerce and privacy rules, and access limits for regulated products.
- For business, digitally enabled trade lifts the constraints of the domestic/regional market, creating opportunities to sell to customers all over the world, or source inputs, products, or services from a myriad of new suppliers. A new occupation, the online trader, has emerged, focusing on small orders, rather than the bulk orders that typically dominate business-to-business (B2B) supply chains. Small and medium-sized enterprises (SMEs) producing niche products can find a critical mass of customers for their goods, services, or digital content online, mainly relying on marketplaces, such as eBay, Amazon, Etsy, or iTunes. Expanded information sets about consumers (their data) can become a more focused driver of business strategy and innovation, for instance through “big data” applications.

- The digital economy creates new scope for electronic delivery of digital files (music, film, games, books, software) directly to consumers on mobile and fixed Internet platforms, via the dematerialised cloud, supported by online sales or by new business models, such as subscription or advertising.
- Manufacturing and services production, as well as their goods and services outputs, increasingly incorporate digital functionality or depend on connectivity and data exchanges.

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## DIGITAL TRADE BY THE NUMBERS

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How large is the digital economy, and which businesses most depend on digitally enabled trade? Official surveys on the share of sales/revenues derived from e-commerce provide an answer. E-commerce-generated sales tend to be most significant for B2B interactions. Supply chains have used electronic data interchange (EDI) for decades (since the 1970s for most large businesses). The most recent (2013) data released by the United States (US) Census Bureau show the Internet-generated share of B2B shipments/sales/revenues as 57 percent for manufacturing, 26.5 percent for merchant wholesalers, and only 3.5 percent for services.<sup>2</sup> Manufacturing firms rely on e-commerce more than any others, because they have long and complex supply chains, often straddling borders, and experience using EDI to realise important efficiencies.

Businesses rely more on e-commerce in transactions with suppliers than with customers. According to the US Census Bureau, B2C online sales (US\$342 billion) in 2015 reached 7.3 percent of retail sales, including food, fuels, and sales of automotive vehicles, an increase of 14.6 percent from 2014.<sup>3</sup> This relatively low share in US retail sales contrasts with much higher shares of B2C e-commerce in retail in certain verticals (e.g., electronic products) where e-commerce is quickly overtaking brick-and-mortar retail.

The US International Trade Commission (USITC) 2014 study on *Digital Trade in the United States and Global Economies* estimated that US firms in digitally intensive industries (digitally delivered content, social media, search engines, and other digital products and services) sold US\$935.2 billion in products and services online in 2012 — roughly equivalent to 6.3 percent of US gross domestic product (GDP) — including US\$222.9 billion in exports.<sup>4</sup> About 30 percent of total online sales of products or services in 2012 (US\$296.4 billion) were delivered online, ranging from music or video downloads

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2 | US Census Bureau, <http://www.census.gov/econ/estats/e13-estats.pdf>

3 | US Census Bureau, [https://www.census.gov/retail/mrts/www/data/pdf/ec\\_current.pdf](https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf)

to online tax preparation. Over two-thirds of online sales (US\$638.8 billion) were ordered online but delivered physically or in person, including everything from ordering parts online to reserving a rental car; the remainder, consisting of bundled online sales of physical and digital products and services, was much smaller at an estimated US\$32.4 billion in 2012.<sup>5</sup> The USITC study also reports that US firms in digitally intensive industries purchased US\$471.4 billion in products and services online in 2012, including US\$106.2 billion in imports, implying a net surplus on digital trade.

The USITC report provides an excellent first survey on the significance of cross-border flows of data, goods, and services for US digitally enabled businesses (including for their own supply chains). A similar survey of evidence on digitally enabled trade within and between other markets would be highly useful as a guide for shaping policy for digitally enabled trade generally. The European Union (EU) has dismantled tariff and other barriers to goods trade and recently launched a digital single market initiative, but Eurostat data show that in 2014, just 41 percent of EU consumers had purchased online, of which 15 percent had purchased on a cross-border basis. European consumers in small countries or in linguistic areas tend to use cross-border e-commerce more than those in larger geographies. For example, in Luxembourg and the United Kingdom (UK), where 62 percent of consumers had ordered online in 2014, 65 percent of those in Luxembourg had ordered cross-border compared with just 18 percent in the UK.

One thing is sure: the opportunity for online trading, including across borders, is in the process of getting much larger with the coming explosion in the mobile Internet. Smartphone adoption will lift connectivity, even in emerging markets and other locations with a shortage of fixed-line infrastructure.

The mobile Internet is exploding and steadily increasing its share of Internet connections. According to ITU statistics, in 2015 global mobile broadband penetration reached 47 percent, with some 3.5 billion mobile broadband subscriptions and 800 million fixed-line subscriptions.<sup>6</sup> The Internet Society's Global Internet Report 2015 forecasts that mobile Internet penetration will reach at least 71 percent by 2019. Access to mobile networks has outstripped fixed networks, because mobile towers cover an entire area without any need to build out last-mile access lines, and mobile network upgrades generally pay for themselves. The report notes that in developing countries, by December 2010, mobile broadband had exceeded fixed Internet connections and by September 2014, the majority of mobile handset shipments were smartphones. As the Internet Society report states, "mobile Internet is the way the next billion are going to get online."<sup>7</sup> The figure below shows that as the number of device users increases every year, more and more of them are using smartphones equipped to access the Internet.

The development dimension of the mobile data revolution is particularly important. Many reports have noted the immense potential of the mobile Internet for improving economic

conditions for SMEs and for developing country businesses — from providing farmers with better information about market prices, to mobile access to education, training, and health services.

But the mobile data revolution depends on the cloud to aggregate, process, and manage data and to supply data back to users. The mobile data revolution is driven by fixed assets: not only mobile towers and telecommunications infrastructure, but also data centres.

The rise of the "app" economy is a case in point. By June 2014, mobile apps accounted for more than half of time spent using digital media in the US, outranking desktop or mobile browser use.<sup>8</sup> Apps have powered an economy, including revenue from app stores, app-powered services, advertising, in-app purchases, and app development. The app economy depends on access to cloud-based distributed data processing. Apps, such as Waze, Uber, YouTube, and Twitter are powered by data aggregated, stored, and processed in data centres and distributed by the mobile Internet.

An important category of Internet-based businesses do not sell goods or services as such, are supplied around the world, and are linked to revenues from online advertising (an intensive data-gathering exercise): search (Google, Bing), news and entertainment portals, Facebook, and other social media sites, YouTube, and many other services, such as free-to-play (F2P) online games. The scale of these platforms is massive: 1.4 billion users for Facebook, 83 percent of which are outside the US and Canada (but blocked in China); more than 1 billion users for Google search; and more than 1 billion YouTube users in 61 languages.<sup>9</sup>

## BARRIERS TO THE DIGITAL ECONOMY

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These businesses and Internet-based platforms for goods and services sales share some key unifying environmental factors and competitive drivers:

- Wide access to Internet and/or mobile data networks and the skills to use this technology effectively;

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4 | USITC (2014), Part 2, p. 1.

5 | USITC (2014), Part 2, p. 41.

6 | ITU (2015).

7 | Internet Society (2015), p. 30, 44, 51.

8 | *Id.*, p. 62.

9 | Holleyman (2015).

- Reliable online payment solutions for B2B and for business-to-consumer (B2C) sales (cross-border sales require either a common currency or a payments solution that provides low-cost currency exchange);
- Friction-free, low-cost delivery including cross-border;

- Trust in online commerce, such as customer-driven rules regarding truthful advertising and marketing, contractual arrangements (requiring linguistic adaptation), including the right to return a good, enforceability of contracts, and rule of law;

FIGURE 1:

Consumers ordering from sellers in another market (%)

Source: Eurostat

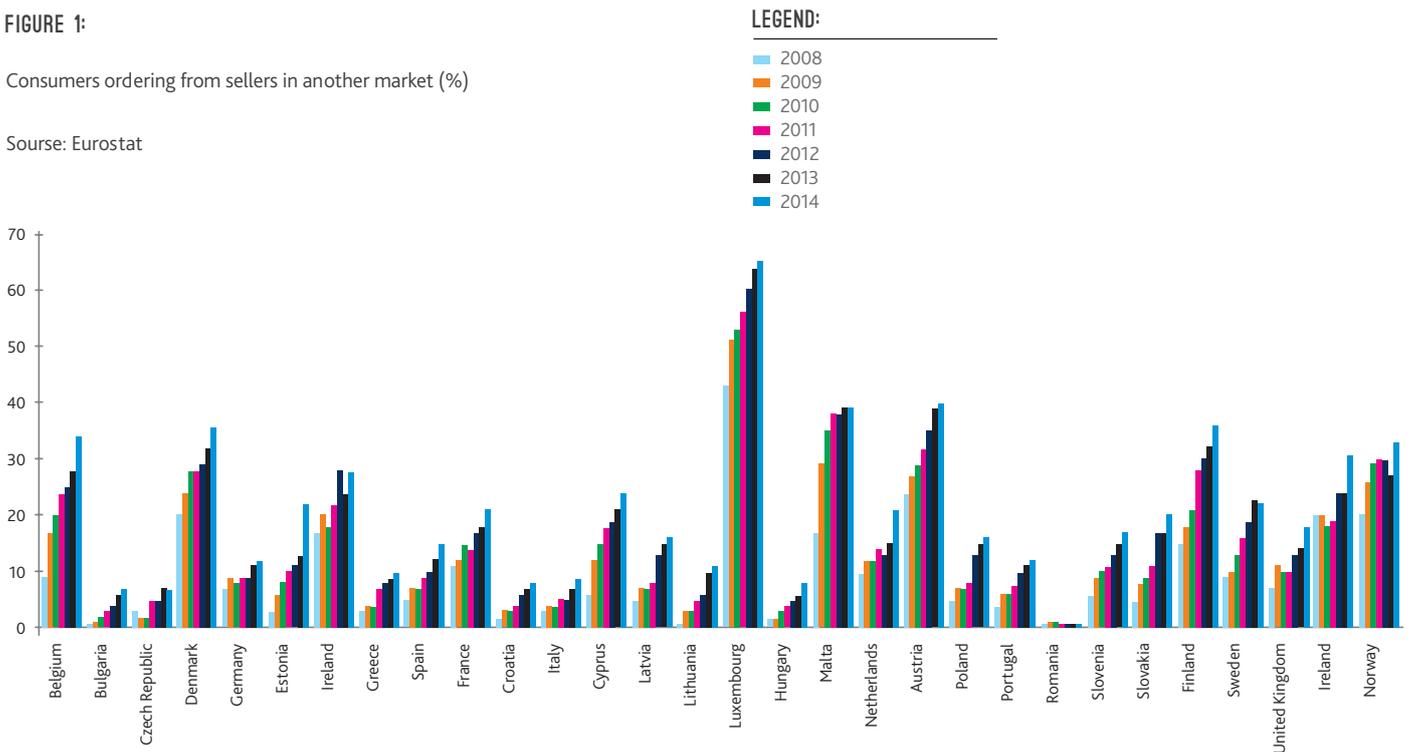
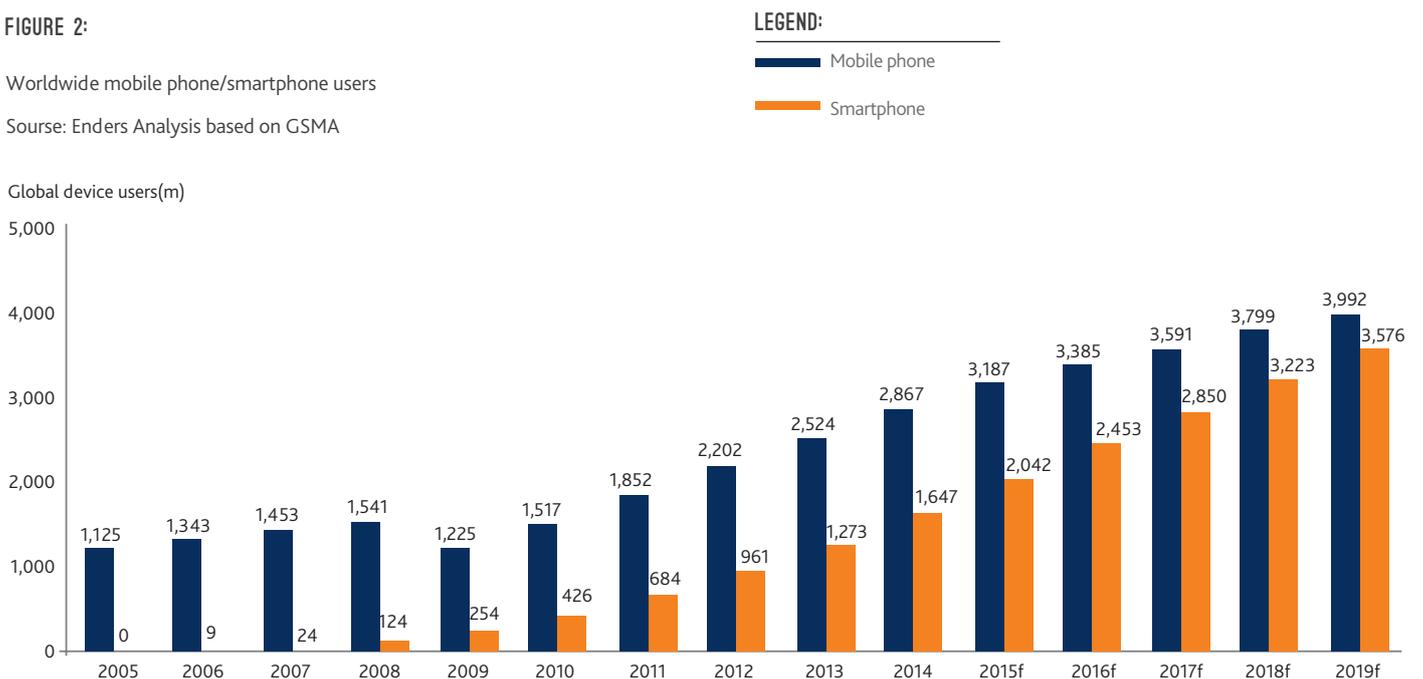


FIGURE 2:

Worldwide mobile phone/smartphone users

Source: Enders Analysis based on GSMA



- Importance of distribution platforms as a means to reach consumers — both for sales of goods (Amazon, eBay); applications; and digital content files (iTunes, Google Play, Amazon) for goods and services (e.g. search);<sup>10</sup>
- Economies of scale and first-mover effects (e.g. Amazon's large market position in online B2C sales);
- For digital content industries, the ability to monetise online sales of content by using online platforms and IP protection, as well as access to the end-customer via Internet service provider (ISP) services — content delivery networks (CDNs) and “net neutrality.”

Many of these core enablers are the subjects of multi-sectoral national policy initiatives designed to unlock the potential of the digital economy for everyone, from the senior citizen to the farmer, often encompassing infrastructure development and skills development.

Some barriers to trade are created by governments, but some arise from the operation of markets or factors, such as geography or language. As noted above, even in the EU's relatively friction-free single market for goods, cross-border ordering by customers is low, at just 15 percent of those ordering online.

The USITC survey identified the following obstacles to digital trade:

- Localisation requirements: requirements to use domestic server suppliers to host data;<sup>11</sup> domestic content requirements for government procurement contracts or subsidies; and compliance with country-specific versus international standards;
- Other market access limitations: FDI requirements; trading rights; distribution rights;
- Data privacy and protection requirements in territories for cross-border transfer of personal data for governments that have such regimes (noting the forthcoming EU-US Privacy Shield to replace Safe Harbour for EU generated personal data);
- Intellectual property rights (IPR) definition and infringement, such as for copyright, trademark, patent, or trade secret infringement;
- Uncertain legal liability rules, including for Internet intermediaries (DMCA “safe harbour”);
- Censorship (when services like Facebook are prevented from entering China); and
- Unclear or overly complicated customs procedures.<sup>12</sup>

This list may not be exhaustive and may reflect US preoccupations. Some form of stocktaking exercise for

“barriers to digital trade” might be usefully convened to explore the category and understand the underlying policy contexts more effectively.

With respect to the geographic scope of trade barriers, the USITC report notes: “Digitally intensive firms most frequently identified Nigeria, Algeria, and China as locations where they had decided not to do business because of digital trade barriers, or where they had faced barriers. By contrast, Australia, the United Kingdom, and Italy were the locations where firms least often felt that they faced barriers or that barriers precluded them from doing business.”

## WTO, THE INTERNET AND UNANSWERED QUESTIONS

### WHAT WE KNOW ABOUT HOW WTO RULES APPLY TO INTERNET-ENABLED GOODS AND SERVICES

The WTO has dealt with the Internet and digitally enabled trade in a fragmented manner. The GATT's rules on tariffs and national treatment have provided strong support for tariff reduction and elimination on ICT hardware. The GATS rules have been hobbled by fundamental limitations from the start; ambitious interpretation in the WTO's dispute settlement has pushed them far and must continue to support the growth of the digital economy.

#### Trade in goods

We know that the GATT provides a framework for tariff bindings and requires national and most-favoured nation (MFN) treatment for physically embodied goods, regardless of the platform used for the sales transaction (Internet or otherwise). GATT rules also prohibit local content requirements that balkanise markets for goods and destroy economies of scale.

<sup>10</sup> These platforms are under investigation by the European Commission's Competition Directorate. See also CEPR No. 9094, “There goes gravity: how eBay reduces trade costs”, an eBay-financed study that argues that online platforms reduce trade costs and increase cross-border trade.

<sup>11</sup> Because the Internet touches every aspect of modern life, the impact of barriers to data flows also affects competitiveness on an economy-wide scale, as pointed out by Bauer et al (2014). Their work presents estimates of the economic losses from data localisation requirements, including significant GDP losses, losses in investment and exports, and welfare losses.

<sup>12</sup> USITC (2014), Table 4.3, page 80.

Less well-known are the implied national treatment requirements on the electronic transfer of documents associated with trade in goods and used in customs clearance. Throughout most of the GATT era, the data flow most strongly associated with goods concerned document transfer for customs clearance, e.g. bills of lading. Intra-company data flows associated with goods trade, such as that generated by multinational enterprises, were never specifically a topic of negotiations on the scope of market access in goods or of dispute settlement. The nondiscrimination requirement in GATT Article III:4 applies to regulations "affecting" distribution and use of imported products. A government could block data collection or transmission for a product on a nondiscriminatory basis, but if this were done explicitly or de facto only with respect to imported products (for instance, stopping data transfer to a foreign manufacturer, but not to a domestic manufacturer) this would be an Article III violation. If a government blocked data only for foreign or foreign-owned service suppliers benefiting from a GATS national treatment commitment, the discrimination would violate GATS Article XVII.

WTO members participating in the ITA of 1996 eliminated tariffs on computers, peripherals, semiconductors, other ICT parts and components, productivity software, mobile telephones, and other building blocks of the Internet. The ITA's effects spread through the distribution chain and helped enable multi-country value chains, increased trade, and economies of scale, lower manufacturing costs and steadily declining hardware prices. The ITA enabled intensified global competition in mobile phones and the smartphones that anchor the mobile Internet. The original 17 participants of 1996 have grown to 53 today (counting the EU as one), as almost every WTO accession has included agreement to the ITA, and almost all US free-trade agreements (FTAs) require the parties to agree to the ITA. The ITA expansion agreed in July 2015 adds 201 more tariff lines accounting for US\$1.3 trillion a year in trade, including some products and components that did not exist in 1996.

### Trade in services

We also know that under the GATS, WTO members can make specific commitments that obligate them to provide particular treatment for digitally enabled services, digital infrastructure services and/or data flows essential to services. Just as a GATT tariff binding assures a manufacturer that it can make a product in one country and export it to another, GATS commitments can in theory reduce risk and stabilise conditions for investing in providing services cross-border or through commercial presence.

- A member may schedule a commitment with respect to any service, including those that are specifically Internet-enabled or Internet-related. For instance, Vietnam's accession GATS schedule included commitments on "Internet Access Services" (defined as providing Internet access to end users) and cross-border "distribution of legitimate computer software for personal and

commercial use."<sup>13</sup> Since 1997, 99 members have made commitments to liberalise basic telecommunications services, and 82 have adopted the Basic Telecom Reference Paper of regulatory principles to promote competition.

- Because negotiators recognised the key role of access to communications, they agreed on the GATS Annex on Telecommunications, which provides rights to access and use public telecommunications transport networks and services for the purpose of supplying any service that is subject to a GATS commitment. The rights provided for include the right to use such networks and services "for the movement of information within and across borders" and for access to information contained in databases or otherwise stored abroad.<sup>14</sup>
- The Understanding on Commitments in Financial Services, included in the 1994 Final Act and incorporated in some members' GATS schedules, includes a commitment that "No Member shall take measures that prevent transfers of information or the processing of financial information, including transfers of data by electronic means, . . . where such transfers of information [or] processing of financial information . . . are necessary for the conduct of the ordinary business of a financial service supplier."<sup>15</sup>
- The Services Sectoral Classification List used as a template for most GATS schedules was drafted in 1989-91<sup>16</sup> when the World Wide Web was in its infancy, but a few of the telecommunications services involved communication between computers.<sup>17</sup>

If favourable conditions exist for reaching multilateral agreement in the WTO, the WTO could develop its rules for digital services by agreement. In 1998, the WTO adopted a declaration on global electronic commerce, establishing a work programme to report to the 1999 Ministerial Conference, and adopting a policy-level moratorium stating that members would "continue their current practice of not imposing customs duties on electronic transmissions." The E-Commerce Work Programme set off with great energy and convened four

13 | WTO (2006), p. 27 and 32.

14 | GATS Annex on Telecommunications, para. 5(a) and (c).

15 | Understanding on Commitments in Financial Services, para. B.8. This concept emerged first in the "Fu Lung Group" of financial services negotiators in early fall 1990 and surfaced in the "Fu Lung paper" (MTN.TNC/W/50 of 3 December 1990), pieces of which remain in the larger GATS package of 1994.

16 | MTN.GNS/W/120, "Services Sectoral Classification List," Secretariat Note dated 10 July 1991, based on the UN Provisional Central Product Classification of 1991.

17 | Circuit-switched and packet-switched data transmission services; value-added telecommunications services (e.g. electronic mail; on-line information and data base retrieval; electronic data interchange; enhanced/value-added facsimile services including store and forward, store and retrieve; code and protocol conversion; on-line information and/or data processing (including transaction processing)); other.

subgroups that considered papers and submitted reports in July 1999 to the General Council. The General Council did not report to the Ministers, because members were split on three issues: the “classification issue” (whether digitally encoded content products are to be classified as goods or services); whether to extend the moratorium; and what WTO group should be in charge of continuing the work programme. After the Seattle Ministerial ended in failure, the WTO extended the moratorium, but the classification issue remained unresolved, and the work programme became dormant.<sup>18</sup>

Ministers have extended the “e-commerce moratorium” at each Ministerial Conference since 2001, most recently at the Nairobi Ministerial Meeting in December 2015.<sup>19</sup> Since 2005, the Ministerial decisions extending the moratorium have also endorsed continuation of the E-Commerce Work Programme and provided guidance for its direction.

In 2005-07, during a period of optimism in the Doha Round talks on services liberalisation, negotiators attempted to clarify and update the meaning of GATS commitments on Internet infrastructure services, such as computer and related services (CRS). A 2007 draft Understanding on the scope of the CRS category<sup>20</sup> clarifies that CRS includes a long list of services connected with computers, computer systems, computing, software and data processing, data storage, data hosting or database services — alone or in combination. This clarification would ensure that services, such as search, hosted software, and cloud computing would qualify for coverage under CRS, a category in which many members have made full commitments. The clarification also states that where CRS enable provision of other services, the other service (for instance online banking services) is not covered by CPC 84, regardless of whether it is enabled by a computer and related service. This provision would let a member make full commitments on CRS even if that member does not make commitments on some other, digitally enabled services, such as audio-visual services.

In 2014-2015, the E-Commerce Work Programme has held formal discussions, informal open-ended meetings and low-key discussions and workshops under the Services Council and the Committee on Trade and Development.<sup>21</sup> The discussions and workshops have provided a showcase for commercial developments in global e-trade and shown that SMEs and developing country businesses are actively using e-commerce.

The work programme has provided a good platform for moving the conversation forward in the WTO, but concrete results have been stymied by the deadlock in WTO negotiations generally. As a result, dispute settlement panels and the Appellate Body have become the decision makers on GATS- and-Internet issues. Several delegations have insisted that no new commitments or disciplines can be negotiated in the framework of the E-Commerce Work Programme.

The dispute settlement process has resolved the question of whether a GATS commitment on a conventional service would include that service when delivered electronically. The

panel in *US – Gambling*, extrapolating from the 1993 GATS Scheduling Guidelines, concluded that Mode 1 (cross-border services) under the GATS “encompasses all possible means of supplying services from the territory of one WTO Member into the territory of another WTO Member” and that a Mode 1 commitment applies to supply of services “through all means of delivery, whether by mail, telephone, Internet, etc.” unless otherwise specified in a member’s schedule. The panel cited “the principle of technological neutrality, which seems to be largely shared among WTO Members,” based on a July 1999 interim progress report of the E-Commerce Work Programme group on services.<sup>22</sup> Neither party appealed this finding.

Two later cases have confirmed this view that GATS commitments also apply to services delivered electronically. In *China – Publications and Audiovisual Products*, the panel in 2009 considered China’s 2001 GATS Mode 3 commitment on “sound recording distribution services” and found that it “extends to sound recordings distributed in non-physical form, through technologies such as the Internet.”<sup>23</sup> The panel’s finding included not just Internet-based distribution of sound recordings (e.g., sales of ringtones or songs via an online store), but also distribution via mobile telephone networks (e.g., sales through an app on a smartphone).<sup>24</sup>

On appeal, the Appellate Body agreed that “the term ‘product’ is used to refer to both tangible and intangible goods, as well as services”<sup>25</sup> and that “sound recording distribution services” refers to content in both physical and non-physical form. It went on to find generally that if a member includes a commitment on a sector or subsector in its GATS Schedule, it undertakes to liberalise the production, distribution, marketing, sale, and delivery of that service; thus, in the

18 Wunsch-Vincent (2005), p. 9-11.

19 Ministerial Decision on Work Programme on Electronic Commerce, WT/MIN(15)42, WT/L/977: text at [https://www.wto.org/english/thewto\\_e/minist\\_e/mc10\\_e/l977\\_e.htm](https://www.wto.org/english/thewto_e/minist_e/mc10_e/l977_e.htm).

20 TN/S/W/60, “Understanding on the scope of coverage of CPC 84 – Computer and Related Services”, circulated 26 January 2007; sponsored by Albania, Australia, Canada, Chile, Colombia, Costa Rica, Croatia, EU, Hong Kong, Israel, Japan, Mexico, Norway, Peru, Singapore, Taiwan, Turkey, and US.

21 Workshop on E-Commerce, 17-18 June 2013: audio and presentations available at [https://www.wto.org/english/tratop\\_e/serv\\_e/wkshop\\_june13\\_e/wkshop\\_june13\\_e.htm](https://www.wto.org/english/tratop_e/serv_e/wkshop_june13_e/wkshop_june13_e.htm). Workshop on E-Commerce, Development and Small and Medium-sized Enterprises (SMEs). 8-9 April 2013: audio and presentations available at [https://www.wto.org/english/tratop\\_e/devel\\_e/wkshop\\_apr13\\_e/wkshop\\_apr13\\_e.htm](https://www.wto.org/english/tratop_e/devel_e/wkshop_apr13_e/wkshop_apr13_e.htm).

22 Panel Report, *US – Gambling*, para. 6.285 (citing a statement in WTO (1999): “It was also the general view that the GATS is technologically neutral in the sense that it does not contain any provisions that distinguish between the different technological means through which a services may be supplied.”)

23 Panel Report, *China – Publications and Audiovisual Services*, para. 7.1265.

24 *Id.*, para. 7.1152; scope issue noted in Appellate Body Report, *China – Publications and Audiovisual Services*, fn. 629.

25 *Id.*, para. 364.

absence of specific limitations, conditions or qualifications, the meaning of "sound recording distribution services" encompasses distribution in electronic form.<sup>26</sup>

China also argued that the reading of "sound recording distribution services" had to be based on its meaning as of China's accession in 2001. If accepted, this argument would have eliminated application of GATS commitments to any new service. The Appellate Body rejected it, finding that "distribution" applied to both tangible and intangible products in 2001 or in 2009; the terms used were "sufficiently generic that what they apply to may change over time"; and China's approach would mean that the same commitment would have a different meaning for members that acceded at different times.<sup>27</sup> China finally argued that it could not have made a commitment on electronic distribution of sound recordings, because this business did not exist as a commercial reality in 2001. The panel disagreed with China on the facts;<sup>28</sup> the panel also observed that even if a government did not currently permit provision of a service under its own law, the government could still make commitments to liberalise that service in the future, and China had in fact done so for a number of services.<sup>29</sup> The Appellate Body upheld the panel. Through these interpretations, in effect all WTO members' GATS commitments on a service also include that service delivered electronically, even if electronic delivery did not exist in 1994 or whenever the commitment was made.

As noted above, the GATS Telecommunications Annex requires each member to ensure that service suppliers of any other member are accorded access to and use of "public telecommunications transport networks and services" for the purpose of supplying any service that is subject to a GATS commitment. Since GATS commitments include services delivered electronically, this right to network access must include access to networks that make electronic delivery possible (that is, access to the Internet or to the mobile Internet) and Internet access to move information within and across borders and to access information anywhere. As the panel in *Mexico – Telecoms* found, the scope of the Annex includes "all measures that affect access to or use of public telecommunications transport networks and services with regard to all services, including basic telecommunications services."<sup>30</sup>

In the *China – Electronic Payments* case of 2012, the panel interpreted a commitment on "[a]ll payment and money transmission services, including credit, charge and debit cards, travellers cheques, and bankers draft (including import and export settlement)." The issue was not whether this commitment included some services delivered online, but the scope of the online services included. The panel found that "'payment and money transmission services' include those services that "'manage', 'facilitate', or 'enable' the act of paying or transmitting money...The term 'all' manifests an intention to cover comprehensively the entire spectrum of payment and money transmission services".<sup>31</sup> Furthermore, "[a]ll payment and money transmission services' refers to those services that are essential to the processing and

completion of transactions using payment cards".<sup>32</sup> By extension, a commitment on "all" of an offline service should also include not just its digitally delivered counterpart, but also the entire complex of services that make it possible to provide the service offline or online, including data flows. There is no surer method of shutting down a service business than cutting off its access to data or essential electronic support services.

As more commerce in goods and services becomes Internet-enabled, and the online link becomes essential to all trade, there will be more WTO disputes featuring online businesses or access to the Internet. Panels and the Appellate Body must continue to interpret WTO obligations in a manner that recognises the essential nature of online business.

## QUESTIONS LEFT OPEN TO DATE

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### Classification of intangibles

Before the E-commerce Work Programme ground to a halt in 1999-2000, there was a lively discussion of whether digital content that is not fixed on carrier media should be classified as a good or as a service. Those supporting a goods classification pointed to the GATT rights and obligations, including national treatment, supporting trade in books, cinema film, software, and CD/DVD music and videos. They asked why the act of digitisation should make these rights disappear. Others supported classification of this trade as a service — for instance to support the EU value-added tax (VAT) on electronic deliveries, which could have violated GATT Article III in some scenarios if e-books were classified as goods; or to support the right to maintain domestic cultural protection laws that restrict the shelf space available to non-domestic cultural products. It is difficult to understand why governments that provide duty-free treatment to cultural products in physical form or on recorded physical media should be unwilling to provide duty-free treatment to the same content delivered electronically, and vice versa.

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26 | *Id.*, para. 377.

27 | *Id.*, paras. 395-397

28 | Panel Report, paras. 7.1240-7.1247. Among other things, the US had provided a copy of a 2000 joint-venture agreement between a Houston Internet company and China's Ministry of Culture to set up a website to distribute music online in China. *Id.*, para. 7.1240.

29 | *Id.*, para. 7.1245.

30 | Panel Report, *Mexico – Telecoms*, para. 7.278.

31 | Panel Report, *China – Electronic Payment Services*, para. 7.100.

32 | *Id.*, para. 7.111.

The arguments regarding classification of intangibles have long since subsided into stalemate. Governments have stopped investing in discussing them in the WTO. The panel on *China – Publications and Audiovisual Products* also left these issues open; it declined to rule on GATT claims regarding regulatory discrimination against imported music CDs and e-publications, and avoided ruling on the nature or legal status of recorded digital content.<sup>33</sup>

A related question is the issue of whether a website transaction (for instance, online banking) is to be classified as cross-border trade under Mode 1 or as supply abroad under Mode 2. A Secretariat note from the 1997 financial services talks<sup>34</sup> explains that the agreed scheduling guidelines of 1993 defined modes of supply on the basis of the origin of the service supplier and consumer, and where the supplier and consumer are when the service is delivered. When online banking services can be delivered anywhere in the world by logging into a browser, it becomes impossible for governments to predict in advance which modes they will need to take into account when negotiating commitments. This question too is more trouble to resolve than it is worth. The Secretariat note suggests a practical answer: to ensure that commitments cover both Modes 1 and 2. That should be enough.

### GATS and the positive list

The GATS was born as a positive-list agreement, in which no service is covered unless it has been listed by name in a member's schedule. The GATS positive-list architecture can create problems for any service (digitally delivered or not) that now exists but was not explicitly named in the Provisional Central Product Classification (CPC). Must the exporter of such a service persuade the governments of its customers that it is encompassed in the Provisional CPC categories of 1991? Fortunately, the panel and Appellate Body in *China – Publications* agreed that GATS commitments are not tied to the technology that existed as of the date those commitments were made.

Should the WTO members then update all of their schedules to reflect the services of today? An update of this sort would be neither feasible nor desirable. Unlike the regulation of trade in goods, where mechanisms exist to update tariff schedules to take new technology into account,<sup>35</sup> GATS procedures for renegotiating commitments are so unwieldy as to be almost unusable. Even launching an update process would be problematic, because a request to enlarge the scope of a commitment implies that the enlargement is necessary — and that the services that would be added in the enlargement are not currently covered. Negative-list approaches do not necessarily imply anything about current GATS rights and obligations. For this and other reasons, they are a much more practical and practicable path to trade liberalisation in services.

## NEXT STEPS FOR DIGITAL TRADE?

As the WTO continues to grapple with the fate of the Doha Round, trade in IT hardware, digitally enabled services and digital content products continues to move ahead. Digital and services companies and industries have not lost their interest in increasing output and trade or their interest in reducing trade risk by expanding trade agreements. Governments have responded to their digital sectors through negotiations on ITA expansion; through free-trade agreements including the recently agreed TPP; and through negotiations on the plurilateral TiSA.

### ITA

On 24 July 2015, the participants in the ITA expansion talks agreed on adding 201 tariff lines to the ITA duty elimination package. These products power digitally enabled businesses; the 2015 product list includes products invented since 1996 and many products used to produce, transmit, or consume digital content, such as touch screens, sound equipment, telecommunications satellites, video game hardware, all digital cameras, all software, and all recorded or unrecorded media (all of the 6-digit subheadings within HS 8523). At the Nairobi Ministerial Meeting in December 2015, the ITA expansion participants adopted a Ministerial Declaration on the Expansion of Trade in Information Technology Products, and agreed on timetables for staging duty elimination, beginning on 1 July 2016.<sup>36</sup>

33 Panel Report, *China – Publications and Audiovisual Services*, para. 7.1641-7.1651.

34 WTO (1997).

35 When new technology arises (for instance the digital camera), the World Customs Organization (WCO) Harmonized System Committee meets and agrees on tariff nomenclature updates, and agrees to reclassify when a good's tariff classification no longer matches its technology. WTO members then align their tariff schedules with these WCO updates, renegotiate concessions under GATT Article XXVIII, and compensate trading partners for any GATT tariff concessions impaired as a result of the update. Even so, this process is plagued by backlogs that leave GATT tariff schedules chronically out of date. See G/MA/63, Current Situation of Schedules of WTO Members, periodically updated (text at [https://www.wto.org/english/tratop\\_e/schedules\\_e/goods\\_schedules\\_table\\_e.htm](https://www.wto.org/english/tratop_e/schedules_e/goods_schedules_table_e.htm)). The table shows how many members have not completed the process of modifying their GATT schedules to implement the HS96, HS 2002, HS 2007 and/or HS 2012.

36 WT/MIN(15)/25, Ministerial Declaration on the Expansion of Trade in Information Technology Products, adopted 16 December 2015.

## TPP

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The negotiations on the TPP closed on 5 October 2015, and the parties signed the final text of the agreement on 4 February 2016 in New Zealand. The TPP Agreement is the first major trade agreement in which the negotiators have made it a key priority to facilitate the operation of a digital economy that stretches across borders, through commitments regarding data flows, digital trade, and e-commerce.

- Chapter 14 on e-commerce requires TPP governments to allow service suppliers or investors of a party, or their investments, to transfer data cross-border in the course of business — and to allow them to do business without using or locating computing facilities in its territory.<sup>37</sup> These provisions cover not just IT and cloud businesses, but also manufacturing businesses and service businesses.<sup>38</sup> TPP governments retain the right to restrict data transfers for a legitimate public policy objective, such as data privacy, but only if the restrictions are no greater than required to achieve the objective and are not applied in a manner that discriminates or is protectionist. TPP governments will also be required to adopt or maintain a framework providing for protection of users' personal information.
- Digital products (software, e-books, audio, video, video games, or other digitally encoded content) will be permanently duty-free if transmitted online. TPP governments have agreed not to discriminate against digital products of any other party, except under agreed reservations to the agreement (for instance, for domestic cultural policies); the nondiscrimination commitment does not apply to broadcasting.
- The TPP's commitments on trade in services were negotiated on a negative-list basis: Chapter 10 on cross-border services and Chapter 9 on investment set out ambitious commitments to national treatment and market access as a benchmark. These are subject to written non-conforming measures (NCMs) agreed by all parties, which accommodate existing inconsistent laws or desired policy space. Outside those NCMs, the agreement provides certainty about the future, because new services will otherwise be automatically open to service business of other TPP parties.
- Chapter 10 on cross-border services generally allows TPP service businesses to market and supply services in any other TPP party without being required to establish a local presence. This provision reduces paperwork and trade costs that can be a severe barrier to SMEs.
- Chapter 14 on e-commerce provides explicitly that the TPP market access coverage for any service also covers that service when delivered or performed electronically.

For example, TPP commitments on value-added telecom services will also cover cloud-based e-mail; commitments on banking services will also cover online banking. Any exceptions to services coverage will also apply to coverage of the same services delivered online.

- In chapter 13 on telecommunications services, the TPP parties agree to ensure that their major public telecommunications service suppliers provide interconnection, leased circuit services, co-location (or virtual co-location), and access to facilities under reasonable terms and conditions and in a timely manner; customers must be allowed to use operating protocols of their choice. The governments also agree that their telecom regulations will not generally discriminate against specific technologies, and agree to work cooperatively to promote competition in international mobile roaming. The chapter includes and improves upon the text of the WTO Basic Telecom Reference Paper.
- Chapter 9 on investment includes provisions prohibiting performance requirements such as local content requirements, requirements to use local technology, or forced technology transfer.
- Chapter 8 on technical barriers to trade includes a limited provision barring TPP parties from requiring makers or suppliers of goods that use encryption for commercial applications (such as routers) to transfer or disclose proprietary encryption technology, production processes, or other information (keys) to government or a domestic partner, or to partner with a domestic partner, or to use a particular type of encryption, as a condition of being able to make, import, sell, distribute or use these goods. A separate provision prohibits any party from banning imports of commercial cryptographic goods (goods that implement or incorporate cryptography, sold to the general public).<sup>39</sup>
- The e-commerce chapter also bars a party from requiring transfer of, or access to, source code of mass-market software owned by a person of another TPP party, as a condition for the import, distribution, sale, or use of such software or products containing it.

The TPP will not enter into force until 2017 at the earliest, and perhaps later, but these provisions already set a high

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<sup>37</sup> Malaysia and Vietnam will have a two-year transition period for dispute settlement concerning the data flows commitment, and Vietnam will have a two-year transition period concerning the computing facilities commitment.

<sup>38</sup> Chapter 11 on financial services provides financial institutions and cross-border financial service suppliers with a parallel right to transfer data, but it omits protection against unreasonable data localisation requirements.

<sup>39</sup> These obligations are limited because they do not apply to encryption in services, and are subject to exceptions for government use of encryption, financial services, duly authorized law enforcement, or national security.

benchmark for other trade agreements, including the TiSA and the TTIP.

## TISA

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The TiSA negotiations were launched in 2013, after years of stalemate in multilateral services trade negotiations. The plurilateral framework of the TiSA was designed to facilitate the forward movement that had been lacking in the WTO. As of 2016, the 23 participants in the TiSA negotiations (including the EU-28) represent two-thirds of global GDP and 70 percent of global services trade. All of them are participants in regional trade agreements with a services component; the TiSA can generalize among the group the market access achieved in the regional trade agreements (RTAs) of each.

The TiSA's architecture addresses some of the structural flaws of the GATS. The participants have agreed to negotiate and schedule commitments for national treatment on a negative-list basis — so that each TiSA participant must provide national treatment for all services and service suppliers of the other participants, subject to reservations for NCMs provided in its schedule. TiSA participants will be able to make positive-list “market access” commitments (to limit or refrain from quantitative limitations on services of the sort listed in GATS Article XVI), but the national treatment requirement will apply even to sectors not subject to any market access commitment.<sup>40</sup> Some parties have proposed that whenever any TiSA party enters into an additional FTA in the future, it must automatically extend benefits under that FTA to any TiSA Party (“MFN-forward”). Others disagree with this goal.<sup>41</sup>

A negative-list negotiation requires a serious engagement by a negotiating government. The first time that a government does such an agreement, it must determine which of its many laws and regulations might conflict with national treatment or other commitments opening a market to foreign investment and cross-border services trade. It must then determine which NCMs to keep and which to eliminate, or eliminate over time; and where it must reserve policy space for existing or future policies that conflict with the agreement. This effort should make it possible to open the market to the possibilities created by competition in new services.

Unfortunately, the EU's first negative-list agreement, the Comprehensive Economic and Trade Agreement (CETA) with Canada, includes an Understanding on “new services that cannot be classified in the CPC 1991”, which excludes them from CETA's disciplines on national treatment, market access, and MFN treatment for cross-border services, as well as the CETA chapter on regulatory transparency.<sup>42</sup> The EU and Canada have separately endorsed a statement that the 1991 CPC category of computer and related services embraces cloud-based services, but this CETA exclusion creates

uncertainty for entrepreneurs at the leading edge and the new services they invent. The final outcome for TiSA should provide maximum mutual market access for the services sustaining the digital economy, without exclusions for new services.<sup>43</sup>

TiSA participants are also discussing rulemaking through sectoral annexes. As of early 2016, these include annexes on telecommunications, e-commerce, localisation (including local presence, local content, and local technology), financial services, and others. The texts being discussed reportedly include proposals that financial service suppliers be guaranteed the right to move data across borders in the ordinary course of business, and that all service suppliers be guaranteed the right to move data.<sup>44</sup> The negotiators have agreed on a work programme for 2016 notionally targeting agreement on the overall text by September and exchanges of revised market access offers in May and October, but concluding the talks in 2016 will be a challenge.

## TTIP?

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Negotiations on a Transatlantic Trade and Investment Partnership (TTIP) between the EU and the US began at the same time as negotiations on TiSA, but they have faced a far bumpier ride. Negotiations have been slowed by controversies over investor-state dispute settlement and other issues where one side's minimum demand exceeds the other side's maximum. As 2016 began, US Trade Representative Michael Froman optimistically argued for conclusion of the negotiations by the end of 2016; EU Commissioner Cecilia Malmström then stated to the press that the EU would not conclude a “TTIP light” — for the overall agreement to conclude in 2016, the end-game phase had to begin by the summer, and difficult issues would need to be resolved before that could happen.<sup>45</sup>

The EU's proposal on services and e-commerce, as released in July 2015, is unambitious; it leaves out almost all of the TPP digital economy provisions listed above and includes a reservation for “new services” as in the TiSA.<sup>46</sup> Meanwhile, in the area of data privacy, in *Schrems v. Data Protection Commissioner* the European Court of Justice invalidated the Commission Decision that the EU-US Safe Harbour Framework

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40 | Inside US Trade (2013).

41 | Inside US Trade (2015).

42 | CETA (2016).

43 | EU (2013), p. 33.

44 | Inside US Trade (2014b).

45 | Inside US Trade (11 March 2016).

46 | EU (2015), p. 47.

for transfers of EU personal data by US companies provided adequate data protection under EU laws. EU and US data protection negotiators accelerated their ongoing work on replacing Safe Harbour, and agreed in February 2016 on a new Privacy Shield that imposes increased data privacy-related obligations on US companies and their vendors.<sup>47</sup> By 2018, current data protection regulations in the 28 EU member states will be replaced by the EU's General Data Protection Regulation (GDPR), due to be adopted in April 2016. The aim is to strengthen protection of the personal data of EU Internet users in a key area of concern to them, and create a level playing field for all companies operating in the EU, albeit at the cost of new onerous compliance requirements. It is hoped that the new harmonised regime will on the whole lay the foundations of a more successful Internet economy in the EU, thus advancing the objective of the Single Market.

Business groups on both sides of the Atlantic have cautioned that in the TTIP negotiations, substance needs to trump timing. Will a rush for a deal result in leaving out the elements that would contribute much of TTIP's economic value, and cement a low-ambition mini-deal that is hard to build on later? If so, the TTIP could go down in history as a missed opportunity with results as politically unsalable in Washington as the Doha Round.

The TPP includes digital trade rules, because all businesses today are digitally enabled and depend on data flows. But practically speaking, there will be no EU-US agreement on rules to guarantee free movement of data unless and until trust issues are resolved through a solution to data privacy. Privacy Shield has not yet achieved approval within the EU and must then survive another challenge in the ECJ. We cannot know now what TTIP will provide for the digital economy of the twenty-first century.

## RECOMMENDATIONS

Access to data flows has become essential in all modern economies. Data flows knit together all global value chains in manufacturing and services. Everywhere in the world, Internet access is becoming predominantly a matter of mobile access to the Internet via smart devices — connected to data flows, databases, digital content, and cloud-based services supplied by networked data centres.

How can the trading system help the development and growth of the digital economy? The actions taken at Nairobi by the WTO to extend the e-commerce moratorium and by the ITA participants to adopt the ITA expansion package are immensely hopeful signals for the organisation as a whole. The WTO needs to support growth of the global digital economy to stay relevant to this essential source of economic growth.

In a world where all companies are digitally enabled, all trade depends on data flows and facilitating data flows becomes a key element of the WTO's mission.

What remains to be done? The ITA expansion needs to be implemented smoothly and on time; as advances in technology create new products, the WCO, the WTO, and the ITA participants should work together so that these innovations benefit from ITA duty elimination. The major non-ITA economies, such as Brazil, Chile, Mexico, and South Africa should facilitate their own connectivity by joining the original and expanded ITA.

WTO case law has brought the GATS into the 21st century — recognising the following key principles:

- A GATS commitment on a service in any mode includes electronic delivery of the service, and includes that service when delivered electronically, even if electronic delivery did not exist when a GATS commitment was made; and this electronic delivery applies to online access through any means (including via the mobile Internet). Members do not need to negotiate additional commitments to cover the online component of a service — indeed, if they did so, they would implicitly admit that online access is not already covered.
- A commitment on “all” of any service includes the entire complex of services that make it possible to provide the service offline or online, including freedom to transfer data within or across borders. (This commitment is subject to GATS exceptions including for data privacy, of course.)

As a corollary, the rights provided in the GATS Annex on Telecommunications to access and use of “public telecommunications transport networks and services” include access to networks that make electronic delivery possible (that is, access to the Internet or to the mobile Internet) and Internet access to move information within and across borders and to access information anywhere. Members should provide the most liberal trade treatment for electronically delivered goods and services, including treatment for electronic content that is no less favourable than the treatment accorded to the same content in physical packages.

The WTO's E-Commerce Work Programme has been extremely useful during the years since its revival in 2005. It has provided a platform to discuss advancing digital technologies and business models, and how they create opportunity for all WTO members— providing a path for SMEs in remote or least-developed economies to connect to global markets. In 1998-2000, the Work Programme was the scene for wrangling over non-resolvable conflicts on abstract issues of principle. The past 10 years of work have helped governments see the benefits to be had by looking beyond abstractions.

<sup>47</sup> See Maldoff (2016) and other coverage of Privacy Shield at <https://iapp.org/tag/trans-border-data-flow>.

Should the WTO launch negotiations on digital trade? Members might justifiably be cautious about framing requests that duplicate rights existing under WTO jurisprudence, since such requests could imply that such rights do not exist unless affirmed by the membership. Members that bargained over the Doha Round launch in 2001 may also be reluctant to pay again. They might also take the lesson from the E-Commerce Work Programme that returning to the arguments of 1998-2000 would not be helpful or fruitful.

The WTO or other trade institutions can help build collective knowledge through a stocktaking exercise on barriers to digital trade, to explore the types of measures used, their policy contexts, and their impact on growth and trade of digital businesses. The WTO already conducts Trade Policy Reviews (TPRs) of its members, including their measures affecting trade in goods and services. Starting immediately, TPRs could and should discuss measures that affect trade by restricting data flows. TPRs are by definition not legally binding and do not affect members' rights and obligations. As such, they provide an excellent forum for exploring the increasing connection between data flows and trade.

The WTO should eventually make the e-commerce moratorium binding. At a minimum, the TPP and TiSA agreements should incorporate binding agreement to a permanent moratorium on duties on electronic transmissions. The TiSA will provide a key opportunity to update the GATS by agreement between its members. The TiSA can and should include meaningful, binding commitments not to restrict cross-border trade flows for protectionist reasons and not to impose localisation requirements of any sort on any services, including requirements to localise data or to locate servers in-country. Where legitimate policy objectives such as data privacy require restrictions on data flows, they should be nondiscriminatory and transparent and governments should commit to take the least restrictive means to accomplish the legitimate policy objective in question.

The TiSA can go far to fill in the many gaps in GATS commitments for basic and value-added telecommunications, CRS, e-payments, and other infrastructure services essential for the digital economy. The agreement text should eliminate any doubt that TiSA commitments also cover electronically delivered services, and that access to the Internet (including the mobile Internet) is included as part of any TiSA commitment. *A priori* exclusion of new services must be rejected or coupled with clarifications that prevent any interference with digital services.

All of these suggestions are only steps on the path to the future. While some issues in the 2015 trade agenda have hardly changed in the last 80 years, digital trade issues are different; the digital trade issues of 2030 or 2040 are sure to include unknowns that are likely to be a complete surprise. Ambition, enterprise, imagination, and flexibility in embracing digital trade liberalisation are a debt we owe to our successors, to equip them to meet the challenges to come.

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