



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

Doctoral Thesis

**Digital Trade Liberalization in the
Analogue Trading Regime:
Three Essays on Digital Trade**

**아날로그 체제 하의 디지털무역 자유화:
디지털무역에 관한 세 가지 연구**

by

Dongchul Kwak

**A thesis submitted in conformity with the requirements
for the degree of Doctor of Philosophy (Ph. D.)**

**Graduate School of International Studies
Seoul National University**

August 2019

국제학박사학위논문

**Digital Trade Liberalization in the
Analogue Trading Regime:
Three Essays on Digital Trade**

아날로그 체제 하의 디지털무역 자유화:
디지털무역에 관한 세 가지 연구

2019년 8월

서울대학교 국제대학원

국제학과 국제통상전공

곽 동 철

**Digital Trade Liberalization in the Analogue Trading Regime:
Three Essays on Digital Trade**

아날로그 체제 하의 디지털무역 자유화:
디지털무역에 관한 세 가지 연구

지도교수 안 덕 근

이 논문을 국제학박사 학위논문으로 제출함
2019년 5월

서울대학교 국제대학원 국제학과
곽 동 철

곽동철의 국제학박사학위논문을 인준함
2019년 6월

위 원 장 이 영 섭



부 위 원 장 이 재 민



위 원 박 태 호



위 원 이 한 영



위 원 안 덕 근



THESIS ACCEPTANCE CERTIFICATE

The undersigned, appointed by


**The Graduate School of International Studies
Seoul National University**

Have examined a thesis entitled

**Digital Trade Liberalization in the Analogue Trading Regime:
Three Essays on Digital Trade**

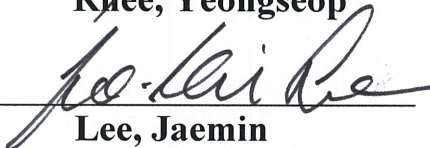
Presented by **Dongchul Kwak**, candidate for the degree of Doctoral of Philosophy in International Studies and hereby certify that it is worthy of acceptance:

Committee Chair




Rhee, Yeongseop

Committee Vice Chair



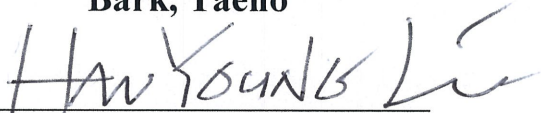
Lee, Jaemin

Committee Member



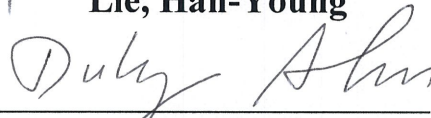
Bark, Taeho

Committee Member



Lie, Han-Young

Thesis Advisor



Ahn, Dukgeun

Dated: June 2019

ABSTRACT

Digital Trade Liberalization in the Analogue Trading Regime: Three Essays on Digital Trade

Digital technologies have transformed the pattern of international trade into digital one. This thesis defines digital trade as cross-border transactions of goods and services through electronic means including cross-border data flows. Against this backdrop, it aims at finding ways to accommodate digital trade liberalization under the current world trading regime led by the World Trade Organization (WTO).

To begin with, it is paramount to establish the principle of technological neutrality in order to render cross-border trade in digital services subject to a rules-based international regulatory framework. Several outstanding digital trade issues in the WTO Work Programme on Electronic Commerce may be addressed by the principle. For instance, it becomes clear that GATS rules are applicable to services delivered online. Moreover, it plays a pivotal role in determining likeness between conventional services and electronically-delivered services, which is crucial for non-discrimination analysis. Last but not least, the principle provides for an important theoretical ground to interpret GATS schedules in a flexible manner as technology advances.

The issue of technological neutrality was raised both in *US – Gambling* and *China – Audiovisuals*. Yet panels and the Appellate Body avoided their rulings on the issue. It was attributed to the fact that consensus was not reached among WTO Members over the principle and the matter at issue was sensitive cultural products. However, it is of great importance to firmly establish the principle of technological neutrality to secure

predictability and legal certainty under the world trading regime. In this light, this thesis proposes ways to incorporate the principle of technological neutrality into the multilateral regulatory framework at the bilateral, plurilateral, and multilateral levels.

The seamless transfer of data across borders is indispensable for digital trade liberalization. Nonetheless, restrictive measures on cross-border data flows (CBDF) are rising around the world, hampering trade in digital services. This thesis also examines this issue from legal and economic perspectives.

Domestic restrictions on CBDF can be categorized into: horizontal and sectoral approaches by the scope of regulation; location-based and risk-based approaches by the conditions of regulation. The econometric analysis using the gravity model and Digital Trade Restrictiveness Index (DTRI) as a main variable shows that restrictions on CBDF not only serve as digital trade barriers but also impede technological innovation, discouraging the exports of services. Moreover, services trade flows are limited between trading partners with heterogeneous data policies. It necessitates an internationally agreed regulatory framework for data flows.

Issues relevant to CBDF should be addressed in the WTO, the most unique multilateral institution governing international trade affairs. This thesis proposes several suggestions to facilitate the free movement and usage of data: scheduling horizontal commitments allowing CBDF; adopting a data-differentiated approach; establishing minimum standards for personal data protection; and elaborating the language of “legitimate public policy objectives.”

It is the audiovisual service sector that is undergoing significant changes due to the development of computer technology and information communication technology. The distinction between computer and related services, telecommunication services, and audiovisual services, which are rather clear in the GATS classification scheme, has

increasingly blurred due to technological convergence. Although the cross-border transaction of over-the-top (OTT) video streaming services through digital networks are rapidly growing, the old GATS classification scheme produces more confusion. Different views between the European Union (EU) and the United States (US) on market opening for audiovisual services have led to a clash over the OTT video streaming sector. This thesis examines the negotiation strategies of the two powerhouses with respect to OTT video streaming services and draws lessons for Korea.

The EU takes a negotiation strategy to strictly distinguish broadcasting from telecommunication services or computer and related services and to carve out audiovisual services from trade talks in the name of *exception culturelle*. In the meantime, the EU imposes content quotas on all types of OTT video streaming services. It is conceivable that, during services negotiations, the EU is to classify OTT video streaming services as audiovisual services, taking the sector off the negotiation table. On the other hand, the US has been an ardent supporter of trade liberalization in audiovisual services. It is found that the US tries to break down audiovisual services into ‘content production’ and ‘transmission’ components, then pursuing a great extent of liberalization in a transmission-related aspect of audiovisual services. Furthermore, it came up with new categories of ‘information services’ and ‘other communication services,’ which possibly include OTT video streaming services at the Doh Round. Recent US domestic media governance reforms separate non-linear services from linear services to take a *laissez-faire* approach toward non-linear OTT video streaming services. It is envisaged that the US is to take a negotiation strategy of separating OTT video streaming services from audiovisual services, requesting full commitments to a negotiating counterpart.

Korean trade negotiators and media policymakers should be aware of these differences in negotiation strategies of the EU and the US to respond properly. On top of that, trade

policies with respect to the cultural industry must be led in the direction of effectively promoting the competitiveness of Korean cultural industries.

There is a mounting concern on digital trade-restrictive measures around the globe as the size of digital trade and economic repercussion are growing. Thus the importance of an international regulatory framework governing digital trade is getting highlighted. The rules and disciplines of the WTO established in the analogue age, however, are not perfectly suitable for digital trade liberalization. The WTO has launched, in a right time, plurilateral negotiations on trade-related aspects of electronic commerce to deal with digital trade-relevant issues. We hope this thesis contribute to reinforcing the predictability and legal certainty in the world trading regime with regard to digital trade by helping interpret traditional trade rules in a flexible way and make up any deficiency.

Keywords: Digital Trade, electronic commerce, world trading regime, technological neutrality, cross-border data flows, OTT video streaming services

Student Number: 2015-30703

TABLE OF CONTENTS

Chapter I Introduction	1
1. Motivation and Scope	1
2. Methodology and Structure	4
Chapter II Technological Neutrality as a Bridge between the Analogue Trading Regime and Digital Trade	6
1. Introduction.....	6
2. Overview of the GATS.....	10
2.1. Scope of the GATS.....	10
2.2. Mode of Supply.....	12
2.3. General Obligations: Most-Favoured-Nation and Transparency	13
2.4. Specific Commitments: Market Access and National Treatment	13
2.5. Schedules of Commitments for Market Access and National Treatment	15
3. Overview of Technological Neutrality in the World Trading Regime.....	16
3.1. Definition of Technological Neutrality.....	16
3.2. Historical Development of Technological Neutrality	19
4. Technological Neutrality, Digital Trade, and the GATS	23
4.1. Applicability of GATS Rules to the Delivery of Services by Electronic Means.....	24

4.1.1. Growing Consensus among WTO Members	25
4.1.2. WTO Jurisprudence	29
4.2. Determination of Likeness in the Era of Digital Trade.....	33
4.2.1. Non-Discrimination and Likeness in the GATS	34
4.2.2. Likeness of Services in the Digital Age.....	37
4.2.3. The Principle of Technological Neutrality in Determining Likeness in the Digital Era	40
4.2.4. WTO Jurisprudence	43
4.3. Evolutionary Interpretation of the GATS Schedules of Commitments... 46	
4.3.1. General Rule of Treaty Interpretation in WTO Dispute Settlement... 47	
4.3.2. Evolutionary Interpretation and the Principle of Technological Neutrality	49
4.3.3. WTO Jurisprudence	52
4.4. Why Would the WTO Adjudicators Maintain Strategic Neutrality on Technological Neutrality?	54
5. A Way Forward to Embracing the Principle of Technological Neutrality in the World Trading System.....	56
5.1. At the Bilateral and Regional Level	56
5.2. At the Plurilateral Level	60
5.3. At the Multilateral Level	63
6. Concluding Remarks	64

Chapter III Cross-Border Data Flows and Trade Agreements	72
1. Introduction.....	72
2. Understanding of the Restrictive Measures on Cross-Border Data Flows	75
2.1. Definition of Notion.....	75
2.2. Data Policies at a Glance.....	76
2.3. Case Studies	80
2.3.1. Horizontal and Risk-Based Approach (Type I).....	80
2.3.2. Horizontal and Location-Based Approach (Type II).....	85
2.3.3. Sectoral and Location-Based Approach (Type III)	87
2.3.4. Sectoral and Risk-Based Approach (Type IV).....	93
3. Empirical Study on the Impact of Regulatory Policies on Cross-Border Data Flows on Trade in Services.....	94
3.1. Introduction.....	94
3.2. Conceptual Framework	96
3.3. Estimating Methodology and Data Description	98
3.3.1. Model Specification.....	98
3.3.2. Data Description.....	102
3.4. Estimation Results and Discussion.....	105
4. The Role of Trade Agreements in Eliminating Barriers to Cross-Border Data Flows	109

4.1.	Historical Development of International Rules on Cross-Border Data Flows.....	110
4.2.	WTO Rules Are Comprehensive, Substantial, Flexible and Effective .	114
4.2.1.	Comprehensive Membership and Subjects.....	115
4.2.2.	Substantial Rules for Trade Liberalization	116
4.2.3.	Flexible Application in Exceptional Circumstances	117
4.2.4.	Effective Dispute Settlement	118
4.3.	Relevant WTO Rules on Cross-Border Data Flows and Challenges to the WTO	119
4.3.1.	General Obligations and Disciplines, and Specific Commitments of the GATS	120
4.3.2.	Annex on Telecommunications.....	123
4.3.3.	General Exceptions and National Security Exceptions.....	124
4.3.4.	Challenges Facing the Brick-and-Mortar WTO in the Era of a Data-Driven Economy	127
4.4.	Emerging Rules on Cross-Border Data Flows in Regional Trade Agreements	129
4.4.1.	Allowing the Cross-Border Free Flows of Information	130
4.4.2.	Banning Data Localization Requirements	133
4.4.3.	Utilizing Government Data	135
5.	Suggestions to Upcoming WTO Negotiations on Trade-Related Aspects of	

Electronic Commerce	137
5.1. Scheduling Horizontal Commitments Allowing Cross-Border Data Flows	138
5.2. Adopting a Data-Differentiated Approach.....	139
5.3. Establishing Minimum Standards for Personal Data Protection.....	141
5.4. Elaborating the Language of “Legitimate Public Policy Objectives”...	143
6. Concluding Remarks	146
Chapter IV Over-the-Top Video Streaming Services and Trade Negotiations	152
1. Introduction.....	152
2. Stock-taking of the “Linear” or “Non-Linear” “Over-the-Top” Video “Streaming” Services	155
3. Over-the-Top Video Streaming Services in the GATS Context.....	159
3.1. Computer and Related Services	160
3.1.1. Classification Scheme	160
3.1.2. GATS Commitments	162
3.2. Telecommunication services	163
3.2.1. Classification Scheme	164
3.2.2. GATS Commitments	166
3.3. Audiovisual Services.....	170
3.3.1. Classification Scheme	171

3.3.2. GATS Commitments	172
4. EU and US Approaches to Over-the-Top Video Streaming Services at the Trade Negotiation Fora	173
4.1. EU Approach.....	174
4.1.1. At the International Level.....	174
4.1.2. At the Domestic Level.....	180
4.2. US Approach.....	184
4.2.1. At the International Level.....	184
4.2.2. At the Domestic Level.....	194
4.3. Preliminary Conclusion.....	196
5. Implications for Korea in the Trade Policy Context	199
6. Concluding Remarks	203
Chapter V Conclusions	228
BIBLIOGRAPHY	233

LIST OF FIGURES

Figure I-1 Scope of electronic commerce and digital trade	4
Figure II-1 Technological neutrality and likeness in <i>US – Gambling</i>	44
Figure II-2 Number of RTAs by the type of provisions on technological neutrality	57
Figure II-3 Number of RTAs by area where technological neutrality applies	58
Figure III-1 Historical global IP traffic (exabytes/month).....	73
Figure III-2 Number of data localization measures globally.....	74
Figure III-3 Analytical tool to comprehend global data regimes.....	77
Figure III-4 Channels through which restrictions on data flows affects trade in services	97
Figure IV-1 Video-on-demand ecosystem by type of providers	156
Figure IV-2 Number of commitments in “Telecommunication Services” by sub-sector.....	167
Figure IV-3 Changes in the EU legal framework concerning OTT video services	183
Figure IV-4 USFCC’s categorization of providers of video programming	196

LIST OF TABLES

Table II-1 Criteria of the mode of supply	12
Table III-1 Selective measures under the horizontal and risk-based approach.....	84
Table III-2 Selective measures under the horizontal and location-based approach	87
Table III-3 Selective measures under the sectoral and location-based approach.....	92
Table III-4 Selective measures under the sectoral and risk-based approach.....	93
Table III-5 Descriptive statistics for the dataset	104
Table III-6 Breakdown of “Computer and Related Services” in W/120.....	122
Table III-7 Comparison of CBDF provisions in major US RTAs.....	132
Table III-8 Comparison of data localization requirement provisions in major US RTAs .	135
Table III-9 Comparison of government data provisions in major RTAs.....	137
Table III-10 Model schedule : Horizontal commitments permitting CBDF	139
Table III-11 Comparison of personal information protection provisions in major RTAs .	143
Table IV-1 Breakdown of “Computer and Related Services” in W/120	161
Table IV-2 GATS Commitments on “Computer and related Services” by selective WTO Members.....	162
Table IV-3 Breakdown of “Telecommunication Services” in W/120	165
Table IV-4 GATS Commitments on “Telecommunication Services” by selective WTO Members.....	169
Table IV-5 Breakdown of “Audiovisual Services” in W/120	171
Table IV-6 GATS commitments on “Audiovisual Services” by selective WTO	

Members 173

Table IV-7 Classification of “Computer and Related Services” in US services
schedules 184

Table IV-8 Comparison of the classification of “Telecommunication Services” in US
services schedules 188

Table IV-9 Comparison of the classification of “Audiovisual Services” in US services
schedules 193

LIST OF ANNEXES

Annex II-1 GATS schedule of the Republic of Korea	65
Annex II-2 List of GATS-related issues discussed under the WTO Work Program on E-Commerce	66
Annex II-3 WTO Cases Concerning the GATS	68
Annex II-4 Articles I and III of the GATT 1994	69
Annex II-5 Articles II and XVII of the GATS	70
Annex II-6 Articles 31 and 32 of the VCLT	71
Annex III-1 Effects of restrictions on data on services trade flows	148
Annex III-2 Effects of the heterogeneity of data regimes on services trade flows	150
Annex IV-1 Breakdown of “Computer and Related Services” in the Provisional CPC	205
Annex IV-2 Breakdown of “Telecommunication Services” in the Provisional CPC	207
Annex IV-3 Breakdown of “Audiovisual Services” in the Provisional CPC	210
Annex IV-4 Annex on Article II Exemptions in regard to audiovisual services of selective WTO Members.....	212
Annex IV-5 EU understanding on the scope of coverage of CPC 84.....	214
Annex IV-6 Example of a schedule in the telecommunications sector proposed by the EU with the new approach of scheduling commitments.....	215
Annex IV-7 EU Schedules of Commitments for “Telecommunications Services” in the draft consolidated GATS schedule	217
Annex IV-8 List of audiovisual and audiovisual related service activities proposed by the	

United States	219
Annex IV-9 Korea’s reservation on digital audio or video services in KORUS	221
Annex IV-10 Subclasses of on-line content services in CPC 2.1	222
Annex IV-11 EU reservations on broadcast transmission services in Canada-EU CETA.	225
Annex IV-12 EU reservations for future measures on broadcast transmission services in EU-Japan EPA.....	226
Annex IV-13 Classification of broadcasting services and operators in a Korea’s draft Bill on Comprehensive Broadcasting.....	227

Chapter I Introduction

1. Motivation and Scope

Digital technologies have transformed and will continue to transform what we trade, whom we trade with, when we trade, and how we trade. Products which used to be internationally traded in a physical medium now are transmitted across borders in less than a second over online network. In addition, innovative digital services delivered by electronic means serve as an intermediate to boost productivity performance of the downstream industries and spur economic growth.

As digital transformations have power to change comparative advantages and the conventional patterns of trade¹, a large number of economies in the globe tend to erect barriers in borderless cyberspace for a wide range of reasons: governments might want to keep their societal values from being overwhelmed by foreign cultural content, which can be readily provided by electronic means; some governments might consider it safer to retain their citizens' personal data or national security-related information within their jurisdiction; or others might implement protectionist digital trade policies curbing the imports of foreign digital services or the exports of domestically generated data to protect their domestic IT industries.

Concerted efforts are being made at the international level to reap the most benefits of digital trade and preserve public policy objectives likely to be affected by the liberalization of data-driven trade.² Among other international fora and instruments, we

¹ WTO, *World Trade Report 2018 – The Future of World Trade: How Digital Technologies Are Transforming Global Commerce* (Geneva, Switzerland: WTO Publications, 2018), 80, 99-101.

² To just name a few of active international fora for data-driven trade: the Group of 20 (hereinafter G20); the Organization of Economic Co-operation and Development (hereinafter OECD); the Asian Pacific Economic Cooperation (hereinafter APEC); bilateral regulatory cooperation between governmental agencies such as the EU-U.S. Privacy Shield. See, for more background

believe that the WTO multilateral trading regime are the most relevant venues to discuss digital trade liberalization and international trade agreements are the most appropriate tool to achieve it. As rules and disciplines of the brick-and-mortar WTO regulatory framework have been established almost thirty years ago when the Internet was in its infancy, however, it is also undeniably true that they are not perfectly suitable to address contemporary digital trade issues.

Against this backdrop, this study intends to bridge the gap between the digital economic reality and the analogue trading regime lagging far behind it. Rather than disrupting the current WTO multilateral trading system to deal with digital trade issues, we attempt to accomplish digital trade liberalization within the framework of the current global trading governance. So far, research on digital trade in the context of international trade law still is in its early stage. This study is expected to contribute to the existing literature by providing theoretical and empirical evidence of digital trade liberalization under the WTO regulatory framework.

The terminology should be clarified before we address the so-called “digital trade” issues. There is no agreed definition on digital trade. The term electronic commerce or e-commerce has been more frequently used than digital trade at the international forum. Ever since the launch of the WTO Work Programme on Electronic Commerce³, for instance, the WTO has officially adopted the term electronic commerce to describe the unprecedented economic activities of “the production, distribution, marketing, sale or

information on these international efforts in a non-binding manner, Rachel Fefer, Wayne Morrison, and Shayerah Ilias Akhtar, “Digital Trade and U.S. Trade Policy,” *Congress Research Service Report R44565* (2019), 36-38.

³ The General Council was instructed to establish a comprehensive work program to examine all trade-related issues relating to global electronic commerce at the Geneva Ministerial Conference held in May 1998. See WTO, *The Geneva Ministerial Declaration on Global Electronic Commerce*, WT/MIN(98)/DEC/2, 25 May 1998.

delivery of goods and services by electronic means.”⁴ On the other hand, US governmental agencies and delegates prefer the term “digital trade” in order to broaden the coverage of issues subjected to the rules and regulations of digital trade. They define digital trade as “international trade in products and services delivered via the Internet”⁵ or “all trade-related aspects of commerce by electronic means – including all elements of the WTO definition of “electronic commerce””⁶ along with the free movement of data. In this study, digital trade is understood as broadly as possible to mean cross-border commercial transactions of goods and services by electronic means including cross-border data flows but excluding commerce in goods ordered online and delivered in physical form. The different scope of conventional electronic commerce, electronic commerce under the WTO, and digital trade in this study is illustrated in **Figure I-1**.

As digital trade encompasses varying aspects of international trade ranging from goods trade, services trade, trade-related aspects of intellectual property rights (hereinafter IPRs), investment, and advanced digital technologies, hereby we narrow down our scope of research to include cross-border data flows as well as services-related aspects of digital trade.⁷ The subjects of our interest (ICT-enabled services, new digital services, and cross-border data flows) are highlighted in **Figure I-1**.

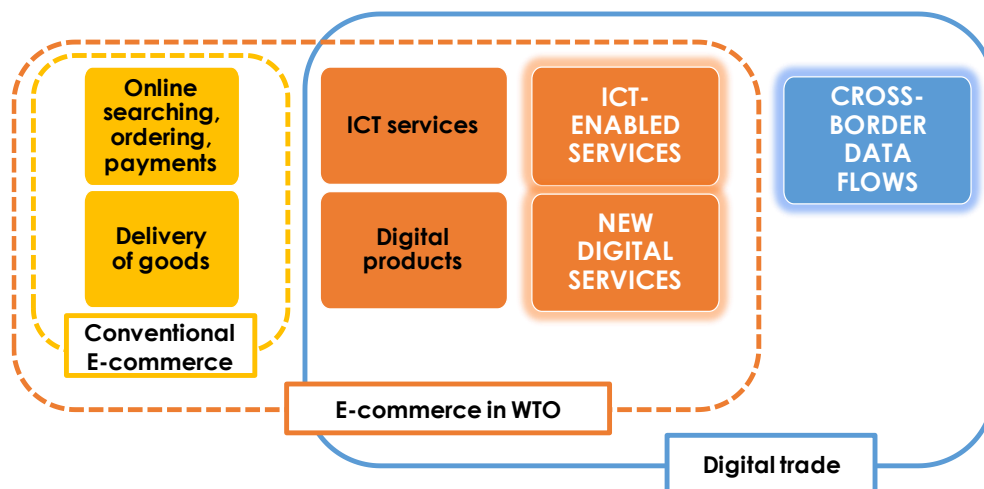
⁴ WTO, *Work Programme on Electronic Commerce – Adopted by the General Council on 25 September 1998*, WT/L/274, 30 September 1998, para. 1.3.

⁵ USITC, *Digital Trade in the U.S. and Global Economies, Part 1*, Publication No. 4415 (2013), 1-2.

⁶ GC, *Joint Statement on Electronic Commerce Initiative – Communication from the United States*, JOB/GC/178, 12 April 2018, footnote 1.

⁷ It does not mean that other digital trade issues are of less importance in the digital age. In particular, the role of IPRs in the context of digital trade is becoming ever more critical as marginal cost of production is almost zero in the digital economy. See, for the importance of IPRs to facilitate digital trade, Rachel Fefer, Shayerah Ilias Aktar and Wayne Morrison, “Digital Trade and U.S. Trade Policy,” *Congress Research Service Report R44565* (2017), 15-18; Fefer et al., “Digital Trade and U.S. Trade Policy (2019),” 15-17; Sacha Wunsch-Vincent and Arno Hold, “Towards Coherent Rules for Digital Trade: Building on Efforts in Multilateral Versus Preferential Trade Negotiations,” in *Trade Governance in the Digital Age*, eds. Mira Burri and Thomas Cottier

Figure I-1 Scope of electronic commerce and digital trade



Source: Illustrated by author.

Note: Information and Communications Technology (hereinafter ICT) services include “activities that are intended to enable and/or fulfill the function of information processing and communication.” ICT-enabled services are defined as those “services that are delivered remotely over ICT networks.” See UNCTAD, *International Trade in ICT Services and ICT-Enabled Services – Proposal Indicators from the Partnership on Measuring ICT for Development*, UNCTAD Technical Notes on ICT for Development, TN/UNCTAD/ICT4D/03 (2015), 3.

2. Methodology and Structure

This study primarily relies on legal analysis on the legal text of trade agreements including services schedules and WTO case laws. When necessary, the creation and development of trade rules and principles are put in historical perspective. The study alternatively counts on econometric analysis in order to find empirical evidence of the effects of domestic data policies on services trade flows. One may also find that comparative legal analysis is useful in understanding the differences in regulatory frameworks concerning digital trade at the domestic and international level.

(Cambridge, U.K.: Cambridge University Press, 2012), 211-215.

To sum up, the influence of digital technologies on international trade should not be limited to either legal or economic aspects alone: thus, in examining digital trade and analogue trading regime relationship, this study is heavily indebted to interdisciplinary method.

This thesis mainly consists of three essays. Following the introduction in Chapter 1, Chapter 2 singles out the principle of technological neutrality as an essential principle to bridge the gap between digital economic reality and brick-and-mortar global trading system. It sheds light on the critical role of the principle of technological neutrality and puts forward some suggestions for the WTO multilateral trading regime to embrace the principle. In Chapter 3, we address the issue of cross-border data flows, which is a fundamental condition for digital trade to take place in the data-driven economy. Empirical study is carried out to show why the free movement of data is prerequisite for digital trade liberalization. The role of trade agreement in ensuring seamless data flows is followed. In Chapter 4, we compare negotiation strategies of the European Union (hereinafter EU) and the United States (hereinafter US) toward market opening for over-the-top (hereinafter OTT) video streaming services under the WTO/GATS regulatory framework. Implications are drawn for Korean policymakers in the context of trade policy and domestic media governance. Chapter 5 summarizes the main findings of the study and concludes.

Chapter II Technological Neutrality as a Bridge between the Analogue Trading Regime and Digital Trade

1. Introduction

The advent of the Internet and subsequent swift development of digital technologies is posing a big challenge to the decades-old WTO legal framework. The WTO multilateral trading system, particularly the General Agreement on Trade in Services (hereinafter GATS), has no directly applicable rulebook to cope with digital trade barriers, which in turn has greatly increased legal uncertainty in cross-border services trade by electronic means. It is mainly due to the fact that the WTO/GATS legal framework was created when the Internet was in its infancy: very few people were aware of the Internet in the late 1980s and the early 1990s and not many trade negotiators expected digital technologies to completely transform the landscape of international trade. Furthermore, subsequent multilateral trade negotiations have been moving too slowly to catch up with technological development significantly affecting international trade. The WTO/GATS regulatory framework, a unique multilateral trading regime in the world, eventually has been left incompetent to make itself relevant to digital trade.

Against this backdrop, in this chapter we revisit the principle of technological neutrality, a fundamental principle making cross-border service supply by electronic means subject to the rules-based trading regime. The principle of technological neutrality is understood as the presumption that trade rules should apply equally regardless of the method of supply, be it electronic means or traditional means for cross-border services

trade.⁸ Many trade law scholars, commentators, tech firms and interest groups accept the principle of technological neutrality and insist further that the WTO should incorporate the principle to make rules and regulations of the WTO matter in the age of digital trade.⁹ Mattoo and Schuknecht, for instance, point out the paramount importance of confirming the technological neutrality principle in the WTO regulatory framework, referring to it as the “single most important step needed to ensure that the rules of the [WTO] agreement apply to e-commerce.”¹⁰ The WTO, in its World Trade Report published in 2018,

⁸ See the following literature for a similar definition on the principle of technological neutrality: Christian Pauletto, “Comment: Digital Trade: Technology versus Legislators,” in *GATS and the Regulation of International Trade in Services*, eds. Marion Panizzon, Nicole Pohl and Pierre Sauvé (Cambridge, U.K.: Cambridge University Press, 2008), 531; Anupam Chander, *The Electronic Silk Road: How the Web Binds the World Together in Commerce* (New Haven: Yale University Press, 2013), 143; Jia-Xiang Hu, “When Trade Encounters Technology,” in *Science and Technology in International Economic Law – Balancing Competing Interests*, eds. Bryan Mercurio and Kuei-Jung Ni (London, U.K.: Routledge, 2014), 75; Ruosi Zhang, “Covered or Not Covered: That Is the Question – Services Classification and Its Implications for Specific Commitments under the GATS,” *WTO Working Paper ERSD-2015-11*, 2015, 9.

⁹ See David Luff, “Telecommunications and Audio-Visual Services: Considerations for a Convergence Policy at the World Trade Organization Level,” *Journal of World Trade* 38, no. 6 (2004), 1075, 1081; Google, “Enabling Trade in the Era of Information Technologies: Breaking Down Barriers to the Free Flow of Information,” accessed July 1, 2019, https://static.googleusercontent.com/media/www.google.com/ko//googleblogs/pdfs/trade_free_flow_of_information.pdf, 18; Panagiotis Delimatsis, “Protecting Public Morals in a Digital Age: Revisiting the WTO Rulings on *US – Gambling* and *China – Publications and Audiovisual Products*,” *Journal of International Economic Law* 14, no. 2 (2011), 274; Brian Bieron and Usman Ahmed, “Regulating E-Commerce Through International Policy: Understanding the International Trade Law Issues of E-Commerce,” *Journal of World Trade* 46, no. 3 (2012), 559; William J. Drake, “Background Paper for the Workshop on Data Localization and Barriers to Transborder Data Flows,” *World Economic Forum* (2016), accessed July 1, 2019, 14, http://www3.weforum.org/docs/Background_Paper_Forum_workshop%2009.2016.pdf; Mira Burri, “The Regulation of Data Flows Through Trade Agreements,” *Georgetown Journal of International Law* 48, no. 2 (2017), 411; Mira Burri, “The Governance of Data and Data Flows in Trade Agreements: the Pitfalls of Legal Adaptation,” *UC Davis Law Review* 51, no. 1 (2017), 93; Peter Cowhey and Jonathan Aronson, *Digital DNA: Disruption and the Challenges for Global Governance* (New York: Oxford University Press, 2017), 243.

¹⁰ Aaditya Mattoo and Ludger Schuknecht, “Trade Policies for Electronic Commerce,” *World Bank Policy Research Working Paper*, no. 2380 (2000), 15. There are also opposing views that it is too early to confirm the principle of technological neutrality as a general principle of the WTO. See, for this view, Hu, “When Trade Encounters Technology,” 83; Pierre Larouche, “Dealing with Convergence at the International Level,” in *The WTO and Global Convergence in*

meticulously describes the role of technological neutrality under the WTO legal framework:

[A]lthough new technologies are making the provision of services across borders both easier and more common, the mechanism or method by which such services are provided should not have an impact on their treatment under WTO law. This provides meaningful *predictability* and *stability*. It means that, although the constantly changing digital environment means that services are continually constantly being provided in new and innovative ways, their provision continues to be governed by the framework of rules and commitments made by members upon their entry into WTO. [Italic added]¹¹

This view is also shared by, if not all, many WTO Members.¹²

Although there is a growing trend of acknowledging the principle of technological neutrality by not only academic pundits but many WTO Members, the WTO adjudicating bodies still maintain neutral stance with respect to the principle. They have made rulings on a couple of WTO cases with respect to digital trade, without confirming it in an explicit fashion. We hereby consider the WTO adjudicatory bodies strategically neutral on the technological neutrality principle and insist that they should shift their stance on technological neutrality in no time. Trade agreements may also play a pivotal role in

Telecommunications and Audio-Visual Services, eds. Damien Geradin and David Luff (Cambridge, U.K.: Cambridge University Press, 2004), 413-414.

¹¹ WTO, *World Trade Report 2018*, 170.

¹² See CTS, *Work Programme on Electronic Commerce – Interim Report to the General Council*, S/C/8, 31 March 1999; CTS, *Work Programme on Electronic Commerce – Progress Report to the General Council*, S/L/74, 19 July 1999.

ensuring WTO Members' existing commitments in the GATS schedules in the digital trade age by incorporating the notion of technological neutrality.

We argue that the principle of technological neutrality matters in three-fold under the international trade law: the applicability of GATS regulations or rules to the delivery of service by electronic means; likeness between services provided via different transmission technologies in the context of non-discrimination principle; the interpretation of the scope of specific commitments in the GATS schedules. Such outstanding legal issues are in urgent needing to be settled down before any serious digital trade-related conflict takes place. The notion of technological neutrality may help countries abide by WTO/GATS rules in a more certain and consistent manner when the countries implement domestic measures possibly affecting cross-border electronic supply of services. Moreover, it can also be a clear guideline for the WTO adjudicating bodies to interpret the WTO Agreements, in particular the GATS, in a more digital trade-friendly way.

Thus in this chapter we lay the groundwork to help WTO Members to embrace the notion of technological neutrality as a ubiquitous principle under the current world trading system. We take a close look at the historical development of the notion at the international level and the arguments supporting its adoption into the WTO/GATS framework. We also explore the principle of technological neutrality in WTO jurisprudence and propose a way forward to establish it within the WTO multilateral regulatory framework.

2. Overview of the GATS

2.1. Scope of the GATS

The GATS came into being in 1995 along with the WTO as a result of long and tedious Uruguay Round negotiations. Since a substantial portion of digital trade is taking place in the service sector, it is necessary to review the basic principles and main features of the GATS.

Article I:1 of the GATS sets out four elements for a measure to fall within the coverage of the agreement¹³: (i) services, (ii) transboundary trade, (iii) measures by Members, and (iv) affecting trade.¹⁴ To begin with, the GATS does not define what a service is. In the context of the GATS, instead, services are defined as broadly as possible but excluding some services provided in the exercise of governmental authority.¹⁵ Now that there are neither definitions on services nor requirements to be validated as services, virtually any economic or business activities may be regarded as services unless they are supplied in the exercise of governmental authority. Thus, it is fair to say that the GATS has a very broad coverage.

Second, rules inscribed in the GATS do not concern services purchased and supplied within the national territory. Trade in services should be, in nature, transboundary, thus involving an international dimension for the GATS to have substantive jurisdiction.¹⁶ Yet identifying an international dimension in services trade is not as easy as it sounds. In

¹³ Article I:1 of the GATS reads: “This Agreement applies to measures by Members affecting trade in services.”

¹⁴ Diana Zacharias, “Article I GATS,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 37.

¹⁵ Article I:3 (c) of the GATS defines a service supplied in the exercise of governmental authority as “any service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers.”

¹⁶ Zacharias, “Article I GATS,” 44.

goods trade, it is rather unambiguous and simple to verify the international dimension of transactions: it is attributed to an origin. However, due to its very nature of intangibility, the transaction of a service cannot be differentiated by an origin. As an alternative, the GATS adopts four modes of supply in which a service delivery is regarded as a transaction between two different economic entities from different countries.¹⁷

Third, a measure by a WTO Member must exist. Measures taken not only by central or local governments but non-governmental bodies under certain conditions are regarded as “measures by Members.”¹⁸ The definition of “measure” is provided in Article XXVIII of the GATS¹⁹, but measure hereby must be interpreted as broadly as possible to include “any barrier to trade in services.”²⁰

Lastly, any measure by Members that does not affect trade in services does not fall within the scope of the GATS. The coverage of measures affecting trade is so broad that, regardless of whether they are final, direct, *de jure* restrictions on trade in services, the GATS is applicable to these measures if at least some effect on trade in services is found.²¹ The Appellate Body also confirms the broad scope of application of the GATS in *EC – Bananas III* concerning the question of whether the GATS is applicable in a case where import licensing procedures – *i.e.*, a measure regulating trade in goods – have direct negative effects on trade in wholesale services or distribution services.²²

¹⁷ Zacharias, “Article I GATS,” 44.

¹⁸ Article I:3 (a) of the GATS.

¹⁹ Pursuant to Article XXVIII (a) of the GATS, measure means any measure by a Member, whether in the form of a law, regulation, rule, procedure, decision, administrative action, or any other form.

²⁰ Zacharias, “Article I GATS,” 44.

²¹ *Ibid.*, 45.

²² Appellate Body Report, *EC – Bananas III*, para. 220.

2.2. Mode of Supply

As mentioned above, there is no concrete definition of service in the GATS. Trade in services is only defined as the supply of services in four different modes. Any services trade takes place in one of the following modes: Mode 1 (cross-border supply); Mode 2 (consumption abroad); Mode 3 (commercial presence); Mode 4 (presence of natural persons).²³ The modes are essentially defined on the basis of the origin of a service provider and user, and the degree and the type of territorial presence which they have at the moment when the service is supplied.²⁴ **Table II-1** depicts the basis of criteria in determining the mode of supply. One should be cautious that delivery technology is not taken into consideration when determining the mode of a specific service transaction. Understanding the mode of supply is of importance not only for comprehending the international transactions of services but also for interpreting the schedules of commitments with regard to market access and national treatment.

Table II-1 Criteria of the mode of supply

Supplier Presence	Other Criteria	Mode
Service supplier <u>not present</u> within the territory of the Member	Service delivered <u>within</u> the territory of the Member, from the territory of another Member	Cross-border supply (Mode 1)
	Service delivered <u>outside</u> the territory of the Member, in the territory of another Member, to a service consumer of the Member	Consumption abroad (Mode 2)
Service supplier <u>present</u> within the territory of the Member	Service delivered within the territory of the Member, through the commercial presence of the supplier	Commercial presence (Mode 3)
	Service delivered within the territory of the Member, with supplier present as a <u>natural</u> person	Presence of natural persons (Mode 4)

Source: WTO, W/L/92, 9.

²³ Article I:2 (a) – (d) of the GATS.

²⁴ WTO, *Guidelines for the Scheduling of Specific Commitments under the General Agreement on Trade in Service (GATS) – Adopted by the Council for Trade in Services on 23 March 2001*, S/L/92, 28 March 2001, para. 26.

2.3. General Obligations: Most-Favoured-Nation and Transparency

General obligations and disciplines are found in Part II of the GATS. Two representative general obligations are most-favoured-nation (hereinafter MFN) treatment obligation in Article II and transparency obligation in Article III of the GATS.

Similar to the GATT, “treatment no less favorable” should be accorded “immediately and unconditionally” to like services and service suppliers of any other Member.²⁵ As the MFN treatment is a general obligation, it applies to across all service sectors irrespective of specific commitments made by each Member. In addition, transparency is essential to facilitate trade in general. It is apparent for trade in services as it is more susceptible to the beyond-the-border measures or non-tariff-barriers (hereinafter NTBs) than trade in goods.²⁶ Thus the GATS Article III in Part II renders transparency a general obligation which WTO Members must abide by. However, the transparency provision of the GATS does not specify the substance of a domestic measure but deals with the publication and administration of laws.²⁷

2.4. Specific Commitments: Market Access and National Treatment

While general obligations of the GATS apply to all services trade, market access and national treatment obligations are applicable on a positive-list basis. When acceding to the WTO, countries are required to list specific service sectors to open to international competition and schedule commitments with respect to each service sector and mode of

²⁵ Article II:1 of the GATS. See, for discussion on MFN principle in the GATT/WTO, Peter Van den Bossche and Werner Zdouc, *The Law and Policy of the World Trade Organization: Text, Cases, and Materials*, 3rd ed. (New York: Cambridge University Press, 2013), 315-347.

²⁶ Panagiotis Delimatsis, “Article III GATS,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 93.

²⁷ Delimatsis, “Article III GATS”, 96.

supply.²⁸ Specific commitments such as market access and national treatment obligations apply only to these committed sectors.

In sectors where market access commitments are undertaken, a WTO Member cannot maintain quantitative restrictions on foreign services or service suppliers, unless specified otherwise in its schedule. In particular, a WTO Member may not limit (i) the number of service suppliers; (ii) the total value of service transactions or assets; (iii) the total number of service operations or the total quantity of service output; (iv) the total number of natural persons providing a service; (v) the type of legal entity or joint venture; and (vi) the participation of foreign capital.²⁹

As to the national treatment obligation, Article XVII of the GATS obligates WTO Members to accord treatment no less favorable to foreign services and service suppliers than they accord to their domestic like services and service suppliers.³⁰ Unlike its counterpart in the GATT 1994, that is, Article III, Article XVII of the GATS allows an individual WTO Member to impose discriminatory measures against foreign services or service suppliers in sectors which are not scheduled. Moreover, the national treatment provision of the GATS explicitly adopts the notion of “conditions of competition,” which has been acknowledged only by GATT jurisprudence³¹, as the benchmark for the interpretation of less favorable treatment.³² *De facto* discrimination as well as *de jure* discrimination can be found in breach of the national treatment obligation of the GATS.³³

²⁸ Nicolas F. Diebold, *Non-Discrimination in International Trade in Services – ‘Likeness’ in WTO/GATS* (Cambridge, U.K.: Cambridge University Press, 2010), 29.

²⁹ Article XVI:2 of the GATS.

³⁰ Article XVII:1 of the GATS.

³¹ For instance, refer to Appellate Body Report, *Korea – Beef*, para. 137: “Whether or not imported products are treated “less favourably” than like domestic products should be assessed instead by examining whether a measure modifies the *conditions of competition* in the relevant market to the detriment of imported products. [Italic original]”

³² Diebold, *Non-Discrimination in International Trade in Services*, 33.

³³ Article XVII:3 of the GATS reads: “*Formally identical or formally different treatment* shall be considered to be less favourable if it modifies the *conditions of competition* in favour of services

Therefore, a measure, which does not discriminate services and service suppliers on the basis of their origin, may be found in violation of national treatment obligation if it modifies the conditions of competition in favor of domestic services and services suppliers. It should be taken with caution that inherent disadvantage resulting from the foreign character such as language difficulties or geographical distance should not be considered as *de facto* discrimination.³⁴ WTO case laws have already prohibited *de facto* discrimination in terms of non-discrimination principle in the GATS as well as in GATT.³⁵

2.5. Schedules of Commitments for Market Access and National Treatment

During the Uruguay Round, drafters of the GATS decided to adopt a new scheduling system for flexible and progressive trade liberalization in services. Members were allowed, to their own discretion, to select which sectors and which modes of supply they intended to abide by the obligations of market access and national treatment. Of course, specific commitments of individual Member are negotiable with trading partners who have interests to make inroads into the foreign service markets on a request-offer basis. GATS schedule consists of, on the one hand, horizontal commitments and limitations, which apply to all scheduled services sectors and all four modes of supply, and, on the other, sector-specific commitments and limitations with respect to each mode of supply.³⁶

or service suppliers of the Member compared to like services or service suppliers of any other Member.[*Italic added*]"

³⁴ Footnote 10 to Article XVII: 1 of the GATS. The footnote stipulates: “[s]pecific commitments assumed under this Article shall not be construed to require any Member to compensate for any *inherent competitive disadvantages* which result from the foreign character of the relevant services or service suppliers. [*Italic added*]"

³⁵ See, for instance, Appellate Body Report, *EC – Bananas III*, paras. 232-233.

³⁶ See Group of Negotiations on Services, *Scheduling of Initial Commitments in Trade in Services: Explanatory Note*, MTN.GNS/W/164, 3 September 1993 and WTO, S/L/92. A part of GATS schedule of the Republic of Korea is reproduced in **Annex II-1** for reference.

3. Overview of Technological Neutrality in the World Trading Regime

3.1. Definition of Technological Neutrality

There is no consensus on the definition of technological neutrality among scholars, WTO Members, and WTO panels and Appellate Body members. According to Pauletto, the notion of technological neutrality is understood as “trade disciplines apply equally whatever the means of a transaction.”³⁷ Other commentators share the similar view especially in the electronic commerce area, saying that “technological neutrality requires non-discrimination between the online version of a service and the offline version of that service because they should be tested under the same legal regime.”³⁸ With focusing more on the issue of the classification of services, Zhang explains that the concept means “the technology involved shall not affect the classification of services as long as the nature of services remains unchanged.”³⁹

Some WTO Members present their opinions on the definition in a slightly different manner: the EU, for instance, has opined that the notion of technological neutrality means “the need for a similar treatment of *economically* comparable transaction independently from the technology used.”⁴⁰ This statement focuses more on the economic dimension rather than the legal dimension.

Taking into account of all the opinions presented above, in this chapter we simply understand the principle of technological neutrality to be meant that all laws and

³⁷ Pauletto, “Comment: Digital Trade,” 530-533.

³⁸ Chander, *The Electronic Silk Road*, 143.

³⁹ Zhang, “Covered or Not Covered,” 9.

⁴⁰ WTO, *Work Programme on Electronic Commerce – Classification Issue – Submission from the European Communities*, WT/GC/W/497, 9 May 2003, para. 14.

regulations should have the same application to trade in the same services regardless of the means of delivery.⁴¹

For further discussion, it might be helpful to compare technological neutrality with different but confusing terminologies often referred to in the age of digital economy: “network neutrality or net neutrality” and “flexibility in the choice of technology.” Net neutrality is the notion that all Internet traffic should be treated equally.⁴² In other words, internet service providers (hereinafter ISPs) should not restrict the access to the Internet of certain service providers or discriminate large-scale content delivery, which is likely to bring about heavy Internet traffic against light-size content delivery.⁴³ Some of the recent regional trade agreements (hereinafter RTAs), including the Korea-United States Free Trade Agreement (hereinafter KORUS) and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (hereinafter CPTPP), contain provisions related to net neutrality.⁴⁴ As net neutrality, in general, is about non-discriminatory access to and freedom to use the Internet, the principle of technological neutrality should not be confused with the principle of net neutrality.

⁴¹ This definition is in line with Hu, “When Trade Encounters Technology,” 75.

⁴² Neha Mishra, “The Role of the Trans-Pacific Partnership Agreement in the Internet Ecosystem: Uneasy Liaison or Synergistic Alliance?,” *Journal of International Economic Law* 20, no. 1 (2017), 53.

⁴³ The notion of net neutrality has been accepted by the United States Federal Communications Commission (hereinafter USFCC) for several decades. However, it became controversial when the Trump Administration planned to sweep away net neutrality for the sake of telecommunications and cable companies. “Trump administration plans to scrap net neutrality,” *Financial Times*, November 22, 2017, accessed July 1, 2019, <https://www.ft.com/content/d8dbef08-cee1-11e7-b781-794ce08b24dc>.

⁴⁴ For instance, Article 14.10 of CPTPP (Principles on Access to and Use of the Internet for Electronic Commerce) reads: “Subject to applicable policies, laws and regulations, the Parties recognize the benefits of consumers in their territories having the ability to: (a) access and use services and application of a consumer’s choice available on the Internet, subject to reasonable network management; (b) connect the end-user devices of a consumer’s choice to the Internet, provided that such devices do not harm the network; and (c) access information on the network management practices of a consumer’s Internet access service suppliers.” Very similar text can be found in Article 15.7 of KORUS under the same article title.

Some commentators link technological neutrality to the standardization of technology in the telecommunications or media sector. To illustrate, Larouche uses the notion of technological neutrality to put into words that telecommunications service providers or ISPs must be free to use technology what they seem appropriate and necessary in the telecommunications sector, which is more often referred to as technical standards.⁴⁵ This understanding is, however, erroneous and confusing at best: while the former deems technology as a method for the provision of any service, the latter specifically deals with the standardization process in the telecommunications sector. It could be more confusing that the US government has created the provision concerning the “flexibility in the choice of technology” in its various bilateral trade agreements: this provision ensures that private telecommunications service providers have the freedom to choose technology as a means of providing a telecommunications service.⁴⁶ Larouche’s notion of technological neutrality and the provision of the flexibility in the choice of technology in US RTAs have more to do with technical standards or standardization rather than the notion of technological neutrality of our interest in the digital trade context. Furthermore, unlike technical standards of which scope is limited to the telecommunications service sector, the scope of technological neutrality is so broad that it applies to theoretically all kinds of services trade.

⁴⁵ Larouche, “Dealing with Convergence at the International Level,” 414.

⁴⁶ For instance, under the title of “Flexibility in the Choice of Technology,” Paragraph 1 in Article 13.23 of CPTPP stipulates that: “No Party shall prevent suppliers of public telecommunications services from choosing the technologies they wish to use to supply their services, subject to requirements necessary to satisfy legitimate public policy interests, provided that any measure restricting that choice is not prepared, adopted or applied in a manner that creates unnecessary obstacles to trade.”

3.2. Historical Development of Technological Neutrality

In the multilateral trading regime, the idea of technological neutrality first appeared in the Chairman Note in 1996 during negotiations over basic telecommunications.⁴⁷ The Chairman Note aims to assist delegations in ensuring the transparency of their commitments and promote a better understanding of the meaning of commitments in the area of basic telecommunications. For that purpose, it comprehends that any basic telecommunications service: (a) encompasses local, long distance and international services for public and non-public use; (b) may be provided on a facilities-basis or by resale; (c) may be provided through *any means of technology* (e.g., cable, wireless, satellites).⁴⁸ Although the Chairman Note does not explicitly refer to technological neutrality, it is clear that, at least in the basic telecommunications service sector, any means of technology can be used for the delivery of basic telecommunications services on the condition that no other commitment is scheduled in the sector column. Accordingly, the same GATS rules and specific commitments should apply regardless of the method of delivery.

In its paper prepared to assist the Council for Trade in Services in its examination of the treatment of electronic commerce in the GATS legal framework, the WTO Secretariat also implies that technological neutrality plays a pivotal role in determining the applicability of legal regime on electronic transactions.⁴⁹ Although all of these documents seem to acknowledge, to a certain extent, the possible impact of technological

⁴⁷ Group on Basic Telecommunications, *Note by the Chairman – Notes for Scheduling Basic Telecom Services Commitments*, S/GBT/W/2, 26 November 1996.

⁴⁸ *Ibid.*, para. 1.

⁴⁹ CTS, *Work Programme on Electronic Commerce – Note by the Secretariat*, S/C/W/68, 16 November 1998, para. 37. It reads: “It should be remembered that the legal regime applying to transactions throughout the WTO system – whether they are governed by the GATS, the GATT or a sectoral agreement such those on Agriculture or Textiles – is determined by the nature of the products being trade, *not by the means of their delivery*. [Italic added]”

development on the global trading system, none of the documents mention the notion of technological neutrality in an explicit manner. The terminology of technological neutrality has not appeared in any official WTO documents until the US has made its simultaneous submission to the General Council and all four WTO subsidiary bodies.⁵⁰ While expressing its opinion on the scope of market access and national treatment commitments for electronic commerce activities, the US insisted that those commitments should encompass the cross-border supply of the service via electronic means in keeping with the principle of technological neutrality.⁵¹ Yet, no further elaboration on the principle of technological neutrality was provided in the document, leaving its definition and scope still uncertain. Moreover, it was solely an opinion of the US, falling short of representing the general viewpoint of stakeholders on the issue.

The Work Programme on Electronic Commerce was remitted to the Council for Trade in Services (hereinafter CTS) by the General Council (hereinafter GC) and discussions among delegations on the issue have taken place for several times in a formal or informal manner. In 1999, the CTS submitted the Interim Report on the subject of electronic commerce to the GC.⁵² Summaries and records of discussions under the auspices of the CTS are contained in the Interim Report and some of them with respect to the principle of technological neutrality are noteworthy: it affirms, in particular, that the GATS applies to all services regardless of the means by which they are delivered and technological neutrality allows committed services to be electronically supplied, unless a

⁵⁰ These are the Council for Trade in Goods, the Council for Trade in Services, the Council for Trade-Related Aspects of Intellectual Property Rights and the Committee on Trade and Development. The submission was made to multiple WTO bodies as the range of WTO disciplines affecting electronic commerce was broad enough to involve services, intellectual property, goods, government procurement, and technical barriers to trade including standards.

⁵¹ WTO, *Work Programme on Electronic Commerce – Submission by the United States*, WT/GC/16, G/C/2, S/C/7, IP/C/16, WT/COMTD/17, 12 February 1999, 3.

⁵² CTS, S/C/8.

schedule states otherwise.⁵³ A common understanding on technological neutrality seemed to be developing as well.

In Chairman's Summaries of Informal Discussions attached to the Interim Report, relevant issues and the results of discussions are more elaborated: with regard to the scope of the GATS, it was argued by some delegations, but not all, that it was of importance to affirm that the principle of technological neutrality makes electronic delivery of services subject to GATS disciplines and applies to scheduled commitments⁵⁴; with regard to the non-discrimination principle in the GATS, highly debated was the question of the relationship between likeness and the notion of technological neutrality, on which delegations failed to reach a common understanding⁵⁵; it was suggested that it was necessary to look at issues of how technological neutrality in Internet-based services trade would apply to existing commitments and to certain new digital services in more detail.⁵⁶

After the submission of the Interim Report, the CTS continued its discussion and examination on individual items included in paragraph 2.1 of the Work Programme on Electronic Commerce.⁵⁷ In its Progress Report to the GC,⁵⁸ the CTS reiterates the view

⁵³ *Ibid.*, 2.

⁵⁴ *Ibid.*, 3, 5, 8.

⁵⁵ *Ibid.*, 3, 8.

⁵⁶ *Ibid.*, 6.

⁵⁷ The Work Programme directs four WTO subsidiary bodies to examine and report on the treatment of electronic commerce in their own legal framework. The issues to be scrutinized by the CTS in the GATS legal framework must involve: scope and the modes of supply; MFN; transparency; increasing participation of developing countries; domestic regulation, standards, and recognition; competition; protection of privacy and public morals and the prevention of fraud; market-access commitments on electronic supply of services including commitments on basic and value-added telecommunications services and on distribution services; national treatment; access to and use of public telecommunications transport networks and services; customs duties; and classification issues. WTO, WT/L/274, para. 2.1.

⁵⁸ CTS, S/L/74. Progress reports of other WTO subsidiary bodies can be found in Council for Trade-Related Aspects of Intellectual Property Rights, *Work Programme on Electronic Commerce – Progress Report to the General Council*, IP/C/18, 30 July 1999; CTG, *Chairman's Factual Progress Report to the General Council on the Work Programme on Electronic Commerce*, G/L/421, 24 November 2000.

made in the Interim Report that the GATS applies to all services regardless of the means by which they are delivered and the Agreement is “technologically neutral in the sense that it does not contain any provisions that distinguish between the different technological means through which a service may be supplied.”⁵⁹ With respect to the non-discrimination principle, WTO Members were aware that the main question in this sense is whether electronically delivered services are like to those delivered by other means.

The notion of technological neutrality does not matter solely in the electronic supply of services context. It also involves the so-called trade in digital products or digitized products⁶⁰, which often brings about classification issue because of its hybrid feature of goods and services. In a discussion on the classification of digitized products, some WTO Members referred to the principle of technological neutrality, which was depicted as the “need for a similar treatment of economically comparable transaction independently from the technology used.”⁶¹ It should be noted, however, that the notion of technological neutrality used in the context of digital products differs from what was debated in the CTS under the Work Programme.⁶² In addition, in its communication circulated to the Members of the CTS and the Members of the Committee on Specific Commitments (hereinafter CSC) in 2005, the US, in an unequivocal manner, asserted that the principle of technology neutrality with respect to market access must apply to the value-added telecommunications sector and include services supplied via Internet Protocol (hereinafter IP)-based networks.⁶³

⁵⁹ CTS, S/L/74, para. 4.

⁶⁰ Digital products or digitized products refer to books, movies, music, games or computer software which used to be embedded in a physical carrier to be traded but now can be digitized, stored and transmitted electronically.

⁶¹ WTO, WT/GC/W/497, para. 14.

⁶² *Ibid.*, footnote 3. It reads: “[D]uring discussion on trade in services, it was simply meant that, where a rule or a specific commitment was written in a manner that did not distinguish between technologies, then that rule or specific commitment would apply for any sort of technology used.”

⁶³ CTS, *Communication from the United States – Classification in the Telecommunications Sector*

In summary, a consensus is growing among WTO Members that affirming the principle of technological neutrality is one of the top priorities to make the outdated and brick-and-mortar WTO architecture matter in the digital era. However, it is also true that the consensus is still growing and there is no provision dedicated to the principle in WTO Agreements. No WTO case law clearly confirms the principle of technological neutrality as a universal principle under the world trading regime, either.

In the next section, bearing in mind the historical development of technological neutrality, we single out legal issues concerning the principle of technological neutrality. And then we delve into its potential role in bridging the gap between the brick-and-mortar WTO legal framework and the rapidly evolving international economic environment in the digital age.

4. Technological Neutrality, Digital Trade, and the GATS

The GC of the WTO in 1998 has instructed its subsidiary bodies to carry out studies on electronic commerce.⁶⁴ The CTS was assigned to examine and report on the treatment of electronic commerce in the GATS legal framework. Twelve subjects, in particular, were selected to be examined: i) scope including modes of supply; ii) MFN; iii) transparency; iv) increasing participation of developing countries; v) domestic regulation, standards, and recognition; vi) competition; vii) protection of privacy and public morals and the prevention of fraud; viii) market-access commitments on electronic supply of services including commitments on basic and value-added telecommunications services and on distribution services; ix) national treatment; x) access to and use of public telecommunications transport networks and services; xi) customs duties; xii)

under the WTO-GATS Framework, TN/S/W/35, S/CSC/W/45, 22 February 2005, para. 14.

⁶⁴ WTO, WT/L/274.

classification issues.⁶⁵ Pursuant to this instruction, the CTS has convened Members to have discussions, and subsequently submitting two reports to the GC: the Interim Report and Progress Report.⁶⁶ On some issues, a common understanding was reached. Yet other issues require substantial further study. Progress made in the subsequent two reports is summarized at **Annex II-2** to this chapter.

Although some general understandings were formed, most of the issues were left unresolved. Furthermore, due to the impasse of the Doha Round, no agreement on the Work Programme has been concluded to date. Generally speaking, it is not wrong to say that the analogue world trading regime has failed to adapt to economic reality in the digital era and is vulnerable to unprecedented digital trade barriers. Under these circumstances, we argue that the principle of technological neutrality may help resolve a number of thorny issues, if not all, in a practical way by bridging the gap between the brick-and-mortar WTO/GATS regulatory framework and digital economic reality. Followed is a detailed analysis of the role of technological neutrality in tackling three digital trade-related issues under the Work Programme.

4.1. Applicability of GATS Rules to the Delivery of Services by Electronic Means

As Wunsch-Vincent and Hold point out, one of the most basic and fundamental legal issues concerning digital trade today is whether GATS rules are applicable to the delivery of services by electronic means.⁶⁷ We hereby assert that incorporating the principle of

⁶⁵ *Ibid.*, para. 2.1. The Council for Trade in Goods, The Council for TRIPs, and the Committee for Trade and Development were also required to examine and report on aspects of electronic commerce relevant to their authority.

⁶⁶ WTO, S/C/8; WTO, S/L/74.

⁶⁷ Wunsch-Vincent and Hold, “Towards Coherent Rules for Digital Trade,” 182. Other key questions with regard to digital trade pinpointed by them are: (i) an agreement on a permanent duty-free moratorium on electronic transmissions and their content; (ii) the classification of electronically traded services as either mode 1 or mode 2; (iii) the classification and scheduling of new services arising in the context of e-commerce; (iv) the classification of digital products; (v)

technological neutrality into the WTO multilateral trading system would help affirm that cross-border services supplied by electronic method are subject to the disciplines of the GATS once and for all. To do so, we first take a look at the stance of WTO Members and legal pundits and then find WTO jurisprudence on the issue by analyzing the two most symbolic digital trade-related WTO dispute settlement cases: *US – Gambling*⁶⁸ and *China – Audiovisuals*.⁶⁹

4.1.1. Growing Consensus among WTO Members

Pursuant to Article I:1 of the GATS, if a Member government's measure affects trade in services, it clearly falls within the scope of the GATS.⁷⁰ Yet, legal uncertainty still remains whether certain products, which can be transformed into bits or bytes and transmitted through online networks, are services in the context of the GATS. A question is naturally followed whether domestic regulations or policies affecting cross-border trade in these products delivered online are subject to the disciplines of the GATS.

This issue is of great importance from practical as well as theoretical perspectives. Legal scholars have great interests in discussing the scope of the GATS in the digital era. If digitally-formatted products, which have characteristics both of physical goods and intangible services, are to be found as goods or third type of products, there is no legal

determining likeness for application for MFN and national treatment obligations; (vi) the application of GATS Article VI regarding domestic regulation; (vii) the application of GATS XIV regarding general exceptions for e-commerce. See, for the comparison of the achievements of the WTO and RTAs on these issues, Wunsch-Vincent and Hold, "Toward Coherent Rules for Digital Trade", 186-87.

⁶⁸ WTO Panel and Appellate Body Reports, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WT/DS285/R, WT/DS285/AB/R, adopted 20 April 2005.

⁶⁹ WTO Panel and Appellate Body Reports, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/R; WT/DS363/AB/R, adopted 1 January 2010.

⁷⁰ See **Section 2.1.** for more thorough analysis on the scope of the GATS.

ground for GATS rules to apply to the products delivered online.⁷¹ As the variety and the volume of these products delivered online are to increase and governments are to erect trade barriers in cyberspace, the need for clarifying the coverage of the GATS becomes paramount. Unfortunately, the negotiation process at the WTO lags way behind the speed of technological development.

In the meantime, contrary to the GATT, the GATS accords high discretion to WTO Members to regulate trade and use trade barriers which can possibly put foreign services and service suppliers at a competitive disadvantage. Should any service provided by electronic means fall within the scope of the GATS, it is subject to general obligations such as MFN treatment and transparency and to specific commitments such as market access and national treatment obligations by the mode of supply unless otherwise specified. Thus for entrepreneurs, who dislike uncertainty, addressing the question of the applicability of the GATS to electronically delivered services is the top priority.

This idea was first proposed, in November 1998, by the WTO Secretariat in the note prepared to assist the CTS in its examination of the treatment of electronic commerce in the GATS legal framework. Under the title of classification issues, the Secretariat put emphasis on maintaining a principle that all services delivered electronically are covered by the GATS and then added that the legal regime applying to transactions throughout the WTO system should be determined by the nature of the products being traded, not by

⁷¹ On a claim that GATS rules should apply to digital products, see Sam Fleuter, "The Role of Digital Products under the WTO: A New Framework for GATT and GATS Classification," *Chicago Journal of International Law* 17, no. 1 (2016): 153-177. On an argument claiming that intangible goods must be distinguished from services, see Peter Hill, "Tangibles, Intangibles and Services: A New Taxonomy for the Classification of Output," *The Canadian Journal of Economics* 32, no. 2 (1999): 426-446. On an opposing view of applying the existing GATS legal framework to digital products, see Farrokh Farrokhnia and Cameron Richards, "E-Commerce Products Under the World Trade Organization Agreements: Goods, Services, Both or Neither?," *Journal of World Trade* 50, no.5 (2016): 793-817. On general discussions on digital products, see Thierry Rayna, "Understanding the Challenges of the Digital Economy: The Nature of Digital Goods," *Communications and Strategies* 71, (2008): 13-36.

the means of their delivery.⁷² Although technological neutrality was not directly mentioned in this note, it was enough to infer the viewpoint of the WTO Secretariat toward the relationship between technological development and the WTO/GATS legal framework.

It is now alleged that this idea is shared among many WTO Members. In its Interim Report, the CTS states:

*The electronic delivery of services falls within the scope of the GATS, since the Agreement applies to all services regardless of the means by which they are delivered, and electronic delivery can take place under any of the four modes of supply. Measures affecting the electronic delivery of services are measures affecting trade in services and would therefore be covered by GATS obligations. [Italic added]*⁷³

The regulatory framework of the GATS does not distinguish between the different technologies of service delivery. As GATS rules are neutral to the means by which services are delivered, the scope of the GATS is broad enough to include cross-border electronically supplied services. It was reiterated by the Progress Report.⁷⁴

However, there were also some skeptical views on the principle of technological neutrality among WTO Members. The Progress Report made it clear that there were some delegations who conveyed that these issues were complex and needed further

⁷² CTS, S/C/W/68, para. 37.

⁷³ CTS, S/C/8, para.4.

⁷⁴ CTS, S/L/74, para.4. The relevant paragraph reads: “It was the general view that *the electronic delivery of services falls within the scope of the GATS*, since the Agreement applies to all services *regardless of the means* by which they are delivered...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 service may be supplied...[Italic added]”

examination.⁷⁵ It showed that despite the fact that the principle of technological neutrality could play a pivotal role in applying GATS disciplines to services electronically supplied across borders, a complete consensus has not been won in the WTO, thus falling short of calling it a universal principle of the WTO.

Trade experts have also been interested in the applicability of GATS rules and disciplines on cross-border supply of services by electronic means. Mattoo and Schuknecht are two of the very first scholars who contend that electronic commerce should be subject to GATS disciplines. They claim in their policy paper that affirming the principle of technological neutrality is needed to ensure that the rules of the WTO Agreement applied to digital trade.⁷⁶ Wunsch-Vincent and Pauletto also support the notion of technological neutrality in order for electronic commerce and/or digitally delivered services to be covered by GATS rules and to be the subject of commitments undertaken.⁷⁷

All these arguments and opinions among WTO Members and the academic community support our assertion that it is desirable to render services supplied by electronic means subject to the GATS framework on the premise that the GATS is technologically neutral. Otherwise, it would generate confusion and undermine legal certainty if we have to come up with a different legal framework whenever new and innovative delivery technologies emerge. WTO jurisprudence also finds the applicability of GATS rules to cross-border electronic delivery of services but it comes not without caveats from the perspective of the principle of technological neutrality.

⁷⁵ *Ibid.*, para.4.

⁷⁶ Mattoo and Schuknecht, "Trade Policies for Electronic Commerce," 15.

⁷⁷ Sacha Wunsch-Vincent, "Trade Rules for the Digital Age," in *GATS and the Regulation of International Trade in Services*, eds. Marion Panizzon, Nicole Pohl and Pierre Sauvé (Cambridge, U.K.: Cambridge University Press, 2008), 501-502; Pauletto, "Comment: Digital Trade," 532.

4.1.2. WTO Jurisprudence

So far, there is a very limited number of WTO litigations concerning the GATS.⁷⁸ **Annex II-3** shows the list of WTO disputes solely or partially concerning the GATS brought before the WTO Dispute Settlement Body (hereinafter DSB) pursuant to the Understanding on Rules and Procedures Governing the Settlement of Disputes (hereinafter DSU).⁷⁹ Of nine cases, *US – Gambling* and *China – Audiovisuals* are worth reviewing for the issue of the applicability of GATS rules on digital trade.

The *US – Gambling* case was brought by Antigua and Barbuda (hereinafter Antigua) against the US with respect to various United States' domestic measures restricting the cross-border electronic supply of gambling and betting services from Antigua. It is symbolic in a way that it is the first-ever WTO dispute directly dealing with the Internet in full context and the second case exclusively based on the GATS.⁸⁰ Moreover, as many unresolved legal issues discussed under the Work Programme on Electronic Commerce were at the center of the dispute, there was a high expectation that *US – Gambling* could serve as the “last nail in the coffin of the WTO Work Programme on E-Commerce,” squaring remaining questions and leading to a conclusion.⁸¹

⁷⁸ As of 15 June 2019, out of total 584 complaints, only 28 cases (counting DS 139 and 142 separately) solely or partially involve the GATS (excluding Article 21.5 disputes). See, for more information on figures and statistics for WTO dispute cases, WorldTradeLaw.net, accessed July 1, 2019, <http://worldtradelaw.net/databases/wtopanels.php>.

⁷⁹ Annex 2 of the Marrakesh Agreement.

⁸⁰ Sacha Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS: Lessons from *US – Gambling*,” *World Trade Review* 5, no. 3 (2006), 320. Before the *US – Gambling* case, *Mexico – Telecoms* was the only WTO case concerning the GATS, in particular, the Reference Paper on Basic Telecommunications Service. For more on *Mexico – Telecoms*, see Eleanor M. Fox, “The WTO’s First Antitrust Case – *Mexican Telecom*: A Sleeping Victory for Trade and Competition,” *Journal of International Economic Law* 9, no. 2 (2006): 271–292; Damien Neven and Petros Mavroidis, “El Mess in *TELMEX*: A Comment on Mexico – Measures Affecting Telecommunications Services,” *World Trade Review* 5, no.2 (2006): 271-296.

⁸¹ David Hartridge, “Remark at the WTO Symposium on Cross-Border Supply of Services on 29 April 2005,” accessed July 1, 2019, https://www.wto.org/english/tratop_e/serv_e/sym_april05_e/sym_april05_e.htm.

In its legal argument before the Panel, Antigua presented the findings of the Appellate Body in *Canada – Autos* that a threshold question for the application of the GATS is whether the measure at issue is a measure affecting trade in services.⁸² Antigua continued that since what constitutes measures affecting trade in services is very broadly construed in WTO law and no GATS provisions suggest a limited scope of the agreement, betting and gambling services supplied from Antigua over Internet connection into the territory of the US fall within Mode 1 or cross-border supply of services.⁸³ The Panel found that certain US regulations – the Wire Act in this case – “prohibits the use of at least one or potentially several means of delivery included in *mode 1* [*Italic added*]”.⁸⁴ And the Panel went on to say that “a ban on the use of one, several or all means of delivery included in mode 1 constitutes a ‘zero quota’ for, respectively, one, several or all of those means of delivery.”⁸⁵ And, in turn, the Panel opined that US regulations contain “a limitation ‘in the form of numerical quotas’ within the meaning of Article XVI:2(a) and a limitation ‘in the form of a quota’ within the meaning of Article XVI:2(c).”⁸⁶ The Appellate Body also confirmed the Panel’s ruling that cross-border betting and gambling services delivered by the means of online networks are within the coverage of the GATS.⁸⁷ Commentators often praise the confirmation of the applicability of the GATS framework to services supplied by electronic means as the greatest achievement of *US – Gambling*.⁸⁸ Much to our dismay, however, the ruling of the Appellate Body could not address the legal status of the principle of technological neutrality under the WTO/GATS regulatory regime. It is still debatable whether GATS rules and disciplines apply to all

⁸² Appellate Body Report, *Canada – Autos*, para. 152. See also Article I:1 of the GATS.

⁸³ Panel Report, *US – Gambling*, para. 3.28-3.29.

⁸⁴ *Ibid.*, para. 6.362.

⁸⁵ *Ibid.*, para. 6.363.

⁸⁶ *Ibid.*, para. 6.363, 6.370-371, 6.377-378.

⁸⁷ Appellate Body Report, *US – Gambling*, para. 265.

⁸⁸ Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 323.

services on a technologically neutral basis, since the Panel and the Appellate Body in *US – Gambling* drew their conclusion without relying on the principle of technological neutrality.

Another noteworthy Internet-related WTO case is *China – Audiovisuals*. The *China – Audiovisuals* case deals with a variety of measures concerning trading and distribution in China of certain cultural or content goods and services including reading materials (e.g., books, newspapers, periodicals, and electronic publications), audiovisual home entertainment products (e.g., videocassettes, CDs, and DVDs), sound recordings (e.g., recorded audio tapes), and cinematographic films for theatrical release. It was raised by the US in the dispute that the Chinese government not only restricted the right of importation and distribution services but discriminated against foreign goods, thus violating several provisions of China’s WTO Accession Protocol and Accession Working Party Report, GATT Article III:4, and GATS Articles XVI as well as XVII.

One of the most controversial legal issues in *China – Audiovisuals* was the question of whether a cultural or content product, which is relatively easy to be digitalized and transmitted via digital networks, was a good or a service.⁸⁹ And, in turn, it brought about the controversy over whether a specific measure is subject to GATT rules or GATS rules.⁹⁰

As for the definition of a good, the ruling of the Appellate Body in the dispute is in line with that of *Canada – Periodicals*.⁹¹ The Appellate Body in both cases based their decisions on the definition of a product upon the tangible or material nature of the product.⁹² It would mean that goods are so tangible and physical that you can actually

⁸⁹ Joost Pauwelyn, “Squaring Free Trade in Culture with Chinese Censorship: the WTO Appellate Body Report on *China-Audiovisuals*,” *Melbourne Journal of International Law* 11 (2010), 124.

⁹⁰ *Ibid.*, 124.

⁹¹ Panel and Appellate Body Reports, *Canada – Periodicals*, WT/DS31/R, WT/DS31/AB/R.

⁹² Paola Conconi and Joost Pauwelyn, “Trading Cultures: Appellate Body Report on *China–*

touch them but services are “products of economic activity that you can’t drop on your foot.”⁹³ Thus if a movie producer decides to stop shipping physical film reels or DVDs – no import restrictions are allowed in principle because they are subject to the GATT – and instead sends the content over the Internet network, it becomes an entertainment service, making an importing country eligible to restrict the importation of the product pursuant to its specific commitment as the GATS allows. As WTO adjudicatory bodies tend to interpret specific commitments on trade in services in a technologically neutral way, the GATT may be construed in a technologically biased way.⁹⁴ However, this legal criterion of tangibility to classify a product as a good or service, which subsequently would decide whether the product is under the coverage of the GATT or GATS, is too simplistic and insufficient to reflect economic reality. As Conconi and Pauwelyn put it, no economic rationale can account for “why basic trade effects and welfare calculations should apply differently to, for example, tangible and intangible products or to distribution by mail or over the Internet.”⁹⁵ Moreover, the Panel and the Appellate Body did not take into account the principle of technological neutrality before they proceeded to examine whether Chinese measures constitute a violation of their commitments in the GATS.

Audiovisuals,” *World Trade Review* 10, no. 1 (2011), 100.

⁹³ The Economist, “Economics A-Z terms beginning with S,” accessed July 1, 2019, <https://www.economist.com/economics-a-to-z/s>. Also see Chander, *The Electronic Silk Road*, 3.

⁹⁴ Conconi and Pauwelyn, “Trading Cultures,” 102.

⁹⁵ *Ibid.* It is still questionable whether content, which used to be embedded in a physical carrier to be traded, should be covered by GATS disciplines when it is converted into bits and bytes and transmitted via electronic networks. Even though the issue of the classification of digital products has been calling for great attention in Geneva since the launch of the Work Program on Electronic Commerce in 1998, no conclusion is reached among delegations due to large discrepancy between the EU and the US. Recent RTAs attempt to resolve this issue in a practical manner. This issue is beyond the scope of this study. See, for more, Sacha Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products: EC-US Perspectives* (Oxford, U.K.: Hart Publishing, 2006); Wunsch-Vincent and Hold, “Towards Coherent Rules for Digital Trade,” 179-221.

WTO jurisprudence over the applicability of GATS disciplines to the cross-border supply of services by electronic means can be inferred from the two WTO disputes. Nonetheless, neither WTO cases hinged on the principle of technological neutrality to draw such conclusions. The Panel in *China – Audiovisuals* even seemed to intentionally avoid invoking the principle by exercising judicial economy.⁹⁶ Without the legal status of technological neutrality being clarified under the WTO/GATS framework, WTO adjudicatory bodies would have to face legal challenges in the same manner as new technologies are utilized to deliver services.

4.2. Determination of Likeness in the Era of Digital Trade

The widespread usage of the Internet as a vehicle to accelerate cross-border services trade is expected to render the determination of likeness between a service provided through a conventional way and an electronically delivered service more difficult. It would also make the GATS regulatory framework unpredictable in terms of non-discrimination. To illustrate, there has been a discrepancy among WTO Members, during the Work Programme on Electronic Commerce, over whether services delivered by electronic means are like to services supplied by a conventional delivery method such as (non-electronic) on-site supply or postal. The CTS inevitably had to admit that more work is needed on the question of likeness and its relationship to the notion of technological neutrality.⁹⁷ What is centered on this issue is the question of whether the nature of national treatment commitments is affected by a means of delivery.⁹⁸ We argue that the principle of technological neutrality would provide for clear legal guidance to help WTO

⁹⁶ Panel Report, *China – Audiovisuals*, para. 7.1258.

⁹⁷ CTS, S/C/8, para. 5.

⁹⁸ Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 329.

adjudicatory bodies reach an impartial, legitimate, and consistent judgement in digital trade-related litigation.

4.2.1. Non-Discrimination and Likeness in the GATS

The principle of non-discrimination is the most fundamental element in the world trading system. Articles I and III of the GATT 1994 inscribe MFN treatment and national treatment obligations, respectively, in the context of goods trade.⁹⁹ As the two elements of any non-discrimination obligation, “less favorable treatment” and “likeness,” are cumulative in nature, likeness between products is a critical test for a measure to run afoul of either MFN or national treatment obligation.¹⁰⁰ Granting more favourable or less favourable treatment to a different product is not deemed as a violation of non-discrimination obligation. Therefore, determining likeness is a paramount task for the WTO adjudicating bodies in trade disputes where a violation of non-discrimination obligation is raised.

Nonetheless, the concrete definition of likeness or guidelines for interpreting likeness cannot be found anywhere in the legal texts of GATT or GATS. Instead, several case laws provide for the standard for the interpretation of likeness in the GATT context. Among others, the Appellate Body in its seminal case, *Japan – Alcoholic Beverages II*, established the standard for the interpretation of likeness with regard to national treatment through a very visual metaphor of an accordion. It is worth reproducing relevant paragraph here:

No one approach to exercising judgement will be appropriate for all cases.

⁹⁹ See, for the legal text of Articles I and III of the GATT 1994, **Annex II-4**.

¹⁰⁰ Appellate Body Report, *EC – Asbestos*, para. 100; see also Diebold, *Non-Discrimination in International Trade in Services*, 32.

The criteria in *Border Tax Adjustments* should be examined, but there can be no one precise and absolute definition of what is “like.” The concept of “likeness” is a relative one that evokes the image of an accordion. The accordion of “likeness” stretches and squeezes in different places as different provisions of the *WTO Agreement* are applied. The width of the accordion in any one of those places must be determined by the particular provision in which the term “like” is encountered as well as by the context and the circumstances that prevail in any given case to which that provision may apply. We believe that, in Article III:2, first sentence of the GATT 1994, the accordion of “likeness” is meant to be narrowly squeezed. [*Italic original*]¹⁰¹

This approach of the Appellate Body in the *Japan – Alcoholic Beverages II* case to the notion of likeness has become a general rule of thumb to interpret likeness in all WTO non-discrimination provisions including the GATS.

The drafters of the GATS were also aware that non-discrimination should play a pivotal role in liberalizing trade in services. Consequently, non-discrimination provisions are also included in GATS legal text. MFN treatment, one dimension of non-discrimination obligation, is inscribed in Article II of the GATS, whereas the other dimension of non-discrimination obligation, national treatment, is stipulated in Article XVII of the GATS.¹⁰² Non-discrimination obligation in the GATS is very similar but not exactly equivalent to that in the GATT. Although some technical details and how they are applied to an actual dispute may be different, the interpretation of the elements of likeness as well as “no less favorable” treatment is commonly vital to judging a breach of non-discrimination obligation.

¹⁰¹ Appellate Body Report, *Japan – Alcoholic Beverages II*, 21.

¹⁰² See, for the legal text of Articles II and XVII of the GATS, **Annex II-5**.

Some commentators, in the context of GATS non-discrimination, put more emphasis on the “no less favorable treatment” element than the likeness element when determining a violation of national treatment obligation.¹⁰³ However, the determination of likeness in the GATS should not be deemed less important than in the GATT.¹⁰⁴ The interpretation of likeness is an imperative first step to determine the violation of non-discrimination obligation in actual litigation. But it is also true that it is controversial and difficult to discern what makes two services and service providers at issue like or unlike. It is disappointing that there is a very limited amount of academic literature and WTO jurisprudence on likeness in the context of trade in services.¹⁰⁵

What makes a matter worse is that the delivery of service hinges very much on technology. The pattern of services trade is highly likely to be diverted upon the development of new technology. In the digital economy where a large scale of goods and services can be converted into bits and bytes and crosses national borders over digital networks, it is still questionable but of urgency to determine whether likeness may exist among services supplied both online and offline. Too little attention has been paid to likeness from the perspective of a means of service supply.

¹⁰³ For instance, see Joost Pauwelyn, “Comment: The Unbearable Lightness of Likeness,” in *GATS and the Regulation of International Trade in Services*, eds. Marion Panizzon, Nicole Pohl, and Pierre Sauvé (Cambridge, U.K.: Cambridge University Press, 2008), 358–369.

¹⁰⁴ This view is shared among several scholars: see Mireille Cossy, “Some Thoughts on the Concept of ‘Likeness’ in the GATS,” in *GATS and the Regulation of International Trade in Services*, eds. Marion Panizzon, Nicole Pohl, and Pierre Sauvé (Cambridge, U.K.: Cambridge University Press, 2008), 327–357; and Diebold, *Non-Discrimination in International Trade in Services*, 65-73.

¹⁰⁵ Very few exploratory works on the issue can be found in the literature: Cossy, “Some Thoughts on the Concept of ‘Likeness’ in the GATS”; Diebold, *Non-Discrimination in International Trade in Services*. For WTO cases in which the issue of likeness is raised, see Panel Report, *EC – Bananas III*, para. 7.302; Panel Report, *Canada – Autos*, paras. 10.247-248, 10.289; Panel Report, *China – Audiovisuals*, paras. 7.1412-1422; Panel Report, *China – Electronic Payment Services*, paras. 7.698-708; Panel Report, *Argentina – Financial Services*, paras. 7.153-186, 7.436.

WTO Members have not totally been ignorant of this issue. They have already recognized that the issue of likeness was central to the application of MFN and national treatment obligations in cross-border electronic delivery of services. During the formal and informal meetings under the Work Program, it was raised as the first question to be dealt with whether electronically delivered services and those delivered by more traditional methods should be considered like services before determining a violation of non-discrimination obligation.¹⁰⁶ Nonetheless, no consensus has been reached so far at the CTS and the discussion is still drifting. In the following sections, we will delve into the issue of likeness in the services trade context stemming from the advent of digital technology. And then we will continue to discuss the role of technological neutrality in determining likeness between different modes of services or methods of service supply.

4.2.2. Likeness of Services in the Digital Age

Two separate but related issues – i) modes of supply and methods of supply; ii) on-site supply, remote supply by electronic means, and cross-border supply – deserve to be scrutinized especially in relation to likeness in the era of the digital economy.

Same services may be provided by different methods of supply. A financial consulting service, for instance, can be supplied either through innovative means such as an online network or through conventional means such as telephone or postal. This illustration demonstrates that more than two methods of supply are possible to facilitate cross-border trade in services within a single mode of service, in this instance, Mode 1 or cross-border supply of service. Nonetheless, WTO Members may commit to provide market access and national treatment on a mode-by-mode basis. That is, even though a Member government undertakes a commitment to a certain service sector, its specific

¹⁰⁶ CTS, S/C/8, 6, 8; CTS, S/L/74, para. 8, 18.

commitments in the sector do not have to be equal across four modes. One should be very cautious in distinguishing “modes” from “methods” of service supply in relation to non-discrimination obligation, or it might lead to an erroneous conclusion, especially with regard to the analysis of likeness.¹⁰⁷

By its unique feature of the GATS, the scope of crossover issue with regard to national treatment differs from that with respect to MFN. An analysis of national treatment obligation should compare a foreign service provided under one of the four modes of supply with a domestically-supplied service. Article I:2 of the GATS defines trade in services by mode based on a cross-border element, that is, whether either a service itself, a service supplier, or a consumer crosses the border. On the other hand, domestic services by its definition do not involve any international aspect and therefore are not capable of being provided via any of the four modes of supply.¹⁰⁸ It is absurd to raise the issue of likeness across modes in relation to national treatment. In this respect, it is incorrect for Antigua to argue in *US – Gambling* that the fact that services of Antigua gaming operators are supplied in a different mode of supply than services provided by US-origin suppliers in the territory of the US (that is, cross-border supply as opposed to commercial presence) does not make these “unlike.”¹⁰⁹

However, national treatment entails the issue of likeness across methods. For instance, domestic service suppliers and foreign service suppliers can make use of a wide variety of methods enabling remote supply within national territory or cross-border transactions of services. In the context of national treatment, all in all, no cross-mode

¹⁰⁷ Diebold, *Non-Discrimination in International Trade in Services*, 220.

¹⁰⁸ *Ibid.*, 220; also Mireille Cossy, “Determining “Likeness” under the GATS: Squaring the Circle?,” *WTO Staff Working Paper* ERSD-2006-08 (2006), 15.

¹⁰⁹ Panel Report, *US – Gambling*, para. 3.150. The Panel in *Canada – Autos* also fell short of realizing this difference: “In our view, it is reasonable to consider for the purposes of this case that services supplied in Canada through modes 3 and 4 and those supplied from the territory of other Members through modes 1 and 2 are “like” services.” Panel Report, *Canada – Autos*, para. 10.307.

likeness issue arises, thus the real question is whether likeness is accepted between a foreign and domestic service supplied by different methods (cross-method likeness).¹¹⁰

Services can be provided either on-site, where physical contact is required between a consumer and a service supplier for a service transaction to take place, or remotely, for instance, through an electronic means without any physical encounter. Before the advent of broadband Internet, a majority of service transactions was conducted through on-site supply; remote supply of services was rather exceptional. However, innovative digital technologies have greatly changed business models of the services industry: even though on-site supply of services still accounts for a vast share of commercial service transactions, electronic or remote supply of services, which needs no physical proximity between the supplier and consumer, is getting prevalent as a convenient and efficient way of service provision. Thus, today an on-site service supplier confronts more competition with other types of business model, either local- or foreign-based, which provide innovative and diverse services electronically or remotely.

In the meantime, a distinction should be made between cross-border supply (Mode 1) and remote supply.¹¹¹ Whereas cross-border supply inherently involves an international element, remote supply can take place either internationally or locally. It is well explained by the Panel in *US – Gambling*:

“Cross-border” must be distinguished from “remote” supply, which is a term that has been used by the parties in this dispute. The Panel will use the latter term to refer to “any situation where the supplier, *whether domestic or foreign*, and the consumer of gambling and betting services are not physically together” ... Hence, cross-border supply is necessarily remote, but

¹¹⁰ Diebold, *Non-Discrimination in International Trade in Services*, 221.

¹¹¹ *Ibid.*, 221.

remote supply amounts to “cross-border” supply only when the service supplier and the consumer are located in territories of different Members.

[Italic original, footnote omitted]¹¹²

From the Panel’s point of view, a violation of national treatment obligation can be challenged between services supplied on-site and services electronically delivered across borders. But likeness does not necessarily matter between on-site supply and remote supply since domestic service suppliers can choose to deliver their services via electronic means instead of providing the services on-site. In this study, unless specified otherwise, we assume that remote or electronic supply of service involves an international element and deem it as Mode 1 cross-border supply of service.

Then, a question becomes more relevant for the purposes of non-discrimination obligation in the context of digital trade: whether the remote or electronic delivery of a service is “like” to the traditional or on-site supply of the same service.¹¹³ The question needs a more thorough examination before it is answered.

4.2.3. The Principle of Technological Neutrality in Determining Likeness in the Digital Era

It is argued that WTO jurisprudence on the interpretation of likeness in the GATT should be taken into account when a GATS dispute is brought up before the DSB.¹¹⁴ Nonetheless, structural differences between the GATT and GATS as well as the peculiar nature of services trade make it hard to put GATT jurisprudence into the context of the GATS in a straightforward way. The determination of likeness is the most notable

¹¹² Panel Report, *US – Gambling*, para. 6.32.

¹¹³ Diebold, *Non-Discrimination in International Trade in Services*, 225.

¹¹⁴ *Ibid.*, 101.

example: since services can be supplied via various methods as technology develops, it would be very controversial whether a service supplied online and the same service supplied in a rather traditional way are like services in the non-discrimination context.¹¹⁵

Based upon the concept of demand substitutability, Diebold argues that consumers may perceive the differences in the method of supply of services, thus the method of supply plays a critical role in the “likeness” scrutiny.¹¹⁶ His argument is in line with the United States’ assertion in *US – Gambling* that a gambler who wants to enjoy the atmosphere in a brick-and-mortar casino site would hardly regard online gambling services replaceable to on-site gambling services and thus demand substitutability is quite low.¹¹⁷

Notwithstanding, this line of logic would impair the existing scheduled commitments since the legal framework of the GATS becomes vulnerable to any technological advances. If different delivery technologies are to make two services, which have same properties, nature, and functions, unlike, it would undermine WTO jurisprudence established in *EC – Asbestos*, where the Appellate Body confirmed that the determination of the likeness of services relies on “competitive relationship.”¹¹⁸

¹¹⁵ For instance, a gambling service can be supplied via the Internet overseas. It can be provided by domestic suppliers through other remote means, such as mail or telephone. At the same time, consumers may go to a brick-and-mortar casino gambling site to enjoy the gambling and betting service.

¹¹⁶ Diebold, *Non-Discrimination in International Trade in Services*, 252. See also Marcus Krajewski and Maika Engelke, “Article XVII GATS,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 406. They are critical towards cross-method likeness: “services supplied through different methods of supply should generally be considered unlike.”

¹¹⁷ Panel Report, *US – Gambling*, para. 3.167.

¹¹⁸ Appellate Body Report, *EC – Asbestos*, para. 103. The Appellate Body ruled that “the term “like products” is concerned with *competitive relationships* between and among products. [*Italic added*]”

If services which are of same nature become unlike depending on the method of supply, it would also contradict Panel's finding in *EC – Bananas III* that the “nature” and the “characteristics” of the services at issue should be taken into account to determine likeness.¹¹⁹ The Panel did not precisely account for what nature and characteristics were but the classification instruments of the GATS might provide a guideline for it. For instance, reference could be made to a criterion of the “intrinsic nature of the products” in the Provisional Central Product Classification (hereinafter Provisional CPC).¹²⁰ Since the GATS applies not to the activity that produces service output but to measures affecting trade in service “outputs,” likeness should be determined by the intrinsic nature of service outputs, which relies on end-use of the service rather than the method of delivery.¹²¹

Moreover, a variety of methods are made available for the supply of services as technology advances. Then it would be very difficult to predict whether a service supplied by technology A is like to that supplied by technology B, even though the only difference is the method of delivery. Not only would it make the GATS framework legally uncertain and unpredictable but place much more burden on the WTO adjudicating bodies, which must determine likeness on a case-by-case basis.

Our premise that the determination of likeness in the GATS should build on the principle of technological neutrality is shared by a number of commentators: Willemys opines that different means of delivery does not incur an inherent unlikeness and only competitive relationship matters when determining likeness¹²²; Luff argues, in the context of the convergence between telecommunications and audio-visual services, that

¹¹⁹ Panel Report, *EC – Bananas III*, para. 7.322.

¹²⁰ See UN, *Provisional Central Product Classification*, ST/ESA/STAT/SER.M/77, 1991, para. 21.

¹²¹ Ines Willemys, “GATS Classification of Digital Services – Does ‘The Cloud’ Have a Silver Lining?,” *Journal of World Trade* 53, no. 1 (2019), 68.

¹²² Ines Willemys, “The GATS (In)Consistency of Barriers to Digital Services Trade”, *KU Leuven Working Paper* No. 207 (2018), 6.

technology used to transmit content does not affect the likeness of similar content¹²³; Peng also asserts that the rules on likeness should depend on the nature of the service in a technologically neutral way.¹²⁴

4.2.4. WTO Jurisprudence

The WTO adjudicatory bodies had a chance to clarify the relationship between the principle of technological neutrality and likeness in the *US – Gambling* case. The Panel and the Appellate Body were expected to give a guidance on the interpretation of likeness in relation to technological neutrality in the digital age but the rulings fell much short of high expectation.

The Panel in *US – Gambling* confirmed a concept of technological neutrality, but to a very limited extent.¹²⁵ Regarding market access obligation, the Panel found that once a commitment is undertaken within a GATS mode, unless specified otherwise, foreign service suppliers have a right to use various technological means of delivery by which a service may be provided across the borders. At least, as long as market access obligation is concerned, commitments undertaken within GATS Mode 1 cross-border supply should be applied in a technologically neutral way. The Panel concluded that:

“[M]ode 1 under the GATS encompasses all possible means of supplying services from the territory of one WTO Member into the territory of another WTO Member. Therefore, a market access commitment for mode 1 implies the right for other Members’ suppliers to supply a service through *all means of delivery*, whether by mail, telephone, Internet etc., unless otherwise

¹²³ Luff, “Telecommunications and Audio-visual Services,” 1079.

¹²⁴ Shin-yi Peng, “Liberalization of Trade in Television Services: The Negotiation Dilemma and Challenges for the Future,” *Journal of World Trade* 43, no. 4 (2009), 680.

¹²⁵ Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 329.

Figure II-1 Technological neutrality and likeness in *US – Gambling*

		Domestic service provider delivering gambling services from within the US	Foreign service provider delivering gambling services across the border (GATS Mode 1)
On-site Supply (non-electronic)		Case I	N/A
Remote Supply	Postal	Case II	Case III
	Electronic and other means		Case IV

The diagram includes blue arrows and text annotations:

- A blue arrow points from Case I to Case II, labeled "Likeness?".
- A blue arrow points from Case II to Case III, labeled "Likeness?".
- A blue arrow points from Case II to Case IV, labeled "Likeness?".
- A vertical double-headed blue arrow is positioned between Case III and Case IV, labeled "Intra-Modal Technological Neutrality".

Source: Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 331.

specified in a member’s Schedule. We note that this is in line with the principle of “technological neutrality”, which seems to be largely shared among WTO members. [*Italic added*]¹²⁶

Wunsch-Vincent refers to the Panel’s restrictive interpretation of the notion of technological neutrality as “intra-modal technological neutrality.”¹²⁷ This intra-modal technological neutrality, which is much narrower than general likeness concept in its scope, is well illustrated in **Figure II-1**. Pursuant to the notion of intra-modal technological neutrality, unless otherwise specified in a Member’s schedule, both gambling service suppliers using postal and those using electronic means across the border should be subject to an equivalent market access or national treatment obligation. It implies that the methods or technologies enabling Mode 1 services supply should not affect whether the services in question are covered by WTO rules and commitments. This Panel’s finding was confirmed by the Appellate Body. The Appellate Body stated that:

We, therefore, uphold the Panel’s finding that: [a prohibition on one, several

¹²⁶ Panel Report, *US – Gambling*, para. 6.285.

¹²⁷ Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 332.

or all means of delivery cross-border] is a “limitation on the number of services suppliers in the form of numerical quotas” within the meaning of Article XVI:2(a) because it totally prevents the use by service suppliers of one, several or *all means of delivery* that are included in mode 1. [Italic added]¹²⁸

It should be welcome that the idea of technologically neutral, albeit in a narrow way, is taken into account in WTO litigation process. Unfortunately, however, more fundamental issue of likeness in the digital era is still left untouched: with respect to the issue of a violation of GATS Article XVII (national treatment) in the dispute, Antigua argued that the cross-border gambling services delivered online provided by Antiguan suppliers were like to on-site supply of gambling services provided by US local suppliers. It is demonstrated in **Figure II-1** as the relationship between Case IV and Case I. It is not clear, either, whether likeness exists between foreign online service providers and their domestic counterparts who supply the same service in various remote ways, that is, Case IV with against to Case II, in **Figure II-1**. Antigua also rejected the concept of cross-mode likeness with reference to the United States’ statement made in the Work Program on Electronic Commerce.¹²⁹ Antigua stated:

By definition, cross-border supply requires the use of remote communication – thus if the different mode of supply *ipso facto* results in a conclusion that services are “unlike” it would render Members’ commitments in respect of cross border supply under the GATS meaningless. Indeed, the United States has itself stated in a submission to the WTO on electronic commerce that “there should be no question that where market

¹²⁸ Appellate Body Report, *US – Gambling*, para. 239.

¹²⁹ WTO, WT/GC/16, G/C/2, S/C/7, IP/C/16, WT/COMTD/17, 3.

access and national treatment commitments exist, they encompass the delivery of the service through electronic means, in keeping with the principle of technological neutrality.”¹³⁰ [*Italic original*]

In turn, the US responded that Antigua has not only failed to prove that remote gambling services and suppliers are like to non-remote gambling services and suppliers but failed to demonstrate that its services and service suppliers receive less favorable treatment.¹³¹

Despite the two parties’ opposing arguments, the question of whether foreign-origin services transmitted by electronic means can be unlike to domestic services supplied on-site or by non-electronic means has not been addressed by the Panel. The Panel and Appellate Body have dealt with Antigua’s claim solely based on GATS Article XVI, exercising judicial economy with respect to Antigua’s GATS Article XVII claims.¹³² One of the most important legal issues concerning digital trade, the relationship between likeness and the principle of technological neutrality, therefore has to remain unclear until the next dispute arises. Despite a strong assertion that the electronic delivery of services does not make the services unlike by definition by a commentator, we have no choice but to endure legal uncertainty for the time being.¹³³

4.3. Evolutionary Interpretation of the GATS Schedules of Commitments

Innovative ICT-enabled services and new media content services combined with telecommunications and digital technologies are crossing the borders at the speed of light. Thus, there are growing concerns whether the decades-old legal mechanisms governing tariff concessions for goods and market access and/or national treatment commitments

¹³⁰ Panel Report, *US – Gambling*, para. 3.161.

¹³¹ *Ibid.*, para. 6.423.

¹³² *Ibid.*, para. 6.426.

¹³³ Wunsch-Vincent, “The Internet, Cross-Border Trade in Services, and the GATS,” 335.

for services are still relevant to today's digital nature of economy.¹³⁴ In other words, a critical question appears: how should the existing goods and services schedules be interpreted in line with digital economic reality?

As WTO Members' schedules are an integral part of the GATT 1994, they have to be examined in accordance with "the rules of treaty interpretation set out in the *Vienna Convention*."¹³⁵ Records of WTO dispute cases show that the issue of interpreting schedules of commitments, directly or indirectly, stemming from technological development has been challenged several times.¹³⁶ Moreover, disputes over the coverage and substantive obligations of GATS commitments are only to increase due to the rapid development of digital technologies and the trend of technological convergence.

In this section, we take a look at general discussions on technological development and treaty interpretation, particularly with respect to GATS schedule of commitments. Then we put emphasis on the role of the principle of technological neutrality in interpreting existing commitments within the context of digital trade. The examination on the use of the principle of technological neutrality in actual litigation will be followed.

4.3.1. General Rule of Treaty Interpretation in WTO Dispute Settlement

For the purpose of codifying the international law on treaties, states adopted the Vienna Convention on Law of Treaties (hereinafter VCLT) in 1969, which entered into force in 1980.¹³⁷ Articles 31 to 33 of the VCLT, in particular, set out the customary rules of treaty interpretation. Pursuant to Article 31, as a general rule, any subsequent

¹³⁴ Shin-yi Peng, "Renegotiate the WTO "Schedules of Commitments"?: Technological Development and Treaty Interpretation," *Cornell International Law Journal* 45, no. 2 (2012), 405.

¹³⁵ Appellate Body Report, *EC – Computer Equipment*, paras. 88, 109.

¹³⁶ For instance, *EC – Computer Equipment*; *Mexico – Telecom*; *US – Gambling*; *EC – IT Products*; *China – Audiovisuals*.

¹³⁷ For the rules of the interpretation of international treaties, see, generally, Antonio Cassese, *International Law*, 2nd ed. (New York: Oxford University Press, 2005), 178-180.

agreement, practice, and relevant rules as well as the ordinary meaning to be given to the terms of a treaty in their context have to be taken into consideration when interpreting a treaty.¹³⁸ On the other hand, the preparatory work and the circumstances may be had recourse to as supplementary means of interpretation under certain conditions in accordance with Article 32.¹³⁹

Like any other international treaties, provisions under the WTO agreements including the GATS, in no doubt, need interpretation by adjudicators in actual litigation. As the WTO dispute settlement system is guided by the DSU, panels and the Appellate Body should clarify the provisions of the WTO covered agreements according to customary rules of interpretation of public international law.¹⁴⁰ The Appellate Body has confirmed that Articles 31 and 32 of the VCLT became “customary rules of interpretation of public international law” in its first report¹⁴¹ and it has continued to hold its opinion.¹⁴² The WTO adjudicatory bodies would have no incentive to depart from such practices of treaty interpretation in clarifying WTO Members’ GATS schedules of commitments as well as the provisions set forth in WTO covered agreements.¹⁴³

¹³⁸ See, for the full text of Article 31 of the VCLT, **Annex II-6**.

¹³⁹ See, for the full text of Article 32 of the VCLT, **Annex II-6**.

¹⁴⁰ Article 3.2 of the DSU. It reads: “The dispute settlement system of the WTO is a central element in providing security and predictability to the multilateral trading system. The Members recognize that it serves to preserve the rights and obligations of Members under the covered agreements, and to clarify the existing provisions of those agreements in accordance with *customary rules of interpretation of public international law*. Recommendations and rulings of the DSB cannot add to or diminish the rights and obligations provided in the covered agreements. [Italic added]”

¹⁴¹ Appellate Body Report, *US – Gasoline*, 16-17.

¹⁴² See, for instance, Appellate Body Report, *Japan – Alcoholic Beverages II*, 104; Appellate Body Report, *EC – Computer Equipment*, para. 84; Appellate Body Report, *US – Shrimp*, para. 114; Appellate Body Report, *Korea – Dairy*, para. 81.

¹⁴³ See generally Isabelle Van Damme, “The Interpretation of Schedules of Commitments,” *Journal of World Trade* 41, no. 1 (2007): 1-52; Isabelle Van Damme, *Treaty Interpretation by the WTO Appellate Body* (New York: Oxford University Press, 2009); Isabelle Van Damme, “Treaty Interpretation by the WTO Appellate Body,” *European Journal of International Law* 21, no. 3 (2010): 605-648.

4.3.2. Evolutionary Interpretation and the Principle of Technological Neutrality

Changes, either expected or unexpected, may not be avoidable between the date of the conclusion of a treaty and the date of its interpretation in actual litigation.¹⁴⁴ Marceau succinctly categorizes these changes into four types, which can be scrutinized through the lens of Articles 31 to 33 of the VCLT: (i) linguistic changes for the ordinary or special meaning of terms – *i.e.*, when generic terms are used; (ii) changes of ordinary meaning of the terms in their broad context; (iii) physical or technical transformations; (iv) changes to other relevant and related treaties or aspects of international law.¹⁴⁵

Under the conventional doctrine of intertemporality in international law, the conclusion date of a treaty has always been chosen as the reference time for interpreting the treaty between the parties.¹⁴⁶ That is to say, the provisions of a treaty should be interpreted in accordance with the meaning which they held at the time when the treaty was initially agreed upon.

Having said that, if strictly applied over the course of treaty interpretation process, the doctrine of intertemporality would fail to take into account the substantial changes – *e.g.*, changes in the political, social, historical or legal context; linguistic changes; changes in the law; or technological changes – after the conclusion of the treaty.¹⁴⁷ This caveat of the principle of intertemporality is particularly relevant to the WTO/GATS framework in the digital era. With digital technologies providing for a new way of

¹⁴⁴ Gabrielle Marceau, “Evolutive Interpretation by the WTO Adjudicator,” *Journal of International Economic Law* 21, no. 4 (2018), 791.

¹⁴⁵ *Ibid.*, 792.

¹⁴⁶ The principle of intertemporality was articulated by Justice Huber. He stated in the *Isla de Palmas Case* that: “a juridical fact must be appreciated in the light of the law contemporary with it, and not of the law in force at the time which a dispute in regard to it arises or falls to be settled.” *Isla de Palmas Case* (Netherlands v United States), 2 *Reports of International Arbitration Awards* 831, 845.

¹⁴⁷ Marceau, “Evolutive Interpretation by the WTO Adjudicator,” 793.

services delivery and with new digital services coming into being, there is a growing concern over how to interpret the brick-and-mortar GATS services schedules in line with technological advances. Such concern includes whether a specific economic activity enabled by digital technologies is covered by a WTO Members' incumbent services schedules or whether existing market access and/or national treatment commitments may be extended to measures restricting digital trade.

To cope with these difficulties, the WTO adjudicating bodies have adopted an evolutionary or dynamic interpretative approach.¹⁴⁸ The Appellate Body in *US – Shrimp*, for the first time, spoke of an evolutionary interpretation as follows:

From the perspective embodied in the preamble of the WTO Agreement, we note that the generic term 'natural resources' in Article XX(g) is not 'static' in its content or reference but is rather 'by definition, evolutionary'.¹⁴⁹

This evolutionary interpretation of the WTO adjudicators, as opposed to intertemporality, is supported by the fact that the reference to intertemporality has disappeared from the draft text during the VCLT negotiations.¹⁵⁰ Panels and the Appellate Body now have more leeway to read the WTO Agreements with a more contemporary view.

Among Marceau's four types of changes, the third type of "physical or technical transformations" is most relevant to the principle of technological neutrality. Most of the time, technological advancement is not envisaged at the time of treaty conclusion, making it arduous to draw negotiators' intention or the meaning of a treaty provision based solely upon legal language itself. Therefore, treaty interpreters need to rely upon a teleological interpretation for an evolutionary approach to be justified. In this sense, the principle of

¹⁴⁸ *Ibid.*, 792.

¹⁴⁹ Appellate Body Report, *US – Shrimp*, para. 130.

¹⁵⁰ See, for the negotiating history of the VCLT, Van Damme, *Treaty Interpretation by the WTO Appellate Body*, 55; Marceau, "Evolutive Interpretation by the WTO Adjudicator," 795-800.

technological neutrality plays a critical role in maintaining the object and purpose of the GATS and the effectiveness of individual services schedule.

Without the principle of technological neutrality, it would lead to an absurd conclusion that the scope and the substance of commitments undertaken at the time of Member's accession to the WTO should be examined every time when new technology develops. It would further undermine the flexibility of the GATS and weaken GATS negotiators' intention to "establish a multilateral framework of principles and rules for trade in services with a view to the expansion of such trade under conditions of transparency and progressive liberalization."¹⁵¹ Since the principle of technological neutrality rightly renders the object and purpose of the GATS insusceptible to technological advancement, it is "necessary to its effectiveness" to interpret the GATS schedules of specific commitments in a dynamic way with regard to technological progress.¹⁵² Such a proposition is also shared by some WTO Members: the US, for instance, has called upon other Members to agree that "old classifications and commitments can apply to new technologies."¹⁵³ A group of trade law commentators also insist the WTO and its subsidiary bodies to formally accept the notion of technological neutrality with respect to the interpretation of GATS schedules of specific commitments.¹⁵⁴

¹⁵¹ Preamble of the GATS.

¹⁵² Marceau, "Evolutive Interpretation by the WTO Adjudicator," 807.

¹⁵³ GC, JOB/GC/178, para. 6.1.

¹⁵⁴ See, among others, Peng, "Renegotiate the WTO "Schedules of Commitments"?," 427-429; L. Lee Tuthill, "Cross-border Data Flows: What Role for Trade Rules?," in *Research Handbook on Trade in Services*, eds. Pierre Sauvé and Martin Roy (Cheltenham, U.K.: Edward Elgar Publishing, 2016), 379; Conconi and Pauwelyn, "Trading Cultures," 102; Marceau, "Evolutive Interpretation by the WTO Adjudicator," 812. On the other hand, there is another view that it is not sufficient to adopt the principle of technological neutrality in interpreting the GATS schedules because existing commitments are out of date and many subsectors are not included. See Andrew Mitchell and Neha Mishra, "Data at the Docks: Modernizing International Trade Law for the Digital Economy", *Vanderbilt Journal of Entertainment and Technology Law* 20, no. 4 (2018), 1119.

It is expected that the principle of technological neutrality would help maintain the stability and predictability of the GATS regulatory framework and give theoretical grounds for an evolutionary interpretation approach in the digital era. However, WTO jurisprudence on the issue is far from clear.

4.3.3. WTO Jurisprudence

With respect to the role of technological neutrality in treaty interpretation, few WTO disputes are available for analysis. To the best of our knowledge, *China – Audiovisuals* is a unique case dealing with the interpretation of the services schedule of specific commitments with regard to digital trade.

In *China – Audiovisuals*, it was contended that whether a music distribution service over digital networks was covered by GATS rules and subject to specific market access and national treatment commitments. The complainant in *China – Audiovisuals*, the US, had recourse to the principle of technological neutrality to contend that “any practical differences that may exist between the supply of sound recordings in physical and non-physical form are simply differences with respect to the “means of delivery.””¹⁵⁵ According to the US, the principle of technological neutrality does not allow these differences to be “relevant to the interpretation of the scope of a GATS commitment, unless specified in a Member’s schedule.”¹⁵⁶ China, on the other hand, rejected the complainant’s assertion that the principle of technological neutrality has been formally accepted by WTO Members. It also denied that the principle “make[s] irrelevant ... the practical differences between the supply of sound recordings in physical as compared to non-physical form.”¹⁵⁷ China continued:

¹⁵⁵ Panel Report, *China – Audiovisuals*, para. 7.1248.

¹⁵⁶ *Ibid.*

¹⁵⁷ *Ibid.*, para. 7.1249.

[The principle of technological neutrality] only applies to different technologies used in the supply of the *same* service, which is not the case with respect to the distribution of sound recordings in non-physical, as compared to physical, form. For China, the services at issue, which are distributed on a non-physical medium, are different services (“network music services”), and not “sound recording distribution services”. [Italic original]¹⁵⁸

The role of the principle of technological neutrality in clarifying the scope of China’s services commitments and its status in the world trading system was explicitly raised in *China – Audiovisuals*. The Panel, however, concluded that it did not need to invoke the principle of technological neutrality to address the issue at hand. It indeed exercised judicial economy to take a strategically neutral stance on the principle of technological neutrality. The Panel stated:

We note, however, that in interpreting China’s commitment on “sound recording distribution services”, we have *no need to invoke a principle of technological neutrality...*¹⁵⁹ [Italic added]

When the Appellate Body was requested to determine whether the scope of commitments in sound recording distribution services may be extended to the “electronic” distribution of sound recording, it took an evolutionary approach to be consistent with the approach taken in *US – Shrimp* without referring to the principle of technological neutrality.¹⁶⁰ The Appellate Body affirmed:

¹⁵⁸ *Ibid.*

¹⁵⁹ *Ibid.*, para. 7.1258.

¹⁶⁰ For the approach taken by the Appellate Body in the *US – Shrimp* case, refer to **Section 4.3.2.** of this chapter.

More generally, we consider that the terms in China’s GATS Schedule (“sound recording” and “distribution”) are *sufficiently generic* that what they apply to may *change over time*. [Italic added]¹⁶¹

Peng, who is a vocal proponent for the principle of technological neutrality, expresses her view that the principle of technological neutrality may well serve as the rationale for the notion of “generic term” used in *China – Audiovisuals*.¹⁶² But Delimatsis rightfully laments that it is puzzling for the Panel and Appellate Body in *China – Audiovisuals* to not have a word on the principle of technological neutrality, even though the issue was unequivocally challenged by the two parties.¹⁶³ We are of the view that the WTO adjudicatory bodies have been hesitant to adopt the idea of technological neutrality in interpreting GATS commitments to take “strategical neutrality” on technological neutrality. It should be hailed for the Appellate Body to take an evolutionary approach toward the interpretation of specific commitments in order to infer negotiators’ intention from the use of generic terms and to preserve the object and purpose of the GATS. It is disappointing, however, that the WTO adjudicators have refused to accept the principle of technological neutrality, which is essential to warrant an evolutionary interpretation amid the rapidly changing technological environment.

4.4. Why Would the WTO Adjudicators Maintain Strategical Neutrality on Technological Neutrality?

Several reasons may be assumed why the WTO adjudicators are reluctant to adopt the principle of technological neutrality. For a starter, there is no textual basis on

¹⁶¹ Appellate Body Report, *China – Audiovisuals*, para. 396.

¹⁶² Peng, “Renegotiate the WTO “Schedules of Commitments”?,” 427.

¹⁶³ Delimatsis, “Protecting Public Morals in a Digital Age,” 25.

technological neutrality in the WTO legal text. As discussed in Section 3.2. of this chapter, the Chairman Note during basic telecommunications negotiations implicitly refers to technological neutrality.¹⁶⁴ It is only limited to the basic telecommunications commitments and may not be applicable to other service sectors.¹⁶⁵ Given no textual basis in WTO Agreements, it must be much burdensome for panels and the Appellate Body, which generally give priority to semantic analysis, to have recourse to technological neutrality as a general principle.

Second, no consensus has been formulated so far among WTO Members on whether technological neutrality is a ubiquitous principle in the WTO/GATS legal framework. Some Members have requested more discussions and examination on the issue in the Interim and Progress Reports.¹⁶⁶ It is likely for the WTO adjudicatory bodies to withhold declaring technological neutrality as a universal WTO principle until a general consensus is reached at the multilateral negotiating fora.

Last but not least, the Panel and the Appellate Body in *China – Audiovisuals* have avoided examining the case through the lens of technological neutrality. It is not only because GATS Mode 3 commercial presence was at the center of the dispute but because the main products at issue also were sensitive cultural goods including books, periodicals, electronic publications, sound recordings, DVDs, cinematographic films and culture-related services.¹⁶⁷ The Appellate Body thus focused more on the questions of whether

¹⁶⁴ Group on Basic Telecommunications, S/GBT/W/2, para. 1.

¹⁶⁵ Hu, “When Trade Encounters Technology,” 82.

¹⁶⁶ The Interim Report reveals: “Several delegations said that it was important to affirm the technological neutrality of the GATS but some delegations wished to see more discussion of this notion.” CTS, S/C/8, 3; The Progress Report describes: “Some delegations expressed a view that these issues [including technological neutrality] were complex and needed further examination.” CTS, S/L/74, 4.

¹⁶⁷ Rolf H. Weber, “Digital Trade in WTO-Law – Taking Stock and Looking Ahead,” *Asian Journal of WTO and International Health Law and Policy* 5, no. 1 (2010), 16.

the content was goods or services and whether the respondent's measures were justified by public morals defense in accordance with Article XIV of the GATS.

5. A Way Forward to Embracing the Principle of Technological Neutrality in the World Trading System

Provided that the WTO adjudicatory bodies have been hesitant to rely on the principle of technological neutrality in actual disputes, alternatives should be sought to incorporate the principle into the world trading system. Some ideas are presented in this section to trigger further discussions.

5.1. At the Bilateral and Regional Level

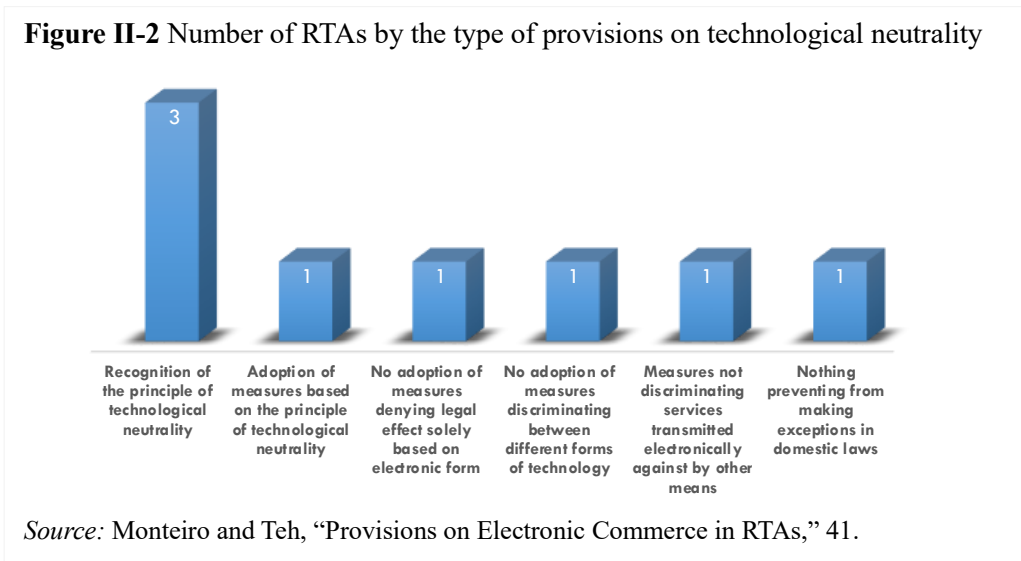
As an interim way of incorporating the principle of technological neutrality into the world trading governance, RTAs can be utilized.¹⁶⁸ It seems that this idea is gaining momentum among countries. A number of recently concluded RTAs have provisions recognizing the principle of technological neutrality in a direct or indirect manner.¹⁶⁹

¹⁶⁸ These RTAs include bilateral free trade agreements between two countries – *e.g.* Korea-US FTA, Korea-Singapore FTA, or US-Australia FTA – or free trade agreements within a region – *e.g.* US-Mexico-Canada Agreement (hereinafter USMCA), Regional Comprehensive Economic Partnership Agreement (hereinafter RCEP), Comprehensive and Progressive Trans-Pacific Partnership Agreement (hereinafter CPTPP).

¹⁶⁹ Following analysis relies on the WTO Staff Working Paper. See José-Antonio Monteiro and Robert Teh, "Provisions on Electronic Commerce in Regional Trade Agreements," *WTO Staff Working Paper* ERSD-2017-11 (2017).

Of 275 RTAs in force at the time of writing, three RTAs explicitly recognize the principle of technological neutrality.¹⁷⁰ Several other RTAs incorporate a specific provision relevant to the principle of technological neutrality. Those specific provisions can be categorized into: adoption of measures based on technological neutrality principle; no adoption of measures denying legal effect solely based on electronic form; no adoption of measures discriminating between different forms of technology; measures not discriminating services transmitted electronically against by other means; nothing preventing from making exceptions in domestic laws. The types of provisions relating to the principle of technological neutrality found in various RTAs are presented in **Figure II-2**.

There are other provisions which address the principle of technological neutrality in an indirect way.¹⁷¹ To illustrate, some RTAs encourage the parties not to take more restrictive measures on international transactions by electronic means than trade



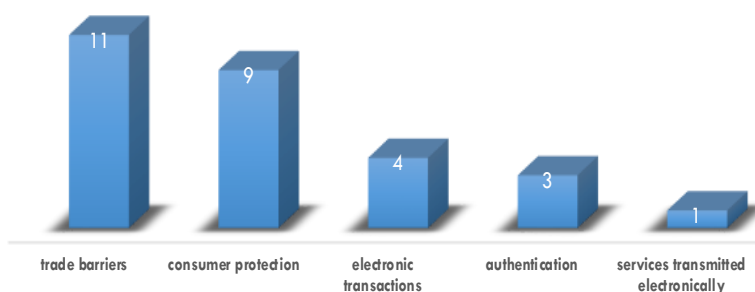
¹⁷⁰ Article 71.2 of Japan-Switzerland EPA; Article 9.1.3 of Japan-Mongolia EPA; Article 1.3 in Chapter VI of EU-Japan EPA.

¹⁷¹ Monteiro and Teh, “Provisions on Electronic Commerce in RTAs,” 42.

conducted by traditional means. Other provisions in RTAs stipulate that the parties shall grant e-commerce consumer protection which is equivalent to that granted for consumers of other forms of transaction methods. Provisions requiring the parties to provide the legal validity on signature in electronic form can also be found in certain RTAs. **Figure II-3** presents various areas to which the principle of technological neutrality applies and the number of RTAs which have such provisions.

Among major countries, it is Japan that makes great effort to incorporate the principle of technological neutrality at the bilateral level. Article 71.2 in Electronic Commerce Chapter of Japan-Switzerland Economic Partnership Agreement (hereinafter EPA), for instance, explicitly refers to the principle of technological neutrality with the definition that “any provisions related to trade in services do not distinguish between the different technological means through which a service may be supplied.”¹⁷² It goes further to prohibit the parties from “discriminat[ing] the supply of services transmitted

Figure II-3 Number of RTAs by area where technological neutrality applies



Source: Monteiro and Teh, “Provisions on Electronic Commerce in RTAs,” 42.

¹⁷² Article 71.2 of Japan-Switzerland EPA. In addition, Article 9.1.3 of Japan-Mongolia EPA sets out that “The Parties recognize *the principle of technological neutrality* in electronic commerce.” [Italic added]; Article 1.3 in Chapter VI of EU-Japan EPA stipulates that “The Parties recognize the importance of *the principle of technological neutrality* in electronic commerce. [Italic added]”

electronically against the supply of like services by other means.”¹⁷³ To the best of our knowledge, Japan-Switzerland EPA is the very first bilateral or regional trade agreement enshrining the principle of technological neutrality in legal text and it sets forth the clear definition of the principle and specifies its role in non-discriminatory treatment. The provisions relating to technological neutrality in the EPA between Japan and Switzerland are ingenious when they are compared to equivalent provisions in other EPAs of which Japan is a signatory: in the EPA with Australia, implicit technological neutrality is adopted in negative terms¹⁷⁴; in other EPAs such as one with Mongolia and one with the EU, the notion of the principle of technological neutrality is stipulated in an explicit manner without any specific definition.¹⁷⁵

With multilateral e-commerce negotiations stalemated for decades, we believe that RTAs can serve as an efficient and swift rule-making tool, if not perfect, to reduce legal uncertainty brought about by digital trade. Moreover, specific provisions dealing with the principle of technological neutrality in RTAs would help guarantee the applicability of principal trade disciplines such as non-discrimination principle to services supplied by electronic means at least between the parties to the agreements. In this light, the approach of Japan-Switzerland EPA, which sets forth the notion, definition, and function of the principle of technological neutrality, would be a good model for other countries to follow.

¹⁷³ Article 74 of Japan-Switzerland EPA.

¹⁷⁴ Article 13.5.2 of Japan-Australia EPA reads: “[n]either Party shall adopt or maintain measures regulating electronic transactions that: (a) deny the legal effect, validity or enforceability of a transaction, including a contract, solely on the grounds that it is in the form of an electronic communication; or (b) discriminate between different forms of technology, unless such measures are provided for in its laws and regulations and are administered in a reasonable, objective and impartial manner.” Japan-Australia EPA entered into force on January 15, 2015.

¹⁷⁵ Article 9.1.3 of Japan-Mongolia EPA reads: “[t]he Parties recognize *the principle of technological neutrality* in electronic commerce. [Italic added]”; Article 8.70 in Chapter 8 of Japan-EU EPA states: “[t]he Parties recognize the importance of *the principle of technological neutrality* in electronic commerce. [Italic added]” Japan-Mongolia EPA entered into force on June 7, 2016. The Japan-EU EPA took effect on February 1, 2019.

5.2. At the Plurilateral Level

The successful conclusion of the Fourth Protocol to the GATS (Annex on Negotiations on Basic Telecommunications), the Information Technology Agreement (hereinafter ITA I), and the expansion of the Agreement (hereinafter ITA II) have brought trade negotiators attention from multilateral negotiation avenue to plurilateral one.¹⁷⁶ Plurilateral negotiations have certain benefits: negotiations are held by like-minded participants who have similar national and trade interests, which makes it easy for them to reach an agreement; they involve more participants than bilateral or regional trade negotiations, thus allowing negotiation results to be multilateralized relatively more smoothly.

Taking into consideration the benefits of plurilateral negotiation, many scholars and trade law commentators have proposed a plurilateral deal as an alternative approach to establish new disciplines on digital trade. To take some examples, Herman comes up with the idea of creating a plurilateral e-commerce agreement as a way of a top-down approach to multilateralize regionalism in digital trade area.¹⁷⁷ Some commentators, who recognize that the current WTO rules are insufficient to regulate digital trade, welcome a plurilateral approach on digital trade within the WTO framework as the best option toward multilateralism.¹⁷⁸ Others put forward a plurilateral agreement as a flexible but crucial

¹⁷⁶ The ITA I was concluded by 29 participants at the Singapore Ministerial Conference (hereinafter MC) in December 1996. The ITA II was finalized at the Nairobi MC by more than 50 members. For more information on ITA, see WTO, *15 Years of the Information Technology Agreement: Trade, Innovation and Global Production Networks*, (Geneva, Switzerland: WTO Publications, 2012).

¹⁷⁷ Lior Herman, "Multilateralizing Regionalism: The Case of E-Commerce", *OECD Trade Policy Papers*, no. 99 (2010), 20-21.

¹⁷⁸ See Mitchell and Mishra, "Data at the Docks," 1129; James Bacchus, "Was Buenos Aires the Beginning of the End or the End of the Beginning?: The Future of the World Trade Organization," *Cato Institute Policy Analysis*, no. 841 (2018), 3, accessed July 1, 2019, <https://www.cato.org/publications/policy-analysis/was-buenos-aires-beginning-end-or-end-beginning-future-world-trade>; Fefer et al., "Digital Trade and U.S. Trade Policy (2017)," 32.

mechanism to keep the WTO principle relevant in the era of digital economy and digital trade.¹⁷⁹

Many digital trade rules, on which WTO Members have failed to reach a consensus so far, may be discussed at the plurilateral negotiations. Among others, the principle of technological neutrality is arguably the most urgent and practical issue that needs to be discussed at the plurilateral venue. Should the definition, scope, and function of the principle be inscribed in a new plurilateral agreement on digital trade, it would help reduce legal uncertainty stemming from the gap between digital economic reality and the brick-and-mortar WTO/GATS legal framework. A plurilateral approach also can serve as a stepping stone to multilateralism since rules and disciplines incorporated in a plurilateral agreement are easy to be multilateralized. Unless the WTO adjudicatory bodies drop out its strategically neutral stance on technological neutrality, a plurilateral agreement can be a second-best option to incorporate the principle of technological neutrality into the world trading regime.

One specific way to accommodate the principle of technological neutrality through plurilateral negotiations is to encourage WTO Members to schedule the principle as additional commitments pursuant to Article XVIII of the GATS.¹⁸⁰ This approach to having additional commitments in a specific sector on a plurilateral basis was not unprecedented: it has been used for the adoption of definitions and regulations proposed in the Reference Paper on Basic Telecommunications Service during the negotiation on

¹⁷⁹ See Hosuk Lee-Makiyama, “Future-proofing World Trade in Technology: Turning the WTO IT Agreement (ITA) into the International Digital Economy Agreement (IDEA)”, *Aussenwirtschaft* (2011), 309; Mira Burri, “Should There Be New Multilateral Rules for Digital Trade?,” *The E15 Initiative – Strengthening the Global Trade System*, International Centre for Trade and Sustainable Development and World Economic Forum (2013), 6.

¹⁸⁰ Article XVIII of the GATS stipulates: “Members may negotiate commitments with respect to measures affecting trade in services not subject to scheduling under Articles XVI or XVII, including those regarding qualifications, standards or licensing matters. Such commitments shall be inscribed in a Member’s Schedules.”

basic telecommunications in the late 1990s.¹⁸¹ WTO Members have reached an agreement to schedule the regulatory principles presented by the Reference Paper as additional commitments pursuant to Article XVIII of the GATS. It was due to the concern that the regulatory principles in the Reference Paper were too sector-specific to be inscribed in a framework agreement like the GATS.¹⁸² As a group of WTO Members have experience to negotiate and conclude the Reference Paper on a plurilateral basis, it would be relatively easy for like-minded Members to list the principle of technological neutrality as an additional commitment to their schedule. It is of our view that the plurilateral fora would be a good place to negotiate a commitment to the principle of technological neutrality.¹⁸³

On January 25, 2019, a group of WTO Members has agreed to commence plurilateral negotiations on the trade-related aspects of electronic commerce.¹⁸⁴ Participants include as many as 76 WTO Members (counting the EU Member States separately), ranging from major digital trade players such as China, the EU, Japan, Korea, and the US to small and developing economies such as Albania, Brunei Darussalam, and Panama.¹⁸⁵ We hope that the issue of technological neutrality should be dealt with at this plurilateral venue.

¹⁸¹ See, for the negotiating history, scope, and coverage of the Reference Paper, Henry Gao, “Telecommunications Services: Reference Paper,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 718-747.

¹⁸² Gao, “Telecommunications Services: Reference Paper,” 721.

¹⁸³ The idea of Reference Paper-type approach on digital trade issues is proposed by several trade law commentators. See, among others, Burri, “Should There Be New Multilateral Rules for Digital Trade?,” 5; Mitchell and Mishra, “Data at the Docks,” 1127.

¹⁸⁴ WTO, *Joint Statement on Electronic Commerce*, WT/L/1056, 25 January 2019.

¹⁸⁵ Other participants are: Argentina; Australia; Bahrain, Brazil; Hong Kong; Iceland; Israel; Kazakhstan; Kuwait; Lao PDR; Liechtenstein; Malaysia; Mexico; Moldova; Mongolia; Montenegro; Myanmar; New Zealand; Nicaragua; Nigeria; Norway; Paraguay; Peru; Qatar; Russian Federation; Singapore; Switzerland; Chinese Taipei; Thailand; the former Yugoslav Republic of Macedonia; Turkey; Ukraine; United Arab Emirates; and Uruguay.

5.3. At the Multilateral Level

An alternative way can also be sought at the multilateral level. WTO Members, for instance, may agree to have a new “Annex on Electronic Commerce” or “Annex on Trade-Related Aspects of Electronic Commerce” to the GATS in order to constitute new rules and disciplines governing digital trade.¹⁸⁶ The principle of technological neutrality can be inscribed in this Annex with a dedicated provision. In this regard, reference can be made to the equivalent provision in Japan-Switzerland EPA.¹⁸⁷ A WTO Member may unilaterally revise its schedule of commitments to include the principle of technological neutrality either in cover note, headnote, or footnote to the schedule.

One may suggest that WTO Members amend the legal text of GATS to adopt a specific provision concerning the principle of technological neutrality to make the GATS matter in the digital era. Yet the approval of such amendment to any of the Multilateral Trade Agreements in Annex 1 of the WTO Agreements, including the GATS, should be decided by a two-thirds of the WTO Members¹⁸⁸, which is not easy to obtain.

Seeking a multilateral solution on controversial regulatory issues is by no means an easy option. Once an arrangement is concluded on a multilateral basis, however, it has *erga omnes* effects on all Members. It would be legally binding on every Member and serve as a legal reference for WTO adjudicators to take into account at actual litigation. Inscribing the principle of technological neutrality as a general principle in the context of multilateral trade agreements is definitely worth considering.

¹⁸⁶ This kind of negotiation strategy is not unprecedented in the GATS context. A number of annexes already have been attached to the GATS as a result of subsequent negotiations after the Uruguay Round including “Annex on Movement of Natural Persons Supplying Services under the Agreement,” “Annex on Air Transport Services,” “Annex on Financial Service,” “Annex on negotiations on Maritime Transport Services,” “Annex on Telecommunications,” “Annex on Negotiations on Basic Telecommunications.”

¹⁸⁷ See, for the relevant legal text in Japan-Switzerland EPA, **Section 5.1.** in this chapter.

¹⁸⁸ Article X of the Marrakesh Agreement Establishing the WTO.

6. Concluding Remarks

It is indeed too early to confirm that the idea of technological neutrality obtains the status of the general principle in the WTO/GATS legal framework. Yet it should also be noted that a common understanding is emerging among academic scholars and WTO Members with respect to the role of technological neutrality as a bridge between the brick-and-mortar analogue trading regime and the digital nature of trade. Integrating the principle of technological neutrality into the world trading regime is urgent and of great importance, given that more and more innovative digital technologies are used to deliver services across borders at a remarkably low cost. As the WTO adjudicatory bodies take a strategically neutral stance on the issue, it is still questionable whether GATS rules and disciplines comprehensively apply to digital trade and how existing GATS commitments and schedules are interpreted in line with digital economic reality.

Cross-border trade in new digital services and services provided over Internet networks should be subject to the legal framework of the WTO/GATS for legal certainty.¹⁸⁹ We strongly believe that the principle of technological neutrality warrants predictability and stability to the analogue global trading system in dealing with the digital aspects of trade. There should be no more reason for the WTO adjudicatory bodies and WTO Members to remain strategically neutral on the principle of technological neutrality.

¹⁸⁹ WTO, *World Trade Report 2018*, 170.

Annex II-1 GATS schedule of the Republic of Korea

Sector or Sub-sector	Limitations on Market Access	Limitations on National Treatment
E. RENTAL / LEASING SERVICES WITHOUT OPERATORS		
b. Relating to Aircraft [83104]	1) Unbound 2) Unbound 3) Joint venture in which foreign equity participation is less than 50% is permitted. 4) Unbound except as indicated in ALL SECTORS	1) None 2) None 3) Representatives of joint venture companies must be Korean nationals. 4) Unbound except as indicated in ALL SECTORS

Source: WTO, GATS/SC/48, 11.

Annex II-2 List of GATS-related issues discussed under the WTO Work Program on E-Commerce

Subjects	Interim Report (S/C/8)	Progress Report (S/L/74)
Scope (including modes of supply)	- Common understanding on the applicability of the GATS provisions to the electronic delivery of services - More work needed on the distinction between modes 1 and 2	- Common understanding on the applicability of the GATS provisions to the electronic delivery of services - More work needed on the distinction between modes 1 and 2
MFN	- More work needed on the question of likeness	- More work needed on the question of likeness
Transparency	- Consensus on the application of transparency obligation to e-commerce	- Consensus on the application of transparency obligation to e-commerce
Increasing participation of developing countries	- Common understanding on the importance of the participation of developing countries in e-commerce	- Common the on the importance of the participation of developing countries in e-commerce
Domestic regulation, standards, and recognition	- More discussion needed	- Common understanding on the application of Art. VI of the GATS to e-commerce
Competition	- Common understanding on the application of the Reference paper to e-commerce	- Common understanding that the expansion of e-commerce could help reduce the extent of restrictive business practices
Protection of privacy and public morals and the prevention of fraud	- Common understanding on the application of Art. XIV of the GATS (General Exceptions) to e-commerce	- Common understanding on the application of Art. XIV of the GATS (General Exceptions) to e-commerce
Market-access commitments on electronic supply of services	- Common understanding on the applicability of market-access commitment to the supply of the service by electronic means	- Common understanding on the applicability of market-access commitment to the supply of the service by electronic means
National treatment	- More work needed on the question of likeness	- More work needed on the question of likeness
Access to and use of public telecommunications	- More work needed	- Common understanding that the Annex on Telecommunications applies to access to and use of the Internet network

Subjects	Interim Report (S/C/8)	Progress Report (S/L/74)
transport networks and services		
Customs duties	- More work needed	- More work needed
Classification	- More work needed	- More work needed

Source: Author's compilation.

Annex II-3 WTO Cases Concerning the GATS

Title	Complaint(s)	Respondent	DS No.	Circulation^{a)}	Adoption^{b)}
<i>Canada – Certain Measures Concerning Periodicals</i>	USA	Canada	31	Mar 14, 1997	Jul 30, 1997
<i>European Communities – Regime for the Importation, Sale and Distribution of Bananas</i>	Ecuador, Guatemala, Honduras, Mexico, USA	European Communities	27	May 22, 1997	Sep 25, 1997
<i>Canada – Certain measures Affecting the Automotive Industry</i>	European Communities, Japan	Canada	139, 142	Feb 11, 2000	Jun 19, 2000
<i>Mexico – Measures Affecting Telecommunications Services</i>	United States	Mexico	204	Apr 2, 2004	Jun 1, 2004
<i>United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services</i>	Antigua and Barbuda	United States	285	Nov 10, 2004	Apr 20, 2005
<i>China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products</i>	USA	China	363	Aug 12, 2009	Jan 19, 2010
<i>China – Certain Measures Affecting Electronic Payment Services</i>	USA	China	413	Jul 16, 2012	Aug 31, 2012
<i>Argentina – Measures Relating to Trade in Goods and Services</i>	Panama	Argentina	453	Sep 30, 2015	May 9, 2016
<i>European Union and Its Member States – Certain Measures Relating to the Energy Sector</i>	Russia	EU	476	Aug 10, 2018	N/A

Source: WorldTradeLaw.net.

Note: a) “Circulation” is the date itself on the cover page of the report. b) “Adoption” refers to the date the report was adopted by the DSB.

Annex II-4 Articles I and III of the GATT 1994

Article I General Most-Favoured-Nation Treatment

1. With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, and with respect to the method of levying such duties and charges, and with respect to all matters referred to in paragraphs 2 and 4 of Article III, any advantage, favor, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the *like product* originating in or destined for the territories of all other contracting parties. [Italic added]

Article III National Treatment on Internal Taxation and Regulation

2. The products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to *like domestic products*. Moreover, no contracting party shall otherwise apply internal taxes or other internal charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1.1.

4. The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment *no less favorable* than that accorded to *like products* of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use. The provisions of this paragraph shall not prevent the application of differential internal transportation charges which are based exclusively on the economic operation of the means of transport and not on the nationality of the product.

Source: WTO, *The Legal Texts – The Results of the Uruguay Round of Multilateral Trade Negotiations* (Cambridge, U.K.: Cambridge University Press, 1999), 424, 427-428.

Annex II-5 Articles II and XVII of the GATS

PART II
GENERAL OBLIGATIONS AND DISCIPLINES

Article II

Most-Favored-Nation Treatment

1. With respect to any measure covered by this Agreement, each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment *no less favorable* than that it accords to *like services and service suppliers* of any other country. [Italic added]

PART III
SPECIFIC COMMITMENTS

Article XVII

National Treatment

1. In the sectors inscribed in its Schedule, and subject to any conditions and qualifications set out therein, each Member shall accord to services and service suppliers of any other Member, in respect of all measures affecting the supply of services, treatment *no less favorable* than that it accords to its own *like services and service suppliers*. [Italic added]

Source: WTO, *The Legal Texts – The Results of the Uruguay Round of Multilateral Trade Negotiations* (Cambridge, U.K.: Cambridge University Press, 1999), 424, 287-288, 299-300.

Annex II-6 Articles 31 and 32 of the VCLT

Article 31 General rules of interpretation

1. A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.
2. The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes:
 - (a) any agreement relating to the treaty which was made between all the parties in connection with the conclusion of the treaty;
 - (b) any instrument which was made by one or more parties in connection with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty.
3. There shall be taken into account, together with the context:
 - (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;
 - (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;
 - (c) any relevant rules of international law applicable in the relations between the parties.
4. A special meaning shall be given to a term if it is established that the parties so intended.

Article 32 Supplementary means of interpretation

Recourse may be had to supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion, in order to confirm the meaning resulting from the application of article 31, or to determine the meaning when the interpretation according to article 31:

- (a) leaves the meaning ambiguous or obscure; or
- (b) leads to a result which is manifestly absurd or unreasonable.

Source: Malcolm D. Evans, *Blackstone's International Law Documents*, 10th ed. (Oxford, U.K.: Oxford University Press, 2011), 133.

Chapter III Cross-Border Data Flows and Trade Agreements

1. Introduction

We are living in a data-driven economy. As most of our economic activities are being digitized and a vast number of machines and devices are connected to the Internet to communicate with each other, the enormous volume of data is being generated every day. This trend of digitization of an economy is only to continue. Cisco forecasts, as shown in **Figure III-1**, that global Internet Protocol (hereinafter IP) traffic will reach 395 exabytes per month in 2022, 219 times bigger than that in 2005.¹⁹⁰ Now it becomes a matter of life or death rather than a matter of choice for businesses to make use of data. The economic importance of data flows is also noteworthy: one study found that data flows have contributed to global gross domestic production (hereinafter GDP) growth more than goods trade in 2014.¹⁹¹

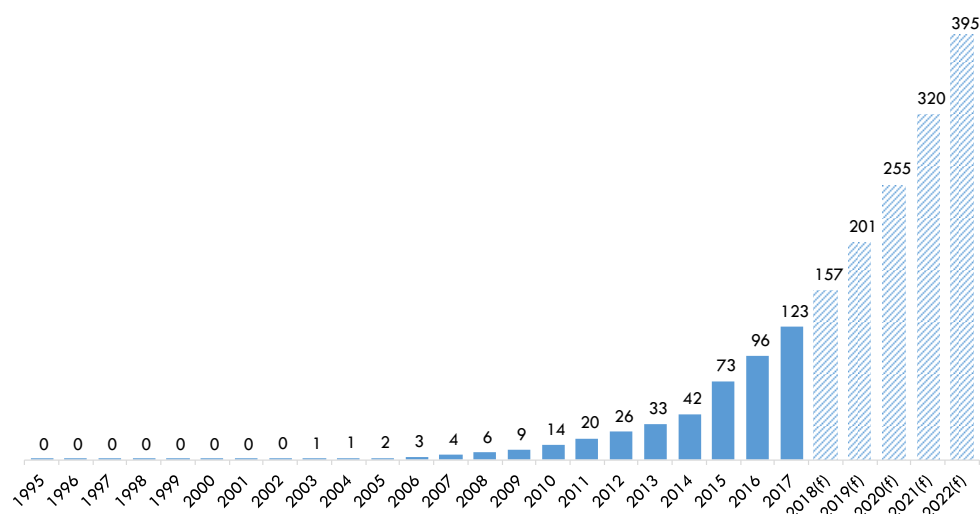
Data or information is often praised as the lifeblood or currency of the modern digital economy.¹⁹² Just as blood and currency need to seamlessly circulate to keep a body and an economy alive, uninterrupted data flows are essential for a modern economy and

¹⁹⁰ Cisco, “Visual Networking Index Global Fixed and Mobile Internet Traffic Forecasts,” accessed July 1, 2019, <https://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>.

¹⁹¹ While the economic contribution on world GDP of trade in goods was USD 2.7 trillion, cross-border data flows was estimated to have generated roughly USD 2.8 trillion of economic value globally in 2014. James Manyika, Susan Lund, Jacques Bughin, Jonathan Woetzel, Kalin Stamenov and Dhruv Dhingra, *Digital Globalization: The New Era of Global Flows*, Mckinsey Global Institute (2016), 77.

¹⁹² Robert D. Atkinson, “Testimony before the Committee on Ways on Means Trade Subcommittee – Hearing on “Expanding U.S. Digital Trade and Eliminating Barriers to Digital Exports,”” ITIF (2016), 19; Anupam Chander and Uyên P. Lê, “Data Nationalism,” *Emory Law Journal* 64 (2015): 721; Drake, “Background Paper,” 2; Google, “Enabling Trade in the Era of Information Technologies,” 13.

Figure III-1 Historical global IP traffic (exabytes/month)



Source: Author's compilation based on Cisco Visual Networking Index (VNI).

Notes: (i) Figures from 2018 through 2022 are based on Cisco's forecast.

(ii) IP traffic consists of fixed Internet (all IP traffic that crosses an Internet backbone), managed IP (corporate IP WAN traffic and IP transport of TV and VoD) and mobile data (mobile data and Internet traffic generated by handsets, notebook cards, and mobile broadband gateways). (iii) 1 Exabyte = 1,000 Petabytes = 1,000,000 Terabytes = 1,000,000,000 Gigabytes.

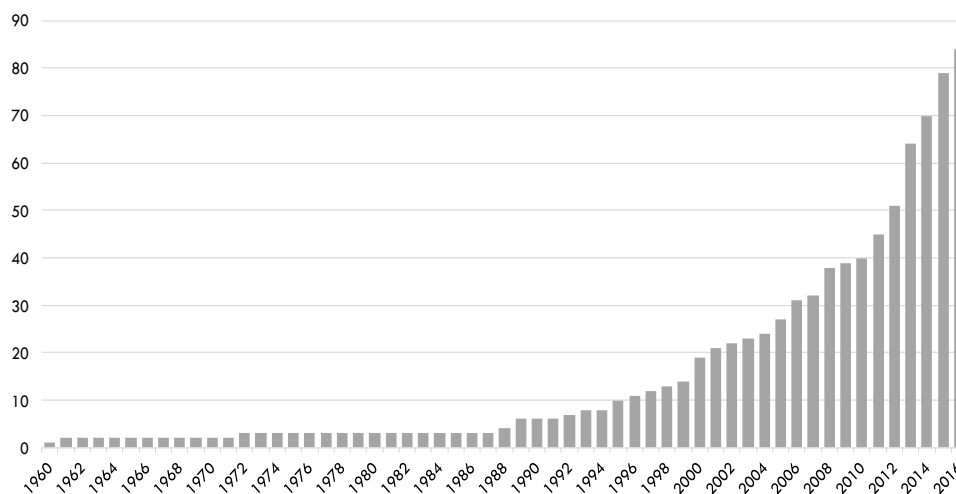
technological innovation. To illustrate, the most important trends in digital technologies today, the so-called AICBM – *i.e.*, artificial intelligence, internet of things, cloud computing, big data analytics, mobile – cannot advance without data crisscrossing national borders. On the other side of the coin, concerns are growing on an infringement of online privacy and an online security breach by third parties with more and more data moving back and forth.

Domestic policies and regulations governing cross-border data flows (hereinafter CBDF) are particularly getting more attention in the context of international trade. Due to its intrinsic “born global” nature of the Internet and its far-reaching usage in cross-border trade, domestic Internet governance or data policy must have an influence on

international commercial transactions.¹⁹³ It is widely reported that some measures originally designed to protect personal data, online privacy, or cybersecurity are being operated as *de facto* trade barriers at a global scale. The most common measure restricting CBDF is data localization. **Figure III-2** illustrates a rapid increase in data localization measures around the globe, especially since 2010. International cooperation is being made to keep data seamlessly flowing across borders but currently, there is no internationally agreed rule on CBDF.

The purpose of this chapter is to verify the significance of data flows in international trade and examine the role of trade agreements in ensuring the free transfer of data to facilitate digital trade. In this sense, this chapter develops an analytical tool to help understand the current status of global data policies and assesses the economic impact of

Figure III-2 Number of data localization measures globally



Source: Author's compilation based on ECIPE Digital Trade Estimates database.

¹⁹³ Shin-yi Peng and Han-wei Liu, "The Legality of Data Residency Requirements: How Can the Trans-Pacific Partnership Help?" *Journal of World Trade* 51, no. 2 (April 2017): 198.

data restrictions in the services trade context. At the end of the chapter, we propose some suggestions to the ongoing WTO plurilateral e-commerce talks.

2. Understanding of the Restrictive Measures on Cross-Border Data Flows

Before we go deep into the study on a digital version of trade barriers, it is necessary to assess domestic measures restricting CBDF in a systematic way. It is because the extent of the Internet and data flows is global but regulation thereof is local.¹⁹⁴ In this section, we develop an analytical tool to probe the nature and underlying rationale of countries' data policy. Country studies are to be followed.

2.1. Definition of Notion

CBDF or trans-border data flows (hereinafter TDF) is defined as “movement across national boundaries of machine readable data for processing, storage or retrieval.”¹⁹⁵ Although there are some contradicting views that data is different from information,¹⁹⁶ we use them interchangeably in this study as they bring about no substantial difference in the international trade law context.

¹⁹⁴ Peng and Liu, “The Legality of Data Residency,” 198.

¹⁹⁵ UN Centre on Transnational Corporations, *Transnational Corporations and Transborder Data Flows: Background and Overview* (New York: UN, 1984), 8.

¹⁹⁶ For instance, Sen argues that data is digitalized information. Nivedita Sen, “Understanding the Role of the WTO in International Data Flows: Taking the Liberalization or the Regulatory Autonomy Path?,” *Journal of International Economic Law* 21, no. 2 (2018): 325; Shapiro and Varian define information as “anything that can be digitized – encoded as a stream of bits.” Carl Shapiro and Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy* (Boston: Harvard Business Press, 1998), 3; it can be argued that data may need further processing to be information. Meanwhile, Rowley identifies data, information, knowledge, and wisdom in a hierarchical order. Jennifer Rowley, “The Wisdom Hierarchy: Representations of the DIKW Hierarchy,” *Journal of Information Science* 33, no. 2 (2007): 163-180.

Rationales for governments to devise and put in place restrictive measures on or barriers to CBDF vary ranging from data protection and online privacy, cybersecurity, data sovereignty, public morals to law enforcement and domestic industry protection. Governments, by either forcing companies to keep data within national jurisdiction or by requiring extra conditions for data to be relocated to foreign countries, may raise the cost of doing business across borders.¹⁹⁷

One of the most representative examples of restrictions on CBDF is data localization requirements.¹⁹⁸ Localization barriers to trade are not something unheard of in the context of international trade law.¹⁹⁹ Localization barriers to digital trade are simply those trade-restrictive measures that are put into place in the digital sector. For the purpose of this study, we understand data localization measures or requirements as broad as possible to include any government measure restricting or prohibiting the cross-border flow of data and requiring the local storage and processing of data.²⁰⁰

2.2. Data Policies at a Glance

To comprehend and monitor countries' practices curbing CBDF in a consistent and systematic way, we develop an analytical framework as shown in **Figure III-3**. A horizontal axis indicates that whether cross-border data flows are allowed under risk

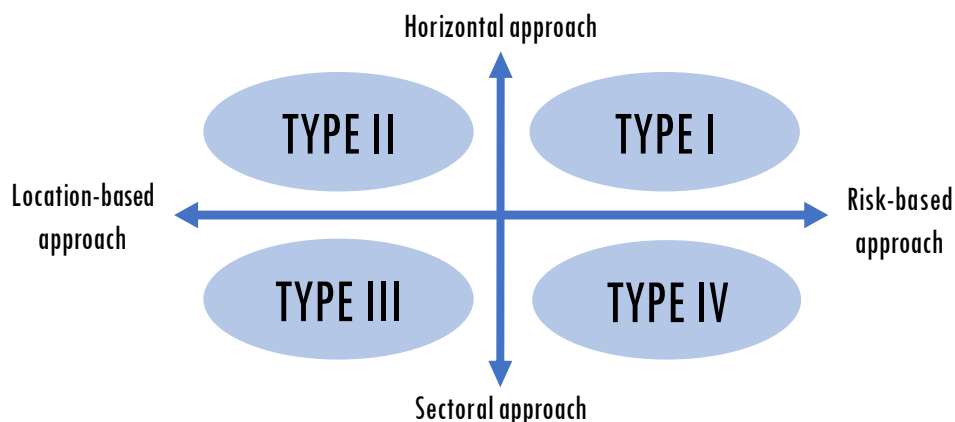
¹⁹⁷ Martina F. Ferracane, "Restrictions on Cross-Border Data Flows: A Taxonomy," *ECIPE Working Paper No. 1/2017* (2017), 2.

¹⁹⁸ They are often referred to as localization barriers to digital trade or data localization measures.

¹⁹⁹ The USTR puts the term of localization barriers to trade in the following way: "measures designed to protect, favor, or stimulate domestic industries, service providers, and/or intellectual property (IP) at the expense of goods, services, or IP from other countries. Localization barriers are measures that can serve as disguised trade barriers when they unreasonably differentiate between domestic and foreign products, services, IP, or suppliers, and may or may not be consistent with WTO rules." See USITC, *Digital Trade, Part 1*, 5-3.

²⁰⁰ See, for similar definition, Daniel Crosby, "Analysis of Data Localization Measures Under WTO Services Trade Rules and Commitments," ICTSD and World Economic Forum (2016), 2. This broad definition seems widely accepted among academics. See Chander and Lê, "Data Nationalism," 679; Sen, "Understanding the Role of the WTO in International Data Flows," 325.

Figure III-3 Analytical tool to comprehend global data regimes



Source: Illustrated by author.

assessment conditions (risk-based approach) or whether a domestic measure or a legal regime restricts or bans the cross-border transfer of data on a basis of geographical location (location-based approach).²⁰¹ A vertical axis shows the applicable scope of a data regime. If a measure restricting CBDF applies to any kind of data within a territory irrespective of sector, then it is to be categorized as a horizontal approach. On the other hand, a data-restrictive measure applicable to a specific sector or a specific type of data is classified as a sectoral approach.²⁰²

Thus four types of CBDF regimes are identified: horizontal and risk-based approach (Type I); horizontal and location-based approach (Type II); sectoral and location-based approach (Type III); sectoral and risk-based approach (Type IV).²⁰³ As not only data

²⁰¹ The USITC investigates several foreign countries' measures affecting business activities of US tech firms based on this categorization. See more USITC, *Digital Trade, Part 1*, 5-4-5.

²⁰² In its report published in 2017, the USITC categorizes major foreign countries' data protection and privacy measures into "comprehensive" and "partial or sectoral" approaches. See, for more, USITC, *Global Digital Trade 1: Market Opportunities and Key Foreign Trade Restrictions*, Publication No. 4716 (2017), 273.

²⁰³ Various taxonomies of restrictive measures on data transfer can be found in the literature. See more Kommerskollegium, *No Transfer, No Trade – the Importance of Cross-Border Data Transfers for Companies Based in Sweden* (Stockholm, Sweden: Kommerskollegium, 2014), 12-

localization requirements but also data protection and online privacy measures are taken into consideration in the framework, this two-by-two matrix may serve as a consistent and intelligent tool to comprehend the nature and underlying rationale of data policies in a global scope.

There have been numerous trade policy studies on tariff barriers and non-tariff barriers (hereinafter NTBs) in trade literature. Studies, however, concerning measures restricting or banning the free flow of data crossing national borders are few in numbers. Among others, Chander and Lê's country studies are noteworthy:²⁰⁴ they select more than 13 countries and an economic bloc²⁰⁵ to provide a detailed legal description of data localization measures and explore their underlying rationales.²⁰⁶ Yet, their study lacks structural research framework and narratively describes current domestic regulations in detail. Another ambitious research on CBDF regimes at a global scale is being carried out by the European Center for International Political Economy (hereinafter ECIPE), a Brussels-based independent think-tank. Under the title of the Digital Trade Estimates Project, it is working on composing Digital Trade Restrictiveness Index (hereinafter DTRI) and publishing the Digital Trade Restrictiveness Index Report (hereinafter DTRI Report) as well as constructing and maintaining the Digital Trade Estimates Database (hereinafter DTE Database), which is a comprehensive database solely dedicated to digital trade policy of 64 economies around the world.²⁰⁷ Among four broad clusters, practices of countries inhibiting data flows are included in "restrictions on data"

13; Peng and Liu, "The Legality of Data Residency Requirements," 192-194; Ferracane, "Restrictions on Cross-Border Data Flows," 3.

²⁰⁴ Chander and Lê, "Data Nationalism," 682-712.

²⁰⁵ They include: Australia; Brazil; Canada; China; the EU; France; Germany; India; Indonesia; Malaysia; Nigeria; Russia; South Korea; Vietnam; and others.

²⁰⁶ They found that underlying rationales for data localization measures include: foreign surveillance; privacy and security; economic development; and domestic law enforcement.

²⁰⁷ ECIPE, "Digital Trade Estimates Project," accessed July 1, 2019, <https://ecipe.org/dte/>.

category.²⁰⁸ The DTE Database is comprehensive in its scope but too simple in substance to grasp global trends in CBDF-restricting measures.

Two US government agencies, the Office of the United States Trade Representative (hereinafter USTR) and the United States International Trade Commission (hereinafter USITC), are at the forefront of uncovering and exploring barriers to digital trade. In its annually published National Trade Estimate Report on Foreign Trade Barriers (hereinafter NTE report), the USTR identifies measures on CBDF abroad or foreign regulatory practices impeding business activities of US tech firms as “barriers to digital trade.”²⁰⁹ The USITC is another pioneer doing significant research on digital trade policy: it has carried out extensive studies on digital trade barriers, identifying several measures affecting the transfer of data abroad.²¹⁰

Despite their contribution to trailblazing research on data policies, previous studies have failed to present an analytical tool, which is necessary to monitor countries’ practices in a consistent way. We are of the view that the analytical framework presented in this chapter would contribute to the existing literature by providing for a useful tool to comprehend the current attitudes of countries toward CBDF.

²⁰⁸ Other three clusters are fiscal restrictions, establishment restrictions, and trading restrictions.

²⁰⁹ See USTR, *2017 National Trade Estimate Report on Foreign Trade Barriers* (2017); USTR, *2018 National Trade Estimate Report on Foreign Trade Barriers* (2018); USTR, *2019 National Trade Estimate Report on Foreign Trade Barriers* (2019).

²¹⁰ See USITC, *Digital Trade, Part 1*; USITC, *Digital Trade in the U.S. and Global Economies, Part 2*, Publication No. 4485 (2014); USITC, *Global Digital Trade 1*. The Information Technology & Innovation Foundation (hereinafter ITIF), a Washington D.C.-based independent think-tank, also uncovers barriers to CBDF abroad by host country and type of data blocked. See Nigel Cory, “Cross-Border Data Flows: Where Are the Barriers, and What Do They Cost?,” ITIF (2017).

2.3. Case Studies

Based on the research tool presented above, we now take a close look at major economies' data policies.²¹¹

2.3.1. Horizontal and Risk-Based Approach (Type I)

A first type to be examined is a horizontal and risk-based approach (Type I in **Figure III-3**). A vast number of countries around the world have in force general privacy acts or security laws affecting the flows of data across borders. As concerns on online privacy, data protection, and cybersecurity are drastically increasing, some of them permit the transfer of data under certain conditions, including a risk assessment condition: a recipient country should provide for the protection of data as adequate as the government of a data generating country deems.

The EU General Data Protection Regulation (hereinafter GDPR) is the most representative measure among horizontal and risk-based regimes. The GDPR, which practically took effect on May 25, 2018²¹², has replaced the EU Data Protection Directive of 1995. The main objective of the GDPR is to empower EU citizens to control their personal data and to facilitate data flows for commercial use within the European digital single market. Nonetheless, the GDPR imposes stringent requirements on non-EU firms that seek to transfer EU citizens' online personal data out of EU jurisdiction for storing and processing. Those requirements include explicit consent from customers, the use of standard contract clauses, and binding corporate rules and so on. Furthermore, the

²¹¹ Following analysis is based mainly upon the Digital Trade Estimates database compiled by the ECiPE and supplemented by various reliable sources including USITC, *Global Digital Trade I*; USTR, *2019 NTE Report*; Cory, "Cross-Border Data Flows." Unless reference is made otherwise, the data is retrieved from the DTE Database. The DTE database is available at <https://ecipe.org/dte/database/>.

²¹² The GDPR itself entered into force on May 24, 2016 but it had to be transposed into EU members' domestic law by May 6, 2018.

movement of EU citizens' personal data to a third country is only allowed when the third country guarantees an adequate level of protection on personal data.²¹³ In other words, EU's approval of the transfer of data to non-EU countries depends on the level of the risk of personal data not getting appropriately protected outside EU jurisdiction. On the other hand, the GDPR is a general regulation so that by definition all personal data in every economic sector is covered.²¹⁴ A commentator recalls that the real challenge which the GDPR poses to global online tech firms is its pursuit of global harmonization of privacy regimes, irrespective of differences in the regulatory, social and cultural environment of partner economies.²¹⁵

In Argentina, the transfer of personal data to countries that do not have an adequate level of protection in place is prohibited pursuant to the Data Protection Act, which seems to replicate the GDPR. According to Regulation No. 60-E/2016, only a handful of countries and economies are recognized as providing adequate levels of data protection by the Argentine authority.²¹⁶

Australia's Federal Privacy Act of 1998 as amended by the Privacy Amendment Act of 2012 requires an organization, before it discloses personal data to an overseas recipient,

²¹³ Non-EU countries seeking to transfer EU citizens' personal data outside the EU must get an "adequacy decision" from the European Commission, which proves that recipient countries' data protection level is as adequate as the EU. So far, there are 13 economies which have been recognized by the European Commission as adequate data protection regimes. Those countries and economies include: Andorra; Argentina; Canada; Faroe Islands; Guernsey; Israel; Isle of Man; Jersey; New Zealand; Switzerland; Uruguay; United States; and Japan. The list is available at https://ec.europa.eu/info/law/law-topic/data-protection/data-transfers-outside-eu/adequacy-protection-personal-data-non-eu-countries_en (accessed July 1, 2019). Adequacy talks with Korea are still ongoing at the time of writing.

²¹⁴ EU member states have implemented domestic measures in accordance with the guidelines of the GDPR. Unlike the GDPR, certain measures have only a partial scope. For examples of EU member states' specific measures, see USITC, *Global Digital Trade 1*, 281-282.

²¹⁵ Cory, "Cross-Border Data Flows," 23.

²¹⁶ These countries and economies include the EU and European Economic Area, Switzerland, Guernsey and Jersey, the Isle of Man, the Faroe Islands, Canada (only private sector), New Zealand, Andorra, and Uruguay.

to take reasonable steps to ensure that the overseas recipient will not breach the Australian Privacy Principles. The Act has a horizontal coverage.

Brazil maintains a horizontal and risk-based privacy regime similar to the EU GDPR. Brazil's Personal Data Protection Law allows the cross-border movement of personal data only on certain conditions: the main condition for such a transfer to take place is that a recipient country must have an adequate level of data protection; a controller is required to use model contract clauses, binding corporate rules or other contractual arrangements; a data subject must give explicit consent.

In Canada, consent is not necessary for a company to transfer personal information to a third country. The Canadian Personal Information Protection and Electronic Documents Act, however, obligates the company to grant a comparable level of protection while the information is being processed by a third party.

Chinese relevant regulatory authorities have devised a number of drafts and measures in an effort to implement the National Security Law, which took effect in 2015, and Cybersecurity Law, which entered into force in 2017. A draft establishing a restrictive regime of security checks and the Cybersecurity Law requiring security assessments restrict the cross-border transfer of any type of data.²¹⁷

India's Information Technology Act and Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules stipulates that the cross-border transfer of sensitive personal data may be allowed on certain conditions: such transfer is necessary for the performance of a lawful contract between a corporate (or any person acting on its behalf) and an information provider; or such transfer is consented to by a provider of information.

²¹⁷ Cory, "Cross-Border Data Flows," 22.

In Japan, the Act on the Protection of Personal Information was amended in 2015 to restrict cross-border data flows. Permitted are legitimate transfers of personal information out of Japan, which include: transfers to a country that the Personal Information Protection Commission has designated as having an acceptable level of data protection; transfers to a third party in a foreign country in circumstances in which actions have been taken to ensure that same level of protection as in Japan; or transfers with a data subject's consent.

Russia's Federal Law No. 152-FZ "On Personal Data" of July 2006 allows the transfer of data outside the territory of the Russian Federation only if the jurisdiction that the personal data is transferred ensures the adequate protection of personal data. Those jurisdictions include the parties to the "Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (hereinafter Convention 108)"²¹⁸ and other countries approved by the Russian Federal Service for Supervision.²¹⁹

In Singapore, an organization may transfer personal data of Singaporeans outside Singapore if it has taken appropriate steps to ensure that: it will comply with obligations in the Personal Data Protection Act (hereinafter PDPA) with regard to the transferred personal data while the data remains in its possession or under its control; a recipient outside of Singapore is bound by legally enforceable obligations to provide for a standard of protection, which is comparable to that under the PDPA.

In South Africa, the cross-border data transfer can take place on certain conditions in accordance with the Protection of Personal Information Act of 2013. Those conditions

²¹⁸ The Convention 108 was the first legally binding international instrument in the data protection area concluded in 1981. The parties are obliged to implement appropriate domestic measures as required by the Convention to ensure that fundamental human rights of all individuals with respect to processing of personal data are respected. See Council of Europe, "Convention 108 and Protocols," accessed July 1, 2019, <https://www.coe.int/en/web/data-protection/convention108-and-protocol>.

²¹⁹ Those other countries include: Australia; Argentina; Canada; Israel; Mexico; and New Zealand.

include that: a third party is subject to a law, binding corporate rules or binding agreement that provides for an adequate level of protection; the transfer is necessary for the performance of a contract between a data subject and a responsible party; the transfer is necessary for the implementation of pre-contractual measures taken in response to the data subject’s request.

Turkey also bans personal data from being transferred or processed abroad without explicit consent from data hosts. Pursuant to the Data Protection Law (No. 6698), however, consent is not required if the transfer is necessary to exercise a right or is required by law and either if sufficient protection exists in a transferee country or if a data controller gives a written security undertaking and Turkey’s Data Protection Board grants permissions.

Table III-1 Selective measures under the horizontal and risk-based approach

Country/ Economy	Act/Measure	Country/ Economy	Act/Measure
Argentina	Data Protection Act	India	Information Technology Act and Rules
Australia	Privacy Amendment Act of 2012	Japan	Act on the Protection of Personal Information
Brazil	Personal Data Protection Law	Singapore	Personal Data Protection Act
Canada	Personal Information Protection and Electronic Documents Act	South Africa	Protection of Personal Information Act of 2013
China	Cybersecurity Law, National Security Law	Russia	Federal Law No. 152-FZ “On Personal Data”
EU	General Data Protection Regulation	Turkey	Data Protection Law

Source: Author’s compilation.

2.3.2. Horizontal and Location-Based Approach (Type II)

Another type of legal regime concerns the location where data is stored or processed, irrespective of the type of data and sector in which the data is generated and used. (Type II in **Figure III-3**). China is one of the most notorious countries for outright bans on data transfer outside Chinese jurisdiction. China's Cybersecurity Law includes requirements for the personal information on Chinese citizens and important data collected by key information infrastructure operators to be kept within the territory of China. If the offshore transfer of data is necessary for an operational purpose, a security assessment must be conducted by designated agencies. In China, the transfer of data containing state secrets abroad is also prohibited in accordance with the Law of the People's Republic of China on Guarding State Secrets.

In Africa, a horizontal and location-based approach to data protection is relatively new. It is reported that some African countries are about to follow the EU's footsteps in the wrong way to formulate a strident data protection regime. Kenya, for instance, revealed a draft Data Protection Bill in 2018 that requires companies to store data on a server or data center located in Kenya and prohibits cross-border processing of sensitive personal data.²²⁰ A commentator expresses his concern that the draft Bill might misguide a "belief that the geography of data storage improves data privacy and security."²²¹

India is also working on a horizontal and location-based data protection regime. A draft Personal Data Protection Bill would require one copy of all personal data to which the law applies to be stored on a server located in India. The Bill also empowers government agencies to classify certain information as critical personal data, which may only be stored within the territory of India. This would broadly apply to any data collected,

²²⁰ Nigel Cory, "The Ten Worst Digital Protectionism of 2018," ITIF (2019), 13.

²²¹ Cory, "The Ten Worst Digital Protectionism," 13.

disclosed, shared, or otherwise processed within the territory of India, meaning that all personal data provided by foreign entities to Indian IT companies for processing could fall under its scope, even though that foreign entities do not process Indian citizens' data.

Korea is often referred to as one of the industrialized countries which maintain a very strict legal regime concerning online privacy protection. For instance, the Personal Information Protection Act (hereinafter PIPA) requires companies to obtain explicit consent from data subjects prior to transferring their personal data not only outside the country but also within the territory. Online service providers who attempt to move Korean customer data abroad must also provide customers with large-scale information such as the destination of the data, any third party's planned use for the data, and the duration of retention pursuant to the PIPA. The IT Network Use and Protection Act, amended in April 2016, obligates data exporters to obtain explicit consent from Korean customers before personal data is transferred outside the Korean jurisdiction.

In New Zealand, the Privacy Commissioner is granted the power by the Privacy Act of 1993 to prohibit the transfer of personal information from New Zealand to foreign countries as well as within the country by issuing a transfer prohibition notice.

Recently Russia has shifted its data protection regime from a risk-based regime to a clear location-based regime. In July 2014, On Personal Data Law (Federal Law No. 152-FZ) was amended by the Federal Law No. 242-FZ "On Amendments to Certain Legislative Acts of the Russian Federation for Clarification of Personal Data Processing in Information and Telecommunications Networks." This amendment requires data operators to ensure the recording, systematization, accumulation, storage, adjustment (update and modification), extraction of personal data of citizens of the Russian Federation by means of data centers being situated within its territory. A vast majority of

Table III-2 Selective measures under the horizontal and location-based approach

Country/ Economy	Act/Measure	Country/ Economy	Act/Measure
China	Cybersecurity Law; Law of PRC on Guarding State Secrets	Korea	Personal Information Protection Act; IT Network Use and Protection Act
India	Draft Personal Data Protection Bill	New Zealand	Privacy Act of 1993; Inland Revenue Acts
Kenya	Draft Data Protection Bill	Russia	On Amendments to Certain Legislative Acts of the Russian Federation for Clarification of Personal Data Processing in Information and Telecommunications Networks

Source: Author’s compilation.

businesses relying on the data of Russian citizens to run a business are likely to be affected due to broad criterion based on citizenship and location.²²²

2.3.3. Sectoral and Location-Based Approach (Type III)

A sectoral and location-based approach has recently become the most popular data regime around the globe (Type III in **Figure III-3**). A growing number of governments have introduced or are planning to adopt domestic legislation banning data flows outside their jurisdiction with regard to a specific sector or specific type of data.

Argentina’s Draft Personal Protection Law requires that data in the public sector to be stored within the territory of Argentina. Its coverage extends to public institutions and private companies that provide services for governmental entities. It also prohibits federal government entities from contracting with any service provider that may allow other international governmental organizations to access the data concerned.

In Australia, the Personally Controlled Electronic Health Record Act of 2012 obligates personally controlled electronic health records to be stored and processed only

²²² Iva Mihaylova, “Could the Recently Enacted Data Localization Requirements in Russia Backfire?,” *Journal of World Trade* 50, no. 2 (2016): 316.

in local data centers. Any electronic health information, in turn, cannot be held or processed outside Australia.²²³

The Ministry of Planning, Development and Management of Brazil has issued guidelines which instruct data to be stored in the territory of Brazil as a requirement for public procurement contracts with respect to cloud computing services. As ensuring the free movement of data is critical to global cloud computing service providers, if implemented, it is to put foreign cloud service suppliers at a serious disadvantage.

In Canada, the states of British Columbia and Nova Scotia require that personal information held by a public body – *e.g.* primary and secondary schools, universities, hospitals, government-owned utilities, and public agencies – must be stored or accessed only in Canada.²²⁴

China maintains a number of measures prohibiting CBDF such as data localization requirements affecting business activities in a wide range of sectors based upon a locational element. To illustrate, the Telecommunications Regulations of the People's Republic of China requires communications data collected inside China to be stored on Chinese data servers. The USITC reports that some global tech firms including Hewlett Packard, Qualcomm, and Uber were required to divest more than 50 percent of their businesses in China to Chinese companies in order to avoid massive fines as a result of this Regulations.²²⁵ Under China's Map Management Regulations, online map service providers are compelled to set up a server within Chinese territory and must acquire an official certificate as well. Administrative Measures for Population Health Information obliges individual health information to be stored and processed in China. Overseas

²²³ USITC, *Digital Trade, Part 1*, 5-5.

²²⁴ Freedom of Information and Protection of Privacy Amendment Act of 2004 of the state of British Columbia, Canada and Personal Information International Disclosure Protection Act of the state of Nova Scotia, Canada.

²²⁵ USITC, *Global Digital Trade 1*, 280.

storage is not allowed by the Telecommunications Regulations. With respect to the financial sector, the Notice to Urge Banking Financial Institutions to Protect Personal Financial Information stipulates that the processing of personal information collected by commercial banks should be stored, handled, and analyzed within the territory of China and such personal information is not allowed to be transferred overseas.

In India, the Guidelines for Government Departments on Contractual Terms Related to Cloud Services requires cloud computing service providers to store all data in India. Furthermore, the 2012 National Data Sharing and Accessibility Policy instructs that all non-sensitive data generated using public funds should be stored within the border of India.

Data protection measures in Indonesia are subject to the Law No. 11 of 2008 regarding Electronic Information and Transaction as well as the Government Regulation No. 82 of 2012 regarding the Provision of Electronic System and Transaction. The Government Regulation No. 82 requires electronic systems operators for public service, whose definition remains unclear, to establish a data center and disaster recovery center in the Indonesian territory for the purpose of law enforcement and data protection. Indonesia's Circular Letter of Bank Indonesia No. 16/11/DKSP Year 2014 regarding E-money Operations requires all operators of e-money to localize data centers and data recovery centers within the territory of Indonesia. Internet-enabled service and over-the-top service providers must have their data centers within the territory of Indonesia.²²⁶

In Korea, under the Act on Promotion of Cloud Computing and Protection of Users and non-binding Data Protection Standards for Cloud Computing Services Guidelines, all cloud service suppliers providing services to public institutions must have public data

²²⁶ USITC, *Global Digital Trade 1*, 283-284.

centers within the country. Moreover, private cloud servers must be physically separated from networks serving the general public.

The Inland Revenue Service of New Zealand may issue a “Revenue Alert” forcing companies to store business records in data centers physically located in New Zealand.

The Guidelines on Point-of-Sale Card Acceptance Services of Nigeria requires IT infrastructure for payment processing to be located domestically. All point-of-sale and ATM domestic transactions need to be processed through local switches and it is forbidden to route transactions outside the country for processing. The Guidelines on Nigerian Content Development in Information and Communications Technology imposes preconditions that data and information management firms keep government data locally within the country and shall not for any reason host any government data outside the country. The Guidelines also enforce all ICT companies to host their subscriber and consumer data within the jurisdiction of Nigeria.

In Russia, the Federal Law No. 374 on Amending the Federal Law on Counterterrorism and Select Legislative Acts of the Russian Federation Concerning the Creation of Additional Measures Aimed at Countering Terrorism and Protecting Public Safety was signed in 2016. The Federal Law requires local storage for information confirming the fact of receipt, transmission, delivery and/or processing of voice data, text messages, pictures, sounds, video or other communications. Local storage requirements are also imposed for the content of communications, including voice data, text messages, pictures, sound, video or other communications. According to the Russian Federal Law No. 907-FZ (Online Content Law), anyone who organizes the dissemination of information on the Internet must store online content generated on Russian citizens in Russia.²²⁷

²²⁷ USITC, *Global Digital Trade 1*, 284.

The Turkish Electronic Communications Act forbids the cross-border transfer of traffic and location data without data subject's explicit consent. The Law on Payments and Security Settlement Systems, Payment Services and Electronic Money Institutions in 2013 forces Internet-based payment services to store all data in the territory of Turkey for 10 years. It also requires information systems and their substitutes, which are used by system operators to carry out its activities, to be kept within the country. It is reported that PayPal shut down its business in Turkey due to this harsh data localization requirement.²²⁸

The US also has a data localization measure in place in the area of government procurement. All cloud computing service providers working for the Department of Defense, for instance, must store data in the US in accordance with the Defense Federal Acquisition Regulation Supplement: Network Penetration Reporting and Contracting for Cloud Services (DFARS Case 2013-D018).²²⁹

In Vietnam, advertising service providers using email advertisements and Internet-based text messages, in accordance with Decree 90/2008/ND-CP on anti-spam, are required to send emails from a Vietnamese domain name (.vn) website which is operated from a server located in Vietnam. Decree No. 72/2013/ND-CP on the Management, Provision and Use of Internet Services and Online Information also imposes local server requirements on online social networks, general information websites, mobile telecommunications networks-based content services, and online games services. Service suppliers are required to set up at least one server within the country to serve the inspection, storage, and provision of information at the request of competent state management agencies.

²²⁸ Cory, "The Ten Worst Digital Protectionism," 31.

²²⁹ Cory, "Cross-Border Data Flows," 30.

Table III-3 Selective measures under the sectoral and location-based approach

Country/ Economy	Act/Measure	Country/ Economy	Act/Measure
Argentina	Draft Personal Protection Law	Korea	Act on Promotion of Cloud Computing and Protection of Users; Data Protection Standards for Cloud Computing Services Guidelines
Australia	Personally Controlled Electronic Health Record Act	Nigeria	Guidelines on Point-of-Sale Card Acceptance Services; Guidelines on Content Development in Information and Communications Technology
Brazil	Guidelines of Ministry of Planning, Development and Management	Russia	Federal Law No. 374; Federal Law No. 907-FZ (Online Content Law)
China	Telecommunications Regulations; Map Management Regulations; Administrative Measures for Population Health Information; Notice to urge Banking Financial Institutions to Protect Personal Financial Information	Turkey	Electronic Communications Act; Law on Payments and Security Settlement Systems, Payment Services and Electronic Money Institutions
Canada	Freedom of Information and Protection of Privacy Amendment Act of the state of British Columbia; Personal Information International Disclosure Protection Act of the state of Nova Scotia	United States	Defense Federal Acquisition Regulation Supplement: Network Penetration Reporting and Contracting for Cloud Services (DFARS Case 2013-D018)
India	Guidelines for Government Departments on Contractual Terms Related to Cloud Services; National Data Sharing and Accessibility Policy	Vietnam	Decree 90/2008/ND-CP; Decree No. 72/2013ND-CP on the Management, Provision and Use of Internet Services and Online Information
Indonesia	Electronic Information and Transaction Law; Provision of Electronic System and Transaction Regulation; Circular Letter of Bank Indonesia No. 1611DKSP		

Source: Author's compilation.

2.3.4. Sectoral and Risk-Based Approach (Type IV)

The last type that draws our attention is a sectoral and risk-based approach. It is found that Korea and the US maintain a number of risk-based data policies restricting cross-border data flows in specific sectors.

Under the Act on the Establishment, Management, Etc. of Spatial Data of Korea, exporting of mapping data abroad is prohibited due to national security concerns. The National Geographic Information Institute of Korea has recently decided to allow the transfer of cartographic or location-based data outside the country if an individual company blur satellite imagery of Korea integrated into their global mapping sites. Yet there has been no decision to allow exporting of such data abroad so far. The transfer of financial data to a third party is also restricted. Korea’s Financial Holding Company Act requires the financial data of Korean customers to be processed in-house by the banks, either locally or abroad.

The US has no generally applicable online privacy law or practice restricting CBDF up to now.²³⁰ The transfer of certain types of data is limited by laws or practices which

Table III-4 Selective measures under the sectoral and risk-based approach

Country/Economy	Act/Measure
Korea	Act on the Establishment, Management, Etc. of Spatial Data; Financial Holding Company Act
United States	Health Insurance Portability and Accountability Act of 1996

Source: Author’s compilation.

²³⁰ There is a growing voice for having a comprehensive online privacy framework within US Congress and government agencies. The United States Government Accountability Office (hereinafter USGAO), in its recent report submitted to the Chairman of the US House Committee on Energy and Commerce, reached a conclusion that it is “an appropriate time for Congress to consider comprehensive Internet privacy.” USGAO, *Internet Privacy*, GAO-19-52 (2019), 37.

are applicable only on a specific sector. The Health Insurance Portability and Accountability Act of 1996, for example, permits the transfer of protected health information abroad only if administrative, physical, and technical safeguards are provided.

3. Empirical Study on the Impact of Regulatory Policies on Cross-Border Data Flows on Trade in Services

3.1. Introduction

In a digital economy, virtually all business entities need to access and transfer personal or non-personal data without unnecessary interruption to run a business. Data is of vital importance not only to large and global information technology (hereinafter IT) firms but also to micro, small and medium-sized entrepreneurs (hereinafter MSMEs), regardless of economic sectors where they mainly operate. It is also true that trade cannot take place without data/information being transferred from one location to another in today's data-driven economy.²³¹ This is attributed to the increasing servicification of the manufacturing sector²³², the widespread usage of cloud computing services, the emergence of new digital media services, and the establishment of global value chains, to just name a few. Having said that, how much international trade flows are positively or negatively affected by regulatory data policies is a matter of empirical study. The purpose of this section is to verify whether domestic data transfer regimes actually serve as trade barriers to international trade and, if so, what kind of trade policy is necessary to

²³¹ Kommerskollegium, *No Transfer, No Trade*, 23.

²³² See Javier López González and Janos Ferencz, "Digital Trade and Market Openness," *OECD Trade Policy Paper*, no. 217 (2018), 11; OECD, *OECD Digital Economy Outlook 2017*, (Paris, France: OECD Publishing, 2017), 232; and Lee-Makiyama, "Future-proofing World Trade in Technology," 299.

alleviate the negative effect of data policies on trade flows, particularly in the case of services trade.

There is not much economic literature with regard to the effect on international trade of the Internet let alone data flows. Early academic findings on the impact of the Internet on trade can be found in economic papers by Freund and Weinhold.²³³ In their two papers published in 2002 and 2004, they empirically find that the Internet indeed facilitates international trade in services and goods, respectively. Despite their early contribution to the academic literature, the two papers do not take the context of trade policy into consideration. Abeliansky and Hilbert find that the quantity and quality of Internet access have different effects on export performance by the level of economic development.²³⁴ Their paper may prove useful to scholars and policymakers in the context of telecommunication infrastructure policy but it fails to put data policy into context.

As more and more governments misuse data protection policies as data protectionism in the course of generating, storing, processing, and transferring data, independent think-tanks and scholars as well as governmental agencies have begun to assess the economic implication of data regulations and policies. Extensive research on the relationship between domestic policies regulating cross-border data flows and global digital trade is carried out by the USITC and the Swedish National Board of Trade (hereinafter Kommerskollegium).²³⁵ Findings are drawn from case studies based upon

²³³ See Caroline Freund and Diana Weinhold, “The Internet and International Trade in Services,” *American Economic Review* 92, no. 2 (2002): 236-240; Caroline Freund and Diana Weinhold, “The Effect of the Internet on International Trade,” *Journal of International Economics* 62, no. 1 (2004): 171-189.

²³⁴ See Ana L. Abeliansky and Martin Hilbert, “Digital Technology and International Trade: Is it the Quantity of Subscriptions or the Quality of Data Speed That Matters?,” *Telecommunications Policy* 41, no. 1 (2016): 35-48. They measure Internet quantity by the number of data subscriptions per capita and Internet quality by bandwidth data speed per subscription.

²³⁵ USITC, *Digital Trade, Part 1*; USITC, *Digital Trade, Part 2*; USITC, *Global Digital Trade 1*; Kommerskollegium, *No Transfer, No Trade*.

survey questionnaire and interviews targeting US and Sweden-based firms in various sectors. On the other hand, a number of empirical studies find that data localization measures and restrictions on data transfer negatively affect competitiveness, productivity or technological innovation in imposing economies, eventually leading to the loss of business opportunities overseas and to overall economic loss.²³⁶ To the best of our knowledge, however, there is no empirical study directly dealing with the restrictiveness of data policy in relation to services trade flows.

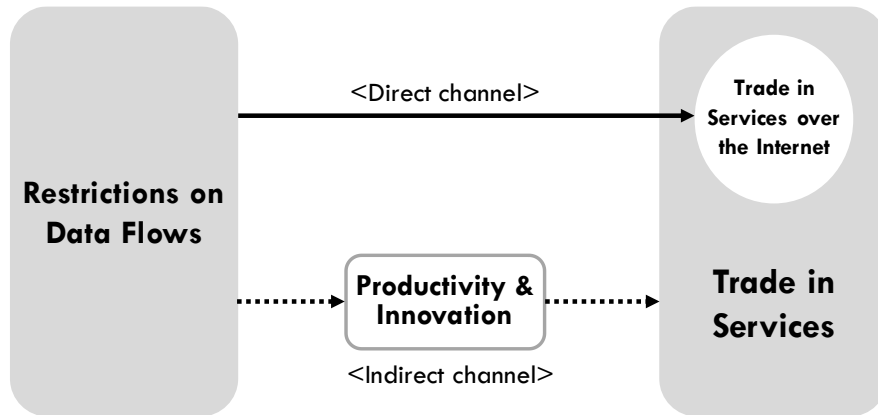
3.2. Conceptual Framework

Based upon the literature, we develop two channels through which restrictions on data flows affect bilateral services trade: a direct channel and an indirect channel as illustrated in **Figure III-4**. As for the direct channel, we assume that data policies inhibiting the commercial use of electronic data or information directly affect the cross-border trade in services over the Internet. Using a data policy index, Ferracane and van der Marel find that more stringent policies on data transfer lead to less imports in data-intensive services, which are mainly provided through the Internet, for imposing countries.²³⁷ The USITC identifies that policies and regulatory measures impeding CBDF

²³⁶ See Avi Goldfarb and Catherine Tucker, "Privacy and Innovation," *Innovation Policy and the Economy* 12, no. 4 (2012): 66-89; Matthias Bauer, Hosuk Lee-Makiyama, Erik van der Marel, and Bert Vershelde, "The Costs of Data Localisation," *ECIPE Occasional Paper*, no. 3/2014 (2014); Matthias Bauer, Hosuk Lee-Makiyama, Erik van der Marel, and Bert Vershelde, "Data Localisation in Russia: A Self-imposed Sanction," *ECIPE Policy Brief*, no. 6/2015 (2015); Erik van der Marel, Matthias Bauer, Hosuk Lee-Makiyama, and Bert Vershelde, "A Methodology to Estimate the Costs of Data Regulations," *International Economics* 146 (2016): 12-39; Matthias Bauer, Martina F. Ferracane, Hosuk Lee-Makiyama, and Erik van der Marel, "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States," *ECIPE Policy Brief*, no. 03/2016 (2016); Martina F. Ferracane, Janez Kren, and Erik van der Marel, "Do Data Policy Restrictions Impact the Productivity Performance of Firms and Industries?," *ECIPE DTE Working Paper*, no. 01 (2018); Martina F. Ferracane and Erik van der Marel, "Do Data Policy Restrictions Inhibit Trade in Services?," *ECIPE DTE Working Paper*, no. 02 (2018).

²³⁷ Ferracane and van der Marel, "Do Data Policy Restrictions Inhibit Trade in Services?," 15.

Figure III-4 Channels through which restrictions on data flows affects trade in services



Source: Illustrated by author.

are particularly detrimental to cloud computing service suppliers, who generally operate data centers in several different countries.²³⁸ Global online service suppliers deem such data policies unnecessary trade barriers overly restricting market access and discriminating against foreign service suppliers.²³⁹ In this regard, the Swedish National Board of Trade also finds that, based on its survey results, restrictions on data transfers are equivalent to restrictions on trade.²⁴⁰

On the other hand, the restrictive measures on data flow, including data localization requirements also curb services trade flows through an indirect channel. The underlying rationale is as follows: restrictive data policies hamper the cross-border movement of data, which is fundamental input to the modern digital economy across the board, limiting access to advanced digital technologies; the misallocation of resources stemming from forced data localization and the limited use of data results in the loss of competitiveness,

²³⁸ USITC, *Global Digital Trade 1*, 67.

²³⁹ USITC, *Digital Trade 1*, 5-1-5-36; USITC, *Digital Trade 2*, 77-108; USITC, *Global Digital Trade 1*, 271-327.

²⁴⁰ Kommerskollegium, *No Transfer, No Trade*, 5.

efficiency, and productivity discouraging investment in innovation; eventually the economy shifts away from innovation and technological development and depends more on the primary sector, reducing the supply and demand of international trade in services as a whole.²⁴¹

To sum up, regulations and practices restricting the movement of data across borders may influence imports of foreign services provided over the Internet through the direct channel and overall service export performance can be affected through the indirect channel. Thus, regulatory policies restricting data transfers are likely to have a notable effect on total services trade flows. Whether both of the channels are valid or one of them is more influential than the other is a matter of empirical study. In addition, another important question to be answered is whether international cooperation to establish global standards for data policy is worth pursuing as a way of promoting international trade in services. Our conceptual framework helps answer those questions.

3.3. Estimating Methodology and Data Description

3.3.1. Model Specification

In his influential paper published in 1962, Tinbergen found out that the volume of bilateral trade flows could be predicted by the masses of the two economies and physical distance between them, which seems analogous to Newton's law of gravity equation in physics.²⁴² Although the Tinbergen's gravity model has proved successful in estimating

²⁴¹ See Goldfarb and Tucker, *Privacy and Innovation*, 66-89; Bauer et al., "The Costs of Data Localisation," 1-19; Chander and Lê, "Data Nationalism," 677-739; Bauer et al., "Data Localisation in Russia," 1-7; Susan Stone, James Messent, and Dorothee Flaig, "Emerging Policy Issues: Localisation Barriers to Trade," *OECD Trade Policy Papers*, no. 180 (2015); van der Marel et al., "A Methodology to Estimate the Costs of Data Regulations," 12-39; Bauer et al., "Unleashing Internal Data Flows in the EU"; Ferracane et al., "Do Data Policy Restrictions Impact the Productivity Performance of Firms and Industries?."

²⁴² For more background on the gravity model in international trade, see Jan Tinbergen, *Shaping*

actual trade flows between two economies, it was not backed by theoretical grounds at the moment. But ever since Anderson and Van Wincoop have founded theoretical grounds²⁴³ and Baldwin and Taglioni have highlighted three mistakes in the traditional gravity approach²⁴⁴, the model has been used extensively to estimate the magnitude and impact of trade policies or trade agreements on trade flows.²⁴⁵

The usefulness of the gravity model is not limited to the area of trade in goods. A number of international trade literature have found the gravity model appropriate for estimating services trade flows no less than goods trade flows. Kimura and Lee even insist that the bilateral trade flows of services are better predicted by standard gravity equations than those of goods.²⁴⁶ The standard gravity model is often augmented with additional variables to evaluate the effect of specific trade policy on services trade flows. Taking examples from the literature, Nordås and Rouzet reinforce the conventional gravity model with service trade restrictiveness to find the negative relationship between services

the World Economy: Suggestions for an International Economic Policy, (New York: Twentieth Century Fund, 1962).

²⁴³ James E. Anderson and Eric van Wincoop, "Gravity with Gravititas: A Solution to the Border Puzzle," *American Economic Review* 93, no. 1 (2003): 170-192.

²⁴⁴ Richard Baldwin and Daria Taglioni, "Trade Effects of the Euro: A Comparison of Estimators," *Journal of Economic Integration* 22, no. 4 (2007): 780-818. They call them the gold, silver and bronze medal errors, respectively. The conditions under that each of these mistakes occur are as follows: the gold medal mistake takes place when multilateral resistance terms or remoteness is omitted; the silver medal mistake is generated when averaging the reciprocal trade flows; the bronze medal mistake occurs when trade flows are inappropriately deflated.

²⁴⁵ See, for instance, Scott L. Baier and Jeffrey H. Bergstrand, "Do Free Trade Agreements Actually Increase Members' International Trade?," *Journal of International Economics* 71, no. 1 (2007): 72-95; Robert C. Johnson and Guillermo Noguera, "Fragmentation and Trade in Value Added over Four Decades," *NBER Working Paper Series* 18186 (2012): 1-61; Andrew K. Rose, "Do We Really Know that the WTO Increases Trade?," *American Economic Review* 94, no. 1 (2004): 98-114; Andrew K. Rose, "Does the WTO Make Trade More Stable?," *Open Economies Review* 16 (2005): 7-22. For more literature using the gravity model in the study of trade policy, see Luca De Benedictis and Daria Taglioni, "The Gravity Model in International Trade," in *The Trade Impact of European Union Preferential Policies*, eds. Luca De Benedictis and Luca Salvatici (Berlin, Heidelberg, Germany: Springer Berlin Heidelberg, 2011), 55-89.

²⁴⁶ Fukunari Kimura and Hyun-Hoon Lee, "The Gravity Equation in International Trade in Services," *Review of World Economics* 142, no. 1 (2006): 93.

trade restrictions and cross-border trade in services, controlling for standard gravity covariates.²⁴⁷ Lee and Park use the augmented gravity model to assess the impact of religious similarity to services trade flows.²⁴⁸

We also use the gravity model in this section to estimate the effects of data policy restricting the movement or use of data/information on services trade flows. For the purpose of our analysis, the standard gravity model is augmented with additional variables: DTRI, HETERODTRI, and MININTUSE. DTRI is an index developed by the ECIPE to measure the extent of policies restricting data flows and use of 64 economies around the world. It is used as a proxy for the magnitude of the restrictiveness of data regimes. To measure the extent of the heterogeneity of data regimes between two trading partners, HETERODTRI is computed using original DTRI.²⁴⁹ It has a value ranging from 0 to 1. When it is nothing two data regimes have the same degree of restrictiveness on data flows and when it is 1, two trading partners take a contrast approach on data transfers. MININTUSE is a proxy for the extent of digital connectivity between two trading partners, measured as the minimum number of total mobile and fixed Internet subscriptions per 100 inhabitants between the two. The rationale for this variable is that both of an exporter and an importer are required to have access to digital networks in order to have good digital connectivity between the two economies.²⁵⁰

Based upon the previous literature on trade flows and our analytical framework constructed above, we estimate the following augmented gravity model:

²⁴⁷ Services trade restrictiveness is measured by OECD's Services Trade Restrictiveness Index (STRI). Hidegunn Kyvik Nordås and Dorothee Rouzet, "The Impact of Services Trade Restrictiveness on Trade Flows: First Estimates," *OECD Trade Policy Papers*, no. 178 (2015).

²⁴⁸ Chong Wha Lee and Soonchan Park, "Does Religious Similarity Matter in International Trade in Services?," *The World Economy* 39, no. 3 (2016): 409-425.

²⁴⁹ HETERODTRI_{ij} is constructed as the absolute value of differential between the DTRIs of economies *i* and *j* ($|DTRI_i - DTRI_j|$).

²⁵⁰ López González and Ferencz, "Digital Trade and Market Openness," 46.

$$\ln(SERVICES_{ij}) = \beta_0 + \beta_1 \ln(GDP_i) + \beta_2 \ln(GDP_j) + \beta_3 \ln(DISTANCE_{ij}) + \beta_4 CONTIGUITY_{ij} + \beta_5 LANGUAGE_{ij} + \beta_6 CURRENCY_{ij} + \beta_7 COLONY_{ij} + \beta_8 LEGALORIGIN_{ij} + \beta_9 RTA_{ij} + \beta_{10} DTRI_i + \beta_{11} DTRI_j + \beta_{12} MININTUSE_{ij} + \beta_{13} \ln(REMOTENESS_i) + \beta_{14} \ln(REMOTENESS_j) + \varepsilon_{ij},$$

where $\ln(SERVICES_{ij})$ denotes the log of nominal services exports from economy i to economy j ; $\ln(GDP_i)$ and $\ln(GDP_j)$ denote the log of nominal gross domestic product (hereinafter GDP) in economies i and j , respectively; $\ln(DISTANCE_{ij})$ denotes the log of distance between economies i and j , weighted by population; $CONTIGUITY_{ij}$ is a dummy variable which equals one when economies i and j are adjacent to each other; $LANGUAGE_{ij}$ is a dummy variable which equals one if economies i and j share a common language; $CURRENCY_{ij}$ is a dummy variable which equals one when economies i and j share a common currency; $COLONY_{ij}$ is a dummy variable which equals one when countries i and j have ever been in colonial relationship; $LEGALORIGIN_{ij}$ is a dummy variable that equals one if economies i and j share a common legal origin; RTA_{ij} is a dummy variable which equals one when economies i and j are members of the same regional trade agreement; $DTRI_i$ and $DTRI_j$, which are our primary variables of interest, denote how much restrictive data regimes of economies i and j are in regulating the cross-border transfer and usage of data; $MININTUSE_{ij}$ denotes the minimum Internet use between economies i and j ; $\ln(REMOTENESS_i)$ and $\ln(REMOTENESS_j)$ denote remoteness indexes on the exporter side and the importer side, respectively²⁵¹; ε_{ij} is the residual and β_0 is a constant.

²⁵¹ Remoteness indexes are taken into account to control for the multilateral resistance terms. For the significant impact of the multilateral resistance terms on the estimates of the gravity covariates, see Anderson and Van Wincoop, "Gravity with Gravitas," 170-192. Remoteness indexes are constructed as the logarithms of trading partner's GDP-weighted averages of bilateral distance. See Keith Head, "Gravity for Beginners," *mimeo*, University of British Columbia (2003), 8-9.

In addition, we estimate the following model specification in order to discern the effects of regulatory differences in data policies on bilateral trade flows:

$$\begin{aligned} \ln(SERVICES_{ij}) = & \beta_0 + \beta_1 \ln(GDP_i) + \beta_2 \ln(GDP_j) + \beta_3 \ln(DISTANCE_{ij}) + \beta_4 CONTIGUITY_{ij} \\ & + \beta_5 LANGUAGE_{ij} + \beta_6 CURRENCY_{ij} + \beta_7 COLONY_{ij} + \beta_8 LEGALORIGIN_{ij} \\ & + \beta_9 RTA_{ij} + \beta_{10} HETERODTRI_{ij} + \beta_{11} MININTUSE_{ij} + \\ & \beta_{12} \ln(REMOTENESS_i) + \beta_{13} \ln(REMOTENESS_j) + \varepsilon_{ij}, \end{aligned}$$

where $HETERODTRI_{ij}$ denotes the extent of the heterogeneity of data regimes between economies i and j .

Due to data availability, especially in the case of DTRI, which is available only for the year of 2018, we carry out cross-sectional regression analysis. The analysis begins with the Poisson Pseudo-Maximum-Likelihood (hereinafter PPML) estimation of the above specification and the estimators are compared with Ordinary Least Squares (hereinafter OLS) estimators for robustness check. The PPML estimation was first proposed by Santos Silva and Tenreyro to solve the heteroskedasticity-bias problem and correct for bias from excluding zero trade flows.²⁵² It is commonly reported that the PPML is a robust estimator in the existence of heteroskedasticity.

3.3.2. Data Description

The dependent variable in our specification is the total value of services exports from a reporting country to a partner country in 2017, which is retrieved from ‘Trade in Services by Partner Economy’ based on EBOPS 2010 of the ‘OECD-WTO Balanced Trade in Services Statistics’ database.²⁵³

²⁵² For more on the PPML estimator, see J. M. C. Santos Silva and Silvana Tenreyro, “The Log of Gravity,” *Review of Economics and Statistics* 88, no. 4 (2006): 641-658.

²⁵³ The database is available at <http://www.oecd.org/sdd/its/balanced-trade-in-services.htm> (accessed July 1, 2019).

The value of GDP is in current US dollar in 2017 obtained from the World Bank World Development Indicators (hereinafter WDI).²⁵⁴ Since Taiwan's GDP is not reported in the WDI, it is retrieved from the National Statistics Bureau of the Republic of China.²⁵⁵ The value of minimum Internet use is measured as the total number of mobile-broadband and fixed-broadband subscriptions per 100 inhabitants in the year of 2017 in two trading partner economies, whichever smaller.²⁵⁶ It is retrieved from the ITU World Telecommunication/ICT Indicators (hereinafter WTI) database 2018. All other data for standard gravity variables including distance, contiguity, language, currency, colony, legal origin, RTA information are from the Centre d'Etudes Prospectives et d'Informations Internationales (hereinafter CEPII) gravity dataset.²⁵⁷

The main variable of our interest, DTRI, need further elaboration. The digital trade restrictiveness index published in April 2018 by the ECIPE²⁵⁸, builds on the Digital Trade Estimates²⁵⁹, a database which accommodates a wide range of digital trade policies covering more than 100 categories of policy measures across 64 economies around the world. The index consists of four broad clusters: (A) Fiscal Restrictions and Market

²⁵⁴ Data is available at <https://databank.worldbank.org/data/source/world-development-indicators> (accessed July 1, 2019).

²⁵⁵ Data is available at <http://www.stats.gov.cn/english/> (accessed July 1, 2019).

²⁵⁶ "Active mobile-broadband subscriptions" refers to the sum of standard mobile-broadband and dedicated mobile-broadband subscriptions to the public Internet. It covers actual subscribers, even though the latter may have broadband enabled-handsets. "Fixed-broadband subscriptions" refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection) at downstream speeds equal to or greater than 256 Kbit/s. This includes cable modem; DSL; fibre-to-the-home/building; other fixed (wired)-broadband subscriptions; satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations. See definitions in the ITU WTI database 2018.

²⁵⁷ The dataset is available at http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8 (accessed July 1, 2019).

²⁵⁸ The dataset is available at <https://ecipe.org/dte/dte-report/> (accessed July 1, 2019).

²⁵⁹ It is available at <https://ecipe.org/dte/database/> (accessed July 1, 2019).

Access; (B) Establishment Restrictions; (C) Restrictions on Data; and (D) Trading Restrictions. Each cluster is composed of several different chapters: Cluster (A) covers tariffs and trade defense, taxation and subsidies and public procurement; Cluster (B) includes foreign investment restrictions, intellectual property rights measures, competition policy and business mobility; Cluster (C) involves data policies, intermediate liability and content access; Cluster (D) comprises quantitative trade restrictions, standards and online sales and transactions.²⁶⁰ Among the four larger clusters, we make use of the DTRI scores in Cluster (C), “Restrictions on Data,” for our study. The index

Table III-5 Descriptive statistics for the dataset

	<i>Mean</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>	<i>Obs.</i>
Log of services exports	17.653	5.605	0	25.023	1,736
Log of GDP of exporter	26.743	1.566	23.978	30.595	1,736
Log of GDP of importer	26.528	1.591	23.218	30.595	1,736
Log of distance	8.287	1.096	5.080	9.880	1,736
DTRI of exporter	26.571	10.331	13	63	1,736
DTRI of importer	24.926	13.851	3	82	1,736
Heterogeneity of data regimes	0.128	0.119	0	0.69	1,736
Minimum Internet use	103.500	29.482	19.9	184.7	1,736
Contiguity dummy	0.050	0.218	0	1	1,736
Language dummy	0.073	0.261	0	1	1,736
Colony dummy	0.039	0.194	0	1	1,736
Currency dummy	0.138	0.435	0	1	1,736
Legal origin dummy	0.278	0.448	0	1	1,736
Remoteness of exporter	19.264	0.321	19.081	20.302	1,736
Remoteness of importer	17.270	0.844	16.101	18.707	1,736
RTA dummy	0.543	0.498	0	1	1,736

Source: Author’s compilation.

²⁶⁰ For the methodology and information on DTRI and each country’s score in detail, see Martina Francesca Ferracane, Hosuk Lee-Makiyama and Erik van der Marel, *Digital Trade Restrictiveness Index*, ECIPE (2018).

has values between one and nil. The score of one signifies a closed data regime, while the score of nil signifies complete data openness. Descriptive statistics are presented in **Table III-5**.

3.4. Estimation Results and Discussion

Estimation results are presented in **Annex III-1**. The table compares the results of PPML estimations (column (1) through column (3)) with those of OLS estimations (column (4) through column (6)). The estimates of the effects of restrictive data regime that we are interested in, DTRI of exporter and importer in the model specification, have negative signs as expected, which means that the more restrictive data regime, the less bilateral services trade. The results should be taken with caution, however, as statistical significance differs by which country implements a restrictive measure. Other major conventional gravity variables generally have the expected signs except for a contiguity dummy in column (3) of **Annex III-1**.

To briefly recapitulate the results, it is confirmed that the standard gravity equation works well in explaining the determinants of services trade flows using our dataset. For instance, the economic size of both exporter and importer proxied by the log of GDP is positively associated with services exports and the estimated coefficients are statistically significant at the 1% level. In column (1) of **Annex III-1**, the estimated coefficient on the log of GDP of importer (0.041 with the standard error of 0.001) signifies that a percentage increase in GDP is associated with 0.041 per cent increase in imports of services.²⁶¹ Furthermore, the further apart two countries, the less services trade between the two. The estimated coefficient on the log of distance in column (1) implies that when physical

²⁶¹ In a log-log specification, an estimated coefficient is the elasticity of a relevant explanatory variable with respect to a dependent variable. See James H. Stock and Mark M. Watson, *Introduction to Econometrics*, 3rd ed. (Boston: Pearson, 2012), 312.

distance between trading partners increases by 10 per cent, services trade flows decrease by 0.6 per cent. The coefficient is statistically significant at the 1% level. The signs and statistical significance of the estimated coefficients on above conventional gravity variables are withheld through the PPML and OLS estimations and do not largely vary when controlling for other covariates as demonstrated in columns (1) and (3).

It is found that the restrictiveness of domestic data policy proxied by DTRI negatively affects total services trade flows. But the statistical significance of the coefficients differs by which country imposes a measure. The estimated coefficient on DTRI of exporter in column (3) controlling for multilateral resistance terms with remoteness indexes implies that a one per cent increase in DTRI is associated with a 8.4 per cent decline in total services exports.²⁶² The coefficients of $DTRI_i$ are statistically significant both with the PPML and OLS estimations. On the other hand, the estimate of the effects of $DTRI_j$ in column (3) reveals that it is probable that restrictions on data flows imposed by an importing country serve as trade barriers although it is not statistically significant.

In addition, **Annex III-2** presents the estimation results of the impact of the heterogeneity of data regimes on services trade flows. The estimate of the main variable, $HETERODTRI_{ij}$ reported in column (2), confirms that the less similar the degree of restrictiveness between the data regimes, the less bilateral services trade. The results continue to hold for the OLS estimations through column (3) through column (4).

In conclusion, our empirical study supports the assumption that domestic measures restricting the free movement of data and the commercial use of digitalized information can deter technological innovation within the local industries, curbing total services

²⁶² For the interpretation of coefficients in a log-linear model, see Stock and Watson, *Introduction to Econometrics*, 310.

exports (the indirect channel effect, as defined in this study). It is found in another empirical study that downstream industries and firms, which heavily rely on data, particularly suffer from the loss of productivity and loss of incentives for innovation due to strict regulations on CDBF and use of data.²⁶³ With data-intensive sectors, which are generally composed of cutting-edge IT firms, losing productivity and competitiveness, the economy tends to shift to the primary industry, eventually exporting less services.

Stringent data policies might serve as non-tariff barriers, preventing foreign innovative services from being imported (the direct channel effect, as defined in this study). The USITC, based on a survey targeting US-based tech firms, finds that overseas sales of large firms would increase by 15 per cent or more if foreign barriers to digital trade were eliminated.²⁶⁴ Ferracane and van der Marel also empirically show that less trade in data-intensive services is attributed to the regulatory restrictiveness of data regime of an importing country.²⁶⁵ However, our estimation results are not statistically significant to support the previous literature. It is probably because our dataset only contains an aggregated total services trade and does not allow an industry-specific analysis due to data availability. Further study is required in this respect.

Another noteworthy finding is the effects of the heterogeneity of data regimes on services trade flows. We find that when the regulatory restrictiveness of data flows of two trading partners is similar to each other, more services trade takes place between them. This result calls upon the digital version of regulatory coherence.²⁶⁶ With divergent data

²⁶³ Ferracane et al., *Do Data Policy Restrictions Impact the Productivity Performance of Firms and Industries?*, 17.

²⁶⁴ USITC, *Digital Trade, Part 2*, 100-101. The USITC identifies seven barriers to digital trade: localization requirements; market access limitations; data privacy and protection requirements; IPR infringement; uncertain legal liabilities; censorship; and customs measures. See USITC, *Digital Trade, Part 1*, 5-1-5-36.

²⁶⁵ Ferracane and van der Marel, "Do Data Policy Restrictions Inhibit Trade in Services?," 15.

²⁶⁶ Main agenda of trade negotiations tends to shift from market access issues such as tariffs to behind-the-border issues such as domestic regulations. Having an interoperable regulatory

policies emerging around the world, there are growing needs from businesses for the establishment of a global framework for an interoperable legal and regulatory regime with regard to data flows or online data protection.²⁶⁷ Otherwise, multinational firms would be required to bear the excessive trade costs to comply with multiple regulatory policies in more than two countries.²⁶⁸ In academia, proposed are regulatory principles that set minimum global standards for cross-border economic activities by electronic means and minimum privacy standards.²⁶⁹ The estimation results presented in **Annex III-2** can lay the theoretical and empirical groundwork for intense negotiations on the global standards for data regime.

Such results must be interpreted with caution, however, because we cannot rule out the possibility of a “race-to-the-bottom” through a competitive lowering of regulatory standards.²⁷⁰ In other words, countries might competitively upraise barriers to data flows but the estimate of $HETERODTRI_{ij}$ may indicate more trade flows between these highly data-restrictive economies. Unfortunately, our model specification is unable to capture

framework is particularly important to services trade. Many of recently concluded RTAs have an independent chapter to deal with regulatory coherence. For example, the CPTPP has a chapter for regulatory coherence (Chapter 25) and the USMCA has a chapter for good regulatory practices (Chapter 28).

²⁶⁷ See, for instance, Nigel Cory and Robert D. Atkinson, “Financial Data Does Not Need or Deserve Special Treatment in Trade Agreements,” ITIF (2016), 11; Batshur Gootiiz and Aaditya Mattoo, “Services in the Trans-Pacific Partnership: What Would Be Lost?,” *World Bank Policy Research Working Paper* 7964 (2017), 24.

²⁶⁸ Bernard Hoekman and Petros C. Mavroidis, “Regulatory Spillovers and the Trading System: From Coherence to Cooperation,” *The E15 Initiative – Strengthening the Global Trade System*, International Centre for Trade and Sustainable Development and World Economic Forum (2015), 3.

²⁶⁹ See, for instance, Henry Gao, “From Trade Regulation to Digital Regulation: The Regulation of Digital Trade in the Trans-Pacific Partnership,” (paper presented at Harvard Law School, 2016); WTO, *World Trade Report 2018*, 140; Joshua P. Meltzer, “Governing Digital Trade,” *World Trade Review* 18, supplement 1 (2019): s47.

²⁷⁰ WTO, *World Trade Report 2018*, 149.

the true effects of a regulatory “race-to-the-bottom” phenomenon due to data availability. We have no choice but to leave it for further study for now.

Our empirical findings are not without caveats. Importantly, it is practically impossible to tell necessary measures restricting CBDF to meet public policy objectives from disguised trade barriers. Another limitation is that as DTRI is available only for the given year, we are unable to construct a panel dataset. We leave it for further study to probe the dynamic impact of restrictions on data on services trade flows while controlling for any unobservable country-specific effects. Last but not least, whereas the indirect channel between restrictions on the cross-border transfers of data and services trade flows is statistically verified, the direct channel between them is not clearly identified. We look forward to further study on it with more sophisticated dataset.

4. The Role of Trade Agreements in Eliminating Barriers to Cross-Border Data Flows

Domestic measures restricting CBDF may be justified by a wide range of rationales: fulfilling legitimate public policy objectives including data protection, online privacy, consumer trust, domestic law enforcement, and cybersecurity; data sovereignty; digital version of infant industry argument.²⁷¹ In the meantime, it is also very hard to deny that some measures or practices of governments serve as “thinly veiled protectionism” with a view to providing protectionist barriers for domestic industries competing against formidable foreign rivals.²⁷² If overly excessive and disguised data protectionism prevails

²⁷¹ See Christopher Kuner, “Regulation of Transborder Data Flows under Data Protection and Privacy Law: Past, Present and Future,” *OECD Digital Economy Papers*, no. 187 (2011), 23-24; Chander and Lê, “Data Nationalism,” 713-739; Andrew D. Mitchell and Jarrod Hepburn, “Don’t Fence Me In: Reforming Trade and Investment Law to Better Facilitate Cross-Border Data Transfer,” *Yale Journal of Law and Technology* 19 (2017): 188-195; Cory, “Cross-Border Data Flows,” 3-5.

²⁷² USITC, *Digital Trade, Part 1*, 5-4.

among countries without any international cooperation, the global economy in the digital age would suffer from negative externalities. In light of this, multilateral, regional, and/or bilateral trade agreements, which are binding in its nature, are essential to prevent parties to an agreement from racing to a bottom in the realm of digital trade.²⁷³ This section focuses on the legal aspects of trade agreements in facilitating the cross-border transfer of data and eventually liberalizing cross-border digital trade. It begins with placing international cooperation on data flows in a historical context and examines relevant rules in the WTO Agreements and major RTAs.

4.1. Historical Development of International Rules on Cross-Border Data Flows

The controversy of barriers to cross-border data flows or trans-border data flows (hereinafter TDF) in the international trade context has been recently raised. Yet international cooperation on the CBDF or TDF issue has had a relatively long history in the international community. In his background paper for the workshop on data localization and barriers to trans-border data flows hosted by the World Economic Forum in 2016, Drake divides the evolution of TDF at the global level into three semi-distinct stages.²⁷⁴ During what could be called TDF 1.0 between 1974 and 1981, the Organization for Economic Cooperation and Development (hereinafter OECD) took the initiative in the TDF issue at the global level. The terminology of TDF was coined by an OECD expert group when the OECD Working Party on Transborder Data Flows was established in 1974. During the period, data protection and privacy were at the center of debate.

²⁷³ WTO, *World Trade Report 2018*, 149.

²⁷⁴ Drake, "Background Paper on Data Localization," 6-9. We generally agree with Drake's division of period and the following analysis is based mainly on his work. In other literature, Kuner presents the history of TDF regulations on a basis of the geographical scope of regulatory bodies: international instruments; regional instruments; national legislation; voluntary and private sector mechanisms. See Kuner, "Regulation of Transborder Data Flows," 14-19.

European governments preferred general data protection laws with horizontal coverage and the establishment of data protection agencies while the US favored a sectoral and more liberal approach. Through many years of debates and studies, the OECD adopted in 1980 voluntary “Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (hereinafter 1980 Guidelines).” It was the first attempt to deal with TDF from a global perspective.²⁷⁵ The 1980 Guidelines contained a series of recommendations including collection limitation, data quality, purpose specificity, use limitations and so forth. It was revised in 2013. Based upon the 1980 OECD Guidelines, the Council of Europe adopted its own “Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data (hereinafter Convention 108)” in 1981.²⁷⁶ This Convention marked the beginning of the data protection mechanisms within the EU, which led to the “1995 EU Data Protection Directive” and eventually to the entry into force of the “General Data Protection Regulation (hereinafter GDPR)” in 2018.

A period between 1981 and 1985 is referred to as TDF 2.0. During this period, attention was paid to not only the transfer of personal data but also the transfer of non-personal data such as the intra-corporate and inter-corporate transfer of data. Government officials and scholars began to care for negative consequences of the movement of corporate data in the economic, legal, and socio-cultural context. As a result, the working document presented at the Second World Conference on Transborder Data Flow Policies hosted by the Intergovernmental Bureau of Informatics (hereinafter IBI) called upon the “[r]ecognition of rights inherent to the sovereignty of States which foresee that [TDF]

²⁷⁵ Kuner, “Regulation of Transborder Data Flows,” 14.

²⁷⁶ The Additional Protocol to the Convention 108 was adopted in 2001. On May 18, 2018, the Committee of Ministers adopted a new Protocol (“Modernization of Convention 108”) to modernize the Convention 108. The Modernization of Convention 108 will be substituted for the 2001 Additional Protocol. Modernization of Convention 108 is available at <https://www.coe.int/en/web/data-protection/convention108/modernised> (accessed July 1, 2019).

serve their interests and objectives,” declaring that “TDF shall not violate their sovereignty nor their constitutional and legal principles.”²⁷⁷ However, a dominant interventionist approach in the IBI lost its momentum when multinational enterprises and the US government successfully campaigned the importance of free flows of data and after the IBI was shut down due to financial problems. In the end, when the OECD adopted its “Declaration on Transborder Data Flows” in 1985, the focus was shifted to the transnational movement of personally identifiable information (pro-trade sentiment) from data protection and privacy (pro-regulatory sentiment).

In today’s TDF 3.0 era, core issues which have been hotly debated in TDF 1.0 and 2.0 are still here to stay. Furthermore, as digital technologies are widely used in every aspect of global trade and large emerging economies claim their sovereignty in cyberspace,²⁷⁸ discussions on setting up rules on CBDF have become more complicated in spite of urgent need of global cooperation. “Guidelines concerning Computerized Personal Files” issued in 1990 by a UN agency states that “when the legislation of two or more countries concerned by a trans-border data flow offers comparable safeguards for the protection of privacy, information should be able to circulate as freely as inside each of the territories concerned.”²⁷⁹ In recent years, the online privacy issue is being addressed mainly by regional economic cooperation organizations such as the OECD and the Asia-Pacific Economic Cooperation (hereinafter APEC) in a non-binding manner. In 2013 the OECD revised its 1980 Guidelines to reflect technological, economic, and social

²⁷⁷ IBI, “Second World Conference on Transborder Data Flow Policies: Working Document,” IBI (1984), 47-48.

²⁷⁸ China pushes for “cyber-sovereignty” and Russia calls for “national Internet segment.” Iran’s “Iranian Internet” is not much different from those Internet policies. See Drake, “Background Paper for Data Localization,” 8.

²⁷⁹ Office of the United Nations High Commissioner for Human Rights, *Guidelines for the Regulation of Computerized Personal Data Files – Adopted by General Assembly Resolution 45/95 of 14 December 1990*, (Geneva, Switzerland: UN, 1990), 2-3.

changes in the digital age.²⁸⁰ On the other hand, the APEC constitutes the other pillar of international cooperation for online privacy. The first APEC “Privacy Framework” in 2005, which established a series of online privacy principles, was modeled upon the 1980 OECD Guidelines.²⁸¹ The APEC Framework recommends businesses in member countries to participate in the “APEC Cross-Border Privacy Rules (hereinafter CBPR) System” and implement data privacy policies consistent with the Framework.²⁸² The APEC Privacy Framework was updated in 2015 to take into account concepts introduced into the 2013 OECD Guidelines.

Efforts to set up international rules on cross-border data flows have been made either through global-scale organizations or regional instruments for decades. However, they fall short of expectations from governments, businesses, and scholars for various reasons: the rules and principles are non-binding in their nature so that it is impossible to force governments or businesses to implement subsequent actions; they fail to take into consideration economic aspects of CBDF such as negative economic externalities; they are agreed by only a handful of advanced economies. Given that CBDF has become vital to international trade, especially trade in services in the digital age,²⁸³ we assert that the CBDF issue should be dealt with in trade agreements in parallel with data protection and online privacy discussions in other international cooperation forum.

²⁸⁰ OECD, *Recommendation of the Council concerning Guidelines governing the Protection of Privacy and Transborder Flows of Personal Data (2013)*, C(80)58/FINAL, as amended on 11 July 2013 by C(2013)79, 11-17.

²⁸¹ APEC Secretariat, *APEC Privacy Framework* (Singapore: APEC, 2005), 1-36.

²⁸² APEC Cross-Border Privacy Rules is available at <http://cbprs.org/> (accessed July 1, 2019).

²⁸³ See, for empirical study on the effect of restrictive measures on CBDF on international trade in services, **Section 3.4**.

4.2. WTO Rules Are Comprehensive, Substantial, Flexible and Effective

Bagwell and Staiger, in their seminal book on the economic theory of trade agreements, present answers to the question: what is the purpose of a trade agreement?²⁸⁴ They argue that, from the traditional economic and political-economic perspectives, governments enter into an international trade agreement to internalize the negative international externalities.²⁸⁵ On the other hand, the commitment approach suggests that an international trade agreement works as an external device to help governments make domestic policy commitments to their private sector.²⁸⁶ Although these negative externalities theory and commitment theory were fabricated in terms of trade in goods, they contain some implications to digital trade.²⁸⁷ Likewise, trade agreements are a legitimate and effective international cooperative tool to govern the transfer of data across borders. It is attributed to the fact that cross-border elements of data regulations are closely related to international trade and measures restricting its flows are also likely to have negative trade consequences.²⁸⁸

Among numerous trading regimes in place today, the WTO is the best place to set rules to reign over CBDF as its Agreements are comprehensive in scope, substantial in

²⁸⁴ Kyle Bagwell and Robert W. Staiger, *The Economics of the World Trading System* (Cambridge: MIT Press, 2004), 13-41.

²⁸⁵ The negative international externalities stem from large countries' intention to manipulate their terms of trade at the expense of their trading partners. A trade agreement safeguards the parties to the agreement against a terms-of-trade-driven Prisoners' Dilemma. Bagwell and Staiger, *The Economics of the World Trading System*, 13.

²⁸⁶ Bagwell and Staiger, *The Economics of the World Trading System*, 13-14.

²⁸⁷ The WTO also notes, in its World Trade Report in 2018, that it is of great importance to have an appropriate trade agreement in the digital age so as to discourage governments to seek opportunistic behavior; cope with jurisdictional spillovers and avoid negative externalities of a jurisdictional nature; develop mechanisms for regulatory interoperability with a common denominator; and avoid a race-to-the-bottom dynamic with regard to data and online privacy protection. WTO, *World Trade Report 2018*, 149.

²⁸⁸ Francesca Casalini and Javier López González, "Trade and Cross-Border Data Flows," *OECD Trade Policy Papers*, no. 220 (2019), 8.

content, flexible in application, and effective in operation.²⁸⁹ In this section, we take a look at why the WTO matters and what it lacks in the era of a data-driven economy.

4.2.1. Comprehensive Membership and Subjects

The WTO holds almost universal membership. It covers not only countries but also economic blocs such as the EU and separate customs territories possessing full autonomy in the conduct of external commercial relations.²⁹⁰ Now its membership covers 164 countries and economies including developed, developing, and least-developed economies at the moment of this writing.²⁹¹ With the MFN principle in place, trade regulations and disciplines established within the WTO framework and tariff concessions and service commitments undertaken by each WTO Member apply to all other Members. It is of great significance that regardless of political, cultural, and societal differences, nearly universal countries and economies commit themselves to be bound by a rules-based multilateral system.

Trade topics discussed within the WTO are also very comprehensive. The WTO has established a world trading regime governing trade in goods (the General Agreement on Tariffs and Trade), trade in services (the General Agreement on Trade in Services), intellectual property rights (the Agreement on Trade-Related Aspects of Intellectual Property Rights), investment (the Agreement on Trade-Related Investment Measures), and development (the Aid for Trade initiative). Recently, the WTO has successfully

²⁸⁹ Aaronson and Leblond also share this view with us. See Susan Ariel Aaronson and Patrick Leblond, “Another Digital Divide: The Rise of Data Realms and Its Implications for the WTO,” *Journal of International Economic Law* 21, no. 2 (2018): 251.

²⁹⁰ Examples of separate customs territories include Hong Kong, China (Hong Kong) and Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (also known as Taiwan).

²⁹¹ See, for more information on members and observers of the WTO, WTO, “Members and Observers,” accessed July 1, 2019, https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm.

concluded multilateral negotiations on Trade Facilitation Agreement in 2013, which came into force on February 22, 2017.²⁹² Since there are many cross-cutting trade issues related to digital trade and a horizontal approach is definitely necessary for CBDF, the WTO multilateral trading regime must be the best venue to seek international cooperation to address the data transfer issue.²⁹³

4.2.2. Substantial Rules for Trade Liberalization

One of the core principles in the WTO regime is the principle of non-discrimination. The Preamble to the WTO Agreement points out “the elimination of discriminatory treatment in international trade relations” as a means to achieve the objectives of the WTO.²⁹⁴ The principle of non-discrimination consists of two separate obligations: MFN treatment obligation and national treatment obligation.

The MFN treatment obligation is praised as one of the pillars of the WTO trading system.²⁹⁵ Subject to the MFN principle, WTO Members bear an obligation to accord immediately and unconditionally to any product, services and service suppliers of any other Member no less favorable treatment than it accords to like product, services and service suppliers of any other countries.²⁹⁶ Since the MFN treatment obligation is a general obligation, all WTO Members and all sectors, regardless of goods or services, are

²⁹² See, for more information on trade facilitation, WTO, “Trade Facilitation,” accessed July 1, 2019, https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm.

²⁹³ WTO, *Second Dedicated Discussion on Electronic Commerce under the Auspices of the General Council – Summary by the Secretariat of the Issues Raised*, WT/GC/W/475, 20 June 2002; GC, *Work Programme on Electronic Commerce – Dedicated Discussions under the Auspices of the General Council on Cross-Cutting Issues related to Electronic Commerce*, WT/GC/W/505, 21 July 2003; WTO, *Sixth Dedicated Discussion on Electronic Commerce under the Auspices of the General Council – Summary by the Secretariat of the Issues Raised*, WT/GC/W/556, 30 November 2005; GC, *Advancing Work on the Electronic Commerce Work Programme*, JOB/GC/132/Rev.4, 7 November 2017.

²⁹⁴ Preamble to The Marrakesh Agreement Establishing the World Trade Organization.

²⁹⁵ Appellate Body Report, *EC – Tariff Preferences*, para. 101.

²⁹⁶ GATT Article I:1 and GATS Article II:1.

covered by the obligation with only a few exceptions allowed under stringent conditions.²⁹⁷

Equal opportunities for market access given to any other WTO Members in accordance with the MFN obligation may be eroded if a country puts in place a discriminatory measure against foreign countries to favor domestic industry. Therefore, the NT obligation, another essential element for trade liberalization, prevents a country from discriminating against foreign countries.²⁹⁸ Unlike the NT obligation under the GATT, however, the NT obligation in the GATS is subject to a specific commitment, only applicable to specific service sectors which a country commits to open.

The WTO is also equipped with other substantive norms such as the principle of reciprocity and transparency obligation. These substantive WTO rules, in tandem with the principle of non-discrimination, reinforce a rules-based WTO system and streamline trade liberalization.

4.2.3. Flexible Application in Exceptional Circumstances

The WTO does not blindly pursue trade liberalization. WTO Members are allowed to use trade remedies when domestic industries suffer from injuries due to trade liberalization: anti-dumping duties, countervailing duties, and safeguard measures are the most representative trade remedies.²⁹⁹ Trade-restrictive measures are also permitted in an

²⁹⁷ See, for more on the MFN treatment in WTO law and policy, Michael J. Trebilcock and Robert House, *The Regulation of International Trade*, 3rd ed. (Abingdon, U.K.: Routledge, 2005), 49-82; Mitsuo Matsushita, Thomas J. Schoenbaum, and Petros C. Mavroidis, *The World Trade Organization – Law, Practice, and Policy*, 2nd ed. (New York: Oxford University Press, 2006), 201-232; Van den Bossche and Zdouc, *The Law and Policy of the World Trade Organization*, 315-348; Joost H.B. Pauwelyn, Andrew T. Guzman, and Jennifer A. Hillman, *International Trade Law*, 3rd ed. (New York: Wolters Kluwer, 2016), 323-352.

²⁹⁸ GATT Article III and GATS Article XVII.

²⁹⁹ See, for more on economic and legal analysis on trade remedies under the WTO system, Petros C. Mavroidis, Patrick A. Messerlin, and Jasper M. Wauters, *The Law and Economics of Contingent Protection in the WTO* (Cheltenham, U.K.: Edward Elgar Publishing, 2008).

effort to aspiring to other social values such as protecting public morals, human, animal or plant life or health, preserving exhaustible natural resources, or maintaining public order. Such WTO-inconsistent measures are justified only under specific conditions.³⁰⁰

The WTO trading system is flexible enough to allow WTO Members to invoke security and balance of payment exceptions. Derogations from WTO obligations are justified when a national security interest is at stake under security exceptions.³⁰¹ When developing Members experience balance of payments difficulties in the process of economic development, they are explicitly permitted to adopt import restrictions as well.³⁰²

4.2.4. Effective Dispute Settlement

Due to its frequent usage and effectiveness, the dispute settlement mechanism of the WTO is often referred to as the “jewel in the crown of the WTO.”³⁰³ At the time of writing, 577 disputes have been filed before the Dispute Settlement Body (hereinafter DSB) since the inception of the WTO.³⁰⁴ This great number of cases proves that the WTO DSB is the most active international tribunal in the international community.

The WTO dispute settlement system has jurisdiction over disputes between WTO Members arising under the covered agreements including the Marrakesh Agreement

³⁰⁰ See, for more on general exceptions and its application in trade disputes, Trebilcock and House, *The Regulation of International Trade*, 232-320; Matsushita et al., *The World Trade Organization*, 785-830; Van den Bossche and Zdouc, *World Trade Organization*, 543-593; Pauwelyn et al., *International Trade Law*, 381-456.

³⁰¹ GATT Article XXI and GATS Article XIV *bis*. See, for more on security exceptions justification and its application in trade disputes, Matsushita et al., *The World Trade Organization*, 591-600; Van den Bossche and Zdouc, *World Trade Organization*, 594-605.

³⁰² GATT Article XVIII Section B.

³⁰³ WTO Press Release, “WTO Disputes Reach 400 Mark,” November 6, 2009, accessed July 1, 2019, https://www.wto.org/english/news_e/pres09_e/pr578_e.htm.

³⁰⁴ The most recent dispute before the DSB is *United States – Anti-dumping and countervailing duties on ripe olives from Spain* (DS577) brought by the EU against the US. The case is in consultations status.

Establishing the World Trade Organization, the GATT 1994 and all other multilateral agreements on trade in goods, the GATS, the TRIPS Agreement, the DSU and the Agreement on Government Procurement. Once a panel issues a panel report on a dispute, any party to the dispute can appeal to the Appellate Body, which is a standing body consisting of seven persons. A ruling of the Appellate Body is final and binding. If a measure of an original responding party is found to be in violation of a covered agreement and the party fails to bring the measure into compliance therewith within a reasonable period of time, a complaining party can retaliate with the authorization of the DSB.³⁰⁵

Since the number of trade disputes pertaining to digital trade or CBDF is expected only to rise, the role of the WTO DSB is more of importance. Indeed, through its rulings on *US – Gambling* and *China – Audiovisuals*, the WTO DSB has shown its relevance to data-driven trade.³⁰⁶

4.3. Relevant WTO Rules on Cross-Border Data Flows and Challenges to the WTO

It is hard to think of any international cooperative tool other than the WTO to address digital trade issues where CBDF is centric. We will explore what principles and regulations are relevant to CBDF in the realm of the WTO and what kind of challenges the WTO is facing in the wake of the data-driven economy.

³⁰⁵ See, for more on the dispute settlement system of the WTO, Trebilcock and House, *The Regulation of International Trade*, 112-154; Matsushita et al., *The World Trade Organization*, 103-140; Van den Bossche and Zdouc, *World Trade Organization*, 156-303; Pauwelyn et al., *International Trade Law*, 127-180.

³⁰⁶ See, for legal and economic analysis on *US – Gambling* and *China – Audiovisuals*, Douglas A. Irwin and Joseph Weiler, “Measures Affecting the Cross-Border Supply of Gambling and Betting Services (DS 285),” *World Trade Review* 7, no. 1 (2008): 71-113; Conconi and Pauwelyn, “Trading Cultures.”

4.3.1. General Obligations and Disciplines, and Specific Commitments of the GATS

Amongst a number of agreements and rules under the WTO regime, it is the GATS that are most likely to govern WTO Members' practices to curb the movement of data. It is because the GATS is comprehensively applicable to "measures by Members affecting trade in services"³⁰⁷ without defining what services are. The delegations of GATT contracting parties, at the moment of Uruguay Round negotiation, could not agree with the definition of services but reached a compromise to insert Article I:3 (b) stating:

(b) "services" includes any service in any sector except services supplied in the exercise of governmental authority.³⁰⁸

This constructive ambiguity in the definition of a service turns out to be not only rightful but also useful in the era of digital transformation. According to GATS Article I:2, which defines the supply of a service in a cross-border manner as trade in services,³⁰⁹ domestic measures banning or restricting CBDF, which would ultimately affect international trade in services, may be held accountable to the violation of GATS disciplines.³¹⁰

No explicit language on CBDF is found in the GATS as the Internet and the transfer of the massive amount of data across borders were in its infancy when the GATS was negotiated in the late 1980s and early 1990s. Having said that, it is worth noting footnote 8 to Article XVI:1 of the GATS designed for the protection of "capital" movement. If a commitment is made on market access with regard to the cross-border supply of a service and the movement of capital constitutes an essential part of that service, a Member must

³⁰⁷ Article I:1 of the GATS.

³⁰⁸ Article I:3 (b) of the GATS.

³⁰⁹ Article I:2 of the GATS states that: "For the purposes of this Agreement, trade in services is defined as the supply of a services: (a) from the territory of one Member into the territory of any other Members."

³¹⁰ Whether the GATS rules and regulations inherently apply to cross-border electronic delivery of services is not crystal-clear. For more, see **Chapter II Section 4.1.** of this thesis.

allow seamless flow of capital across borders. The notion of “cross-border capital flows” should cover not only inward flows of capital but also outward flows of capital.³¹¹

Footnote 8 to Article XVI:1 reads:

If a Member undertakes a market-access commitment in relation to the supply of a service through the mode of supply referred to subparagraph 2(a) of Article I and if the cross-border movement of capital is an *essential* part of the service itself, that Member is thereby committed to allow such *movement of capital*...[Italic added]³¹²

If the word capital is replaced with data or information in this text, one would find that the GATS is flawlessly ready to address CBDF in the age of the data-driven economy. As of now, however, there is no tailor-made provision in the GATS having the free movement of data mandatory and warranting restrictive domestic measures on data flows.

On the other hand, the GATS is equipped with flexible market access and national treatment obligations which are applicable only to sectors where Members decide to commit to open. Supposing that full market access and national treatment commitments are undertaken on certain digital service delivered through mode 1 under the heading of “Computer and Related Services” as shown in **Table III-6**, local data storage or local data processing measures might run counter to the obligations set out in GATS Articles XVI (market access obligation) and/or XVII (national treatment obligation).³¹³ With respect to market access, the cross-border supply of digital services by definition includes the movement of data. In addition, data localization requirements are deemed to bar

³¹¹ Panagiotis Delimatsis and Mart3n Molinuevo, “Article XVI GATS,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. R3diger Wolfrum, Peter-Tobias Stoll, and Clemens Fein3ugle (Leiden: Martinus Nijhoff Publishers, 2008), 373.

³¹² Footnote 8 to Article XVI:1 of the GATS.

³¹³ Crosby, “Analysis of Data Localization Measures,” 7-8.

Table III-6 Breakdown of “Computer and Related Services” in W/120

SECTORS AND SUB-SECTORS	CORRESPONDING CPC
1. BUSINESS SERVICES	
B. Computer and Related Services	
a. Consultancy services related to the installation of computer hardware	841
b. Software implementation services	842
c. Data processing services	843
d. Data base services	844
e. Other	845+849

Source: GATT, *Services Sector Classification List*, MTN.GNS/W/120, 10 July 1991.

Note: “Data processing services” and “Data base services” in W/120 correspond to input preparation services (84310), data processing and tabulation services (84320), time sharing services (84330), other data processing services (84390), and data base services (84400) in the Provisional CPC.

services operations, as stipulated in paragraph 2(c) to Article XVI:2, in digital services, therefore preventing the provision of any service through mode 1, in breach of Article XVI:1 and XVI:2(c) of the GATS.³¹⁴ Even though a Member imposes a measure restricting CBDF in a “formally identical” way to domestic and overseas digital services suppliers, the measure may be found to modify the conditions of competition in a manner less favorable to foreign suppliers. This may be found in a violation of national treatment obligation as set out in GATS Article XVII.³¹⁵

³¹⁴ GATS Article XVI:1 sets forth: “With respect to market access through the modes of supply identified in Article I, each Member shall accord services and service suppliers of any other Member treatment no less favorable than that provided for under the terms, limitations and conditions agreed and specified in its Schedule. [footnote omitted]” GATS Article XVI:2 lists “limitations on the total number of service operations” in subparagraph (c) as a measure that must not be adopted. Subparagraph (c) reads: “limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test[.]”

³¹⁵ Article XVII:2 of the GATS reads: “A Member may meet the requirement of paragraph 1 by according to services and service suppliers of any other Member, either *formally identical treatment* or formally different treatment to that it accords to its own like services and service suppliers. [Italic added]” Article XVII:3 of the GATS reads: “Formally identical or formally different treatment shall be considered to be less favorable if it *modifies the conditions of competition* in favor of services or service suppliers of the Member compared to like services or service suppliers of any other Member.”

4.3.2. Annex on Telecommunications

While the GATS provides for general rules and obligations in its main text, several sector-specific Annexes are also included in the GATS. The Annex on Telecommunications is one of those annexes establishing rules and disciplines in the telecommunications sector. The Telecommunications Annex were added to the GATS to ensure that a foreign service supplier is “accorded access to and use of public telecommunications transport networks and services on reasonable and non-discriminatory terms and conditions, for the supply of a service” committed in Members’ schedule.³¹⁶

Paragraphs 5(a) through (d) of the Telecommunications Annex set forth users’ rights to use public telecommunications transport networks and services.³¹⁷ Interestingly, paragraph 5(c) points out the movement of information across borders as an integral element for international trade in services, thus obliging each WTO Member to allow service providers from other Members to use public telecommunication transport networks in its territory. Paragraph 5(c) reads:

c) Each Member shall ensure that service suppliers of any other Member may use public telecommunications transport networks and services for the *movement of information within and across borders*, including for intra-corporate communications of such service suppliers, and for access to information contained in data bases or otherwise stored in machine-readable form in the territory of any Member. Any new or amended measures of a Member significantly affecting such use shall be notified and shall be subject

³¹⁶ Paragraph 5(a) of the GATS Annex on Telecommunications.

³¹⁷ Henry Gao, “Annex on Telecommunications,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 702.

to consultation, in accordance with relevant provisions of the Agreement.

[Italic added]³¹⁸

Based upon paragraph 5(c) of the Annex, Crosby concludes that WTO Members may not restrict the transfer of data across borders in connection with scheduled services.³¹⁹

4.3.3. General Exceptions and National Security Exceptions

Multilateral trade liberalization cannot and should not be pursued without any exceptions as each WTO Member is situated in different economic, cultural, societal, religious, and geopolitical circumstances. Member governments may want to adopt trade-restrictive measures to achieve public policy objectives which they deem necessary: GATS Article XIV, entitled “General Exceptions” in parallel with GATT Article XX, provides WTO Members with legal grounds in defense of WTO-inconsistent and trade-restrictive measures. But as this provision justifies derogations from principles, the language in the provision must be strictly interpreted. The Appellate Body in the *US – Gambling* case makes it clear that “a responding party invoking an affirmative defense bears the burden of demonstrating that its measure, found to be WTO-inconsistent, satisfies the requirements of the invoked defense.”³²⁰

The Appellate Body uses a “two-tiered analysis” to decide whether a WTO-inconsistent measure is justified under the GATS Article XIV in *US – Gambling*³²¹: first, the challenged measure should fall within the scope of one of the paragraphs of Article XIV and a sufficient nexus between the measure and the interest protected should be confirmed – the so-called necessity test; and, second, that measure must satisfy the

³¹⁸ Paragraph 5(c) of the GATS Annex on Telecommunications.

³¹⁹ Crosby, “Analysis of Data Localization Measures,” 7.

³²⁰ Appellate Body Report, *US – Gambling*, para. 309.

³²¹ *Ibid.*, para. 292.

requirements that the measure is “not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or a disguised restriction on trade in services.”³²² Regarding the first condition, a measure restricting inward or outward data transfers may be eligible to be justified under the Article XIV, if the measure is:

(a) necessary to protect *public morals* or to maintain *public order*; ...

(c) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement including those relating to:

(i) the prevention of deceptive and fraudulent practices or to deal with the effects of a default on services contracts;

(ii) the protection of the *privacy* of individuals in relation to the *processing and dissemination of personal data* and the *protection of confidentiality of individual records and accounts*;

(iii) safety;... [Italic added]³²³

A responding party, in turn, must show that sufficient nexus exists between a data flow-restrictive measure and public policy objectives such as public morals, public order, or privacy that it seeks to achieve. Panels and the Appellate Body would examine whether such a measure is necessary to achieve the alleged objectives on a basis of weighing and balancing method, which is well established in WTO case laws.³²⁴ If there is reasonably

³²² *Chapeau* of Article XIV of the GATS.

³²³ Article XIV of the GATS.

³²⁴ See, for the determination of necessity through a ‘weighing and balancing’ method, Thomas Cottier, Panagiotis Delimatsis, and Nicolas F. Diebold, “Article XIV GATS,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-

available and WTO-consistent alternatives, the measure should not be regarded as necessary.³²⁵ In this regard, Peng and Liu argue that the Mutual Legal Assistance Treaty (hereinafter MLAT) may not qualify as a genuine alternative to data localization measures in the case of an online criminal investigation.³²⁶ According to their argument, the MLAT is not less trade restrictive than data localization measures and is likely to fail to preserve for a responding party's right to achieve its desired level of protection pertaining to law enforcement or a criminal investigation.³²⁷

Once the measure passes the necessity test, the application of the measure, as a second step, should be scrutinized under the terms and conditions of the *chapeau* in Article XIV. Panels and the Appellate Body would decide whether the WTO-inconsistent measure at issue is applied in a manner which would constitute a means of "arbitrary or unjustifiable discrimination between countries where like conditions prevail" or a "disguised restriction on trade in services."³²⁸ There is no compelling reason for the WTO adjudicatory bodies not to adopt WTO jurisprudence developed in previous GATT-related disputes when interpreting the *chapeau* in GATS Article XIV.³²⁹ Thus, if CBDF-

Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 315-318.

³²⁵ Appellate Body Report, *US – Gambling*, para. 308. See, for identifying alternatives and reasonably available measures, Cottier et al., "Article XIV GATS," 319-320.

³²⁶ Peng and Liu, "The Legality of Data Residency Requirements," 202.

³²⁷ Not all legal scholars agree with this argument, however. Chander and Lê, for instance, opine that an MLAT is a useful tool for governments to collect information held on overseas computer servers, thus making mutual cooperation arrangements far more effective in the long run to support government intelligence efforts than efforts to detain data and information within the domestic jurisdiction. See Chander and Lê, "Data Nationalism," 735.

³²⁸ For a legal analysis on the *chapeau* of GATS Article XIV, see Cottier et al., "Article XIV GATS," 321-326.

³²⁹ Panels and the Appellate Body have interpreted GATS Article XIV in a consistent way in various GATS-related litigations. For example, see Panel and Appellate Body Reports, *US – Gambling*; Panel and Appellate Body Reports, *China – Audiovisuals*; Panel Report, *China – Electronic Payment Services*; and Panel and Appellate Body Reports, *Argentina – Financial Services*.

restrictive practices or data localization measures arbitrarily or unjustifiably discriminate against overseas digital service suppliers or serve as a disguised restriction on trade in digital services in terms of WTO jurisprudence, a responding party cannot defend its WTO-inconsistent data transfer restrictions.

In addition to general exceptions, the GATT Article XXI (Security Exceptions) and GATS Article XIV *bis* (Security Exceptions) also permit derogations from WTO obligations in a particular situation where national security is at stake.³³⁰ GATS Article XIV *bis*, in particular, may be invoked by a responding party in defense of onerous data transfer constraints in order to preserve cybersecurity or tackle cyber espionage or cyber warfare.³³¹ Putting aside the controversy over whether WTO Members are eligible to self-judge whether they may resort to security exceptions to justify the restrictions on data flows,³³² its application would be significantly limited to exceptional cases due to subparagraphs (i) to (iii) of the Article.³³³

4.3.4. Challenges Facing the Brick-and-Mortar WTO in the Era of a Data-Driven Economy

Despite comprehensive and effective WTO/GATS rules and regulations mentioned above, many doubts are being cast on the relevance of the WTO/GATS legal framework

³³⁰ For the historic development of security exceptions and challenges for the future of WTO security exceptions, see generally Ji Yeong Yoo and Dukgeun Ahn, “Security Exceptions in the WTO System: Bridge or Bottle-Neck for Trade and Security?,” *Journal of International Economic Law* 19, no. 2 (2016): 417-444.

³³¹ Relevant text of Article XIV *bis* of the GATS reads: “Nothing in this Agreement shall be construed to prevent any Member from taking any action which it considers necessary for the protection of its essential security interests: (i) relating to the supply of services as carried out directly or indirectly for the purpose of provisioning a military establishment; (ii) relating to fissionable and fusionable materials or the materials from which they are derived; (iii) taken in time of war or other emergency in international relations[.]”

³³² In the recent dispute involving Ukraine and Russia, the Panel ruled that issues under Article XXI of the GATT 1994 are justiciable. See Panel Report, *Russia – Traffic in Transit*, para. 7.120.

³³³ Mitchell and Helpburn, “Don’t Fence Me In,” 205.

to data-driven trade. Some relate to the positive-list approach of the GATS, giving WTO Members regulatory autonomy to keep data or information from flowing across borders in certain sectors; some relate to the outdated classification scheme, which had been devised way before the Internet took off and which is now more and more deviated from digital economic environment; others relate to some governments' efforts to deal with non-trade issues including cultural diversity, online data privacy, data protection, cybersecurity within the realm of the WTO – the so-called “trade and something” debate.³³⁴ The WTO Work Programme on Electronic Commerce has been working on these issues for more than two decades, but it has failed to bear any substantial fruit so far.³³⁵

All in all, great legal uncertainty arises when the adaptation of law and legal framework is made too slow to reflect economic reality. This is the case of the brick-and-mortar WTO, failing to adjust its regulatory framework to a data-driven economy and digital trade. Fortunately, the WTO has gradually found its relevance to digital trade in WTO jurisprudence through Internet-related litigations such as *US – Gambling* and *China – Audiovisuals*. As Burri and Cottier rightly point out, however, the WTO dispute settlement mechanism is not much helpful to accomplish legal certainty in the field of digital trade because “judicial transplants cannot replace political consensus on the

³³⁴ Burri, “The Regulation of Data Flows through Trade Agreements,” 413.

³³⁵ The only achievement that the Work Programme has accomplished is a duty-free moratorium on electronic transmissions. However, even this duty-free moratorium on electronic transmissions is agreed on a temporary basis not on a permanent basis. See Sacha Wunsch-Vincent, “The Digital Trade Agenda of the U.S.: Parallel Tracks of Bilateral, Regional and Multilateral Liberalization,” *Aussenwirtschaft* 58 (2003): 7-46; Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products*; Wunsch-Vincent, “Trade Rules for the Digital Age,” 497-529; Marc Bacchetta, Patrick Low, Aaditya Mattoo, Ludger Schuknecht, Hannu Wager and Madelon Wehrens, *Electronic Commerce and the Role of the WTO – Special Studies 2* (Geneva, Switzerland: WTO Publications, 1998); Aaditya Mattoo, Rosa Perez-Esteve and Ludger Schuknecht, “Electronic Commerce, Trade and Tariff Revenue: A Quantitative Assessment,” *The World Economy* 24, no. 7 (2001): 955-970.

substance, in particular in a complex and highly technical domain such as digital trade.”³³⁶ Moreover, when it comes to data transfers, major players such as the US, EU, China, and Russia are so divergent in their views on data flows that it is likely to make the WTO adjudicating bodies reluctant to delivering an effective ruling before political consensus is reached at the multilateral level.

Given that multilateral rule-making process has been deadlocked and the WTO Work Program on Electronic Commerce has progressed no further, RTAs have increasingly served as experimental laboratories in coming up with new disciplines to guarantee the seamless cross-border transfers of data.³³⁷

4.4. Emerging Rules on Cross-Border Data Flows in Regional Trade Agreements

With its economy rapidly getting digitized and its tech firms relying increasingly on the overseas market, the US has been a vocal advocate of digital trade liberalization.³³⁸ In an effort to formulate pro-digital trade regulatory environment, the US began to use bilateral or regional trade agreements, which usually contain provisions reflecting US tech firms’ interests. The very first provisions dealing with digital trade can be found in a trade agreement with Jordan in 2001 in a non-binding manner. In subsequent RTAs, the US has continuously had electronic commerce chapter or digital trade chapter in a binding manner.³³⁹

³³⁶ Mira Burri and Thomas Cottier, “Introduction: Digital Technologies and International Trade Regulation,” in *Trade Governance in the Digital Age: World Trade Forum*, eds. Mira Burri and Thomas Cottier (Cambridge, U.K.: Cambridge University Press, 2012), 6.

³³⁷ Lior Herman, “Multilateralising Regionalism: The Case of E-Commerce,” *OECD Trade Policy Papers*, no. 99 (2010), 6; Burri, “The Governance of Data and Data Flows in Trade Agreements,” 131; Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products*, 128.

³³⁸ Global tech firms such as Facebook, Amazon, Apple, Netflix and Google (also known as “FAANG”) and Microsoft are all US-based firms.

³³⁹ Wunsch-Vincent rightly points out that the US pursues regulatory model of electronic commerce, using RTAs as laboratories for innovative new disciplines. Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products*, 128.

Unlike other e-commerce issues, however, rules on restrictions on data flows have not appeared in any US RTA until the Korea-US FTA (hereinafter KORUS). As the US relies on electronic commerce or digital trade chapter in its RTAs as a tool to devise new disciplines on CBDF, it is worthwhile to take a close look at relevant provisions in RTAs including KORUS, CPTPP, and United States-Mexico-Canada Agreement (hereinafter USMCA).³⁴⁰

4.4.1. Allowing the Cross-Border Free Flows of Information

KORUS, which was signed in June 2007 and took effect in March 2012, is the very first US RTA which has an explicit provision related to CBDF. In Electronic Commerce Chapter, Article 15.8 of KORUS takes note of the significant role of data flows in promoting international trade, recommending the Parties not to restrict the transfer of data across borders. The provision stipulates:

Article 15.8 Cross-Border Information Flows

Recognizing the importance of the free flow of information in facilitating trade, and acknowledging the importance of protecting personal information, the Parties shall *endeavor* to refrain from imposing or maintaining unnecessary barriers to electronic information flows across borders. [Italic added]³⁴¹

³⁴⁰ In parallel with RTAs, new digital trade rules affecting services trade have been under discussion amongst more than 60 WTO Members under the name of Trade in Service Agreement (hereinafter TISA) negotiations. The US and the EU were participating in negotiation but China was not. After US President Donald Trump took office in 2017, the talks over the TISA has stopped. Therefore, the TISA is excluded from the scope of this study. See, for more background on the TISA, Juan A. Marchetti and Martin Roy, "The TISA Initiative: An Overview of Market Access Issues," *Journal of World Trade* 48, no. 4 (2014): 683-728.

³⁴¹ Article 15.8 of KORUS.

But this provision fails to make the free movement of data mandatory. Both parties are only obliged to make an effort to refrain from imposing measures restricting CBDF. It does not set forth exceptional circumstances where the restriction of data flow is warranted.

The regulatory discipline on CBDF is strengthened by Electronic Commerce Chapter in CPTPP.³⁴² Article 14.11 of CPTPP imposes on the Parties an obligation to permit the free flow of data across borders.

2. Each Party *shall* allow the cross-border transfer of information by electronic means, including personal information, when this activity is for the conduct of the business of a covered person. [Italic added]³⁴³

Unlike KORUS, CPTPP permits the Parties to derogate from the free flow obligation to achieve “legitimate public policy objectives (hereinafter LPPO).” A measure limiting CBDF is allowed under the conditions that the measure “is not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade” and “does not impose restrictions on transfers of information greater than are required to achieve the objective.”³⁴⁴ Although the language of CBDF exception in CPTPP reminds of WTO general exception clauses – *i.e.*, GATT Article XX and GATS Article XIV – it is much more loosely written. Peng and Liu comment that this

³⁴² The original TPP has been once praised as a high-standard and 21st Century trade agreement due to its innovative approach toward cutting-edge issues including trade in digital services and data transfer. See Gao, “From Trade Regulation to Digital Regulation,” 16. Despite the withdrawal of the US from the agreement on January 24, 2017, other eleven signatories decided to keep TPP alive without any change in Electronic Commerce Chapter.

³⁴³ Article 14.11 paragraph 2 of the CPTPP.

³⁴⁴ Article 14.11 paragraph 3 of the CPTPP.

constructive ambiguity was necessary in order to draw the positive commitments from other then-TPP parties on the free flow of information.³⁴⁵

USMCA, which was concluded in November 2018 to replace NAFTA among the three North American nations including the United State, Mexico, and Canada, also renders free data flow mandatory. The USMCA provision regulating CBDF by electronic means does not significantly differ from that of CPTPP except that USMCA adopts it in a negative form³⁴⁶ and adds a more restrictive requirement on CBDF.³⁴⁷

We may conclude that the US has been taking a very liberal approach toward the free flow of data in the trade context.³⁴⁸ **Table III-7** compares CBDF provisions in electronic commerce chapters or digital trade chapters in KORUS, CPTPP, and USMCA.

Table III-7 Comparison of CBDF provisions in major US RTAs

	KORUS	CPTPP	USMCA
CBDF	Recommended	Mandatory	Mandatory
LPPO exception	Not available	Allowed	Allowed

Source: Author’s compilation.

³⁴⁵ Peng and Liu, “The Legality of Data Residency Requirements,” 196. The same comment is applicable to Article 14.13 (Location of Computing Facilities).

³⁴⁶ Article 19.11 paragraph 1 of USMCA stipulates that: “No Party shall prohibit or restrict the cross-border transfer of information, including personal information, by electronic means if this activity is for the conduct of the business of a covered person.”

³⁴⁷ Article 19.11 paragraph 2 footnote 6 of USMCA. “A measure does not meet the conditions of this paragraph if it accords different treatment to data transfers solely on the basis that they are cross-border in a manner that modifies the conditions of competition to the detriment of services suppliers of another Party.”

³⁴⁸ On the other hand, the EU, another big player in digital trade, are still very cautious about the free flow of data across borders. The Economic Partnership Agreement between the EU and Japan (hereinafter EU-Japan EPA) stipulates that: “The Parties shall reassess within three years of the date of entry into force of this Agreement the need for inclusion of provisions on the free flow of data into this Agreement.” Article 8.81 of the EU-Japan EPA. This EPA took effect on February 1, 2019.

4.4.2. Banning Data Localization Requirements

It is found that an increasing number of countries have introduced or been drafting laws or regulations keeping data within their jurisdiction. Among governments' measures or practices, measures forcing overseas service providers to set up or use local computing facilities such as servers or data centers may work as *de facto* trade barriers to digital trade.³⁴⁹

To the best of our knowledge, CPTPP is the first binding international trade agreement to have a provision banning data localization requirements or prohibiting countries from requiring computing facilities to be located within a regulating country. The provision of "Location of Computing Facilities" of CPTPP reads:

2. No Party shall require a covered person to use or locate computing facilities in that Party's territory as a condition for conducting business in that territory.³⁵⁰

Similar to the CBDF provision in Article 14.11, this provision allows the Parties to take a restrictive measure to meet legitimate public policy objectives, if the measure "is not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade" and "does not impose restrictions on the use or location of computing facilities greater than are required to achieve the objective."³⁵¹ But the language is silent on what constitutes legitimate public policy objectives.

³⁴⁹ CPTPP defines computing facilities as "computer servers and storage devices for processing or storing information for commercial use." Article 14.1 of CPTPP.

³⁵⁰ Article 14.13 paragraph 2 of the CPTPP.

³⁵¹ Article 14.13 paragraph 3 of the CPTPP.

USMCA tackles data localization requirements under the same article title of “Location of Computing Facilities” in Digital Trade Chapter with some alterations. Article 19.12 of USMCA stipulates that:

No Party shall require a covered person to use or locate computing facilities in that Party’s territory as a condition for conducting business in that territory.³⁵²

The language is equivalent to that in CPTPP. However, three significant differences in data localization requirements provisions between USMCA and CPTPP are noteworthy. One is that the LPPO exception is entirely omitted in USMCA. Theoretically, it means that either the US, Mexico, or Canada has absolutely no regulatory freedom to impose necessary data localization measures to achieve public policy objectives. Another one is that while the CPTPP permits each Party to “have its own regulatory requirements regarding the use of computing facilities” with a view to ensuring the “security and confidentiality of communications,”³⁵³ USMCA lacks such provision. The omission of LPPO exception and no language on regulatory autonomy under USMCA reveal that a stricter legal regime banning data localization requirements are to be established in the North American region than in the Asia-Pacific region.

Another difference is the scope of data that subjects to a ban on data localization requirements. Article 14.13 of CPTPP forbids a “covered person” from localizing computing facilities to conduct business in a host country. But financial data is carved out from the prohibition of data localization as CPTPP excludes a “financial institution” or a “cross-border financial service suppliers of a Party” from the definition of a covered

³⁵² Article 19.12 of USMCA.

³⁵³ Article 14.13 paragraph 1 of CPTPP.

Table III-8 Comparison of data localization requirement provisions in major US RTAs

	KORUS	CPTPP	USMCA
Ban on data localization	Not available	Mandatory	Mandatory
LPPO exception	Not available	Allowed	Not allowed
Financial data carve-out	Not available	Carved-out	Not allowed

Source: Author’s compilation.

person.³⁵⁴ Facing fierce criticism from independent think-tanks and scholars,³⁵⁵ the US negotiators of USMCA decided to grant no special treatment to financial data, outlawing data localization measures in the financial sector.³⁵⁶ **Table III-8** summarizes above findings.

4.4.3. Utilizing Government Data

Most of the digital trade provisions in USMC are borrowed from CPTPP. Very Few provisions are genuine in USMCA and one of them is the provision on “Open Government Data.”³⁵⁷ This provision on the publication of government data was not

³⁵⁴ Article 14.1 of CPTPP.

³⁵⁵ See Cory and Atkinson, “Financial Data Does Not Need or Deserve Special Treatment,” 3-8.

³⁵⁶ The free flow of financial data and the prohibition on data localization measures on financial data are guaranteed not by Digital Trade Chapter but by Financial Services Chapter of USMCA. In accordance with Article 19.2 of USMCA, provisions in Digital Trade Chapter are subsumed by rules inscribed in Financial Chapter. See Article 19.2 (Scope and General Provisions), Article 17.17 (Transfer of Information) and Article 17.18 (Location of Computing Facilities) of USMCA.

³⁵⁷ The other provision which is not found in CPTPP is the “Interactive Computer Services” provision. This provision is excluded from the scope of this study because it is more about exemptions from liability on online platforms for illegal online content. See, for more on interactive computer services issues in USMCA, Ali Sternburg, “Crucial USMCA Intermediary Protections Are Consistent with U.S. Law,” *Disruptive Competition Project*, December 7, 2018, accessed July 1, 2019, <http://www.project-disco.org/21st-century-trade/120718-crucial-usmca-intermediary-protections-are-consistent-with-u-s-law/#.XSCGduj7R6s>.

listed in USTR’s objectives for the NAFTA renegotiation announced in November 2017³⁵⁸ but is included in the final text of USMCA.

The Parties to USMCA not only acknowledge the importance of the cross-border movement of personal information for the digital economy but also “recognize that facilitating public access to and use of *government information* fosters economic and social development, competitiveness, and innovation. [Italic added]”³⁵⁹ Furthermore, it is insufficient for three North American governments to simply allow the public to get access to their massive databases: they are recommended – but not obligated – to provide for the information in a “machine-readable and open format.” Paragraph 2 of Article 19.18 reads:

2. To the extent that a Party chooses to make government information, including data, available to the public, it shall endeavor to ensure that the information is in a *machine-readable* and *open format* and can be searched, retrieved, used, reused, and redistributed. [Italic added]³⁶⁰

The provision even goes further to encourage the Parties to promote the usage of government data for commercial interests. In so doing, small and medium-sized firms must be taken great care of by the governments.

3. Parties shall endeavor to cooperate to identify ways in which each Party can expand access to and use of government information, including data, that the Party has made public, with a view to enhancing and generating

³⁵⁸ USTR, “USTR Releases Updated NAFTA Negotiating Objectives,” November 17, 2017, accessed July 1, 2019, <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/november/ustr-releases-updated-nafta>.

³⁵⁹ Article 19.18 paragraph 1 of USMCA.

³⁶⁰ Article 19.18 paragraph 2 of USMCA.

Table III-9 Comparison of government data provisions in major RTAs

	KORUS	CPTPP	USMCA
Machine-friendly government data	N/A	N/A	Recommended
Public access to government information	N/A	N/A	Recommended

Source: Author's compilation.

business opportunities, especially for small and medium-sized enterprises.³⁶¹

This new rule has never been negotiated for KORUS and CPTPP. The US government and giant tech firms in Silicon Valley might have seen great business opportunities in the massive amount of data stored in foreign governments' data servers. Whether this commercial-oriented approach toward government data will be disseminated around the globe should remain to be seen. **Table III-9** compares provisions on open government data in the three RTAs.

5. Suggestions to Upcoming WTO Negotiations on Trade-Related Aspects of Electronic Commerce

At the 11th Ministerial Conference of the WTO (hereinafter MC11) held in Buenos Aires in December 2017, a group of like-minded WTO Members has announced to “initiate exploratory work toward future WTO negotiations on trade-related aspects of electronic commerce.”³⁶² In accordance with this initiative, a new round of WTO

³⁶¹ Article 19.18 paragraph 3 of USMCA.

³⁶² MC, *Joint Statement on Electronic Commerce*, WT/MIN(17)/60, 13 December 2017. The Joint Statement was supported by 70 WTO Members including Albania, Argentina, Australia, Bahrain, Brazil, Brunei Darussalam, Cambodia, Canada, Chile, Colombia, Costa Rica, EU, Guatemala, Hong Kong, Iceland, Israel, Japan, Kazakhstan, Korea, Kuwait, Lao, Liechtenstein, Macedonia, Malaysia, Mexico, Moldova, Montenegro, Myanmar, New Zealand, Nigeria, Norway, Panama, Paraguay, Peru, Qatar, Russia, Singapore, Switzerland, Chinese Taipei, Turkey, Ukraine, United States, and Uruguay. China, one of the major digital trade players, did not participate in the Joint Statement.

negotiations on electronic commerce/digital trade on a plurilateral basis has begun in March 2019.³⁶³ It was once questionable whether China, which had not joined the 2017 Joint Statement in Buenos Aires and often opposed US digital trade agenda, would join the talks. But China, at the World Economic Forum in January 2019, decided to participate in negotiations at the last minute.³⁶⁴ China's joining of WTO e-commerce negotiations is welcoming news in terms of the scope of negotiation participants. Nevertheless, concerns are growing as the US and China are positioned at the other end of the spectrum when it comes to the free flows of data, data localization, data sovereignty, and cybersecurity. In this part, we would like to suggest some ideas which could help trade negotiators build interoperability between varying data governance regimes.³⁶⁵

5.1. Scheduling Horizontal Commitments Allowing Cross-Border Data Flows

Undertaking a horizontal commitment to allow the cross-border transfer of data could be the first option to national delegates to the WTO e-commerce negotiations.³⁶⁶ As the free flow of data is vital to make use of digital transformation regardless of sector or type of services, it should be committed not in a sectoral way but in a horizontal way. By inserting "movement of information and location of computing facilities" for all services in all sectors and indicating "none" in limitations on market access and national

³⁶³ Hannah Monicken, "In first WTO e-commerce meeting, U.S. stresses 'same obligations' for all," *Inside U.S. Trade*, March 7, 2019, accessed July 1, 2019, <https://insidetrade.com/daily-news/first-wto-e-commerce-meeting-us-stresses-%E2%80%98same-obligations%E2%80%99-all>.

³⁶⁴ Hannah Monicken, "U.S., China, over 70 others announce 'intent' to launch e-commerce talks," *Inside U.S. Trade*, January 31, 2019, accessed July 1, 2019, <https://insidetrade.com/inside-us-trade/us-china-over-70-others-announce-intent-launch-e-commerce-talks>.

³⁶⁵ Interoperability hereby refers to the ability of "systems, regulatory frameworks, technologies or standards to interact, communicate and function with those of other operators or countries." Casalini and López González, "Trade and Cross-Border Data Flows," 6. Trade agreements may contribute to establishing interoperability in a data-driven economy. See Cory, "Cross-Border Data Flows," 14; Burri, "The Governance of Data and Data Flows in Trade Agreements," 128.

³⁶⁶ Sen, "Understanding the Role of the WTO in International Data Flows," 347.

treatment columns, a WTO Member would commit to accord market access and national treatment to all services provided on a cross-border basis (Mode 1 cross-border supply and Mode 2 consumption abroad). It should be noted that not only committed services in the schedule but also new services where commitments are not made yet will fall under the purview of this horizontal commitment. Public policy objective exemptions such as data protection, online privacy and cybersecurity must be provided in due course in tandem with horizontal commitments on data flows. **Table III-10** illustrates the structure of a model schedule.

5.2. Adopting a Data-Differentiated Approach

A second option which negotiators at the WTO e-commerce talks may take into account is to set up internationally agreed regulatory standards governing CBDF based on the different types of data. Some literature has already proposed a taxonomy of data: the Swedish National Board of Trade or Kommerskollegium proposes that data consists of corporate data, end-customer data, human resources data, merchant data, and technical

Table III-10 Model schedule : Horizontal commitments permitting CBDF

Modes of supply: 1) Cross-border supply 2) Consumption abroad 3) Commercial presence
4) Presence of natural persons

Sector or subsector	Limitations on market access	Limitations on national treatment	Additional commitments
I. HORIZONTAL COMMITMENTS			
ALL SERVICES IN ALL SECTORS: Movement of Information and Location of Computing Facilities	1), 2) None	1), 2) None	

Source: Author.

data;³⁶⁷ Sen classifies data into personal data, company data, business data, and social data;³⁶⁸ Aaronson and Leblond distinguish data between personal data, confidential business data, public data, metadata (aggregated and unidentified personal data), and machine-to-machine data.³⁶⁹

A data differentiated approach is expected to enable greater market access and streamline the liberalization of digital trade, while preserving essential societal values.³⁷⁰ Certain types of data with little or no sensitive element such as company data, which is neither personal nor confidential business data, should be allowed to move freely across borders to reap the benefit of an innovative data-driven economy. On the other hand, personal information needs more secure management than technical product data.³⁷¹ A plausible tool could be a horizontal commitment to CBDF with respect to these less sensitive types of data. In the meantime, other types of data which are sensitive in terms

³⁶⁷ Kammerskollegium, “No Transfer, No Trade,” 8.

³⁶⁸ Each type of data is not mutually exclusive. More than two types of data may formulate independent data for a certain usage: data can be personal, business and company; data can be personal and company, but not business; data can be social and company; data can be company, but neither personal nor business; data can be company and business, but not personal. Sen admits the instances of overlapping between different categories of data. See Sen, “Understanding the Role of the WTO in International Data Flows,” 346.

³⁶⁹ Personal data includes birthdates, passport numbers. Confidential business data includes payrolls. Public data includes census data and scientific data. Metadata is frequently used for artificial intelligence (hereinafter AI) and big data analytics. Machine-to-machine data is generated by the Internet of Things (hereinafter IoT) and used for communication between machines. See Aaronson and Leblond, “Another Digital Divide,” 250. Data also can be categorized by the origin of data for a specific policy purpose. The EU GDPR, for instance, makes a distinction between different categories of data for the purpose of the “right to data portability” as set forth in Article 20 of the GDPR: “data actively and knowingly provided by the data subject (provided data)” and “observed data provided by the data subject by virtue of the use of the service or the device (observed data)” fall within the scope of the right to data portability; on the contrary, inferred data and derived data, which are produced as a result of the analysis of data provided by the data subject, are not covered by the right to data portability. See, for more background on the right to data portability, Article 29 Data Protection Working Party, *Guidelines on the Right to Data Portability*, 16/EN, WP 242 rev.01, April 5, 2017, 10.

³⁷⁰ Sen, “Understanding the Role of the WTO in International Data Flows,” 347.

³⁷¹ Kammerskollegium, “No Transfer, No Trade,” 20.

of privacy and security should be subject to more stringent government regulations when crossing borders. Regulatory autonomy must be retained by carving-out sensitive data from a horizontal commitment. The positive list approach in the GATS should also be maintained for WTO Members which seek to keep data in a specific sector under their jurisdiction.³⁷²

All in all, applying diversified regulatory frameworks by the type of data would be a good starting point to allow the free movement of data across borders.

5.3. Establishing Minimum Standards for Personal Data Protection

The protection of personal data or online privacy becomes increasingly important as a massive amount of data can now be transferred to a third party due to advanced digital technologies. After the revelation of former US National Security Agency (hereinafter NSA) contractor Edward Snowden that the NSA was monitoring European citizens and political leaders in secret³⁷³, the EU got cautious about the transfer of personal data out of the EU. It eventually led to very stringent personal data protection governance quite different from the *laissez-faire* data regime of the US. The Chinese government has also been struggling to establish its own data protection mechanism in an effort to beefing up cybersecurity.

Against this backdrop, policymakers in other countries are now pushed to choose one of the three data realms – *i.e.* US, EU, and Chinese realms – described above.³⁷⁴ Thus

³⁷² For instance, in CPTPP, financial data has been carved out from the obligation of data localization requirements because of surveillance reason. However, commentators have criticized US government's decision to exempt financial data from a ban on data localization. Cory and Atkinson, "Financial Data Does Not Need or Deserve Special Treatment," 1-17. The scope of a ban on data localization extends to financial data in USMCA.

³⁷³ "Edward Snowden: Leaks that exposed US spy programme," *BBC*, January 17, 2014, accessed July 1, 2019, <https://www.bbc.com/news/world-us-canada-23123964>.

³⁷⁴ Aaronson and Leblond, "Another Digital Divide," 269.

it becomes an ever more urgent and primary task to have a global mechanism of interoperability or compatibility between different data protection realms in trade agreements because data flows can be only enabled under the condition of high-level regulatory coordination on principles of privacy/data protection.³⁷⁵ What we would like to suggest here in the wake of formal WTO e-commerce talks is to adopt international personal data protection instruments created outside the WTO as minimum standards for personal data protection. International personal data protection instruments may include but not be limited to: the “OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data” in 1980 and its 2013 revisions (hereinafter OECD Privacy Guidelines); the “Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data”; and the “APEC Privacy Framework and its Cross-Border Privacy Rules (hereinafter CBPR) System.”³⁷⁶

This idea of espousing non-WTO international instruments as minimum data protection standards has been already discussed at the bilateral or regional level. CPTPP and USMCA are at the forefront: both of the agreements encourage each party to “take into account principles and guidelines of relevant international bodies” before setting up its own domestic framework for the protection of personal information.³⁷⁷ The parties to the two agreements are also recommended to develop “mechanisms to promote compatibility” between different data protection regimes.³⁷⁸ The two agreements contain very similar language on personal information protection. But unlike CPTPP, which sets out only a simple principle of compatibility, USMCA illustrates specific international

³⁷⁵ Mishra, “The Role of the TPP Agreement in the Internet Ecosystem,” 44.

³⁷⁶ See, for more background information on these international instruments, Casalini and López González, “Trade and Cross-Border Data Flows,” 24-25, 39-40.

³⁷⁷ Article 14.8 paragraph 2 of CPTPP and Article 19.8 paragraph 2 of USMCA. Any relevant provision cannot be found in KORUS.

³⁷⁸ Article 14.8 paragraph 5 of CPTPP and Article 19.8 paragraph 6 of USMCA.

cooperative works as an example of valid mechanisms to facilitate data flows while protecting personal information. Those international achievements are the APEC Privacy Framework, 2013 OECD Privacy Guidelines, and APEC CBPR system.³⁷⁹ **Table III-11** summarizes above findings.

Given that the data protection realms of China, the EU, and the US are based on philosophical differences with regard to online privacy and data protection, it would be a pipedream to come up with a panacea at the multilateral trade negotiation forum right away. A small but significant first step could begin with endorsing minimum data protection standards formed by non-WTO international institutions in a non-binding manner.

5.4. Elaborating the Language of “Legitimate Public Policy Objectives”

As international trade in goods and services often lead to unexpected worldwide consequences in another part of the society, an increasing number of trade agreements deal with non-economic elements other than trade. For instance, general exceptions

Table III-11 Comparison of personal information protection provisions in major RTAs

	KORUS	CPTPP	USMCA
The role of principles and guidelines of relevant int’l bodies	Not available	Paragraph 2 of Art. 14.8	Paragraph 2 of Art. 19.8
The necessity of compatibility	Not available	Paragraph 5 of Art. 14.8	Paragraph 6 of Art. 19.8
Examples of relevant int’l bodies	Not available	Not available	APEC Privacy Framework; OECD Privacy Guidelines; APEC CBPR

Source: Author’s compilation.

³⁷⁹ Article 19.8 paragraph 6 of USMCA.

provisions of GATT Article XX and GATS Article XIV shed light on to what extent the WTO cares about non-trade elements, such as the protection of public morals, human, animal or plant life or health, preservation of exhaustible natural resources, or maintenance of public order and how to balance between facilitating trade liberalization and preserving non-economic interests. A large number of disputes have helped develop WTO jurisprudence with respect to the interpretation and application of the general exception provision.³⁸⁰

CPTPP and USMCA provide for general exceptions-like provisions with regard to CBDF and data localization in Articles 14.11 and 14.13 of CPTPP and Articles 19.11 and 19.12 of USMCA, respectively. While obligating the parties to the agreement not to restrict the cross-border transfer of information by electronic means, the two agreements allow the parties to restrict data flows to achieve a legitimate public policy objective if the measure is “necessary to achieve the objective” and does not constitute “arbitrary or unjustifiable discrimination or a disguised restriction on trade.”³⁸¹ Paragraph 3 of Article 14.13 in the CPTPP stipulates similar exceptional conditions in the case of data localization, while the USMCA contains no such exception for the obligation of the location of computing facilities.³⁸²

It is highly likely that, during the WTO negotiations on trade-related aspects of electronic commerce, disciplines on CBDF and data localization build on relevant texts of CPTPP and USMCA as the US has the initiative to lead those digital trade talks. However, we would refuse the idea of replicating the provisions of CPTPP and USMCA without any alteration. The underlying rationale is that the provisions governing CBDF

³⁸⁰ See, for example, *US – Gasoline*, *US – Shrimp (1998)*, *Brazil – Retreaded Tyres*, *EC – Asbestos*, *US – Gambling*, *China – Audiovisuals*.

³⁸¹ Article 14.11 paragraph 3 of CPTPP and Article 19.11 paragraph 2 of USMCA.

³⁸² Article 14.13 paragraph 3 of CPTPP and Article 19.12 of USMCA.

and data localization in CPTPP and USMCA lack a specific list of legitimate public policy objectives, which is starkly different from GATT and GATS general exception clauses.³⁸³ Some commentators understand that it was inevitable to have an open-ended list of legitimate objectives in order to establish constructive ambiguity in a politically sensitive area during the CPTPP negotiations.³⁸⁴ Nonetheless, we are of the view that the absence of a list of legitimate public policy objectives would result in abuses and more legal uncertainty.³⁸⁵ When a dispute takes place, it would only precipitate “blind deference to regulatory goals of a country” or, at best, bring about an intrusive judicial activism issue.³⁸⁶

One conclusion we can draw from this discussion is that coming up with a specific list of legitimate public policy objectives justifying data flow-restrictive measures is worth considering during the upcoming WTO e-commerce negotiations. It would clearly

³⁸³ GATT Article XX lays down trade-restrictive measures, which are deemed necessary to achieve legitimate public policy objectives. Those include measures: (i) necessary to protect public morals; (ii) necessary to protect human, animal or plant life or health; (iii) relating to the importations or exportations of gold or silver; (iv) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of the GATT; (v) relating to the products of prison labor; (vi) imposed for the protection of national treasures of artistic, historic or archaeological value; (vii) relating to the conservation of exhaustible natural resources; (viii) undertaken in pursuance of obligations under any intergovernmental commodity agreement; (ix) involving restrictions on exports of domestic materials necessary to ensure essential quantities of such materials to a domestic processing industry; and (x) essential to the acquisition or distribution of products in general or local short supply. GATS Article XIV also permits trade-restrictive measures, which are necessary to meet legitimate public policy objectives. Those include measures: (i) necessary to protect public morals or to maintain public order; (ii) necessary to protect human, animal or plant life or health; (iii) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of the GATS including those relating to the prevention of deceptive and fraudulent practices, the protection of the privacy of individuals, and safety; (iv) to ensure the equitable or effective imposition or collection of direct taxes; (v) to assure the avoidance of double taxation.

³⁸⁴ Peng and Liu, “The Legality of Data Residency Requirements,” 196.

³⁸⁵ Our assessment is shared by many trade law experts. See, for instance, Mitchell and Hepburn, “Don’t Fence Me In,” 208-211; Mishra, “The Role of the TPP Agreement In the Internet Ecosystem,” 41; Burri, “The Regulation of Data Flows through Trade Agreements,” 433.

³⁸⁶ Mishra, “The Role of the TPP Agreement in the Internet Ecosystem,” 58.

prevent countries from abusing an exception clause when combined with the necessity test, which is to detect data protectionism under the guise of legitimate objectives. Negotiators can also refer to the existing WTO agreements on technical barriers to trade and sanitary and phytosanitary measures to ensure that the seamless flow of data is not interrupted by any disguised digital trade barrier.³⁸⁷

6. Concluding Remarks

This chapter has attempted to go through a stock-taking of domestic data policies in the context of international trade, one of the most contentious issues in the age of the digital economy. Under the current circumstances of full-fledged digital transformation in the economy, restrictions on data movement are highly likely to be translated into restrictions on international trade.³⁸⁸ This is the compelling reason why, in this chapter, we propose internationally agreed rules regulating CBDF through trade agreements.

We conclude this chapter by reiterating what we have found so far. To start with, we have developed an analytical tool to categorize the different data regimes of major countries. Using a 2 by 2 matrix framework (horizontal vs sectoral approach; location-based vs risk-based approach), we have found that different countries have different legal systems involving the transfer and use of data. It was also observed that a number of countries use several different approaches simultaneously when regulating data flows.

Second, we have augmented the traditional gravity model with an additional variable to assess the impact of restrictions on data transfer on services trade flows. The empirical

³⁸⁷ Aaronson and Leblond, “Another Digital Divide,” 271. For more on the TBT Agreement, see generally Arkady Kudryavtsev, “The TBT Agreement in context,” in *Research Handbook on the WTO and Technical Barriers to Trade*, eds. Tracey Epps and Michael J. Trebilcock (Cheltenham, U.K.: Edward Elgar, 2013), 17-80; Van Den Bossche and Zdouc, *World Trade Organization*, 850-893. For more on the SPS Agreement, see generally Van den Bossche and Zdouc, *The Law and Policy of the World Trade Organization*, 894-950.

³⁸⁸ Kommerskollegium, “No Transfer, No Trade,” 5.

result is in support of our assumption that data restrictions indeed serve as trade barriers specifically in services trade.

Third, this study has shown that some of the existing WTO rules are relevant to CBDF but not perfect to forbid countries' data protectionism. The US, which has been consistently supportive of open CBDF policies, has relied on RTAs to establish binding international trade rules on CBDF.³⁸⁹

Last but not least, we have suggested some proposals for the trade-related aspects of electronic commerce negotiations at the WTO. We hope that, based upon the ideas presented in this chapter, negotiators reach an agreement striking a delicate balance between CBDF and online privacy or data protection.

³⁸⁹ Rachel F. Fefer, "Data Flows, Online Privacy, and Trade Policy," *Congressional Research Service Report*, R45584 (2019), 2.

Annex III-1 Effects of restrictions on data on services trade flows

	(1) PPML	(2) PPML	(3) PPML	(4) OLS	(5) OLS	(6) OLS
ln(GDP _i)	0.047*** (0.001)	0.048*** (0.001)	0.046*** (0.001)	0.913*** (0.022)	0.936*** (0.021)	0.892*** (0.021)
ln(GDP _j)	0.041*** (0.001)	0.040*** (0.001)	0.039*** (0.001)	0.796*** (0.021)	0.786*** (0.022)	0.759*** (0.023)
Ln(DISTANCE _{ij})	-0.058*** (0.001)	-0.053*** (0.001)	-0.058*** (0.003)	-1.125*** (0.030)	-1.033*** (0.029)	-1.131*** (0.062)
DTRI _i		-0.108*** (0.016)	-0.084*** (0.018)		-2.233*** (0.328)	-1.756*** (0.343)
DTRI _j		-0.021* (0.011)	-0.005 (0.012)		-0.450* (0.235)	-0.120 (0.237)
MININTUSE		0.001*** (0.000)	0.001*** (0.000)		0.015*** (0.001)	0.016*** (0.001)
CONTIGUITY			-0.014** (0.006)			0.111 (0.113)
LANGUAGE			0.049*** (0.005)			0.926*** (0.109)
COLONY			0.031*** (0.006)			0.612*** (0.116)
CURRENCY			0.011*** (0.003)			0.238*** (0.073)
LEGALORIGIN			0.006* (0.003)			0.085 (0.071)
RTA			0.004 (0.005)			0.086 (0.099)

	(1) PPML	(2) PPML	(3) PPML	(4) OLS	(5) OLS	(6) OLS
EXPORTER REMOTENESS INDEX			0.010 (0.006)			0.210* (0.116)
IMPORTER REMOTENESS INDEX			0.011*** (0.003)			0.237*** (0.057)
No. of obs.	1,602	1,602	1,602	1,602	1,602	1,602
Adjusted/Pseudo R-sq.	0.694	0.735	0.753	0.698	0.744	0.763

Source: Author's calculations.

Notes: (i) Robust standard errors are in parentheses. (ii) *, **, *** denote significance at the 10%, 5%, 1% levels, respectively.

Annex III-2 Effects of the heterogeneity of data regimes on services trade flows

	(1) PPML	(2) PPML	(3) OLS	(4) OLS
ln(GDP _i)	0.047** (0.001)	0.045*** (0.001)	0.910*** (0.021)	0.868*** (0.021)
ln(GDP _j)	0.041*** (0.001)	0.041*** (0.001)	0.800*** (0.022)	0.778*** (0.022)
Ln(DISTANCE _{ij})	-0.052*** (0.002)	-0.059*** (0.003)	-1.009*** (0.029)	-1.127*** (0.062)
HETERODTRI _{ij}	-0.091*** (0.015)	-0.068*** (0.015)	-1.792*** (0.275)	-1.332*** (0.296)
MININTUSE	0.001*** (0.000)	0.001*** (0.006)	0.016*** (0.001)	0.016*** (0.001)
CONTIGUITY		-0.014** (0.006)		-0.122 (0.114)
LANGUAGE		0.041*** (0.006)		0.876*** (0.110)
COLONY		0.031*** (0.006)		0.618*** (0.116)
CURRENCY		0.012*** (0.004)		0.245*** (0.073)
LEGALORIGIN		0.007* (0.004)		0.108 (0.071)
RTA		0.004 (0.006)		0.104 (0.101)
EXPORTER		0.016***		0.315***
REMOTENESS INDEX		(0.006)		(0.114)

	(1) PPML	(2) PPML	(3) OLS	(4) OLS
IMPORTER		0.011***		0.252***
REMOTENESS INDEX		(0.003)		(0.056)
No. of obs	1,602	1,602	1,602	1,602
Adjusted/Pseudo R-sq.	0.694	0.735	0.742	0.762

Source: Author's calculations.

Notes: (i) Robust standard errors are in parentheses. (ii) *, **, *** denote significance at the 10%, 5%, 1% levels, respectively.

Chapter IV Over-the-Top Video Streaming Services and Trade Negotiations

1. Introduction

Digital technologies have transformed and will continue to transform economic activities on a global scale, bringing about remarkable changes in the trade landscape.³⁹⁰ One of the most affected sectors by technological advancement is the media content service sector. Technological advances make it easier to convert audiovisual content into digitalized form and enable each type of content to be delivered through non-traditional distribution networks such as the Internet.³⁹¹ Consumers, as long as they stay online, may enjoy the freedom to choose what to watch, when to watch, where to watch, and how to watch movies or television series due to the convergence of media content, communications technology, and computer technology.³⁹² Audiovisual content producers may also seize great trade opportunities, which used to be practically impossible to be harnessed due to massive trade costs.

The use of digital technologies in the audiovisual sector, however, has given rise to regulatory difficulties under the brick-and-mortar WTO regulatory framework. Cross-border trade in over-the-top (hereinafter OTT) video streaming services, for instance, is central to digital trade, but their coverage in trade policy and trade negotiation still remains in a gray area.³⁹³ This is mainly due to the positive-list approach of multilateral services negotiations. Moreover, this positive-list approach is based on the outdated

³⁹⁰ WTO, *World Trade Report 2018*, 80.

³⁹¹ Working Party on Domestic Regulation (WPDR), *Regulatory Issues in Sectors and Modes of Supply – Note by the Secretariat*, S/WPDR/W/48, 13 June 2012, para. 108.

³⁹² *Ibid.*, para. 109.

³⁹³ Cowhey and Aronson, *Digital DNA*, 243.

classification regime of the Services Sectoral Classification List (hereinafter W/120)³⁹⁴ by reference to the Provisional CPC, which was created way back in the early 1990s, when the Internet was hardly used for commercial purposes. Such legacy classification scheme is not clearly fit for OTT video streaming services as a distinct line between computer services, telecommunications services, and audiovisual services has blurred due to technological convergence. It may give rise to legal uncertainty and unpredictability at best; it may, at worst, erode current services commitments and undermine the existing GATS framework.³⁹⁵

This chapter does not attempt to directly address the questions of, within which service classification or service sector OTT video streaming services should fall in terms of GATS schedules and what classification criteria should be preferred.³⁹⁶ These questions are beyond the scope of this chapter and WTO jurisprudence with regard to services classification is still insufficient to shed light on the issue.³⁹⁷ Rather, this chapter

³⁹⁴ GATT, MTN.GNS/W/120, 10 July 1991.

³⁹⁵ If the regulatory and trade policy regimes do not adapt to the economic environment of convergence, “regulatory opportunism” is likely to arise. Regulatory opportunism refers to the practice of service providers to exploit differences in classifications so as to fall under a less stringent regulatory regime. See Rob Frieden, “Whither Convergence: Legal, Regulatory and Trade Opportunism in Telecommunications,” in *The WTO and Global Telecommunications and Audio-Visual Services*, eds. Damien Geradin and David Luff (Cambridge, U.K.: Cambridge University Press, 2004), 323. Luff reiterates the danger of regulatory opportunism in the era of convergence. See David Luff, “Convergence: A Buzzword to Remain?,” in *Trade Governance in the Digital Age – World Trade Forum*, eds. Mira Burri and Thomas Cottier (Cambridge, U.K.: Cambridge University Press, 2012), 83.

³⁹⁶ See, for academic discussions on the classification of new services delivered online in the GATS context, Rolf H. Weber and Mira Burri, *Classification of Services in the Digital Economy* (Berlin, Germany: Springer, 2012); Ruosi Zhang, “Covered or Not Covered”; Shin-yi Peng, “GATS and the Over-the-Top Services: A Legal Outlook,” *Journal of World Trade* 50, no. 1 (2016): 21-46; Ines Willemys, “GATS Classification or Digital Services – Does ‘The Cloud’ Have a Silver Lining?” *Journal of World Trade* 53, no. 1 (2019): 59-81.

³⁹⁷ See, for more on WTO jurisprudence regarding services classification, CSC, *Services Classification in WTO Jurisprudence – Note by the Secretariat*, S/CSC/W/61, 12 March 2013. Of 23 cases where the GATS was made reference to in the course of consultation requests, only seven cases were brought before the DSB, as of March 2013. Legal issues with reference to the GATS raised in four panel reports were appealed. The Note by the WTO Secretariat summarizes WTO

focuses on the political dynamics of services trade negotiations. In this respect, this chapter aims at identifying trade interests and examining negotiation strategies of two biggest trading powers, the EU and US, with regard to OTT video streaming services and to draw a lesson for Korea from trade policy and media governance perspectives.

Of our interests are particularly three services: computer and related services, telecommunications services, and audiovisual services in terms of W/120. It is mainly because an OTT video streaming service is the inseparable combination of telecommunications, audiovisual content, and computer technologies,³⁹⁸ and thus having a possibility of being qualified as one of them in the GATS regulatory framework.³⁹⁹ Trade opportunities in such digitally-enabled content services may rely on market opening commitments not only on content services themselves but also on their online transmission services.⁴⁰⁰

jurisprudence found in: *EC – Bananas III* regarding wholesale trade services for bananas; *Canada –Autos* regarding wholesale trade services for motor vehicles; *Mexico –Telecom* regarding telecommunication services; *US –Gambling* regarding gambling and betting services; *China – Audiovisuals* regarding electronic distribution of sound recordings; *China –Electronic Payments Services* regarding electronic payment services.

³⁹⁸ Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products*, 71; CTS, *Telecommunication Services – Background Note by the Secretariat*, S/C/W/299, 10 June 2009, para. 9.

³⁹⁹ It should be noted that it does not matter, at the international trade negotiation forum, whether OTT video service providers regard themselves as an IT firm or a media firm. Although the OTT video service providers declare themselves a media firm, a government may negotiate market opening conditions with trading partners as if they provide computer services or telecommunications services. For the controversy over whether Netflix, a giant global video streaming platform, is a tech firm or a media firm, see “The tech giant everyone is watching,” *The Economist*, June 30, 2018, 9; Makena Kelly, “Netflix becomes first streaming company to join the MPAA,” *The Verge*, January 22, 2019, accessed July 1, 2019, <https://www.theverge.com/2019/1/22/18193568/netflix-joins-mpaa-motion-picture-association-internet>; Lauren Feiner, “Netflix is valued like a tech company, but its CEO just said it was a media company,” *CNBC*, March 19, 2019, accessed July 1, 2019, <https://www.cnn.com/2019/03/19/netflix-ceo-breaks-with-big-tech-saying-its-actually-a-media-company.html>.

⁴⁰⁰ Wunsch-Vincent, *The WTO, the Internet and Trade in Digital Products*, 71.

To begin with, we take stock of the OTT video streaming service industry and review trade rules possibly applicable to OTT video streaming services. Next, we analyze services schedules of the EU and US, both original GATS ones and offers made at the Doha Round, in particular, with a focus on audiovisual services as well as computer and telecommunications services. And then, we compare different negotiation strategies of the two big players not only at the multilateral level but also at the regional or bilateral level. Such analysis is complemented by the examination on recent domestic media regulatory reforms as a way of addressing technological transformation in the media sector taking place in both sides of the Atlantic. Implications for Korean media policymakers and trade negotiators are followed.

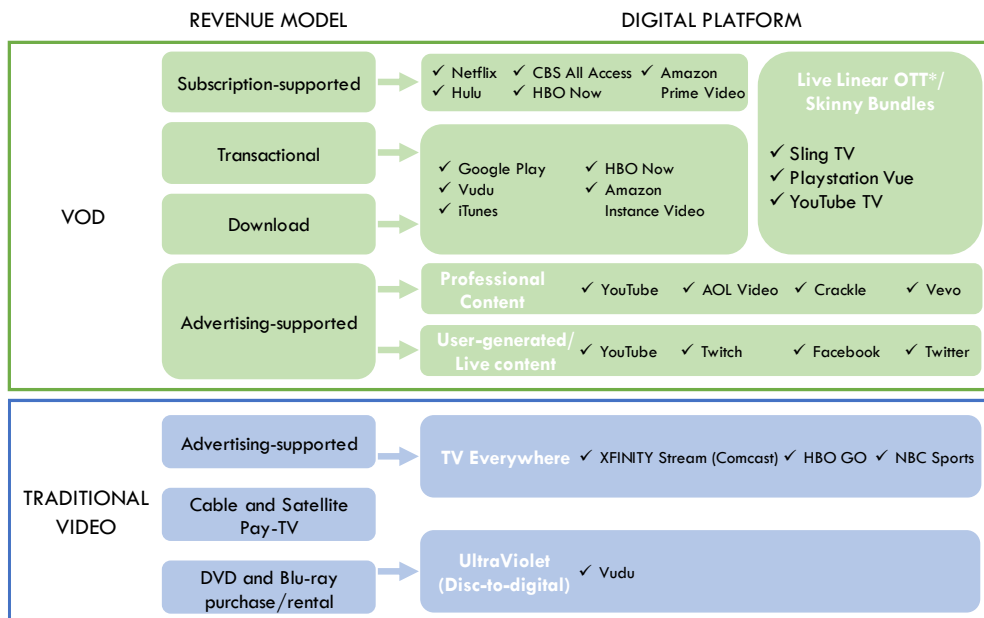
2. Stock-taking of the “Linear” or “Non-Linear” “Over-the-Top” Video “Streaming” Services

Television viewing patterns of households are shifting swiftly from traditional free-to-air television broadcast and cable to video-on-demand (hereinafter VOD) consumption.⁴⁰¹ With cloud computing technologies and broadband Internet connection readily available, viewers can now enjoy VOD content whenever and wherever they want using various Internet-connected devices, including smartphones, tablets, or computers. As shown in **Figure IV-1**, digital video or VOD ecosystem consists of several different business models: subscription-supported VOD; transactional VOD; downloadable VOD; advertising-supported VOD.⁴⁰²

⁴⁰¹ The USITC describes VOD as the “viewing of live or recorded online programming either in real time, or via purchasing to own, or by accessing within a defined time period.” USITC, *Global Digital Trade 1*, 95.

⁴⁰² This taxonomy of VOD is used by the USITC. See USITC, *Global Digital Trade 1*, 96. Bookman breaks down the type of VOD into subscription VOD, ad-supported VOD, user-generated content, transactional VOD, linear OTT, TV Everywhere. See Samantha Bookman, “Where Netflix, YouTube and HBO Now fit in the OTT industry,” *FierceVideo*, May 6, 2015,

Figure IV-1 Video-on-demand ecosystem by type of providers



Source: USITC, *Global Digital Trade 1*, 96.

Note: * Live linear OTT services or “skinny bundles” combine VOD services with traditional broadcast and pay-TV content.

OTT video streaming services, operating mainly on a subscription-supported or advertising-supported basis, are the fastest-growing segment in the global VOD market.⁴⁰³ Two global subscription-supported VOD operators, Netflix and Amazon Prime Video, are projected to increase its global subscriptions significantly in the coming

accessed July 1, 2019, <https://www.fiercevideo.com/special-report/where-netflix-youtube-and-hbo-now-fit-ott-industry>. Boston Consulting Group divides VDO into advertising-supported services, transaction-supported services, subscription-supported services, digital multichannel video programming distributors. See Frank Arthofer, Áki Hardarson, Martin Kon, Eric Lee and John Rose, “The Future of Television: The Impact of OTT on Video Production Around the World,” *BCG* (2016), 9-10.

⁴⁰³ USITC, *Recent Trends in U.S. Services Trade: 2018 Annual Report* (June 2018), 58.

years.⁴⁰⁴ Global streaming VOD revenue recorded USD 25 billion in 2016.⁴⁰⁵ Five major streaming service providers, such as YouTube, Netflix, Facebook, Amazon Prime Video, and Hulu, which are all US-based firms, accounted for 45% of total global revenue in the same year.

From the technological point of view, OTT video streaming services are composed of the “OTT” element and “streaming” element. OTT is generally understood as content delivery through an Internet platform.⁴⁰⁶ In the past, video content was delivered to viewers only over the dedicated networks of television broadcast, cable, fiber, or satellite. Fixed and mobile broadband Internet connections, however, have enabled content providers to transmit video content to connected devices “over the top” of traditional distribution technologies.⁴⁰⁷ Thus, network operators have no room to involve in control or distribution of the content.⁴⁰⁸ The widespread popularity of OTT video services has incentivized consumers to “cut the cord,”⁴⁰⁹ but generated enormous online traffic too.

Streaming is a way of downloading content via the Internet but comparable to traditional progressive downloads.⁴¹⁰ In the case of progressive download, consumers

⁴⁰⁴ Netflix is expected to grow from less than 20 million households in 2010 to 115 million by 2020 globally. Amazon Prime Video is also expected to increase its global subscriptions outside the US from 9.3 million in 2017 to 17.8 million in 2020. USITC, *Recent Trends in U.S. Services Trade: 2018 Annual Report*, Publication No. 4789 (2018), 58.

⁴⁰⁵ Arthofer et al., “The Future of Television,” 14-15.

⁴⁰⁶ Peng, “GATS and the Over-the-Top Services,” 22.

⁴⁰⁷ Arthofer et al., “The Future of Television,” 7.

⁴⁰⁸ Francisco Javier Cabrera Blázquez, Maja Cappello, Christian Grece, Sophie Valais, “VOD, Platforms and OTT: Which Promotion Obligations for European Works?,” *IRIS Plus* 2016-3 (2016), 25.

⁴⁰⁹ Cisco defines cord-cutting as the trend which traditional and subscription television viewing is increasingly being supplanted by other means of video viewing, such as online and mobile video, which are available to viewers through fixed and mobile Internet connections. See Cisco, “Visual Networking Index: Forecast and Trends, 2017-2022 White Paper,” February 27, 2019, accessed July 1, 2019, https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html#_Toc532256796.

⁴¹⁰ Sam Costello, “Internet Streaming: What It Is and How It Works,” *Lifewire*, December 17, 2018, accessed July 1, 2019, <https://www.lifewire.com/internet-streaming-how-it-works-1999513>.

have to wait until the entire file of video, music, or game is downloaded from the Internet before they fully enjoy it. On the contrary, streaming, a new Internet data transfer technique, enables users to watch audiovisual content nearly immediately without waiting. As a media content provider compresses and streams small packets of data over the Internet as a continuous flow, the recipient of a streaming service may access the content as soon as it is received.⁴¹¹ On-demand video and music streaming services, and live streaming services are recently made available due to the fast Internet connections and advanced information and communication technologies.⁴¹² Salient features of streaming technology including easy access to broadband Internet connections, the convenience of usage, and no need for large storage capacity on devices have made streaming services preferable to conventional progressive downloads.

In addition, for the purposes of regulatory media governance, media services are often categorized into two groups – “linear” and “non-linear” media services – and they are generally subject to different regulatory frameworks. The EU Audiovisual Media Services Directive (hereinafter AVMSD) of 2010, for instance, categorizes television broadcasting, which is provided on the basis of a program schedule, into a linear audiovisual media service.⁴¹³ On-demand audiovisual media services, which are provided at the moment chosen by the user and at his or her request on the basis of a catalogue of programs, fall within the coverage of non-linear audiovisual media services.⁴¹⁴ A

⁴¹¹ IAB, “Video Advertising Glossary,” accessed July 1, 2019, <http://dvglossary.www2.iab.com/#chapter-43>.

⁴¹² At least a speed of two megabits per second (Mbps) is required to stream standard definition video content without buffering delays. At least 5 Mbps is required for HD content and 9 Mbps for 4K content.

⁴¹³ Official Journal of the European Union, *Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive)*, 15 April 2010, 12.

⁴¹⁴ *Ibid.*, 12.

scheduled broadcasting program, in a linear service business model, is “pushed” to consumers through conventional television networks, the Internet, or mobile phones, while consumers, in a non-linear service business model, “pull” VODs, news, or short video clips from the online network.⁴¹⁵ The latter is usually governed by less stringent media regulations due to viewers’ greater control and choice in this respect.⁴¹⁶

US-based tech firms and media firms have been at the forefront of using these innovative digital technologies. The recent global expansion of US-origin OTT video streaming platforms, however, has faced a variety of possible market access barriers and protectionist domestic measures overseas, which may be subject to trade negotiations.⁴¹⁷ In the following section, we review GATS rules possibly applicable to OTT video streaming services and the overall level of GATS commitments for relevant service sectors: computer and related services, telecommunication services, and audiovisual services.

3. Over-the-Top Video Streaming Services in the GATS Context

It has become an increasingly daunting mission to distinguish between telecommunication services, computer services, and audiovisual services supplied over digital communication networks due to technological convergence.⁴¹⁸ It is especially problematic in the case of OTT video streaming services which deliver video content over online networks using information and computer technologies. In this section, we examine three possible candidates – computer and related services, (value-added)

⁴¹⁵ Peng, “Liberalization of Trade in Television Services,” 676.

⁴¹⁶ WPDR, S/WPDR/W/48, para. 114.

⁴¹⁷ Peng, “GATS and the Over-the-Top Services,” 25.

⁴¹⁸ WPDR, S/WPDR/W/48, para. 92.

telecommunication services, and audiovisual services – which OTT video streaming services may fall within in accordance with the GATS classification scheme. The classification structure of W/120 for each sector and the current status of market opening commitments undertaken by WTO Members are closely reviewed.

3.1. Computer and Related Services

The computer industry is at the center of the ICT industry, which is one of the most rapidly growing sectors in the modern digital economy. So far, no computer services-tailored legal framework is in place within the GATS. But trade rules and principles in the GATS are applicable to trade in all services. Computer and related services are not exceptional.

3.1.1. Classification Scheme

In terms of W/120, computer and related services belong to business services along with professional services, research and development services, real estate services, rental/leasing services without operators, and other business services. The sector is broken down into five sub-sectors with specific CPC numbers with them as shown in **Table IV-1**: (a) *consultancy services related to the installation of computer hardware* (CPC 841); (b) *software implementation services* (CPC 842); (c) *data processing services* (CPC 843); (d) *data base services* (CPC 844); (e) *other* (CPC 845, 849).⁴¹⁹

⁴¹⁹ Descriptions in detail on corresponding CPC in the Provisional CPC regime can be found in **Annex IV-1**.

Table IV-1 Breakdown of “Computer and Related Services” in W/120

Sectors and sub-sectors	Corresponding CPC
1. BUSINESS SERVICES	
B. Computer and Related Services	
a. Consultancy services related to the installation of computer hardware	841
b. Software implementation services	842
c. Data processing services	843
d. Data base services	844
e. Other	845+849

Source: GATT, MTN.GNS/W/120, 10 July 1991.

There are growing concerns that the terms and classifications used in W/120 and Provisional CPC, which were made when the Internet was in its infancy, are so outdated that considerable overlap problems arise. Classification pertaining to computer services are not free from this criticism. Among others, CPC 844 (database services), which is made reference to in computer and related services in terms of W/120, explicitly excludes data and message transmission services classified under CPC 7523, but it is not clear whether the exclusion applies to some or all of the value-added telecommunication services in W/120.⁴²⁰ W/120 also lists seemingly same economic activity in the different sections of the schedule: “1.B.c – *Data processing services* (CPC 843)” in computer and related services and “2.C.n – *On-line information and/or data processing services* (CPC 843**)” in telecommunication services.⁴²¹

⁴²⁰ Lee Tuthill and Martin Roy, “GATS Classification Issues for Information and Communication Technology Services,” in *Trade Governance in the Digital Age*, eds. Mirra Burri and Thomas Cottier (Cambridge, U.K.: Cambridge University Press, 2012), 164. See also CTS, *Computer and Related Services – Background Note by the Secretariat*, S/C/W/45, 14 July 1998, para. 8.

⁴²¹ Shin-yi Peng, “Trade in Telecommunication services: Doha and Beyond,” *Journal of World Trade* 41, no. 2 (2007), 298. See also CTS, S/C/W/45, para. 8.

3.1.2. GATS Commitments

At the moment of the conclusion of the Uruguay Round, not many governments have had domestic measures regulating the computer service sector in place. Due to its relatively liberal regulatory nature, sector-specific market access and national treatment limitations were rarely scheduled for the computer and related service sector. Thus full commitments on the sector are commonly found across WTO Members. The WTO Secretariat, in its background note in 2009, reported that commitments on computer and related services were included in 83 of the GATS schedules (counting the EC-12 schedule as one) out of 94 schedules as of May 2009.⁴²² More specifically, sub-sector (a) *consultancy services related to the installation of computer hardware* is committed by 73 Members, sub-sector (b) *software implementation services* by 78 Members, sub-sector (c) *data processing services* by 76 Members, sub-sector (d) *data base services* by 69 Members, and sub-sector (e) *other computer services* by 51 Members.⁴²³

Table IV-2 GATS Commitments on “Computer and related Services” by selective WTO Members

	1.B.a.	1.B.b.	1.B.c.	1.B.d.	1.B.e.
Australia	O	O	O	-	O
Canada	O	O	O	O	O
China	O	O	O	-	O
European Community	O	O	O	O	O
India	O	O	O	O	O
Japan	O	O	O	O	O
Korea	O	O	O	O	O
Mexico	-	-	O	-	-
New Zealand	O	O	O	O	O
Switzerland	O	O	O	O	O
USA	O	O	O	O	O

Source: CTS, S/C/W/300, 14-15.

⁴²² CTS, *Computer and Related Services – Background Note by the Secretariat*, S/C/W/300, 22 June 2009, para. 19.

⁴²³ *Ibid.*

Canada, the EU, India, Japan, Korea, New Zealand, Switzerland, and the US, among major players, have undertaken full commitments on the sector as shown in **Table IV-2**. No WTO Members have listed MFN exemptions specific to computer and related services.

3.2. Telecommunication services

The telecommunication sector plays a dual role in the economy: it itself is a distinct sector of an economy, importance of which is considerably increasing in the modern connected society; at the same time, it is an essential infrastructure for the development of many other economic activities such as ICT-enabled business, education, financial, computer, and audiovisual services.⁴²⁴

Contrary to computer and related services, telecommunication services are subject to unique and tailor-made trade rules under the GATS.⁴²⁵ The GATS, for instance, includes the Annex on Telecommunications, which requires WTO Member governments to grant reasonable access to and use of public transport telecommunication networks and services (or essentially basic public telecommunication services) to foreign suppliers of any services benefiting from specific commitments scheduled.⁴²⁶ In February 1998, the

⁴²⁴ Henry Gao, “Annex on Telecommunications,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 687.

⁴²⁵ See, for more on the international trade rules on telecommunication services, Gao, “Annex on Telecommunications,” 683-711; Henry Gao, “Annex on Negotiations on Basic Telecommunications,” in *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, eds. Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle (Leiden, Netherlands: Martinus Nijhoff Publishers, 2008), 712-717; Gao, “Telecommunication services: Reference Paper,” 718-747; David Luff, “Current International Trade Rules Relevant to Telecommunication services,” in *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, eds. Damien Geradin and David Luff (Cambridge, U.K.: Cambridge University Press, 2004), 34-50; WTO, “Telecommunications services,” accessed July 1, 2019, https://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_e.htm.

⁴²⁶ Luff, “Current International Trade Rules Relevant to Telecommunication services,” 43.

Fourth Protocol to the GATS, the so-called “Agreement on Basic Telecommunication Services,” entered into force. The Fourth Protocol obliges its parties to schedule commitments on basic telecommunication services. The Protocol also incorporates the “Reference Paper,” which limits major private telecommunication suppliers’ anti-competitive practices in a legally binding manner. It was the first of its kind under the WTO regime.⁴²⁷

3.2.1. Classification Scheme

The GATS classification framework draws a distinct line between telecommunication services and other services based on the use/supply dichotomy.⁴²⁸ Suppliers of other services such as computer services, audiovisual services, and ICT-enabled business services may use telecommunication services as a means of delivery. Thus, for example, commitments on content production are classified under audiovisual services, whereas any activity engaged in the transmission of the content over any electromagnetic means are classified under telecommunication services.⁴²⁹ Technological convergence across sectors, however, renders it difficult to clearly distinguish telecommunication services from other services which use them as a means of transmission.

Not only cross-sectoral classification but within-sectoral classification regarding the telecommunication service sector is controversial as information and communication technology advances. Telecommunication services consist of basic telecommunication services and value-added telecommunication services in terms of W/120. Sub-sectors (a) through (g) as well as various other services are generally referred to as basic services,

⁴²⁷ *Ibid.*, 46.

⁴²⁸ CTS, S/C/W/299, para. 11.

⁴²⁹ Peng, “GATS and the Over-the-Top Services,” 22.

Table IV-3 Breakdown of “Telecommunication Services” in W/120

Sectors and sub-sectors	CPC	Remark
2. COMMUNICATION SERVICES		
C. Telecommunication Services		
a. Voice telephone services	7521	Basic services
b. Packet-switched data transmission services	7523**	
c. Circuit-switched data transmission services	7523**	
d. Telex services	7523**	
e. Telegraph services	7522	
f. Facsimile services	7521**, 7529**	
g. Private leased circuit services	7522**, 7523**	
h. Electronic mail	7523**	Value-added services
i. Voice mail	7523**	
j. On-line information and data base retrieval	7523**	
k. Electronic data interchange (EDI)	7523**	
l. Enhanced/value-added facsimile services, incl. store and forward, store and retrieve	7523**	
m. Code and protocol conversion	n.a.	
n. On-line information and/or data processing (incl. transaction processing)	843**	
o. Other	-	

Source: GATT, MTN.GNS/W/120.

Note: The (**) indicates that the service specified constitutes only a part of the total range of activities covered by CPC concordance (e.g., voice mail is only a component of CPC item 7523).

which provide real-time transmission of customer-supplied information.⁴³⁰ On the other hand, sub-sectors (h) through (n) and any other services are understood as value-added services, which are not supplied on a real-time basis or which transform the form or content of customer’s information.⁴³¹ A W/120 list of sub-sectors of telecommunication services and corresponding CPC is summarized in **Table IV-3**.

⁴³⁰ Basic telecommunication services include: *voice telephone services* (CPC 7521); *packet-switched data transmission services* (CPC 7523**); *circuit-switched data transmission services* (CPC 7523**); *telex services* (CPC 7523**); *telegraph services* (CPC 7522); *facsimile services* (CPC 7521**, 7529**); and *private leased circuit services* (CPC 7522**, 7523**). The (**) indicates that the service specified constitutes only a part of the total range of activities covered by CPC concordance.

⁴³¹ Value-added telecommunication services include: *electronic mail* (CPC 7523**); *voice mail*

With regard to the current GATS classification scheme, the EU has expressed its concern that the separation of basic and value-added services became irrelevant to economic reality. It has subsequently proposed the new definition of telecommunication without demarcating the two. The US, on the other hand, refused the EU proposal. This issue will be addressed in detail in **Section 4.1.1.** and **4.2.1.** in this chapter.

3.2.2. GATS Commitments

The WTO Secretariat, in 2009, has investigated WTO Members' commitments on telecommunication services and reported the summary results in the Background Note regarding telecommunication services.⁴³² According to the Background Note, more than two-thirds of all WTO Member governments⁴³³ have undertaken commitments on telecommunication services, which makes the sector the third most liberalized sector following the professional service and financial service sectors.

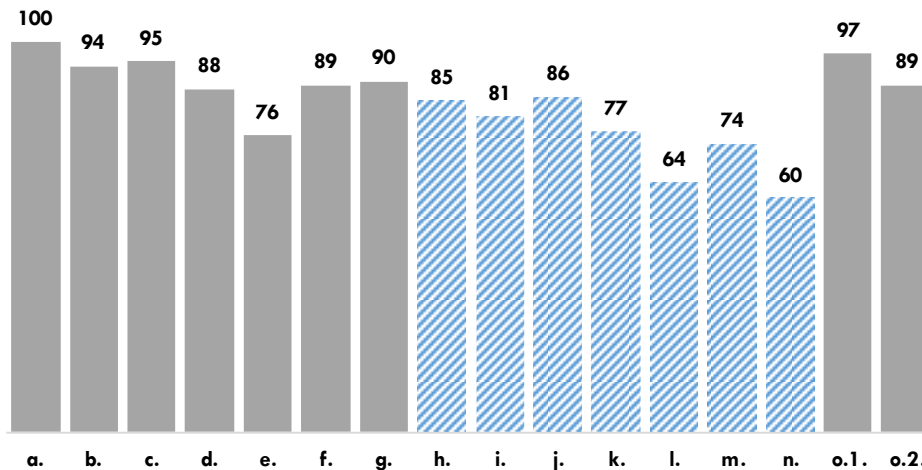
Taking a look at Members' commitments in detail at the sub-sectoral level, one can find an intriguing picture: value-added services (sub-sectors (h) – (n)) are less committed than basic services (sub-sectors (a) – (g)). As illustrated in **Figure IV-2**, *voice telephone services* (sub-sector (a)) are committed by 100 governments; *packet-* and *circuit-switched data transmission services* (sub-sectors (b) and (c)) are committed by 94 and 95 governments, respectively. Mobile cellular and mobile satellite services, often scheduled under “other” services, are committed by 97 and 89 governments, respectively. Among value-added services, *on-line information and data base retrieval services* (sub-sector (j)) has the highest number of commitments in which a total of 86 governments commit; *on-*

(CPC 7523**); *on-line information and data base retrieval* (CPC 7523**); *electronic data interchange* (CPC 7523**); *enhanced/value-added facsimile services* (CPC 7523**); *code and protocol conversion, on-line information and/or data processing* (CPC 843**).

⁴³² CTS, S/C/W/299.

⁴³³ A total of 108 governments, counting EU Member states individually.

Figure IV-2 Number of commitments in “Telecommunication Services” by sub-sector



Source: CTS, S/C/W/299, 9.

Note: o.1. Other – Mobile Cellular; o.2. Other – Mobile Satellite.

line information and/or data processing services (sub-sector (n)), on the other hand, are committed only by 60 governments. This asymmetry in the number of commitments between basic and value-added telecommunication services does not mean that value-added services are less open to international competition than basic services: it is more or less a legacy of the WTO negotiations dedicated to basic services, which needs to be rectified in future negotiations.⁴³⁴

Table IV-4 shows a summary of selected WTO Members’ GATS commitments on the telecommunication service sector. Canada, Korea, New Zealand, Switzerland, and the US have committed all sub-sectors. The EU, however, has not committed *enhanced/value-added facsimile services* (sub-sector (l)) and *on-line information and/or data processing services* (sub-sector (n)). Developing countries such as China and India have refused to undertake commitments on some basic services including *telex services*

⁴³⁴ CTS, S/C/W/299, para. 21.

(sub-sector (d)) and *telegraph services* (sub-sector (e)). Yet no commitment to such basic services by large developing countries would not result in serious impediments to trade in telecommunication services because such services are readily replaceable by email or other online communication services.

Table IV-4 GATS Commitments on “Telecommunication Services” by selective WTO Members

	a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.1.	o.2.
Australia	O	O	O	O	-	O	O	O	O	O	O	O	O	-	O	O
Canada	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
China	O	O	O	-	-	O	O	O	O	O	O	O	O	O	O	O
EU	O	O	O	O	O	O	O	O	O	O	O	-	O	-	O	O
India	O	-	O	-	-	O	O	O	O	O	-	O	-	O	O	-
Japan	O	O	O	O	-	O	O	O	O	O	O	O	O	O	O	O
Korea	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Mexico	O	O	O	-	-	O	O	O	O	O	O	O	O	O	O	O
New Zealand	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Switzerland	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
USA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Source: CTS, S/C/W/299, 23-25.

Note: o.1. Other – Mobile Cellular; o.2. Other – Mobile Satellite.

3.3. Audiovisual Services

At the Uruguay Round, a large number of WTO Members, under the rationale of “exception culturelle (cultural exception),” have refused to undertake any commitment on audiovisual services.⁴³⁵ However, growing evidence shows that such a rigorous negotiation position of these WTO Members is not only hurting the competitiveness of their domestic cultural industries, but is also losing its grounds in the era of digital trade. It is due to the fact that the sector is increasingly embracing innovative technologies and the unprecedented scale of changes in trade pattern is taking place as a result of technological convergence.⁴³⁶

There is neither specific provision or annex applicable to trade in audiovisual services nor specific exceptions justifying trade-restrictive measures in relation to cultural policy in the GATS. Nonetheless, WTO Members, regardless of whether they commit the sector or not, are subject to general obligations, including MFN treatment and transparency, of the GATS. A relatively large number of exemptions to MFN treatment are found in the sector.

⁴³⁵ At the center of a clash between trade interests and non-economic objectives in the audiovisual service sector lays exception culturelle or cultural diversity. Burri, “The Governance of Data and Data Flows in Trade Agreements,” 86. See, for “trade versus culture” debate in the context of international trade law, Mirra Burri, “Trade *versus* Culture in the Digital Environment: An Old Conflict in Need of a New Definition,” *Journal of International Economic Law* 12, no. 1 (2008): 17-62; Tania Voon, “A New Approach to Audiovisual Products in the WTO: Rebalancing GATT and GATS,” *UCLA Entertainment Law Review* 14, no. 1 (2007): 1-32; Tania Voon, *Cultural Products and the World Trade Organization* (Cambridge, U.K.: Cambridge University Press, 2007).

⁴³⁶ CTS, *Audiovisual Services – Background Note by the Secretariat*, S/C/W/310, 12 January 2010, para. 3-4.

3.3.1. Classification Scheme

Audiovisual services, listed under the heading of communication services in terms of W/120, consist of six sub-sectors: (a) *motion picture and video tape production and distribution services* (CPC 9611); (b) *motion picture projection services* (CPC 9612); (c) *radio and television services* (CPC 9613); (d) *radio and television transmission services* (CPC 7524); (e) *sound recording*; and (f) *other*, as shown in **Table IV-5**.

It should be welcome that audiovisual services or cultural products are finally made subject to trade negotiations. Like any other service sector, market opening for the audiovisual service sector was also negotiated on the basis of W/120. In the context of audiovisual services negotiation, however, the classification scheme of W/120 is far from perfect: first, audiovisual classification is so outdated that it cannot capture any newly emerging online delivery of content⁴³⁷, a directly related issue to an OTT video streaming service; second, by listing CPC 7524 (program transmission services) and CPC 9613 (radio and television services) together under the audiovisual service sector, W/120 fails to distinguish between content “production” and “transmission”⁴³⁸; third, separate but

Table IV-5 Breakdown of “Audiovisual Services” in W/120

Sectors and sub-sectors	CPC
1. COMMUNICATION SERVICES	
D. Audiovisual Services	
a. Motion picture and video tape production and distribution services	9611
b. Motion picture projection services	9612
c. Radio and television services	9613
d. Radio and television transmission services	7524
e. Sound recording	n.a.
f. Other	-

Source: GATT, MTN.GNS/W/120.

⁴³⁷ Wusch-Vincent, *The WTO, the Internet and Trade in Digital Products*, 73-75.

⁴³⁸ Peng, “Trade in Telecommunications Services,” 298-300.

related to the second issue, the scope of audiovisual services is so broad that it wrongly encompasses broadcasting.⁴³⁹ These classification issues are at the center of controversy over OTT video streaming services between the EU and US, which will be revisited in Section 4.

3.3.2. GATS Commitments

As of 2009, a total of only thirty WTO Members have committed at least one sub-sector in the audiovisual service sector, which makes the sector the one with the lowest number of commitments.⁴⁴⁰ A vast number of Members with commitments are developing countries, except Japan, New Zealand, and the US as summarized in **Table IV-6**. Many developed countries such as Australia, Canada, the EU, and Switzerland have opted out from specific commitments.

The sector is also characterized by many MFN exemptions, which are explicitly allowed by Article II:2 of the GATS.⁴⁴¹ A total of 114 MFN exemptions have been scheduled as of 2009.⁴⁴² Some advanced countries such as Australia, Canada, the EU, and Switzerland, which have not undertaken any commitment on the sector, also have listed a handful of MFN exemptions in their services schedule. Such MFN exemptions generally address domestic measures related to co-production programs or retaliatory measures against unfair foreign practices: for instance, Canada reserves its right to accord

⁴³⁹ Nihoul insists that audiovisual refers to “what” is being conveyed, whereas broadcasting refers to “how” information is conveyed. See P. L. G. Nihoul, “Audio-visual and Telecommunications Services: A Review of Definitions under WTO Law,” in *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, eds. Damien Geradin and David Luff (Cambridge, U.K.: Cambridge University Press, 2004), 380.

⁴⁴⁰ CTS, S/C/W/310, para. 64.

⁴⁴¹ Article II:2 of the GATS reads: “A Member may maintain a measure inconsistent with paragraph 1 provided that such a measure is listed in, and meets the conditions of, the Annex on Article II Exemptions.”

⁴⁴² CTS, S/C/W/310, para. 69.

Table IV-6 GATS commitments on “Audiovisual Services” by selective WTO Members

	2.D.a.	2.D.b.	2.D.c.	2.D.d.	2.D.e.	2.D.f.
Australia	No commitments					
Canada	No commitments					
China	O	O	-	-	O	-
EC	No commitments					
India	O	-	-	-	-	-
Japan	O	O	-	-	O	-
Korea	O	-	-	-	O	-
Mexico	O	O	-	-	-	-
New Zealand	O	O	O	O	-	O
Switzerland	No commitments					
USA	O	O	O	O	O	O

Source: CTS, S/C/W/310, 17-18.

differential treatment to works co-produced with foreign producers under certain conditions; the EU is exempted from the MFN obligation in case of taking measures to counterbalance trading partner’s unreasonable actions affecting EU audiovisual services.⁴⁴³

4. EU and US Approaches to Over-the-Top Video Streaming Services at the Trade Negotiation Fora

With a view to uncovering negotiation strategies of the EU and the US regarding market opening for OTT video streaming services, in this section we take a close look at their original GATS schedules and new schedules offered at the Doha Round. As Peng succinctly points out, monitoring the bilateral request-offer procedure sheds light on the political dynamics of services trade negotiations and WTO Members’ specific trade interests.⁴⁴⁴ It should also be taken into account, however, that the Doha Round has been

⁴⁴³ A list of the Annex on Article II Exemptions with regard to audiovisual services by selective WTO Members is reproduced in **Annex IV-4**.

⁴⁴⁴ Peng, “Trade in Telecommunication services,” 309.

stalled for more than a decade and those offers may not reflect up-to-date advances in technology and business trends. Thus, when necessary, we rely on RTAs that they recently concluded to compare these two trading nations' positions on the classification of OTT video streaming services under the international trading regime. Recent reforms in domestic legal frameworks governing the digital media sector on both sides of the Atlantic also help foresee two governments' approach to trade negotiations.

4.1. EU Approach

4.1.1. At the International Level

In the computer and related service sector, the EU (then the European Communities and their member states), during the Uruguay Round, has undertaken commitments on a basis of W/120. All of the subsectors of the computer and related services in W/120 are committed with specific CPC numbers. Those subsectors and CPC numbers are: a) *consultancy services related to the installation of computer hardware* (CPC 841); (b) *software implementation services* (CPC 842); (c) *data processing services* (CPC 843); (d) *data base services* (CPC 844); and (e) *other computer services* (CPC 849). In addition, a new subsector which is not explicitly listed in W/120, *maintenance and repair* (CPC 845), is included in Section 1.B.d) as a result of services negotiations.⁴⁴⁵

As the content industry gets increasingly digitized with the help of advanced digital technologies, the EU has expressed its concerns over market opening pressure on content or cultural products.⁴⁴⁶ In its submission under the Work Programme on Electronic Commerce, the EU raised an issue of whether some deliveries over electronic networks

⁴⁴⁵ WTO, *European Communities and Their Member States – Schedule of Specific Commitments*, GATS/SC/31, 15 April 1994.

⁴⁴⁶ These products include goods, services and in-between such as entertainment software.

involving “digitized products” should be classified as goods or services.⁴⁴⁷ It then argued that “the GATT schedules have never covered any information digitized into bits and sent across a border through a telecommunications network”⁴⁴⁸ and since the GATS rules apply to the delivery of a service, “[t]he electronic transmission of, e.g., customized software, simply forms the delivery part of the development of software and is therefore subject to the GATS and commitments on the services of CPC 842 (software implementation services).”⁴⁴⁹ The intention of the EU was to place content-related software under the GATS regulatory framework instead of the GATT, thus maintaining more discretion on its cultural policy.

During the Doha Round services negotiation, the EU has presented the idea of the so-called “cluster” approach, scheduling commitments at a broad 2-digit level (CPC 84) in an effort to streamline trade liberalization in the computer service sector.⁴⁵⁰ Scholars have hailed the EU approach, which was based on a functional and technology-neutral manner, as a meaningful attempt to overcome existing discrepancies in classification.⁴⁵¹ Instead of relying on the disaggregated list of services, the EU subscribed to the “Understanding on the scope of coverage of Computer Services – (CPC 84).”⁴⁵² It is worth pointing out that, in the Understanding, the EU makes a delineating line between the “enabling service” such as web-hosting or application hosting and the “content or core service” such as banking that is being delivered electronically. In such cases, the content or core service is not covered by the computer and related services. The negotiation strategy of the EU not to classify any service connected to content-related

⁴⁴⁷ WTO, WT/GC/W/497, para. 2.

⁴⁴⁸ *Ibid.*, para. 7.

⁴⁴⁹ *Ibid.*, para. 17.

⁴⁵⁰ Trade in Services, *Communication from the European Communities and Their Member States – Conditional Initial Offer*, TN/S/O/EEC, 10 June 2003.

⁴⁵¹ Weber and Burri, *Classification of Services in the Digital Economy*, 98.

⁴⁵² See **Annex IV-5** to this chapter for full text.

software as the computer and related services has remained unchanged through the revised offer⁴⁵³ and the consolidated schedule⁴⁵⁴ submitted in 2006. In the consolidated schedule offer, the EU also separates other services, the provision of which is enabled by computer and related services, from the genuine computer and related services. Moreover, “audiovisual services (2.D of W/120)” are explicitly mentioned as the other services which should not be covered by computer and related services.⁴⁵⁵

As for telecommunication services, the current EU GATS Schedule shows nearly full commitments.⁴⁵⁶ The Schedule follows the conventional distinction of basic and value-added telecommunication services at the time. The only subsector excluded from the commitment in terms of W/120 is “enhanced/value-added facsimile services, including store and forward, store and retrieve.” The category of “other services” is clarified to include “mobile and personal communications services and systems.” One of the most noticeable features of the EU Schedule is the incorporation of the definition of telecommunication services and the exclusion of “broadcasting” from the telecommunication commitments. Telecommunication services are defined as the “transport of electromagnetic signals – sound, data image and any combinations thereof,” but broadcasting is specifically carved out from liberalization commitments.⁴⁵⁷

⁴⁵³ CTS, *Communications from the European Communities and Their Member States – Conditional Revised Offer*, TN/S/O/EEC/Rev.1, 29 June 2005.

⁴⁵⁴ CTS, *Communication from the European Communities and Its Member States – Draft Consolidated GATS Schedule*, S/C/W/273, 9 October 2006.

⁴⁵⁵ There are several other services, which are not supposed to be covered by CPC 84: *accounting, auditing and bookkeeping services* (1.A.b of W/120), *architectural services* (1.A.d of W/120), *medical and dental services* (1.A.h of W/120), and *educational services* (5 of W/120). CTS, *Communication from the European Communities and Its Member States – Draft consolidated GATS Schedule*, S/C/W/273, 9 October 2006, 90.

⁴⁵⁶ Trade in Services, *European Communities and Their Member States – Schedule of Specific Commitments*, GATS/SC/31/Suppl. 3, 11 April 1997.

⁴⁵⁷ *Ibid.*, 2. The EU Schedule, in its footnote, defines broadcasting as the “uninterrupted chain of transmission required for the distribution of TV and radio program signals to the general public, but does not cover contribution links between operators.”

In its communication circulated to the Members of the CTS and CSC in 2005, the EU proposed a new approach on classification in the telecommunication sector under the WTO/GATS framework.⁴⁵⁸ First of all, based on the functional aspects of the service, the EU proposed a new definition of telecommunications services: telecommunications services were defined as broadly as possible to include “any service consisting of the transmission and reception of signals by any electromagnetic means.”⁴⁵⁹ It also suggested a new way of scheduling commitments to telecommunications services without changing the scope of services subject to additional commitments, which is reproduced in **Annex IV-6** to this chapter. More importantly, it was made clear that economic activities consisting of content provision which requires telecommunication services for its transport are left beyond the scope of telecommunication commitments.⁴⁶⁰ In so doing, the EU intends to make the provision of audiovisual or broadcasting content, which is not intrinsically linked to the transmission and reception, for example, subject to the specific commitments undertaken in the audiovisual service sector not in the telecommunication service sector.

Following the communication in 2005, the revised offer and consolidated schedule of the EU entail several meaningful shifts in the negotiation strategy of the EU in the telecommunication sector.⁴⁶¹ First, to base its commitments on the more comprehensive classification of telecommunication services, telecommunication services are redefined as “[a]ll services consisting of the transmission and reception of signals by any electromagnetic means.” Broadcasting is excluded from the scope of telecommunication

⁴⁵⁸ CTS and CSC, *Communication from the European Communities – Classification in the Telecom Sector under the WTO-GATS Framework*, TN/S/W/27, S/CSC/W/44, 10 February 2005.

⁴⁵⁹ *Ibid.*, para.16. Such a simple definition of telecommunications services can also be found in paragraph 3 (a) of the GATS Annex on Telecommunications.

⁴⁶⁰ CTS and CSC, TN/S/W/27, S/CSC/W/44, para.17, 22.

⁴⁶¹ CTS, TN/S/O/EEC/Rev.1; CTS, S/C/W/273.

services as usual. The EU expects such a far-reaching definition based on the functions performed to cover unmistakably all telecommunication services. Second, the dichotomy of basic and value-added telecommunication services is discarded and the cluster approach is proposed. It is a part of EU negotiators' efforts to create greater legal certainty in the telecommunications sector and to prevent national regulators from discriminating between different technologies in providing a service. Third, an additional clarification for classification is inscribed: sub-category 2.C.h) to 2.C.m) of W/120, which are often referred to value-added services, and Sub-sectors 2.C.a) to 2.C.g) of W/120, which are basic services, are included in the telecommunications sector. Sub-sector 2.C.o) of W/120 is also included in the sector to the extent that it falls under this definition.⁴⁶² For the purpose of this Schedule, sub-sector 2.C.n), that is *On-line information and/or data processing (including transaction processing)*, is classified as a computer and related service.

The cluster approach of the EU clearly accords flexibility to trade negotiators on a technologically neutral basis in line with technological development.⁴⁶³ Although the EU approach toward the classification of telecommunication sector would help clarify confusing definitions, however, not all of WTO Members agree with the idea. As soon as the EU proposal was published, it faced serious challenges from its major trading partner, the US.⁴⁶⁴

With regard to the cultural or media sector, on the other hand, the EU has strongly insisted on cultural exemptions from trade negotiations since the conclusion of the GATT in 1947.⁴⁶⁵ In particular, it was believed that preserving and nurturing the domestic media

⁴⁶² The EU Consolidated Schedules of Commitments for telecommunications services is reproduced in **Annex IV-7**.

⁴⁶³ Weber and Burri, *Classification of Services in the Digital Economy*, 102.

⁴⁶⁴ See **Section 4.2.1.** of this chapter:4.2.1.

⁴⁶⁵ Article IV of the GATT sets forth special rules relating to cinematograph films allowing

service industry was essential to promote cultural diversity. In line with this rationale, the EU has never undertaken any commitment whatsoever on audiovisual services in terms of W/120 to have utmost discretion in domestic cultural policy. Furthermore, it has scheduled various MFN exemptions pursuant to the Annex on Article II Exemptions to the GATS. The EU has also shown no willingness to abandon its “all-or-nothing” negotiation strategy at the Doha Round.⁴⁶⁶ Given that an innovation-friendly or a pro-trade approach is taken for computer and telecommunication services, it remains to be seen how much longer the EU would adhere to the delineation of computer and telecommunication services, on the one hand, and audiovisual services, on the other, in spite of technological convergence.

The all-or-nothing negotiating strategy of the EU for the audiovisual service sector has continued over the course of a Korea-EU FTA negotiation. Since the negotiation of the Korea-EU FTA has taken place on the basis of a positive-list approach similar to the GATS, neither the EU nor Korea committed themselves in audiovisual services.

During bilateral services negotiations with Canada and Japan, a sea change of the EU negotiation strategy was observed: from a positive-list approach to a negative-list approach. In general, a negative-list approach is considered more open to trade than a positive-list approach, especially in the digital services area.⁴⁶⁷ However, several provisions in EU-Canada Comprehensive Economic and Trade Agreement (hereinafter EU-Canada CETA)⁴⁶⁸ and EU-Japan Economic Partnership Agreement (hereinafter EU-Japan EPA)⁴⁶⁹ illustrate the strong intention of the EU to carve out the audiovisual service

exceptions to the principle of national treatment.

⁴⁶⁶ Weber and Burri, *Classification of Services in the Digital Economy*, 103.

⁴⁶⁷ It is practically impossible to list all of new digital service sectors which countries want to keep from opening markets or all of measures which are and will be potentially inconsistent with market access or national treatment commitments.

⁴⁶⁸ EU-Canada CETA took effect provisionally on September 21, 2017.

⁴⁶⁹ EU-Japan EPA entered into force on February 1, 2019.

sector from trade liberalization. Under EU-Canada CETA, for instance, Telecommunications Chapter does not apply to a measure affecting the transmission by any means of telecommunications, including broadcast and cable distribution, of radio or TV programming intended for reception by the public.⁴⁷⁰ Cross-border Trade in Services Chapter does not apply to a measure affecting audiovisual services for the EU and cultural industries for Canada.⁴⁷¹ The EU also reserves its right to adopt or maintain non-conforming measures affecting “broadcast transmission services.”⁴⁷² EU-Japan EPA does not differ from the EU-Canada CETA. Sub-Section of Telecommunication Services as well as Sections of Electronic Commerce and Cross-Border Trade in Services are not applicable to measures affecting broadcasting services and audiovisual services.⁴⁷³ Moreover, the EU makes it clear that it reserves the right to adopt or maintain non-conforming measures in the future with respect to “broadcast transmission services.”⁴⁷⁴

4.1.2. At the Domestic Level

The European Commission responded to technological convergence in a rather proactive manner to address regulatory issues as early as the mid-1990s. The Commission has gradually established a horizontal approach, separating transmission from content under the electronic communication networks environment, as a result of intense discussions through the “Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation

⁴⁷⁰ Article 15.2.2 of EU-Canada CETA.

⁴⁷¹ Article 9.2(b) and (c) of EU-Canada CETA.

⁴⁷² Reservations applicable in the EU with respect to broadcast transmission services is reproduced in **Annex IV-11** to this chapter.

⁴⁷³ Articles 8.14.2(d), 8.41.2(a) and 8.70.5 of EU-Japan EPA.

⁴⁷⁴ Reservation No. 11 – Telecommunication in Annex II to the EU-Japan EPA is reproduced in **Annex IV-12** to this chapter.

(hereinafter Green Paper of 1997)”⁴⁷⁵, “Towards a New Framework for Electronic Communications Infrastructure and Associated Services – The 1999 Communications Review (hereinafter 1999 Communications Review)”⁴⁷⁶, and “Directive on a common regulatory framework for electronic communications networks and services (hereinafter Framework Directive of 2002)”⁴⁷⁷.

In the context of content regulation, the EU regulatory framework concerning OTT video streaming services has struggled with the question of whether this new type of media business model must be governed in the same way as conventional audiovisual media services such as television broadcasting are regulated.⁴⁷⁸ As the new type of video programming services, which did not rely on a dedicated conventional transmission facility, had become widely available due to the development of broadband Internet and communication technology, EU regulators have decided to expand the scope of the domestic legal framework concerning audiovisual media services.

The current EU Audiovisual Media Services Directive of 2010 (hereinafter AVMSD or Directive)⁴⁷⁹ covers all audiovisual media services with content both television broadcasting and on-demand audiovisual media services irrespective of the technology used to deliver the content. When the provider does not hold control (the so-called,

⁴⁷⁵ European Commission, *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation*, COM(97)623, 3 December 1997.

⁴⁷⁶ European Commission, *Towards a New Framework for Electronic Communications Infrastructure and Associated Services – The 1999 Communications Review*, COM(1999)539, 10 November 1999.

⁴⁷⁷ Official Journal of the European Communities, *Directive 2002/21/EC of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive)*, 2002 OJ L108/33, 24 April 2002.

⁴⁷⁸ Weber and Burri, *Classification of Services in the Digital Economy*, 122.

⁴⁷⁹ Official Journal of the European Union, *Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive)*, OJ L 95/1, 15 April 2010.

editorial responsibility) for the content offered, however, the services are not covered by the Directive. Thus, for instance, the user-generated content offered by YouTube is not subject to the Directive because YouTube does not exercise control over the content, whereas Netflix, which manages the content and organizes the program, is subject to the AVMSD.⁴⁸⁰ Under the current legal framework, YouTube and other online video-sharing platform services are subject to the Directive on Electronic Commerce⁴⁸¹ as they fall within information society services.

On the other hand, the AVMSD adopts a two-tier approach to reflect dramatically changing market realities brought about by technological convergence: a distinction between linear (conventional television broadcasts) services⁴⁸² and non-linear (on-demand) services⁴⁸³. Lighter regulations are applicable to on-demand audiovisual media services or non-linear services where consumers play a more active role in deciding the content and the time of watching.⁴⁸⁴

⁴⁸⁰ European Commission, “Questions and answers on the public consultation on the AVMSD,” accessed July 1, 2019, <https://ec.europa.eu/digital-single-market/en/news/questions-and-answers-public-consultation-avmsd>.

⁴⁸¹ Official Journal of the European Communities, *Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on Electronic Commerce)*, OJ L 178/1, 17 July 2000.

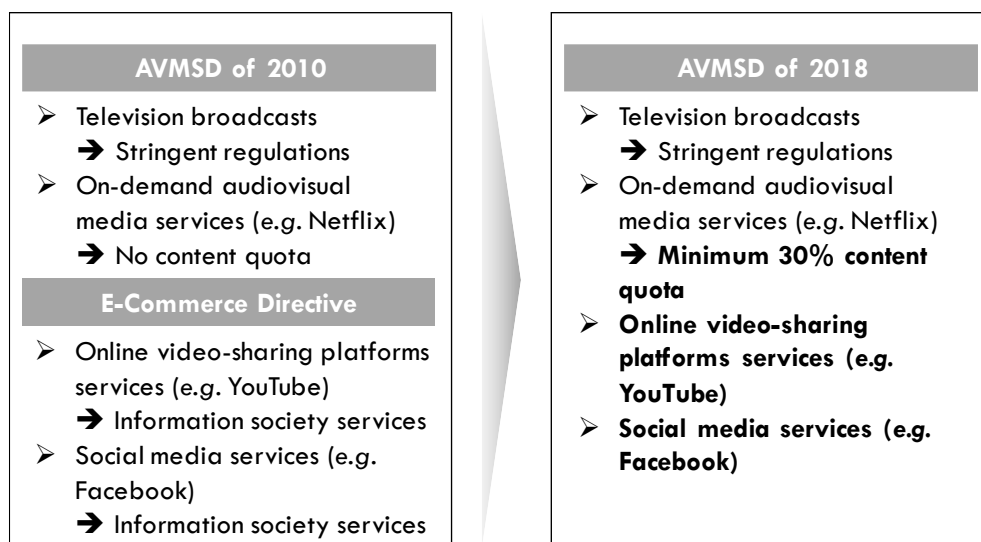
⁴⁸² Television broadcasting or television broadcast (*i.e.* a linear audiovisual media service) is “provided by a media service provider for simultaneous viewing of programs on the basis of a program schedule.” Article 1(e) of the AVMSD.

⁴⁸³ On-demand audiovisual media service (*i.e.* a non-linear audiovisual media service) is “provided by a media service provider for the viewing of programs at the moment chosen by the user and at his individual request on the basis of a catalogue of programs selected by the media service provider.” Article 1(g) of the AVMSD.

⁴⁸⁴ Linear services should abide by the following rules stipulated in the AVMSD: events of major importance and short news reporting (Chapter V); quotas for promotion and distribution of European television program (Chapter VI); time limits for TV advertising and teleshopping (Chapter VII); stricter rules on the protection of minors (Chapter VIII); and right of reply (Chapter IX). On the other hand, non-linear services are subject to less stringent rules: protection of minors (Article 12 in Chapter IV); and general promotion and distribution of European works (Article 13 in Chapter IV).

The AVMSD of 2010 was lately amended in November 2018 to better respond to the technological developments in the audiovisual and online VOD markets.⁴⁸⁵ A number of changes in the regulatory framework concerning online video services draw our attention: revised rules extend to video-sharing platforms services and social media services such as YouTube and Facebook, which used to be beyond the scope of the AVMSD of 2010⁴⁸⁶; minimum content quota of 30 per cent is imposed on Internet-based VOD services.⁴⁸⁷ Domestic media governance reforms of the EU reveal that the EU would not withdraw from the protectionist approach to audiovisual media industry but rather strengthen its regulatory grip on it even in the age of technological convergence.

Figure IV-3 Changes in the EU legal framework concerning OTT video services



Source: Author's compilation.

⁴⁸⁵ Official Journal of the European Union, *Directive (EU) 2018/1808 of the European Parliament and of the Council of 14 November 2018 amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) in view of changing market realities*, OJ L 303/69, 28 November 2018.

⁴⁸⁶ *Ibid.*, para. 4.

⁴⁸⁷ *Ibid.*, para. 18.

Figure IV-3 briefly illustrates changes in the EU legal framework concerning OTT video services. Such an outright protectionist or all-or-nothing negotiation strategy of the EU would inevitably result in trade conflicts with the home of global media moguls, the US.

4.2. US Approach

4.2.1. At the International Level

The US, a frontrunner in technological innovation and a leading player in the computer technology and software sector, has committed the computer and related service sector as a whole at the Uruguay Round. It did not allow any distinction between the sub-sectors. The only exemption from trade liberalization is airline computer reservation systems as shown in **Table IV-7**. Such a liberal approach has continued to prevail through its revised offer at the Doha Round services negotiation in 2005.⁴⁸⁸ A

Table IV-7 Classification of “Computer and Related Services” in US services schedules

W/120	GATS	Revised Offer
B. COMPUTER AND RELATED SERVICES a. Consultancy services related to the installation of computer hardware b. Software implementation services c. Data processing services d. Data base services e. Other	B. COMPUTER AND RELATED SERVICES (MTN.GNS/W/120 a) – e), except airline computer reservation systems)	B. COMPUTER AND RELATED SERVICES (MTN.GNS/W/120 a) – e), except airline computer reservation systems) (CPC 84)

Source: Author’s compilation

⁴⁸⁸ WTO, *United States – Revised Services Offer*, TN/S/O/USA/Rev.1, 28 June 2005, accessed July 1, 2019, <https://www.carecprogram.org/uploads/US-Revised-Services-Offer.pdf>.

negative-list approach in bilateral trade negotiations has also helped the US achieve maximum liberalization in the sector.

The US has also sought the unchanged highest level of commitments in the telecommunication service sector. US negotiation strategy for telecommunication services during the GATS and basic telecommunications negotiations has relied on the dichotomy of basic and value-added services. With regard to basic telecommunication services, the US adopted the classification scheme of W/120 without any change: *voice services* (2.C.a. of W/120); (b) *packet-switched data transmission services* (2.C.b. of W/120); *circuit-switched data transmission services* (2.C.c. of W/120); *telex services* (2.C.d. of W/120); *telegraph services* (2.C.e. of W/120); *facsimile services* (2.C.f. of W/120); *private leased circuit services* (2.C.g. of W/120); *other* (2.C.o. of W/120).⁴⁸⁹ The current US schedule provides for some information for the clarification purposes: telecommunication services do not include one-way satellite transmission of Direct-to-Home (hereinafter DTH) and Direct Broadcast Satellite (hereinafter DBS) television services and digital audio services; sub-sector (o) *other* includes mobile services, analogue/digital cellular services, personal communications services (hereinafter PCS), paging services and mobile data services.⁴⁹⁰

Enhanced telecommunication services or value-added services are defined by the US as “services, offered over common carrier transmission facilities – *i.e.*, public telecommunications transport services – which employ computer processing applications that: (i) act on the format, content code, protocol or similar aspects of the subscriber’s transmitted information; or (ii) provide the subscriber additional, different, or restructured

⁴⁸⁹ WTO, *The United States of America – Schedule of Specific Commitments – Supplement 2*, GATS/SC/90/Suppl.2, 11 April 1997, 2.

⁴⁹⁰ *Ibid.*, 3.

information; or (iii) involve subscriber interaction with stored information.”⁴⁹¹ Such services include: (h) *electronic mail*; (i) *voice mail*; (j) *on-line information and data base retrieval*; (k) *electronic data interchange*; (l) *enhanced/value-added facsimile services (including store and forward, store and retrieve)*; (m) *code and protocol conversion*; (n) *on-line information and/or data processing (including transaction processing)*; (o) *other*.

United States’ adherence to the basic/value-added telecommunications dichotomy was challenged by the EU’s revolutionary classification scheme in 2005, which disposed of “basic versus value-added” distinction.⁴⁹² In response, the US expressly rejected the EU proposal. The US raised its concern that the EU’s classification scheme might not cover value-added services, which the US considered an essential part of telecommunication services.⁴⁹³ It also criticized the EU’s proposal of “add[ing] greater uncertainty into the sector with respect to value-added services⁴⁹⁴,” and then suggested an alternative to the EU definition of telecommunication services: “[a]ll services consisting of the transmission and reception of signals by any electromagnetic means, *alone or in combination with enhancing, storing, forwarding, retrieving, or processing functions added to the transmission and reception of signals*. [Italic original]”⁴⁹⁵

The US revised offer for the Doha Round of services negotiations entails some definitional calibrations but the basic/value-added telecommunication services dichotomy still remain in place. The revised offer contains the new definition of basic telecommunication services: “[t]he transmission between or among points specified by the user, of information of the users choosing, without change in the form or content of

⁴⁹¹ GATS, *The United States of America – Schedule of Specific Commitments*, GATS/SC/90, 15 April 1994, 45.

⁴⁹² See, for the EU’s new classification scheme for telecommunication services, see CTS, S/CSC/W/44, TN/S/W/27; or **Section 4.1.1.** of this chapter.

⁴⁹³ CTS, TN/S/W/35, S/CSC/W/45, para. 2.

⁴⁹⁴ *Ibid.*, para. 2.

⁴⁹⁵ *Ibid.*, para. 11.

the information as sent and receive. These services may be provided on a facilities basis or non-facilities basis, and encompass local, long-distance, or international services, for public or non-public use, and may be provided through any means of technology.”⁴⁹⁶ What draws attention in the US revised offer is that the subgroup of “Enhanced Telecommunications Services” under the heading of Telecommunications Services in the US original GATS Schedule is eliminated and the same list of services is moved to the new heading of “E. Information Services (Value-added services),” which does not exist in W/120 classification scheme. Information services are newly defined as “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications.”⁴⁹⁷ They include, but are not limited to electronic mail; voice mail; on-line information and/or data base retrieval; electronic data interchange (hereinafter EDI); enhanced/value-added facsimile services; code and protocol conversion; on-line information and/or data processing; packet-switched information services. As summarized in **Table IV-8**, in its revised offer the US rather bolsters the distinction between basic telecommunication services and value-added services compared to the classification of W/120 and its original GATS Schedule.

With respect to audiovisual services, the US was one of the few countries undertaking substantial market opening commitments in all sub-sectors of audiovisual services at the conclusion of the Uruguay Round. No MFN exemption is listed. The US original GATS Schedule follows the classification structure of W/120 without any

⁴⁹⁶ WTO, TN/S/O/USA/Rev.1, 62.

⁴⁹⁷ *Ibid.*, 66.

Table IV-8 Comparison of the classification of “Telecommunication Services” in US services schedules

W/120	GATS	Revised Offer
<p>C. TELECOMMUNICATION SERVICES</p> <p>a. Voice telephone services</p> <p>b. Packet-switched data transmission services</p> <p>c. Circuit-switched data transmission services</p> <p>d. Telex services</p> <p>e. Telegraph services</p> <p>f. Facsimile services</p> <p>g. Private leased circuit services</p>	<p>C. TELECOMMUNICATION SERVICES</p> <p>a. Voice services</p> <p>b. Packet-switched data transmission services</p> <p>c. Circuit-switched data transmission services</p> <p>d. Telex services</p> <p>e. Telegraph services</p> <p>f. Facsimile services</p> <p>g. Private leased circuit services</p> <p>o. Other</p>	<p>D. BASIC TELECOMMUNICATION SERVICES</p> <p>a. Voice telephone services</p> <p>b. Packet-switched data transmission services</p> <p>c. Circuit-switched data transmission services</p> <p>d. Telex services</p> <p>e. Telegraph services</p> <p>f. Facsimile services</p> <p>g. Private leased circuit services</p>
<p>h. Electronic mail</p> <p>i. Voice mail</p> <p>j. On-line information and data base retrieval</p> <p>k. Electronic data interchange (EDI)</p> <p>l. Enhanced/value-added facsimile services, including store and forward, store and retrieve</p> <p>m. Code and protocol conversion</p> <p>n. On-line information and/or data processing (including transaction processing)</p> <p>o. Other</p>	<p>ENHANCED TELECOMMUNICATION SERVICES</p> <p>h. Electronic mail</p> <p>i. Voice mail</p> <p>j. On-line information and data base retrieval</p> <p>k. Electronic data interchange (EDI)</p> <p>l. Enhanced/value-added facsimile services, including store and forward, store and retrieve</p> <p>m. Code and protocol conversion</p> <p>n. On-line information and/or data processing (including transaction processing)</p> <p>o. Other</p>	<p>E. INFORMATION SERVICES (VALUE-ADDED SERVICES)</p> <p>- Electronic mail</p> <p>- Voice mail</p> <p>- On-line information and/or data base retrieval</p> <p>- Electronic data interchange (EDI)</p> <p>- Enhanced/value-added facsimile services</p> <p>- Code and protocol conversion</p> <p>- On-line information and/or data processing</p> <p>- Packet-switched information services</p>

Source: Author’s compilation.

changes. The only difference is that it lacks CPC numbers with regard to sub-sectors of audiovisual services.

The US has kept insisting that the audiovisual sector should be on the trade negotiation table since the beginning of the Uruguay Round. From its point of view, the GATS has trade disciplines flexible enough to accommodate specific concerns such as

special cultural characteristics.⁴⁹⁸ The US government as well as the US audiovisual media industry were greatly concerned over other Members' negotiation strategy of excluding the audiovisual service sector from negotiation agenda.⁴⁹⁹ The US has also called for the review of different activities constituting the audiovisual sector – e.g., dubbing, production, casting, designing, costumes – to develop an understanding of where the different facet of the sector was classified.⁵⁰⁰ The US government has believed that it would help to better reflect technological advances and fully exploit the economic benefits of trade liberalization in the sector. In this sense, the US presented the diverse set of activities that may be considered to form part of the audiovisual sector.⁵⁰¹ Interestingly, “converged transmission services,” which transmit other forms of data, voice or other communication services from producers to end-users, is exemplified as an audiovisual and audiovisual related service activity. Although what constitutes converged transmission services is not specifically described in the document, we can now assume that US delegates were aware of the technological feasibility of delivering audiovisual content over the online network.

Against this backdrop, the US, at the Doha Round negotiations, has made significant alterations in a classification scheme to promote deeper liberalization in the sector.⁵⁰² First, the sub-category of (a) *motion picture and video tape production and distribution services* in the original GATS schedule is broken down into four sub-sectors: *promotion or advertising services* (CPC 96111); *motion picture or video tape production services*

⁴⁹⁸ CTS, *Communication from the United States – Audiovisual and Related Services*, S/CSS/W/21, 18 December 2000, para. 7.

⁴⁹⁹ CTS, *Communication from Hong Kong China, Japan, Mexico, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, and United States – Joint Statement on the Negotiations on Audiovisual Services*, TN/S/W/49, 30 June 2005, para. 4.

⁵⁰⁰ CTS, S/CSS/W/21, para. 10.

⁵⁰¹ It is reproduced in **Annex IV-8** to this chapter.

⁵⁰² WTO, TN/S/O/USA/Rev.1, 68.

(CPC 96112); *motion picture or video tape distribution services* (CPC 96113); *other services in connection with motion pictures and video tape production and distribution* (CPC 96114). As one may see, the “production” and “distribution” of motion picture and video tape are separated and new classifications of *promotion or advertising services* and *other services in connection with motion pictures and video tape production and distribution* are added.

Second, the US begins to provide direct references to CPC in its schedule to clarify the scope of its existing commitments.⁵⁰³ And most importantly, the revised services offer introduces a new classification under the heading of “F. Other Communications Services,” which is new to in terms of W/120. The new sector consists of cable services provided over cable system; one-way satellite transmission of DTH and DBS television services and of digital audio services; program transmission services (CPC 7524); broadcast television transmission services (CPC 75241); radio broadcast transmission services (CPC 75242); radio and television combined program making and broadcasting services (CPC 96133).⁵⁰⁴ The new classification scheme reveals that the US intends to set apart a transmission element from a content element in audiovisual services and calls upon other WTO Members for opening markets for audiovisual services, at least for a transmission-related activity.

Such a new classification scheme of the US is expected to bring in more clarity in the controversial audiovisual service sector. However, it would not be acceptable to other

⁵⁰³ USTR, “US Submits Revised Services offer to the WTO,” May 31, 2005, accessed July 1, 2019, https://ustr.gov/archive/Document_Library/Press_Releases/2005/May/US_Submits_Revised_Services_offer_to_the_WTO.html.

⁵⁰⁴ Comparison of US classification approaches on audiovisual services in the GATS schedule and the Doha revised offer schedule is presented in **Table IV-9** in this chapter.

WTO Members, which are unwilling to extend their commitments beyond the present level or even to commit at all in this sector such as the EU.⁵⁰⁵

In the case of OTT video streaming services, the possibility of being qualified as the transmission of video content cannot be ruled out because of the characteristics of “streaming” function. Thus the US is highly likely to formulate a viable negotiation strategy to classify OTT video streaming services as “Other Communications Services” instead of conventional audiovisual services. Other WTO Members may be under pressure to take new commitments on this sector in an effort to achieve deeper trade liberalization in audiovisual services, as long as OTT video streaming services are concerned.

In parallel with its negotiation strategy at the multilateral level, the US has pushed hard its RTA negotiation partners to make full commitments on digital audiovisual services and to detach them from conventional offline ones by making use of a negative-list approach. This would come as substantial pressure to RTA partners because nearly all audiovisual media are to become digitally-enabled as technology further advances.⁵⁰⁶ The USTR, for example, touts that “KORUS protects against increases in the amount of domestic content required and ensures that new platforms, such as *online video and streaming music*, are not subject to these legacy restrictions. [Italic added]”⁵⁰⁷ What is worth noting is Korea’s response in KORUS to US pressure on the digitally-enabled audiovisual sector: Korea reserves its right to adopt any measure to promote the availability of Korean video content or genres in the digital video service sector, where streaming video content is provided regardless of the type of transmission including through the Internet. Yet, such measures are valid subject to the condition that they are

⁵⁰⁵ Weber and Burri, *Classification of Services in the Digital Economy*, 107.

⁵⁰⁶ *Ibid.*, 91.

⁵⁰⁷ USTR, *2019 NTE Report*, 322.

implemented in accordance with transparency and proportionality requirements, which are definitely not easy to be met.⁵⁰⁸

⁵⁰⁸ See, for the full text of Korea's reservation on digital audio and video services, **Annex IV-9**.

Table IV-9 Comparison of the classification of “Audiovisual Services” in US services schedules

GATS	Revised Offer
-	F. OTHER COMMUNICATIONS SERVICES - Cable services provided over cable system - One-way satellite transmission of DTH and DBS television services and of digital audio services - Program transmission services (CPC 7524) - Broadcast television transmission services (CPC 75241) - Radio broadcast transmission services (CPC 75242) - Radio and television combined program making and broadcasting services (CPC 96133)
D. AUDIOVISUAL SERVICES a) Motion picture and video tape production and distribution services	G. AUDIOVISUAL SERVICES a) Motion picture and video tape production and distribution - Promotion or advertising services (CPC 96111) - Motion picture or video tape production services (CPC 96112) - Motion picture or video tape distribution services (CPC 96113) - Other services in connection with motion pictures and video tape production and distribution (CPC 96114)
b) Motion picture projection services	b) Motion picture projection services (CPC 9612)
c) Radio and television services	c) Radio and television services (CPC 96131 and 96132)
d) Radio and television transmission services	Radio and television distribution services*, excluding transmission * For greater clarity, distribution services in this context may include the licensing of radio and television programs to other service providers for exhibition, broadcast or other transmission, rental, sale or other use. Transmission services for radio and television programs are classified in CPC 7524 (program transmission services) and 96133 (combined program making and broadcasting services)
e) Sound recording	e) Sound recording
f) Other	f) Other services in connection with radio and television production and distribution

Source: Author’s compilation.

4.2.2. At the Domestic Level

The US domestic communication regulatory framework has traditionally dealt with various types of communication media on a vertical, segmented or silo approach basis.⁵⁰⁹ An individual communication service is defined first according to technological features and then bound by specific regulatory governance. For instance, Title II of the Communications Act of 1943 grants the USFCC authority to regulate common carriers – *e.g.*, telecommunication services, while Title III confers on the USFCC authority over users of the radio spectrum – *e.g.*, wireless broadcasting services. Title IV, which was later added by the Cable Communications Act of 1984, grants the USFCC authority over cable. On the other hand, newer ICT-enabled services delivered via Internet networks are often classified as “information services.”⁵¹⁰ Thus, a digitally-enabled service bears less regulatory burden than telecommunication, broadcasting or cable.

Based upon such vertical approach, the USFCC categorizes entities in the video distribution industry, the most relevant industry to OTT video streaming services of our interest, into one of three groups: multichannel video programming distributors (hereinafter MVPD)⁵¹¹, online video distributors (hereinafter OVD)⁵¹², and broadcast

⁵⁰⁹ Larouche, “Dealing with Convergence at the International Level,” 410.

⁵¹⁰ The Telecommunications Act of 1996 defines information services as “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications.” SECTION 3(a)(2)(41) of the Telecommunications Act of 1996.

⁵¹¹ Section 602(13) of the Communications Act of 1934 defines MVPD as “a person such as, but not limited to, a cable operator, a multichannel multipoint distribution services, a direct broadcast satellite service, or a television receive-only satellite program distributor, who makes available for purchase, by subscribers or customers, multiple channels of video programming.”

⁵¹² The USFCC, in its 18th Report, defines OVD as “an entity that distributes video programming (1) by means of the Internet or Internet Protocol-based transmission path; (2) not as a component of an MVPD subscription or other managed video service; and (3) not solely to customers of a broadband Internet access service owned or operated by the entity or its affiliates.” USFCC, *The 18th Report on the Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 16-247, January 17, 2017, 3.

television stations. From the regulator’s point of view, an MVPD is an “entity that makes available for purchase by subscribers or customers multiple channels of video programming,” including cable companies, DBS MVPD, telephone company MVPD, and combined telephone company and DBS MVPD.⁵¹³ Less than a decade, varying types of OVD, which are analogous to OTT video service providers in this chapter, have penetrated into households at a fast pace. Unlike a traditional MVPD, whose service area is dependent on the provider’s dedicated facilities-based infrastructure, consumers may enjoy watching online video content supplied by OVD in any place provided that broadband Internet services are available.

With the growing volume of video content being provided by OTT video platforms via the Internet, the USFCC was asked to level the playing field and accommodate the technological transition occurring in the video distribution industry.⁵¹⁴ In this light, the USFCC modernized the definition of MVPD in 2015 to include “services that make available for purchase, by subscribers or customers, *multiple linear streams* of video programming, regardless of the technology used to distribute the programming. [Italic added]”⁵¹⁵ Accordingly, linear OTT video streaming services, which provide prescheduled streams of video programming and were once classified as OVD, would fall within the scope of MVPD.⁵¹⁶ However, non-linear OTT video streaming services, which transmit online video content at a time of the viewer’s choosing, would be qualified

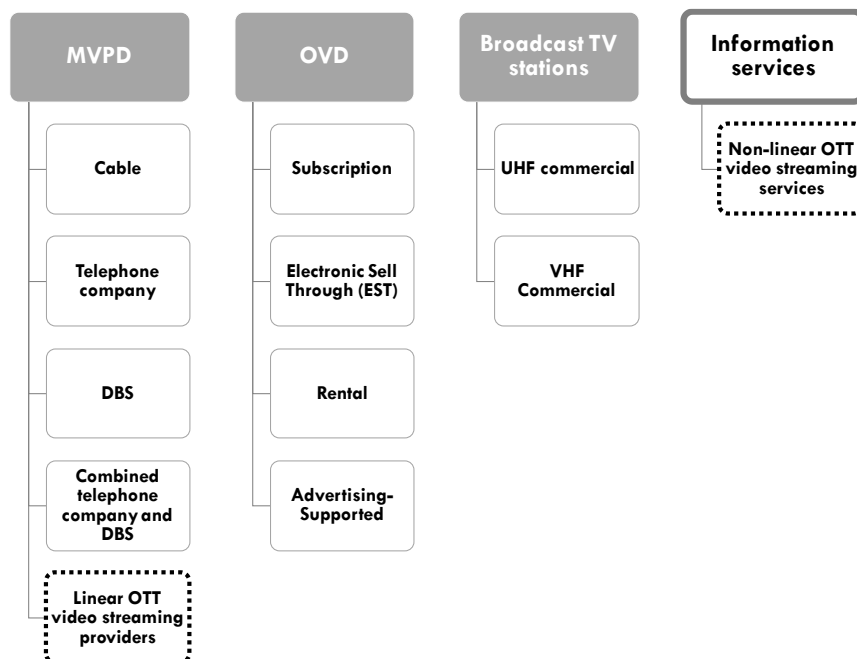
⁵¹³ *Ibid.*, 6-7.

⁵¹⁴ USFCC, “FCC Proposes to Modernize MVPD Definition,” December 19, 2014, accessed July 1, 2019, <https://www.fcc.gov/document/fcc-proposes-modernize-mvdp-definition>.

⁵¹⁵ Federal Register, 80 FR 2078, January 15, 2015, 2078.

⁵¹⁶ Although linear OTT video streaming business might suffer from legacy regulations as a result of the new definition, MacDonald asserts that the benefits would outstrip the potential for harm. She takes guaranteed access to programming and exemption from data caps as just two examples of the benefits. See Maggie MacDonald, “Comcast v. Netflix: Why the FCC Should Redefine Multi-Channel Video Programming Distributors to Include Over-the-Top Video Providers,” *Colorado Technology Law Journal* 12, no. 2 (2014), 495.

Figure IV-4 USFCC’s categorization of providers of video programming



Source: Illustrated by the author based on the 18th Report.

as information services and still remain outside of the scope of MVPD. Taking into account its recent domestic media regulatory reforms, it is likely that, at trade negotiations, the US would pursue a negotiation strategy of separating non-linear OTT video streaming services from linear ones.

4.3. Preliminary Conclusion

Now having provided a basic summary of EU and US approaches toward computer and related services, telecommunication services and audiovisual services, there is an opportunity to highlight their negotiation strategies on the subject of our interest, OTT video streaming services.

In the case of the EU, there is no sign of changes in negotiation strategy to draw a distinct line between telecommunications and audiovisual services despite technological

convergence. Under these circumstances, it is expected that the EU would classify OTT video streaming services as audiovisual services, regardless of whether video content is transmitted in a linear way or a non-linear way over the Internet. In so doing, the EU would preserve discretion to impose certain discriminatory or protectionist measures, such as content quota or subsidies, against overseas OTT video streaming service providers. This preliminary conclusion is in line with European Commission's latest regulatory reforms: online video-sharing platform services and social media services are no longer classified as information society services subject to the Electronic Commerce Directive; instead, online video-sharing platforms such as YouTube as well as social media platforms such as Facebook are, for the first time, qualified as audiovisual media service providers under the AVMSD of 2018; and minimum 30 per cent content quota is imposed on on-demand audiovisual media services such as Netflix pursuant to the same Directive.

Contrary to the European Union's all-or-nothing strategy at services trade negotiations, the US may attempt what we call, a "salami-slice strategy" at trade negotiations to liberalize trade in audiovisual services converged with digital technology. The salami-slice strategy hereby refers to a trade negotiation strategy of breaking down digitally-enabled audiovisual services into several subsectors, negotiating market opening for each subsector one by one. As a part of this salami-slice strategy in the audiovisual service sector, the US could make an argument that OTT video streaming services fall not within audiovisual services but within other communication services or computer and related services, which is subject to much more liberal commitments in the GATS context. With more emphasis on transmission, database, and data processing elements of the OTT video streaming services, the US could push hard its major trading partners, including the EU, to undertake a market opening commitment on each element

of OTT video streaming services at trade negotiations. Moreover, the USFCC has made a distinct separation of linear streaming services and non-linear services and recently decided that multiple linear streams of video programming are covered by MVPD but non-linear services are subject to much less stringent regulation as information services. It is probable that the US would pursue utmost trade liberalization at least in the non-linear OTT video streaming service sector at the international level to seek great trade opportunities in the sector.

A clash over the classification of OTT video streaming services between the EU and the US seems unavoidable under the current outdated classification scheme of W/120 and Provisional CPC. Using the updated version of CPC at the services negotiation fora might help mitigate such controversy. The latest CPC 2.1, made available in 2015, includes a group entitled On-line content (CPC 843) under the Division of Telecommunication, broadcasting and information supply services (CPC 84).⁵¹⁷ OTT video streaming services could be readily recognized to fall within the subclass of “Streamed video content (CPC 84332)” in terms of CPC 2.1, as this subclass explicitly includes “streamed video data sent over the Internet.”⁵¹⁸ But CPC 2.1 cannot be a silver bullet in the epic of digital trade: whether both non-linear and linear services are included in the streamed video content category in terms of CPC 2.1 or how the classification of CPC 2.1 is associated with the GATS commitments made in accordance with W/120 is still open to question.⁵¹⁹

⁵¹⁷ A full list of subclasses of On-line content is presented in **Annex IV-10** of this chapter.

⁵¹⁸ UN, *Central Product Classification (CPC) Version 2.1*, ST/ESA/STAT/SER.M/77/Ver2.1, 2015, 497.

⁵¹⁹ Weber and Burri, *Classification of Services in the Digital Economy*, 123.

5. Implications for Korea in the Trade Policy Context

Before we draw implications for Korea from the EU and US trade negotiation strategies, it is worth exploring the ongoing discussions on media regulatory reforms in Korea, in particular, with regard to broadcasting and OTT video services.

OTT video streaming services available in Korea are currently subject to the Telecommunications Business Act⁵²⁰ instead of the Broadcasting Act⁵²¹ or the Internet Multimedia Broadcast Services Act.⁵²² OTT video services are not deemed as broadcasting services under the current legal framework. Netflix, for instance, which has been running an online video streaming business in Korea since 2016⁵²³, is registered as a value-added telecommunications business operator pursuant to the Telecommunications Business Act.

As more VODs are available on an OTT basis, an argument is made that OTT video streaming services should be regulated under a regulatory framework as stringent as traditional broadcasting. Moreover, it is often suggested that local content quota on OTT services is necessary to protect the domestic content production industry as the EU proposed. Against this backdrop, in early 2019, a draft Bill on Comprehensive Broadcasting (hereinafter the Bill)⁵²⁴ was proposed to combine several media-related acts, including the Broadcasting Act, the Internet Multimedia Broadcast Services Act, and the

⁵²⁰ 『전기통신사업법』 in Korean.

⁵²¹ 『방송법』 in Korean.

⁵²² 『인터넷 멀티미디어 방송 사업법』 in Korean.

⁵²³ It is reported that the number of Netflix users in Korea has soared from 80,000 in September 2016 to 900,000 in September 2018. The number of spending hours of Korean users on Netflix has also skyrocketed from 14 million minutes a month in September 2016 to 283 million minutes a month in September 2018. Wiseapp, “Netflix users soar by three times compared to same month last year (in Korean),” October 22, 2018, accessed July 1, 2019, <https://m.post.naver.com/viewer/%20postView.nhn?volumeNo=16932291&memberNo=32291422&vType=VERTICAL>.

⁵²⁴ 『방송법 전부개정법률안』 or 『종합방송법』 in Korean.

Telecommunications Business Act, into a comprehensive one. The Bill builds on a horizontal approach embracing the dichotomy of “transmission platform” and “content production.” As shown in **Annex IV-13**, Broadcasting services⁵²⁵, which are central to the Bill, consist of terrestrial broadcasting services⁵²⁶, pay broadcasting services⁵²⁷, and broadcasting program providers⁵²⁸. Specifically, OTT video streaming services would fall within the category of value-added pay broadcast operators⁵²⁹ under the heading of pay broadcasting services. The Bill also requires a linear OTT streaming service provider to operate on a registration basis, whereas a non-linear OTT service provider may provide its services on a report basis.

It should be appreciated that the Bill adopts a horizontal approach based on the separation of transmission and content. It is envisaged to streamline flexibility and predictability in the Korean media regulatory framework in the wake of technological convergence. It is also true, however, that the draft Bill could hamper the online media industry with OTT video streaming services subject to rigid legal framework of broadcasting. Supporters of open Internet blame the Bill on raising market entry barriers for promising but small OTT service providers and generating less competition and fewer consumer choices in the market, which would eventually bring about a net loss for the public.⁵³⁰

Several lessons can be drawn from these findings for Korea in the trade policy context. First, Korean trade negotiators should be prepared to cope with the United States’

⁵²⁵ 방송사업(서비스) in Korean.

⁵²⁶ 지상파방송사업(자) in Korean.

⁵²⁷ 유료방송사업(자) in Korean.

⁵²⁸ 방송콘텐츠제공사업(자) in Korean.

⁵²⁹ 부가유료방송사업자 in Korean.

⁵³⁰ Open Net, “A Comment on the Bill on Comprehensive Broadcasting (『방송법 전부개정법률안』 의견서 in Korean),” accessed July 1, 2019, <https://opennet.or.kr/15618>.

salami-slice strategy with regard to audiovisual services. As this study found out, the US, at the Doha services negotiation, significantly modified its services schedule to list the transmission element of audiovisual services in the new independent service category of “Other Communications Services.” The intention of the US is assumed to classify online VOD, including OTT video streaming services, as “Other Communications Services” instead of conventional audiovisual services, pursuing maximum market opening for the sector. Accordingly, Washington may request Seoul to follow its new classification scheme. Korean trade negotiators need to take a closer look at the domestic regulatory framework to see whether the existing domestic media and telecommunication regulations are compatible with the US delicate salami-slice strategy.

Second, trade negotiators should take into consideration a negotiation strategy of distinguishing linear OTT services from non-linear ones, scheduling limitations to market access and national treatment regarding linear OTT streaming video services in an explicit manner. Not only the EU but also the US regulatory authorities tend to regulate linear OTT streaming video services under conventional and rigid broadcasting laws. Since linear OTT services, which transmit prescheduled streams of video content, are influential to society as much as broadcasting, Korean negotiators should come up with a careful scheduling strategy to secure a policy space to intervene the linear service market when necessary.

Third, should local content quota be imposed on foreign OTT video service providers to facilitate domestic content production, it must be examined, prior to the implementation, whether the quota is consistent with its commitments under trade agreements. For instance, Korea has already reserved its right to intervene in the digital video service market to promote the availability of Korean content to Korean consumers under KORUS, when necessary. Trade-restrictive measures allowed in KORUS, however,

are not without conditions: the measures should be “based on objective criteria, and be no more trade-restrictive or burdensome than necessary.”⁵³¹ Accordingly, when introducing a new policy measure possibly affecting trade in OTT video services, Korean policymakers need to think carefully whether the measure may get through the proportionality test enshrined in KORUS.⁵³²

Fourth, more exploratory study on the classification regime of services is required. Several classification regimes are available at the international level: W/120; CPC; Joint OECD-Eurostat Trade in Services Classification, Manual on Statistics of International Trade in Services (MSITS); Extended Balance of Payments Services Classification (EBOPS); Balance of Payments Manual (BPM); System of National Accounts (SNA); and International Standard Industrial Classification (ISIC). Among these classification regimes, CPC, which is based upon the physical features of goods or upon the nature of the services, has been updated several times to come to the latest one, CPC 2.1. Now that CPC 2.1 is precise enough to include “streamed video content” as part of online content services, further research on the relationship between CPC 2.1 and Korea’s existing services commitments is urgently required.⁵³³

Last, but not least, in the era of digital transformation and technological convergence, trade experts and media policymakers need to deeply contemplate what would be an effective trade policy to promote the competitiveness of the Korean media or cultural industry. Should entire audiovisual services be exempted from trade negotiation in defense of cultural diversity? Can a local content quota indeed work for encouraging

⁵³¹ KORUS, 606.

⁵³² It can also be argued that Korea is not permitted to impose any type of content quotas on any audiovisual service as it has fully committed motion picture and video tape distribution services (except those services for cable TV broadcasting) as well as record production and distribution services in its original GATS Schedule. In this case, Korea has no choice but to sorely rely on GATS Article XIV (general exceptions).

⁵³³ See, for the subclasses of online content services in the CPC 2.1, **Annex IV-10** to this chapter.

domestic video content production amid a prompt penetration of global tech giants into the media market? May tax relief schemes and massive subsidies for domestic media industry achieve its intended goal? Some previous literature may give hints on these questions: it is found that, contrary to conventional belief, screen quotas actually lead to the erosion of cultural diversity⁵³⁴ and mismanaged financial support for the film industry fails to deliver desirable outcomes⁵³⁵; online VOD distribution platforms with global reach indeed facilitates cross-border trade in motion picture services in digital format both from large countries to small ones and vice versa instead of infectiously spreading cultural hegemony around the world.⁵³⁶

6. Concluding Remarks

Convergence between computer technologies, telecommunications, and media content is transforming trade pattern in audiovisual services, which used to be very much insulated against international competition. Highly illustrative is today's digitally-enabled cross-border video services using streaming technology. As *exception culturelle* rationale is gradually losing its ground in the era of digital trade, literature has emerged that issues of market access and domestic regulation with regard to OTT video streaming services may be subject to trade negotiations.⁵³⁷ Conflicting views from the EU and the US over opening markets for OTT video streaming services, however, may give rise to uncertainty and unpredictability under the current analogue trading regime.

⁵³⁴ Jimmyn Parc, "The Effects of Protection in Cultural Industries," *International Journal of Cultural Policy* 23, no. 5 (2017), 630.

⁵³⁵ Jimmyn Parc and Patrick Messerlin, "In Search of an Effective Trade Policy for the Film Industry: Lessons from Korea," *Journal of World Trade* 52, no. 5 (2018), 753-759.

⁵³⁶ Luis Aguiar and Joel Waldfogel, "Netflix: Global Hegemon or Facilitator of Frictionless Digital Trade?," *Journal of Cultural Economics* 42, no. 3 (2018), 444.

⁵³⁷ See Peng, "GATS and the Over-the-Top Services," 25; Cowhey and Aronson, *Digital DNA*, 243.

Findings of this chapter can be recapitulated as follows: the EU would continue to seek the exemption of audiovisual services from trade negotiations; it would, in turn, classify OTT video streaming services, which are provided mainly by US-based global tech firms, as audiovisual services at the trade negotiation table to extend its regulatory authority to the online media service sector; on the other hand, the US, which is deeply dissatisfied with the extent of liberalization in the audiovisual sector, would modify the current classification scheme to separate a streaming or transmission part from traditional audiovisual services and a non-linear service from a linear service⁵³⁸; it would call for trading partners to take full commitments on, at least, non-linear OTT video streaming services.

Korean policymakers and trade negotiators can learn several lessons. As the coverage of international trade law expands to include a variety of economic activities ranging from goods trade, services trade, and investment to trade in digitally-enabled services and digitized cultural products, domestic media policy should be implemented in a way pursuant to international trade obligations. At the same time, trade negotiators need to figure out negotiating party's core trade interests and draw up a negotiation strategy prioritizing domestic media industries' interests. Last but not least, policymakers should bear in mind that it is practically impossible to erect trade barriers in cyberspace and any politically-charged protectionist measure in favor of domestic cultural industries will be, in the end, detrimental to their competitiveness. In the digital age, it should not be more correct to conclude that competitiveness cannot be cultivated without competition.

⁵³⁸ We refer to it as the “salami-slice strategy” in the main body.

Annex IV-1 Breakdown of “Computer and Related Services” in the Provisional CPC

DIVISION 84 COMPUTER AND RELATED SERVICES		
841		Consultancy services related to the installation of computer hardware
8410	84100	<u>Consultancy services related to the installation of computer hardware</u>
		Assistance services to the clients in the installation of computer hardware (i.e. physical equipment) and computer networks.
842		Software implementation services
All services involving consultancy services on, development and implementation of software. The term “software” may be defined as the sets of instructions required to make computers work and communicate. A number of different programmes may be developed for specific applications (application software), and the customer may have a choice of using ready-made programmes off the shelf (packaged software), developing specific programmes for particular requirements (customized software) or using a combination of the two.		
8421	84210	<u>Systems and software consulting services</u>
		Services of a general nature prior to the development of data processing systems and applications. It might be management services, project planning services, etc.
8422	84220	<u>Systems analysis services</u>
		Analysis services include analysis of the clients’ needs, defining functional specification, and setting up the team. Also involved are project management, technical coordination and integration and definition of the systems architecture.
8423	84230	<u>Systems design services</u>
		Design services include technical solutions, with respect to methodology, quality-assurance, choice of equipment software packages or new technologies, etc.
8424	84240	<u>Programming services</u>
		Programming services include the implementation phase, i.e. writing and debugging programmes, conducting test, and editing documentation.
8425	84250	<u>Systems maintenance services</u>
		Maintenance services include consulting and technical assistance services of software products in use, rewriting or changing existing programmes or systems, and maintaining up-to-date software documentation and manuals. Also included are specialist work, e.g. conversions.
843		Data processing services
8431	84310	<u>Input preparation services</u>
		Data recording services such as key punching, optical scanning or other methods for data entry.
8432	84320	<u>Data-processing and tabulation services</u>
		Services such as data processing and tabulation services, computer calculating services, and rental services of computer time.
8433	84330	<u>Time-sharing services</u>
		This seems to be the same type of services as 84320. Computer time only is bought; if it bought from the customer’s premises, telecommunication services are also bought. Data processing or tabulation services may also be bought from a service bureau. In both cases the services might be time sharing processed. Thus, there is no clear distinction between 84320 and 84330.
8439	84390	<u>Other data processing services</u>

		Services which manage the full operations of a customer's facilities under contract: computer-room environmental quality control services, management services of in-place computer equipment combinations; and management services of computer work flows and distributions.
844		Database services
8440	84400	<u>Database services</u>
		All services provided from primarily structured databases through a communication network. <u>Exclusions:</u> Data and message transmission services (e.g. network operation services, value-added network services) are classified in class 7523 (Data and message transmission services). Documentation services consisting in information retrieval from databases are classified in subclass 96311 (Library services).
845		Maintenance repair services of office machinery and equipment including computers
8450	84500	<u>Maintenance repair services of office machinery and equipment including computers</u>
		Repair and maintenance services of office machinery, computers and related equipment.
849		Other computer services
8491	84910	<u>Data preparation services</u>
		Data preparation services for clients not involving data processing services.
8499	84990	<u>Other computer services n.e.c.</u>
		Other computer related services, not elsewhere classified, e.g. training services for staff of clients, and other professional computer services.

Source: UN, ST/ESA/STAT/SER.M/77, 1991.

Annex IV-2 Breakdown of “Telecommunication Services” in the Provisional CPC

DIVISION 75 POST AND TELECOMMUNICATION SERVICES	
752	Telecommunication services
7521	Public telephone services
75211	<u>Public local telephone services</u>
	Switching and transmission services necessary to establish and maintain communications within a local calling area. This service is primarily designed (used) to establish voice communications, but may serve other applications such as text communication (facsimile or telex) and is generally provided for a flat monthly fee independently of the number of calls made by the subscriber. <u>Exclusions:</u> Private line services and rental services of terminal equipment are classified in class 7522 (Business network services) and 7541 (Equipment rental services), respectively.
75212	<u>Public long distance telephone services</u>
	Switching and transmission services necessary to establish and maintain communications between local calling areas. This service is primarily designed (used) to establish voice communications, but may serve other applications such as text communication (facsimile or teletext) and may be provided on a toll or flat rate basis. This service provides the customer with access to the supplier’s and connecting carrier’s entire telephone network or, in some instances, to a limited number of exchange areas (WATS service).
75213	<u>Mobile telephone services</u>
	Radio telephone services which, by means of transportable equipment, give both-way access to the public telephone network or other mobile telephones. Some versions of this service, with proper terminal equipment, may be used to transmit facsimiles as well as voice communications. <u>Exclusion:</u> Air-to-ground and maritime mobile communications services are classified in subclass 75299 (Other telecommunication services n.e.c.)
7522	<u>Business network services</u>
75221	<u>Shared network services</u>
	Network services necessary to establish telephone communications between selected (point-to-point or multi-point) locations (terminals) via a public (shared) network. This type of service is primarily used to establish long distance voice communications but some versions can also accommodate facsimile and data transmission. It is provided on a pay-as-you-use basis at discount rates over regular long distance telephone charges.
75222	<u>Dedicated network services</u>
	Network services necessary to establish telephone communications between selected (point-to-point or multi-point) locations (terminals) via private line(s). This type of service is primarily used to establish voice communications between distant PBX’s (tie line), between a distance location and a PBX (off premises extension), between a PBX and a distant exchange area (foreign exchange) or between designated telephone sets, but may also accommodate data transmission. It is provided on a lease basis.
7523	Data and message transmission services
75231	<u>Data network services</u>
	Network services necessary to transmit data between equipment using same or

		different protocols. This service can be provided via a public or dedicated data network (i.e. via a network dedicated to the customer's use).
	75232	<u>Electronic message and information services</u>
		Network and related services (hardware and software) necessary to send and receive electronic messages (telegraph and telex/TWX services) and/or to access and manipulate information in databases (so-called value-added network services).
7524		Program transmission services
	75241	<u>Television broadcast transmission services</u>
		Network services necessary for the transmission of television signals, independently of the type of technology (network) employed. This subclass does not include satellite-to-cable services where the provider sells T.V. signals via satellite to cable companies (as opposed to selling use of satellite facilities) nor does it include DTH (direct-to-home) satellite services where the provider sells television program packages directly to households located in remote areas.
	75242	<u>Radio broadcast transmission services</u>
		Network services necessary for the transmission of audio signals such as radio broadcasting, wired music and loudspeaker service.
7525	75250	<u>Interconnection services</u>
		Network services by one carrier to another when a communication originating in a carrier's territory must travel through another carrier's network to reach its destination.
7526	75260	<u>Integrated telecommunication services</u>
		Private point-to-point or multipoint network services which enable the users to simultaneously or alternatively transmit voice, data and/or image. This type of service offers high bandwidth capacity and flexible, customer controlled network reconfiguration to accommodate changing traffic patterns.
7529		Other telecommunication services
	75291	<u>Paging services</u>
		Network summoning of a person to the telephone through the use of an electronic pager. This subclass includes tone, voice and digital display paging services.
	75292	<u>Teleconferencing services</u>
		Network and related services necessary to hold a one-way or two-way fully interactive video conference.
	75299	<u>Other telecommunication services n.e.c.</u>
		Telecommunication services, not elsewhere classified. This class includes mobile maritime and air-to-ground communications services.
753		Radio and television cable services
7530	75300	<u>Radio and television cable services</u>
		Radio and television programming packages via cable. This subclass includes both basic and "pay-TV" services.
754		Telecommunications related services
7541	75410	<u>Equipment rental services</u>
		Telecommunication terminal equipment leasing or rental services (generally for a flat monthly fee).
7542	75420	<u>Equipment sales services</u>
		The retail or wholesale sales of telecommunication terminal equipment.

7543	75430	<u>Connection services</u>
		The provision of access to telecommunication network services by connecting the customer's premises to the carrier's facilities.
7544	75440	<u>Consulting services</u>
		The provision of advice and assistance to businesses and/or institutions on matters related to telecommunications and telematics.
7545	75450	<u>Communications equipment maintenance services</u>
		The provision of maintenance services for communications related products on a fee or contract basis. Equipment maintained includes modems, multiplexers, earth stations, microcomputers, peripherals, telex terminals, telephones etc.
7549	75490	<u>Other telecommunication services n.e.c.</u>
		The provision of telecommunications related services not elsewhere classified such as operator services furnished to other carriers, billing and collection services for customer sponsored services etc.

Source: UN, ST/ESA/STAT/SER.M/77, 1991.

Annex IV-3 Breakdown of “Audiovisual Services” in the Provisional CPC

DIVISION 96 RECREATIONAL, CULTURAL AND SPORTING SERVICES	
961	Motion picture, radio and television and other entertainment services
9611	Motion picture and video production and distribution services
96111	<u>Promotion or advertising services</u>
96112	<u>Motion picture or video tape production services</u>
	Production services of theatrical and non-theatrical motion pictures, whether on film or on video tape, for direct projection in theaters, for broadcasting on television, or for sale or rental to others. The products may be full-length and short theatrical films for public entertainment, for advertising, education, training and news information as well as religious pictures, animated cartoons of any kind, etc. <u>Exclusions:</u> Production services of still and slide films are classified in class 8750 (Photographic services).
96113	<u>Motion picture or video tape distribution services</u>
	Distribution services of motion pictures and video tapes. This involves the sale or rental of movies or tapes to other industries for public entertainment, television broadcasting, or sale or rental to others.
96114	<u>Other services in connection with motion picture and video tape production and distribution</u>
	Auxiliary services, not elsewhere classified, on a fee or contract basis, to motion picture and tape production and distribution, such as film dubbing, film title printing, editing, cutting, etc. <u>Exclusions:</u> Rental services of articles and equipment (e.g. apparel, scenery, cameras) to the entertainment industries are classified in division 83 (Leasing or rental services without operator). Agency services on behalf of individual performers are classified in subclass 87909 (Other business services n.e.c.). Film and tape duplicating services are classified in subclass 88442 (Publishing and printing, on a fee or contract basis). Casting and booking agency services are classified in subclass 96499 (Other recreational services n.e.c.).
9612	Motion picture projection services
96121	<u>Motion picture projection services</u>
	Motion picture projection services in cinemas or in the open air and in private screening rooms or other projection facilities.
96122	<u>Video tape projection services</u>
	Video tape projection services in cinemas or in the open air and in private screening rooms or other projection facilities.
9613	Radio and television services
96131	<u>Radio services</u>
	Production services of radio programmes whether live or on tape or other recording medium for subsequent broadcast. These programmes may be for entertainment, for promotion, education or training or news dissemination, including plays that are normally produced in radio studios. Also included are productions such as sport covering, weather forecasting, interviews, etc. <u>Exclusion:</u> Transmission services for radio programmes produced by others are

classified in class 7524 (Programme transmission services).	
96132	<u>Television services</u>
Production of television programmes whether live or on tape or other recording medium for subsequent broadcast. These programmes may be for entertainment, for promotion, education or training or news dissemination, including pictures or plays that normally produced in television studios. Also included are productions such as sport covering, weather forecast, interviews, etc.	
<u>Exclusion:</u> Transmission services for television programmes produced by others are classified in class 7524 (Programme transmission services).	
96133	<u>Combined programme making and broadcasting services</u>
Combined services of both producing and transmitting radio and television programmes.	

Source: UN, ST/ESA/STAT/SER.M/77, 1991.

Annex IV-4 Annex on Article II Exemptions in regard to audiovisual services of selective WTO Members

Members	Exemptions
Australia	<ul style="list-style-type: none"> ● Under the Australian Government Co-production programme, Australia maintains preferential co-production arrangements for film and television productions. Official co-production status, which may be granted to a co-production produced under these co-production arrangements, confers national treatment on works covered by these arrangements, including in respect of access to finance and tax concessions and simplified requirements for the temporary entry of skilled personnel into Australia for the purposes of the co-production. ● Measures taken to respond to any unreasonable measures imposed on Australian services or service suppliers by another Member
Canada	<ul style="list-style-type: none"> ● Differential treatment is accorded to works co-produced with persons of countries with which Canada may have co-production agreements or arrangements, as well as to natural persons engaged in such co-production. ● Differential treatment is accorded to works co-produced with persons of countries with which Québec may have co-production arrangements, and to natural persons engaged in such co-productions, as well as to natural and juridical persons engaged in film and video distribution pursuant to bilateral arrangements for the distribution of film, video and television programming in its territory.
EU	<ul style="list-style-type: none"> ● Foreign participation in companies in Italy exceeding 49% of the capital and voting rights subject to a condition of reciprocity. ● Measures taken in Denmark that are adopted for the implementations of benefits in conformity with such support programme as the NORDIC FILM and TV FUND in order to enhance production and distribution of audiovisual works produced in Nordic countries. ● Redressive duties which may be imposed in order to respond to unfair pricing practices, by certain third countries distributors of audiovisual works. ● Measures taken to prevent, correct or counterbalance adverse, unfair or unreasonable conditions or actions affecting EC audiovisual services, products or service providers, in response to corresponding or comparable actions taken by other Members. ● Measures which define works of European origin, in such a way as to extend national treatment to audiovisual works which meet certain linguistic and origin criteria regarding access to broadcasting or similar forms of transmission. ● Measures based upon government-to-government framework agreements, and plurilateral agreements, on coproduction of audiovisual works, which confer National Treatment to audiovisual works covered by these agreements, in particular in relation to distribution and access to funding. ● Measures granting the benefit of any support programmes (such as Action Plan for Advanced Television Services, MEDIA or EURIMAGES) to audiovisual works, and suppliers of such works, meeting certain European origin criteria. ● Waiver of the requirement in Spain to obtain licences for the distribution of

	dubbed films of non-Community origin, granted to films of European origin which are especially recommended for children's audiences.
Switzerland	<ul style="list-style-type: none"> ● To confer national treatment to audiovisual works covered by bilateral or plurilateral agreements on coproduction in the field of audiovisual works, in particular in relation to access to funding and to distribution. ● Measures granting the benefit of support programmes, such as MEDIA and EURIMAGES, and measures relating to the allocation of screentime which implement arrangements such as the Council of Europe Convention on Transfrontier Television and confer national treatment, to audiovisual works and/or to suppliers of audiovisual services meeting European origin criteria. ● Concessions for the operation of radio or television broadcast stations may be granted, normally on the basis of bilateral agreements, to persons of countries other than Switzerland.

Source: WTO, "Integrated Trade Intelligence Portal (I-TIP)," accessed July 1, 2019, <http://i-tip.wto.org/services/SearchResultGats.aspx>.

Annex IV-5 EU understanding on the scope of coverage of CPC 84

Annex to the Schedule: Understanding on the scope of coverage of CPC 84 – Computer and Related Services

CPC 84 covers the basic functions used to provide all computer and related services: computer programs defined as the sets of instructions required to make computers work and communicate (including their development and implementation), data processing and storage, and related services, such as consultancy and training services for staff of clients. Technological developments have led to the increased offering of these services as a bundle or package of related services that can include some or all of these basic functions. For example, services such as web or domain hosting, data mining services and grid computing each consist of a combination of basic computer services functions.

Computer and related services, regardless of whether they are delivered via a network, including the Internet, include all services that provide:

- Consulting, strategy, analysis, planning, specification, design, development, installation, implementation, integration, testing, debugging, updating, support, technical assistance, or management of or for computers or computer systems; or
- Computer programs defined as the sets of instructions required to make computers work and communicate (in and of themselves), plus consulting, strategy, analysis, planning, specification, design, development, installation, implementation, integration, testing, debugging, updating, adaptation, maintenance, support, technical assistance, management or use of or for computer programs; or
- Data processing, data storage, data hosting or database services; or
- Maintenance and repair services for office machinery and equipment, including computers; or,
- Training services for staff of clients, related to computer programs, computers or computer systems, and not elsewhere classified.

Computer and related services enabled the provision of other services (e.g., banking) by both electronic and other means. However, there is an important distinction between the enabling service (e.g., web-hosting or application hosting) and the content or core service that is being delivered electronically (e.g., banking). In such cases, the content or core service is not covered by CPC 84.

Source: WTO, Communication from the European Communities and Its Member States – Conditional Initial Offer, TN/S/O/EEC, 10 June 2003.

Annex IV-6 Example of a schedule in the telecommunications sector proposed by the EU with the new approach of scheduling commitments

Sector	Market Access	National Treatment	Additional commitments
<p>2.C Telecommunications</p> <p>All services consisting of the transmission and reception of signals by any electromagnetic means. (*)</p> <p>Services of broadcasting transmission of TV and radio programmes to the public are not included.</p> <p>Telecommunications services do not cover the economic activity consisting for the provision of content services which require telecommunications services for their transport.</p>	<p>1) Monopoly for long-distance and international voice services until 1 January 2005.</p> <p>2) None</p> <p>3) Monopoly for long-distance and international voice services until 1 January 2005.</p> <p>4) Unbound, except as indicated in horizontal commitments</p>	<p>1) None</p> <p>2) None</p> <p>3) None</p> <p>4) Unbound, except as indicated in horizontal commitments</p>	<p>Member X undertakes the obligations contained in the reference paper attached hereto for the following services:</p> <p>a) voice telephone services (CPC 7521)</p> <p>b) Packet-switched data transmission services (CPC 7523**)</p> <p>c) Circuit-switched data transmission services (CPC 7523**)</p> <p>d) Telex services (CPC 7523**)</p> <p>e) Telegraph services (CPC 7522)</p> <p>f) Facsimile services (CPC 7521**+7529**)</p> <p>g) Private leased circuit services (CPC 7522**+7523**)</p> <p>o) other</p>

[Optional footnote: * This includes notably, but not only, W120-2C – h] Electronic mail (CPC 7523**), Voice mail (CPC 7523**), j) On-line information and database retrieval (CPC 7523**), k) Electronic data interchange (EDI) (CPC 7523**), l) Enhanced/value-added facsimile services, including store and forward, store and retrieve (CPC 7523**) and m) Code and protocol conversion.

These commitments cover services like voice mail and e-mail, and enhanced/value-added facsimile services, incl. store and forward, store and retrieve.]

This ensures a legally certain and comprehensive coverage of all telecom services.

In the case of most Members which acceded to the WTO after 1997, additional commitments apply to all services, thus there is no need to list any service in the fourth column.

Source: CTS and CSC, Communication from the European Communities-Classification in the Telecom Sector under the WTO-GATS Framework, TN/S/W/27, S/CSC/W/44, 10 February 2005.

Annex IV-7 EU Schedules of Commitments for “Telecommunications Services” in the draft consolidated GATS schedule

Sector or Sub-sector	Limitations on Market Access	Limitations on National Treatment	Additional Commitments
<p>2.C Telecommunications services⁴⁶</p> <p>All services consisting of the transmission and reception of signals by any electromagnetic means⁴⁷, excluding broadcasting⁴⁸.</p> <p>These services do not cover the economic activity consisting of the provision of content which require telecommunications services for their transport.</p>	<p>1) All Member States except CY, MT: None</p> <p>CY, MT: Unbound</p> <p>2) All Member States: None</p> <p>3) All Member States except FI, FR, PL, SI: None</p> <p>FI: Permanent residence requirement for half of the founders, half of the members of the board of directors and the managing director. If the founder is a juridical person, residence requirement for that juridical person.</p> <p>FR: Non-EC natural or juridical persons may not hold directly more than 20% of the shares or voting rights of companies authorized to establish and operate radio-based infrastructure for the provision of telecommunications services to the general public. For the application of this provision, companies or firms legally established according to the laws of a Member State of the EC are considered EC juridical persons.</p>	<p>1) All Member States except CY, MT: None</p> <p>CY, MT: Unbound</p> <p>2) All Member States: None</p> <p>3) All Member States: None</p>	<p>The EC undertakes the obligations contained in the reference paper attached hereto for the following services:</p> <p>a) Voice telephone services (CPC 7521)</p> <p>b) Packet-switched data transmission services (part of CPC 7523)</p> <p>c) Circuit-switched data transmission services (part of CPC 7523)</p> <p>d) Telex services (part of CPC 7523)</p> <p>e) Telegraph services (CPC 7522)</p> <p>f) Facsimile services (part of CPC 7521+part of CPC 7529)</p>

	<p>PL: For domestic and international telecom services provided using cable television and radio networks and for public cellular mobile telephone services and networks: The limitation of foreign capital and voting rights is 49%.</p> <p>SI: Foreign participation may not exceed 99 per cent of the equity.</p> <p>4) ICT and BV: All Member States: Unbound except as indicated in the horizontal section</p> <p>CSS: All Member States: Unbound</p>	<p>4) ICT, BV: All Member States except: Unbound except as indicated in the horizontal section.</p> <p>CSS: All Member States: Unbound</p>	<p>g) Private leased circuit services (part of CPC 7522+part of CPC 7523)</p> <p>o) Mobile and personal communications services and systems</p>
--	--	--	---

⁴⁶ Footnote for clarification purposes: Some EC Member States maintain public participation in certain telecommunication operators. EC Member States reserve their rights to maintain such public participation in the future. This is not a market access limitation. In Belgium, government participation and voting rights in Belgacom are freely determined under legislative powers as is presently the case under the law of 21 March 1991 on the reform of government-owned economic enterprises.

⁴⁷ Sub-sectors 2.C.h) to 2.C.m) of the Services Sectoral Classification List contained in MTN.GNS/W/120 (value-added services) and Sub-sectors 2.C.a) to 2.c.g) of that List are included here. Sub-sector 2.C.o) of that List is also included here to the extent that it falls under this definition. For the purpose of this Schedule, sub-sector 2.C.n) of that List ('On-line information and/or data processing (including transaction processing)') is a computer and related service and, as such, is reflected in this Schedule of Commitments under 1.B.

⁴⁸ Broadcasting is defined as the uninterrupted chain of transmission required for the distribution of TV and radio programme signals to the general public but does not cover contribution links between operators.

Source: CTS, *Communication from the European Communities and Its Member States-Certification-Draft Consolidated GATS Schedule*, S/C/W/273, 9 October 2006.

Annex IV-8 List of audiovisual and audiovisual related service activities proposed by the United States

Annex A

A Summary List of Audiovisual and Audiovisual Related Service Activities

Note: In the following list, the United States is describing the complex, diverse set of activities that may be considered to form part of today's audiovisual sector, but is not asserting that these services should be classified as audiovisual services in MTN.GNS/W/120. Some of the following activities are currently classified in MTN.GNS/W/120 as audiovisual services, while others are classified as distribution, telecommunications, business, leasing, or recreation services. An asterisk indicates those services sectors that do not appear to be covered by an existing GATS classification, or that may be covered by more than one GATS classification.

1. Theatrical Motion Pictures

- Production of films
- Pre- and post-production services
- Duplication of prints
- Distribution (licensing) of films
- Delivery of motion pictures to theatres via specialized truck delivery services or via satellite or via digital networks*
- Exhibition of films/operation of cinemas*

2. Television

- Creation (production) of content
- Program packaging, i.e., acquiring distribution rights to programming of others, arranging programming in an attractive stream, selling schedule stream, advertising, etc.
- Sale of advertising time by programmers, broadcasters, cable service providers, Direct to Home service providers, or converged system operators

3. Home Video Entertainment

- Production of content
- Duplication/Reproduction of the tape/optical media product*
- Distribution of home video entertainment to general merchandise stores for sales of programming on any format for resale to home consumer and distribution directly to home consumers*
- Leasing of home video entertainment to video rental stores for rental/viewing of content at home or to other business customers (airlines, bus companies, etc.)

4. Transmission services

- From producers to broadcast stations, cable headends, satellite uplink stations*, and to end-users by:
 - analogue or digital broadcast
 - Direct-to-Home satellite services*
 - Multichannel Multipoint Distribution Systems (wireless) cable systems*
 - or, increasingly, by "converged" transmission services which also transmit other forms of data, voice or other communications services*

5. Recorded Music

- Representation/signing of artists
- Production of sound recording
- Duplication/reproduction of tapes/optical media recording
- Distribution (licensing of rights) for broadcast on radio or television
- Distribution (wholesaling) of recorded music to intermediaries for sales of copies to consumers
- Distribution (retailing) of recorded music directly to home consumers
- Program Packaging of channels of music for distribution on multi-channel transmission systems, or hotels, office buildings, etc.

Source: CTS, Communication from the United States – Audiovisual and Related Services, S/CSS/W/21, 18 December 2000.

Annex IV-9 Korea's reservation on digital audio or video services in KORUS

Sector:	Digital Audio or Video Services
Obligations Concerned:	National Treatment (Articles 11.3 and 12.2) Most-Favored-Nation Treatment (Articles 11.4 and 12.3) Performance Requirements (Article 11.8) Local Presence (Article 12.5)
Description:	<p><u>Cross-Border Trade in Services and Investment</u></p> <p>Korea reserves the right to adopt any measure to ensure that, upon a finding by the Government of Korea that Korean digital audio or video content or genres thereof is not readily available to Korean consumers, access to such content is not unreasonably denied to Korean consumers. With respect to digital audio or video services targeted at Korean consumers, Korea reserves the right to adopt any measure to promote the availability of such content.</p> <p>Any measure adopted pursuant to the paragraph above shall be implemented in accordance with the provisions of Chapter Twenty-One (Transparency), as well as Article 12.8 (Transparency in Developing and Applying Regulations), as applicable, be based on objective criteria, and be no more trade-restrictive or burdensome than necessary.</p> <p>For purposes of this entry, digital audio or video service means a service that provides streaming audio content, films, or other video downloads or streaming video content regardless of the type of transmission (including through the Internet), but does not include broadcasting services as defined by the <i>Broadcasting Act</i> as of the date this Agreement enters into force or subscription-based video services as defined in the Communications Services – Broadcasting and Telecommunication services entry in Korea's Schedule to Annex II.</p>

Source: KORUS legal text.

Annex IV-10 Subclasses of on-line content services in CPC 2.1

Subclass	Description	Corresponding CPC 2	ISIC 4
84	Telecommunications, broadcasting and information supply services		
843	On-line content		
8431	On-line text based information		
84311	On-line books This subclass includes: - On-line books, including school textbooks, general reference books, such as atlases and other books of maps or charts, dictionaries and encyclopedias	84311	5811
84312	On-line newspapers and periodicals This subclass includes: - publications issued on the Internet where the main content is updated at fixed intervals, usually on a daily, weekly or monthly basis; whether on subscription or single copy sales - portions of newspapers such as headlines e-mailed daily or more frequently - periodic newsletters This subclass does not include: - digital archives, cf. 84520	84312	5813
84313	On-line directories and mailing lists This subclass includes: - on-line directories and mailing lists, including telephone books - other on-line collections of facts/information (databases) This subclass does not include: - web search portal content, cf. 84394	84313	5812
8432	On-line audio content		
84321	Musical audio downloads This subclass includes: - electronic files containing musical audio recordings that can be downloaded and stored on a local device	84321	5920
84322	Streamed audio content This subclass includes: - streamed audio data sent over the Internet	84322	5920
8433	On-line video content		
84331	Films and other video downloads This subclass includes:	84331	5911

	- electronic files containing films and other video recordings that can be downloaded and stored on a local device		
84332	Streamed video content This subclass includes: - streamed video data sent over the Internet	84332	5911
8434	Software downloads		
84341	System software downloads This subclass includes: - electronic files containing system software that can be downloaded and stored on a local device for later execution/installation	84341	5820
84342	Application software downloads This subclass includes: - electronic files containing application software that can be downloaded and stored on a local device for later execution/installation	84342	5820
8439	Other on-line content		
84391	On-line games This subclass includes: - games that are intended to be played on the Internet such as: ● role-playing games (RPGs) ● strategy games ● action games ● card games ● children's games Note: Payment may be by subscription or pay-per-play. This subclass does not include: - on-line gambling services, cf. 96921	84391	5820
84392	On-line software This subclass includes: - software that is intended to be executed on-line, except game software This subclass does not include: - software downloads, cf. 84341, 84342 - on-line games, cf. 84391 - on-line gambling services, cf. 96921	84392	5820
84393	On-line adult content This subclass includes: - mature theme, sexually explicit content published or broadcast over the Internet including graphics, live feeds, interactive performances and virtual activities Note: Payment may be by methods such as subscription, membership fee or pay-per-view.	84393	5819

	This subclass does not include: - adult content in on-line newspapers, periodicals, books, directories, cf. 8431		
84394	Web search portal content This subclass includes: - content provided on web search portals, i.e. extensive databases of Internet addresses and content in an easily searchable format	84394	6312
84399	Other on-line content n.e.c. This subclass includes: - statistics or other information, including streamed news - other on-line content not included above such as greeting cards, jokes, cartoons, graphics, maps	84399	5819

Source: UN, *Central Product Classification (CPC) Version 2.1*, ST/ESA/STAT/SER.M/77/Ver.2.1, 2015.

Annex IV-11 EU reservations on broadcast transmission services in Canada-EU CETA

Sector:	Communication services
Sub-Sector:	Telecommunication services
Type of Reservation:	Market access, National treatment
Description:	<p>Investment and Cross-Border Trade in Services</p> <p>The EU reserves the right to adopt or maintain any measure with respect to broadcast transmission services.</p> <p>Broadcasting is defined as the uninterrupted chain of transmission required for the distribution of TV and radio programme signals to the general public, but does not cover contribution links between operators.</p>

Source: Canada-EU CETA legal text.

Annex IV-12 EU reservations for future measures on broadcast transmission services in EU-Japan EPA

Reservation No. 11 – Telecommunication

Sector:	Telecommunication services
Type of reservation:	Market access, National treatment
Section:	Investment liberalization and Cross-border trade in services
Description:	The EU reserves the right to adopt or maintain any measure with respect to broadcast transmission services. Broadcasting is defined as the uninterrupted chain of transmission required for the distribution of TV and radio programme signals to the general public, but does not cover contribution links between operators.

Source: EU-Japan EPA legal text.

Annex IV-13 Classification of broadcasting services and operators in a Korea’s draft Bill on Comprehensive Broadcasting

Broadcasting services^{a)}						
Terrestrial broadcasting services (operators)^{b)}	Pay broadcasting services (operators)^{c)}		Broadcasting program providers^{d)}			
	Multi-channel pay broadcast operators (including SO, satellite, IPTV) ^{e)}	Value-added pay broadcast operators (including OTT , CATV relay broadcasting) ^{f)}	Channel-use operators^{g)}			Internet broadcasting program providers^{k)}
			General programming and News report program providers ^{h)}	Home-shopping program providers ⁱ⁾	Specialized programming providers ^{j)}	

Source: Author’s compilation based on the press release by Representative Sungsoo Kim on January 11, 2019.

Note: a) 방송사업(서비스) in Korean; b) 지상파방송사업(자) in Korean; c) 유료방송사업(자) in Korean; d) 방송콘텐츠제공사업(자) in Korean; e) 다채널유료방송사업자 in Korean; f) 부가유료방송사업자 in Korean; g) 방송콘텐츠제공사업(자) in Korean; h) 종편 및 보도전문 방송콘텐츠제공사업(자) in Korean; i) 홈쇼핑 방송콘텐츠제공사업(자) in Korean; j) 전문편성 방송콘텐츠제공사업자 in Korean; k) 인터넷 방송콘텐츠제공사업자 in Korean.

Chapter V Conclusions

Advanced digital technologies and ubiquitous broadband connections have dramatically transformed the nature of cross-border trade. Regardless of whether it is dubbed as digital trade, electronic commerce, or digitally-enabled trade, such a new type of trade has a potential to help more individuals and firms participate in international trade, make goods and services traded online, and contribute to a general improvement in productivity through digital innovation. On the other hand, the digital version of protectionist policy is also proliferating in every corner of the world. Such protectionist policies intend to take advantage of a lack of internationally agreed digital trade rules in the current global trading regime. It could be a great challenge to the rules-based trading system as well as the analogue WTO regime.

Three different but closely related topics – the principle of technological neutrality, cross-border data flows, and OTT video streaming services as a specific example of technological convergence – have been extensively examined in the study. In Chapter II, we have focused on the principle of technological neutrality as a missing link between the digital nature of trade and the analogue WTO/GATS regulatory framework. Within the GATS framework, we have dealt with the necessity and merits of embracing the principle of technological neutrality in various legal aspects. We also have found that the WTO adjudicatory bodies have taken a strategically neutral position on technological neutrality. In turn, we have proposed several ways to incorporate the principle of technological neutrality into the WTO/GATS regulatory framework.

Issues of cross-border data flows, one of the most essential preconditions to have frictionless digital trade, and the role of trade agreements to ensure the free flow of information were addressed in Chapter III. We have developed an analytical tool to

comprehend the nature and magnitude of local measures restricting the movement of data across borders. Our empirical study using the augmented gravity model has found that data policies limiting the transfer and usage of data indeed negatively affect services trade flows. Moreover, it was found that internationally agreed minimum data policy standards, a digital version of regulatory coherence, may help facilitate cross-border services trade. Multiple suggestions have been presented in an effort to ensure frictionless cross-border data flows in the context of trade agreements.

The media or audiovisual sector has been off the negotiating table in the name of cultural exception or cultural diversity. Such a protectionist or all-or-nothing approach of the EU toward the audiovisual sector, however, has faced an increasing challenge due to technological convergence. Technological convergence has enabled the transmission of video content over mobile or fixed broadband networks without relying on conventional media distribution channels. In Chapter VI, we have compared the different approaches of the EU and US toward market opening for OTT video streaming services at the trade negotiations. After identifying contrasting negotiation strategies of the two global players, we have derived implications for Korean policymakers in the context of trade policy and domestic media governance.

This study has made an effort to tackle digital trade issues as comprehensively as possible in an interdisciplinary manner. Nevertheless, it cannot be denied that a plethora number of issues concerning digital trade are still left untouched: whether digital products, which have a physical counterpart, are goods or services or neither of them; whether services provided through Mode 1 are like to same services provided through Mode 3 or Mode 4; whether the current WTO regulatory framework is applicable to additive manufacturing (so-called 3D printing); whether the implementation of a digital services tax proposed by the European Commission is consistent with its international

commitments under the WTO/GATS framework; how to apply trade remedy measures to the imports of digitally-enabled services; how to protect intellectual property rights embedded in digital products or digital services; how to classify new digital services such as online platform services, big data analytics, services enabled by distributed ledger technology (so-called blockchain technology), services provided by artificial intelligence, and autonomous vehicle operating services, to just name a few. We look forward to further study on these issues.

Ongoing WTO plurilateral negotiations on e-commerce may have a chance to address some of the unresolved digital trade issues mentioned above. Major participants have already submitted their text proposals for the WTO disciplines on digital trade and expressed their particular interests in some specific issues.⁵³⁹ It is reported that discussions focus mainly on data flows or online privacy and the duty-free moratorium on electronic transmissions.⁵⁴⁰ Despite businesses' high expectation of having global trade rules on digital trade, however, it seems quite uneasy for participants to close policy gaps in a foreseeable future: with respect to data flows or online privacy, for example, China deems online privacy as a matter of information security⁵⁴¹ whereas the EU and

⁵³⁹ See, for instance, WTO, *Joint Statement on Electronic Commerce Initiative – Communication from the United States*, INF/ECOM/5, 25 March 2019; WTO, *Joint Statement on Electronic Commerce Initiative – List of the Key Elements and Ideas on Electronic Commerce*, INF/ECOM/7, 25 March 2019; WTO, *Joint Statement on Electronic Commerce Initiative – Communication from China*, INF/ECOM/19, 24 April 2019; WTO, *Joint Statement on Electronic Commerce – EU Proposal for WTO Disciplines and Commitments Relating to Electronic Commerce – Communication from the EU*, INF/ECOM/22, 26 April 2019; WTO, *Joint Statement on Electronic Commerce – Communication from the Republic of Korea*, INF/ECOM/31, 9 May 2019.

⁵⁴⁰ Hannah Monicken, "Business groups emphasize data flows as e-commerce talks resume," *Inside U.S. Trade*, June 21, 2019, accessed July 1, 2019, <https://insidetrade.com/daily-news/business-groups-emphasize-data-flows-e-commerce-talks-resume>.

⁵⁴¹ Giovanni Buttarelli, "Less is Sometimes More," *European Data Protection Supervisor*, December 18, 2017, accessed July 1, 2019, https://edps.europa.eu/press-publications/press-news/blog/less-sometimes-more_en.

the US consider it as a fundamental human right and a consumer right, respectively⁵⁴²; most of the developed countries including the EU, Japan, and the US are in favor of the duty-free moratorium on electronic transmissions on a permanent basis but China wants to keep it only through the next MC⁵⁴³; the US intends to include audiovisual services in the scope of the plurilateral talks whereas the EU carved out its audiovisual sector in its e-commerce proposal.⁵⁴⁴ It remains to be seen whether participants to the plurilateral e-commerce talks will fill the gap and come up with answers to the questions that we raised.

This study has attempted to understand the new patterns of international trade, that is digital trade, in the context of the WTO regulatory framework. It has also sought possible ways to achieve digital trade liberalization under the brick-and-mortar WTO/GATS regime. We have insisted in a consistent manner that the WTO multilateral trading system is the most appropriate venue to discuss and achieve the liberalization of digital trade. It is partly due to the prestigious status of the WTO as a unique multilateral institution specializing in international trade affairs. Furthermore, no other international fora are more comprehensive in scope, more substantial in content, more flexible in application, and more effective in enforcement than the WTO and its associated legal instruments.

Just as the WTO has replaced the GATT regime more than twenty years ago, a new global trading regime, irrespective of whether it is referred to as WTO 2.0 or Digital

⁵⁴² Jih-An Lee, "Hacking into China's Cybersecurity Law," *Wake Forest Law Review* 53, no. 1 (2018), 99-103; Svetlana Yakovleva, "Should Fundamental Rights to Privacy and Data Protection be a Part of the EU's International Trade 'Deals'?", *World Trade Review* 17, no. 3 (2018), 7-8.

⁵⁴³ Hannah Monicken, "India, South Africa: WTO e-commerce moratorium too costly for developing members," *Inside U.S. Trade*, June 5, 2019, accessed July 1, 2019, <https://insidetrade.com/daily-news/india-south-africa-wto-e-commerce-moratorium-too-costly-developing-members>.

⁵⁴⁴ Brett Fortnam, "Scope of e-commerce talks another divisive issue for U.S., EU," *Inside U.S. Trade*, May 23, 2019, accessed July 1, 2019, <https://insidetrade.com/daily-news/scope-e-commerce-talks-another-divisive-issue-us-eu>.

Economy Trade Agreement, may be substituted for the current WTO regime to better reflect the trade-related aspect of digital economy in the 21st century. However, it is imperative for the new global trading regime to build on fundamental principles inscribed in the WTO/GATS legal framework and operate on a multilateral basis. In this sense, international cooperation to deal with the three topics addressed in this study must take priority in any trading regime. We hope that this study lay the theoretical groundwork for enhancing multilateralism in the age of digital economy.

BIBLIOGRAPHY

Books and Journal Articles

- Arthofer, Frank, Áki Hardarson, Martin Kon, Eric Lee and John Rose. “The Future of Television: The Impact of OTT on Video Production Around the World.” *BCG*, 2016.
- Article 29 Data Protection Working Party. *Guidelines on the Right to Data Portability*. 16/EN, WP 242 rev.01, April 5, 2017.
- Abeliansky, Ana L. and Martin Hilbert. “Digital Technology and International Trade: Is it the Quantity of Subscriptions or the Quality of Data Speed That Matters?.” *Telecommunications Policy* 41, no. 1 (2016): 35-48.
- Anderson, James E. and Eric van Wincoop. “Gravity with Gravitas: A Solution to the Border Puzzle.” *American Economic Review* 93, no. 1 (2003): 170-192.
- APEC Secretariat. *APEC Privacy Framework*. Singapore: APEC, 2005.
- Aaronson, Susan Ariel and Patrick Leblond. “Another Digital Divide: The Rise of Data Realms and Its Implications for the WTO.” *Journal of International Economic Law* 21, no. 2 (2018): 245-272.
- Aguiar, Luis and Joel Waldfogel. “Netflix: Global Hegemon or Facilitator of Frictionless Digital Trade?.” *Journal of Cultural Economics* 42, no. 3 (2018): 419-445.
- Bacchetta, Marc, Patrick Low, Aaditya Mattoo, Ludger Schuknecht, Hannu Wager, and Madelon Wehrens. *Electronic Commerce and the Role of the WTO – Special Studies 2*. Geneva, Switzerland: WTO Publications, 1998.
- Bagwell, Kyle and Robert W. Staiger. *The Economics of the World Trading System*. Cambridge: MIT Press, 2004.

- Baldwin, Richard and Daria Taglioni. "Trade Effects of the Euro: A Comparison of Estimators." *Journal of Economic Integration* 22, no. 4 (2007): 780-818.
- Baier, Scott L. and Jeffrey H. Bergstrand. "Do Free Trade Agreements Actually Increase Members' International Trade?." *Journal of International Economies* 71, no. 1 (2007): 72-95.
- Bauer, Matthias, Hosuk Lee-Makiyama, Erik van der Marel, and Bert Vershelde. "The Costs of Data Localisation." *ECIPE Occasional Paper*, no. 3/2014, 2014.
- Bauer, Matthias, Hosuk Lee-Makiyama, Erik van der Marel, and Bert Vershelde. "Data Localisation in Russia: A Self-imposed Sanction." *ECIPE Policy Brief*, no. 6/2015, 2015.
- Bauer, Matthias, Martina F. Ferracane, Hosuk Lee-Makiyama, and Erik van der Marel. "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States." *ECIPE Policy Brief*, no. 03/2016, 2016.
- Blázquez, Francisco Javier Cabrera, Maja Cappello, Christian Grece, Sophie Valais. "VOD, Platforms and OTT: Which Promotion Obligations for European Works?." *IRIS Plus* 2016-3, 2016.
- Bieron, Brian and Usman Ahmed. "Regulating E-Commerce Through International Policy: Understanding the International Trade Law Issues of E-Commerce." *Journal of World Trade* 46, no. 3 (2012): 545-570.
- Burri, Mirra. "Trade *versus* Culture in the Digital Environment: An Old Conflict in Need of a New Definition." *Journal of International Economic Law* 12, no. 1 (2008): 17-62.

- Burri, Mira. "Should There Be New Multilateral Rules for Digital Trade?." *The E15 Initiative – Strengthening the Global Trade System*. International Centre for Trade and Sustainable Development and World Economic Forum, 2013.
- Burri, Mira. "The Governance of Data and Data Flows in Trade Agreements: The Pitfalls of Legal Adaptation," *UC Davis Law Review* 51, no. 1 (2017): 65-132.
- Burri, Mira. "The Regulation of Data Flows through Trade Agreements." *Georgetown Journal of International Law* 48, no. 2 (2017): 407-448.
- Burri, Mira and Thomas Cottier. "Introduction: Digital Technologies and International Trade Regulation." In *Trade Governance in the Digital Age: World Trade Forum*, edited by Mira Burri and Thomas Cottier, 1-16. Cambridge, U.K.: Cambridge University Press, 2012.
- Casalini, Francesca and Javier López González. "Trade and Cross-Border Data Flows." *OECD Trade Policy Papers*, no. 220, 2019.
- Cassese, Antonio. *International Law*. 2nd ed. New York: Oxford University Press, 2005.
- Chander, Anupam. *The Electronic Silk Road: How the Web Binds the World Together in Commerce*. New Haven: Yale University Press, 2013.
- Chander, Anupam and Uyên P. Lê. "Data Nationalism." *Emory Law Journal* 64 (2015): 677-739.
- Conconi, Paola and Joost Pauwelyn. "Trading Cultures: Appellate Body Report on China-Audiovisuals." *World Trade Review* 10, no. 1 (2011): 95-118.
- Cossy, Mireille. "Determining "Likeness" under the GATS: Squaring the Circle?." *WTO Staff Working Paper* ERSD-2006-08, 2006.
- Cossy, Mireille. "Some Thoughts on the Concept of 'Likeness' in the GATS." In *GATS and the Regulation of International Trade in Services*, edited by Marion

- Panizzon, Nicole Pohl, and Pierre Sauvé, 327–357. Cambridge, U.K.: Cambridge University Press, 2008.
- Cottier, Thomas, Panagiotis Delimatsis, and Nicolas F. Diebold. “Article XIV GATS.” In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 287-328. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Cowhey, Peter and Jonathan Aronson. *Digital DNA: Disruption and the Challenges for Global Governance*. New York: Oxford University Press, 2017.
- De Benedictis, Luca and Daria Taglioni. “The Gravity Model in International Trade.” In *The Trade Impact of European Union Preferential Policies*, edited by Luca De Benedictis and Luca Salvatici, 55-89. Berlin, Heidelberg, Germany: Springer Berlin Heidelberg, 2011.
- Delimatsis, Panagiotis. “Article III GATS.” In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 92-107. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Delimatsis, Panagiotis. “Protecting Public Morals in a Digital Age: Revisiting the WTO Rulings on *US – Gambling* and *China – Publications and Audiovisual Products*.” *Journal of International Economic Law* 14, no. 2 (2011): 257-293.
- Delimatsis, Panagiotis and Martýn Molinuevo. “Article XVI GATS.” In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 367-395. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Diebold, Nicolas F. *Non-Discrimination in International Trade in Services – ‘Likeness’ in WTO/GATS*. Cambridge, U.K.: Cambridge University Press, 2010.

- Evans, Malcolm D. *Blackstone's International Law Documents*. 10th ed. Oxford, U.K.: Oxford University Press, 2011.
- Farrokhnia, Farrokh and Cameron Richards. "E-Commerce Products Under the World Trade Organization Agreements: Goods, Services, Both or Neither?." *Journal of World Trade* 50, no.5 (2016): 793-817.
- Fefer, Rachel. "Data Flows, Online Privacy, and Trade Policy." *Congressional Research Service Report R45584*, 2019.
- Fefer, Rachel, Shayerah Ilias Aktar and Wayne Morrison. "Digital Trade and U.S. Trade Policy." *Congress Research Service Report R44565*, 2017.
- Fefer, Rachel, Wayne Morrison and Shayerah Ilias Akhtar. "Digital Trade and U.S. Trade Policy." *Congress Research Service Report R44565*, 2019.
- Ferracane, Martina F. "Restrictions on Cross-Border Data Flows: A Taxonomy." *ECIPE Working Paper* No. 1/2017, 2017.
- Ferracane, Martina F., Janez Kren, and Erik van der Marel. "Do Data Policy Restrictions Impact the Productivity Performance of Firms and Industries?." *ECIPE DTE Working Paper*, no. 01, 2018.
- Ferracane, Martina F. and Erik van der Marel. "Do Data Policy Restrictions Inhibit Trade in Services?." *ECIPE DTE Working Paper*, no. 02, 2018.
- Fleuter, Sam. "The Role of Digital Products under the WTO: A New Framework for GATT and GATS Classification." *Chicago Journal of International Law* 17, no. 1 (2016): 153-177.
- Fox, Eleanor M. "The WTO's First Antitrust Case – *Mexican Telecom*: A Sleeping Victory for Trade and Competition." *Journal of International Economic Law* 9, no. 2 (2006): 271–292.

- Freund, Caroline and Diana Weinhold. "The Internet and International Trade in Services." *American Economic Review* 92, no. 2 (2002): 236-240.
- Freund, Caroline and Diana Weinhold. "The Effect of the Internet on International Trade." *Journal of International Economics* 62, no. 1 (2004): 171-189.
- Frieden, Rob. "Whither Convergence: Legal, Regulatory and Trade Opportunism in Telecommunications." In *The WTO and Global Telecommunications and Audio-Visual Services*, edited by Damien Geradin and David Luff, 323-357. Cambridge, U.K.: Cambridge University Press, 2004.
- Gao, Henry. "Annex on Telecommunications." In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 683-711. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Gao, Henry. "Annex on Negotiations on Basic Telecommunications." In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 712-717. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Gao, Henry. "Telecommunication services: Reference Paper." In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 718-747. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Gao, Henry. "From Trade Regulation to Digital Regulation: The Regulation of Digital Trade in the Trans-Pacific Partnership." Paper presented at Harvard Law School, 2016.
- Goldfarb, Avi and Catherine Tucker. "Privacy and Innovation." *Innovation Policy and the Economy* 12, no. 4 (2012): 66-89.

- Gootiiz, Batshur and Aaditya Mattoo. “Services in the Trans-Pacific Partnership: What Would Be Lost?.” *World Bank Policy Research Working Paper* 7964, 2017.
- Head, Keith. “Gravity for Beginners.” *Mimeo*. University of British Columbia, 2003.
- Herman, Lior. “Multilateralising Regionalism: The Case of E-Commerce.” *OECD Trade Policy Papers*, no. 99, 2010.
- Hill, Peter. “Tangibles, Intangibles and Services: A New Taxonomy for the Classification of Output.” *The Canadian Journal of Economics* 32, no. 2 (1999): 426-446.
- Hu, Jia-Xiang. “When Trade Encounters Technology.” In *Science and Technology in International Economic Law – Balancing Competing Interests*, edited by Bryan Mercurio and Kuei-Jung Ni, 75-89. London, U.K.: Routledge, 2014.
- Intergovernmental Bureau for Informatics. “Second World Conference on Transborder Data Flow Policies: Working Document.” IBI, 1984.
- Irwin, Douglas A. and Joseph Weiler. “Measures Affecting the Cross-Border Supply of Gambling and Betting Services (DS 285).” *World Trade Review* 7, no. 1 (2008): 71-113.
- Johnson, Robert C. and Guillermo Noguera. “Fragmentation and Trade in Value Added over Four Decades.” *NBER Working Paper Series* 18186 (2012): 1-61.
- Kimura, Fukunari and Hyun-Hoon Lee. “The Gravity Equation in International Trade in Services.” *Review of World Economics* 142, no. 1 (2006): 92-121.
- Kommerskollegium. “No Transfer, No Trade – the Importance of Cross-Border Data Transfers for Companies Based in Sweden.” *Kommerskollegium*, 2014.
- Krajewski, Marcus and Maika Engelke. “Article XVII GATS.” In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 396-420. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.

- Kudryavtsev, Arkady. "The TBT Agreement in context." In *Research Handbook on the WTO and Technical Barriers to Trade*, edited by Tracey Epps and Michael J. Trebilcock, 17-80. Cheltenham, U.K.: Edward Elgar, 2013.
- Kuner, Christopher. "Regulation of Transborder Data Flows under Data Protection and Privacy Law: Past, Present and Future." *OECD Digital Economy Papers*, no. 187, 2011.
- Larouche, Pierre. "Dealing with Convergence at the International Level." In *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, edited by Damien Geradin and David Luff, 390-422. Cambridge, U.K.: Cambridge University Press, 2004.
- Lee, Chong Wha and Soonchan Park. "Does Religious Similarity Matter in International Trade in Services?." *The World Economy* 39, no. 3 (2016): 409-425.
- Lee, Jih-An. "Hacking into China's Cybersecurity Law." *Wake Forest Law Review* 53, no. 1 (2018): 57-104.
- Lee-Makiyama, Hosuk. "Future-proofing World Trade in Technology: Turning the WTO IT Agreement (ITA) into the International Digital Economy Agreement (IDEA)." *Aussenwirtschaft* (2011): 279-322.
- López González, Javier and Janos Ferencz. "Digital Trade and Market Openness." *OECD Trade Policy Paper*, no. 217, 2018.
- Luff, David. "Current International Trade Rules Relevant to Telecommunication services." In *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, edited by Damien Geradin and David Luff, 34-50. Cambridge, U.K.: Cambridge University Press, 2004.

- Luff, David. "Telecommunications and Audio-Visual Services: Considerations for a Convergence Policy at the World Trade Organization Level." *Journal of World Trade* 38, no. 6 (2004): 1059-1086.
- Luff, David. "Convergence: A Buzzword to Remain?." In *Trade Governance in the Digital Age – World Trade Forum*, edited by Mira Burri and Thomas Cottier, 65-90. Cambridge, U.K.: Cambridge University Press, 2012.
- MacDonald, Maggie. "Comcast v. Netflix: Why the FCC Should Redefine Multi-Channel Video Programming Distributors to Include Over-the-Top Video Providers." *Colorado Technology Law Journal* 12, no. 2 (2014): 479-497.
- Manyika, James, Susan Lund, Jacques Bughin, Jonathan Woetzel, Kalin Stamenov and Dhruv Dhingra. *Digital Globalization: The New Era of Global Flows*. Mckinsey Global Institute, 2016.
- Marceau, Gabrielle. "Evolutive Interpretation by the WTO Adjudicator." *Journal of International Economic Law* 21, no. 4 (2018): 791-813.
- Marchetti, Juan A. and Martin Roy. "The TISA Initiative: An Overview of Market Access Issues." *Journal of World Trade* 48, no. 4 (2014): 683-728.
- Matsushita, Mitsuo, Thomas J. Schoenbaum, and Petros C. Mavroidis. *The World Trade Organization – Law, Practice, and Policy*. 2nd ed. New York: Oxford University Press, 2006.
- Mattoo, Aaditya and Ludger Schuknecht. "Trade Policies for Electronic Commerce." *Work Bank Policy Research Working Paper*, no. 2380, 2000.
- Mattoo, Aaditya, Rosa Perez-Esteve and Ludger Schuknecht. "Electronic Commerce, Trade and Tariff Revenue: A Quantitative Assessment." *The World Economy* 24, no. 7 (2001): 955-970.

- Mavroidis, Petros C., Patrick A. Messerlin, and Jasper M. Wauters. *The Law and Economics of Contingent Protection in the WTO*. Cheltenham, U.K.: Edward Elgar Publishing, 2008.
- Meltzer, Joshua P. "Governing Digital Trade." *World Trade Review* 18, supplement 1 (2019): s23-s48.
- Mihaylova, Iva. "Could the Recently Enacted Data Localization Requirements in Russia Backfire?." *Journal of World Trade* 50, no. 2 (2016): 313-333.
- Mishra, Neha. "The Role of the Trans-Pacific Partnership Agreement in the Internet Ecosystem: Uneasy Liaison or Synergistic Alliance?." *Journal of International Economic Law* 20, no. 1 (2017): 31-60.
- Mitchell, Andrew D. and Jarrod Hepburn. "Don't Fence Me In: Reforming Trade and Investment Law to Better Facilitate Cross-Border Data Transfer." *Yale Journal of Law and Technology* 19 (2017): 182-237.
- Mitchell, Andrew and Neha Mishra. "Data at the Docks: Modernizing International Trade Law for the Digital Economy." *Vanderbilt Journal of Entertainment and Technology Law* 20, no. 4 (2018): 1073-1134.
- Monteiro, José-Antonio and Robert Teh. "Provisions on Electronic Commerce in Regional Trade Agreements." *WTO Staff Working Paper* ERSD-2017-11, 2017.
- Neven, Damien and Petros Mavroidis. "El Mess in *TELMEX*: A Comment on Mexico – Measures Affecting Telecommunications Services." *World Trade Review* 5, no.2 (2006): 271-296.
- Nihoul, P. L. G. "Audio-visual and Telecommunications Services: A Review of Definitions under WTO Law." In *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, edited by Damien Geradin and David Luff, 357-389. Cambridge, U.K.: Cambridge University Press, 2004.

- Nordås, Hidegunn Kyvik and Dorothée Rouzet. “The Impact of Services Trade Restrictiveness on Trade Flows: First Estimates.” *OECD Trade Policy Papers*, no. 178, 2015.
- OECD. *OECD Digital Economy Outlook 2017*. Paris, France: OECD Publishing, 2017.
- Parc, Jimmyn. “The Effects of Protection in Cultural Industries.” *International Journal of Cultural Policy* 23, no. 5 (2017): 618-633.
- Parc, Jimmyn and Patrick Messerlin. “In Search of an Effective Trade Policy for the Film Industry: Lessons from Korea.” *Journal of World Trade* 52, no. 5 (2018): 745-764.
- Pauletto, Christian. “Comment: Digital Trade: Technology versus Legislators.” In *GATS and the Regulation of International Trade in Services*, edited by Marion Panizzon, Nicole Pohl and Pierre Sauvé, 530-533. Cambridge, U.K.: Cambridge University Press, 2008.
- Pauwelyn, Joost. “Comment: The Unbearable Lightness of Likeness.” In *GATS and the Regulation of International Trade in Services*, edited by Marion Panizzon, Nicole Pohl, and Pierre Sauvé, 358–369. Cambridge, U.K.: Cambridge University Press, 2008.
- Pauwelyn, Joost. “Squaring Free Trade in Culture with Chinese Censorship: the WTO Appellate Body Report on *China-Audiovisuals*.” *Melbourne Journal of International Law* 11 (2010): 119-140.
- Pauwelyn, Joost, Andrew T. Guzman, and Jennifer A. Hillman. *International Trade Law*. 3rd ed. New York: Wolters Kluwer, 2016.
- Peng, Shin-yi. “Trade in Telecommunication services: Doha and Beyond.” *Journal of World Trade* 41, no. 2 (2007): 293-317.

- Peng, Shin-yi. "Liberalization of Trade in Television Services: The Negotiation Dilemma and Challenges for the Future." *Journal of World Trade* 43, no. 4 (2009): 657-681.
- Peng, Shin-yi. "Renegotiate the WTO "Schedules of Commitments"?: Technological Development and Treaty Interpretation." *Cornell International Law Journal* 45, no. 2 (2012): 403-430.
- Peng, Shin-yi. "GATS and the Over-the-Top Services: A Legal Outlook." *Journal of World Trade* 50, no. 1 (2016): 21-46.
- Peng, Shin-yi and Han-wei Liu. "The Legality of Data Residency Requirements: How Can the Trans-Pacific Partnership Help?" *Journal of World Trade* 51, no. 2 (2017): 183-204.
- Rayna, Thierry. "Understanding the Challenges of the Digital Economy: The Nature of Digital Goods." *Communications and Strategies* 71, (2008): 13–36.
- Rowley, Jennifer. "The Wisdom Hierarchy: Representations of the DIKW Hierarchy." *Journal of Information Science* 33, no. 2 (2007): 163-180.
- Santos Silva, J. M. C. and Silvana Tenreyro. "The Log of Gravity." *Review of Economics and Statistics* 88, no. 4 (2006): 641-658.
- Sen, Nivedita. "Understanding the Role of the WTO in International Data Flows: Taking the Liberalization or the Regulatory Autonomy Path?." *Journal of International Economic Law* 21, no. 2 (2018): 323-348.
- Shapiro, Carl and Hal R. Varian. *Information Rules: A Strategic Guide to the Network Economy*. Boston: Harvard Business Press, 1998.
- Stock, James H. and Mark M. Watson. *Introduction to Econometrics*. 3rd ed. Boston: Pearson, 2012.

- Stone, Susan, James Messent, and Dorothee Flaig. “Emerging Policy Issues: Localisation Barriers to Trade.” *OECD Trade Policy Papers*, no. 180 (2015).
- Rose, Andrew K. “Do We Really Know that the WTO Increases Trade?.” *American Economic Review* 94, no. 1 (2004): 98-114.
- Rose, Andrew K. “Does the WTO Make Trade More Stable?.” *Open Economies Review* 16 (2005): 7-22.
- Tinbergen, Jan. *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: Twentieth Century Fund, 1962.
- Trebilcock, Michael J. and Robert House. *The Regulation of International Trade*. 3rd ed. Abingdon, U.K.: Routledge, 2005.
- Tuthill, L. Lee. “Cross-border Data Flows: What Role for Trade Rules?.” In *Research Handbook on Trade in Services*, edited by Pierre Sauvé and Martin Roy, 357-382. Cheltenham, U.K.: Edward Elgar Publishing, 2016.
- Tuthill, Lee and Martin Roy. “GATS Classification Issues for Information and Communication Technology Services.” In *Trade Governance in the Digital Age*, edited by Mirra Burri and Thomas Cottier, 157-178. Cambridge, U.K.: Cambridge University Press, 2012.
- UN Centre on Transnational Corporations. *Transnational Corporations and Transborder Data Flows: Background and Overview*. New York: UN, 1984.
- UNCTAD. *International Trade in ICT Services and ICT-Enabled Services – Proposal Indicators from the Partnership on Measuring ICT for Development*. UNCTAD Technical Notes on ICT for Development, TN/UNCTAD/ICT4D/03, 2015.
- USFCC. *The 18th Report on the Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*. MB Docket No. 16-247. January 17, 2017.

- USGAO. *Internet Privacy*. GAO-19-52, 2019.
- USITC. *Digital Trade in the U.S. and Global Economies, Part 1*. Publication No. 4415, 2013.
- USITC. *Digital Trade in the U.S. and Global Economies, Part 2*. Publication No. 4485, 2014.
- USITC. *Global Digital Trade 1: Market Opportunities and Key Foreign Trade Restrictions*. Publication No. 4716, 2017.
- USITC. *Recent Trends in U.S. Services Trade: 2018 Annual Report*. Publication No. 4789, 2018.
- USTR. *2017 National Trade Estimate Report on Foreign Trade Barriers*, 2017.
- USTR. *2018 National Trade Estimate Report on Foreign Trade Barriers*, 2018.
- USTR. *2019 National Trade Estimate Report on Foreign Trade Barriers*, 2019.
- Van den Bossche, Peter and Werner Zdouc. *The Law and Policy of the World Trade Organization – Text, Cases and Materials*. 3rd ed. Cambridge, U.K.: Cambridge University Press, 2013.
- Van Damme, Isabelle. “The Interpretation of Schedules of Commitments.” *Journal of World Trade* 41, no. 1 (2007): 1-52.
- Van Damme, Isabelle. *Treaty Interpretation by the WTO Appellate Body*. New York: Oxford University Press, 2009.
- Van Damme, Isabelle. “Treaty Interpretation by the WTO Appellate Body.” *European Journal of International Law* 21, no. 3 (2010): 605-648.
- van der Marel, Erik, Matthias Bauer, Hosuk Lee-Makiyama and Bert Vershelde. “A Methodology to Estimate the Costs of Data Regulations.” *International Economics* 146 (2016): 12-39.

- Voon, Tania. "A New Approach to Audiovisual Products in the WTO: Rebalancing GATT and GATS." *UCLA Entertainment Law Review* 14, no. 1 (2007): 1-32.
- Voon, Tania. *Cultural Products and the World Trade Organization*. Cambridge, U.K.: Cambridge University Press, 2007.
- Weber, Rolf H. "Digital Trade in WTO-Law – Taking Stock and Looking Ahead." *Asian Journal of WTO and International Health Law and Policy* 5, no. 1 (2010): 1-24.
- Weber, Rolf H. and Mira Burri. *Classification of Services in the Digital Economy*. Berlin, Germany: Springer, 2012.
- Willems, Ines. "The GATS (In)Consistency of Barriers to Digital Services Trade." *KU Leuven Working Paper No. 207*, 2018.
- Willems, Ines. "GATS Classification of Digital Services – Does 'The Cloud' Have a Silver Lining?." *Journal of World Trade* 53, no. 1 (2019): 59-81.
- WTO. *The Legal Texts – The Results of the Uruguay Round of Multilateral Trade Negotiations*. Cambridge, U.K.: Cambridge University Press, 1999.
- WTO. *15 Years of the Information Technology Agreement: Trade, Innovation and Global Production Networks*. Geneva, Switzerland: WTO Publications, 2012.
- WTO. *World Trade Report 2018 – The Future of World Trade: How Digital Technologies Are Transforming Global Commerce*. Geneva, Switzerland: WTO Publications, 2018.
- Wunsch-Vincent, Sacha. "The Digital Trade Agenda of the U.S.: Parallel Tracks of Bilateral, Regional and Multilateral Liberalization." *Aussenwirtschaft* 58 (2003): 7-46.
- Wunsch-Vincent, Sacha. *The WTO, the Internet and Trade in Digital Products: EC – US Perspectives*. Oxford, U.K.: Hart Publishing, 2006.

- Wunsch-Vincent, Sacha. “The Internet, Cross-Border Trade in Services, and the GATS: Lessons from US – Gambling.” *World Trade Review* 5, no. 3 (2006): 319-355.
- Wunsch-Vincent, Sacha. “Trade Rules for the Digital Age.” In *GATS and the Regulation of International Trade in Services*, edited by Marion Panizzon, Nicole Pohl, and Pierre Sauvé, 497-529. Cambridge, U.K.: Cambridge University Press, 2008.
- Wunsch-Vincent, Sacha and Arno Hold. “Towards Coherent Rules for Digital Trade: Building on Efforts in Multilateral Versus Preferential Trade Negotiations.” In *Trade Governance in the Digital Age*, edited by Mira Burri and Thomas Cottier, 179-221. Cambridge, U.K.: Cambridge University Press, 2012.
- Yakovleva, Svetlana. “Should Fundamental Rights to Privacy and Data Protection be a Part of the EU’s International Trade ‘Deals’?.” *World Trade Review* 17, no. 3 (2018): 477-508.
- Yoo, Ji Yeong and Dukgeun Ahn. “Security Exceptions in the WTO System: Bridge or Bottle-Neck for Trade and Security?.” *Journal of International Economic Law* 19, no. 2 (2016): 417-444.
- Zacharias, Diana. “Article I GATS.” In *WTO – Trade in Services: Max Planck Commentaries on World Trade Law*, vol. 6, edited by Rüdiger Wolfrum, Peter-Tobias Stoll, and Clemens Feinäugle, 31-69. Leiden, Netherlands: Martinus Nijhoff Publishers, 2008.
- Zhang, Ruosi. “Covered or Not Covered: That is the Question – Services Classification and Its Implications for Specific Commitments under the GATS.” *WTO Working Paper* ERSD-2015-11, 2015.

Newspaper Articles

- “Edward Snowden: Leaks that exposed US spy programme.” *BBC*, January 17, 2014. Accessed July 1, 2019. <https://www.bbc.com/news/world-us-canada-23123964>.
- “The tech giant everyone is watching,” *The Economist*, June 30, 2018.
- “Trump administration plans to scrap net neutrality.” *Financial Times*, November 22, 2017. Accessed July 1, 2019. <https://www.ft.com/content/d8dbef08-cee1-11e7-b781-794ce08b24dc>.
- Feiner, Lauren, “Netflix is valued like a tech company, but its CEO just said it was a media company.” *CNBC*, March 19, 2019. Accessed July 1, 2019. <https://www.cnbc.com/2019/03/19/netflix-ceo-breaks-with-big-tech-saying-its-actually-a-media-company.html>.
- Fortnam, Brett. “Scope of e-commerce talks another divisive issue for U.S., EU.” *Inside U.S. Trade*, May 23, 2019. Accessed July 1, 2019. <https://insidetrade.com/daily-news/scope-e-commerce-talks-another-divisive-issue-us-eu>.
- Monicken, Hannah. “U.S., China, over 70 others announce ‘intent’ to launch e-commerce talks.” *Inside U.S. Trade*, January 31, 2019. Accessed July 1, 2019. <https://insidetrade.com/inside-us-trade/us-china-over-70-others-announce-intent-launch-e-commerce-talks>.
- Monicken, Hannah. “In first WTO e-commerce meeting, U.S. stresses ‘same obligations’ for all.” *Inside U.S. Trade*, March 7, 2019. Accessed July 1, 2019. <https://insidetrade.com/daily-news/first-wto-e-commerce-meeting-us-stresses-%E2%80%98same-obligations%E2%80%99-all>.
- Monicken, Hannah. “India, South Africa: WTO e-commerce moratorium too costly for developing members.” *Inside U.S. Trade*, June 5, 2019. Accessed July 1, 2019.

<https://insidetrade.com/daily-news/india-south-africa-wto-e-commerce-moratorium-too-costly-developing-members>.

Monicken, Hannah. “Business groups emphasize data flows as e-commerce talks resume.”

Inside U.S. Trade, June 21, 2019. Accessed July 1, 2019.

<https://insidetrade.com/daily-news/business-groups-emphasize-data-flows-e-commerce-talks-resume>.

WTO Documents

Committee on Specific Commitments. *Services Classification in WTO Jurisprudence – Note by the Secretariat*. S/CSC/W/61, 12 March 2013.

Council for Trade in Goods. *Chairman’s Factual Progress Report to the General Council on the Work Programme on Electronic Commerce*. G/L/421, 24 November 2000.

Council for Trade in Services. *Computer and Related Services – Background Note by the Secretariat*. S/C/W/45, 14 July 1998.

Council for Trade in Services. *Work Programme on Electronic Commerce – Note by the Secretariat*. S/C/W/68, 16 November 1998.

Council for Trade in Services. *Work Programme on Electronic Commerce – Interim Report to the General Council*. S/C/8, 31 March 1999.

Council for Trade in Services. *Work Programme on Electronic Commerce – Progress Report to the General Council*. S/L/74, 19 July 1999.

Council for Trade in Services. *Communication from the United States – Audiovisual and Related Services*. S/CSS/W/21, 18 December 2000.

Council for Trade in Services. *Communication from the United States – Classification in the Telecommunications Sector under the WTO-GATS Framework*. TN/S/W/35, S/CSC/W/45, 22 February 2005.

Council for Trade in Services. *Communications from the European Communities and Their Member States – Conditional Revised Offer*. TN/S/O/EEC/Rev.1, 29 June 2005.

Council for Trade in Services. *Communication from Hong Kong China, Japan, Mexico, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, and United States – Joint Statement on the Negotiations on Audiovisual Services*. TN/S/W/49, 30 June 2005.

Council for Trade in Services. *Communication from the European Communities and Its Member States – Draft Consolidated GATS Schedule*. S/C/W/273, 9 October 2006.

Council for Trade in Services. *Telecommunication Services – Background Note by the Secretariat*. S/C/W/299, 10 June 2009.

Council for Trade in Services. *Computer and Related Services – Background Note by the Secretariat*. S/C/W/300, 22 June 2009.

Council for Trade in Services. *Audiovisual Services – Background Note by the Secretariat*. S/C/W/310, 12 January 2010.

Council for Trade in Services and Committee on Specific Commitments. *Communication from the European Communities – Classification in the Telecom Sector under the WTO-GATS Framework*. TN/S/W/27, S/CSC/W/44, 10 February 2005.

GATT. *Services Sector Classification List*. MTN.GNS/W/120, 10 July 1991.

GATS. *The United States of America – Schedule of Specific Commitments*. GATS/SC/90, 15 April 1994.

- General Council. *Work Programme on Electronic Commerce – Dedicated Discussions under the Auspices of the General Council on Cross-Cutting Issues related to Electronic Commerce*. WT/GC/W/505, 21 July 2003.
- General Council. *Advancing Work on the Electronic Commerce Work Programme*. JOB/GC/132/Rev.4, 7 November 2017.
- General Council. *Joint Statement on Electronic Commerce Initiative – Communication from the United States*. JOB/GC/178, 12 April 2018.
- Group of Negotiations on Services. *Scheduling of Initial Commitments in Trade in Services: Explanatory Note*. MTN.GNS/W/164, 3 September 1993.
- Group on Basic Telecommunications. *Note by the Chairman – Notes for Scheduling Basic Telecom Services Commitments*. S/GBT/W/2, 26 November 1996.
- Ministerial Conference. *Joint Statement on Electronic Commerce*. WT/MIN(17)/60, 13 December 2017.
- Trade-Related Aspects of Intellectual Property Rights. *Work Programme on Electronic Commerce – Progress Report to the General Council*. IP/C/18, 30 July 1999.
- Working Party on Domestic Regulation. *Regulatory Issues in Sectors and Modes of Supply – Note by the Secretariat*. S/WPDR/W/48, 13 June 2012.
- WTO. *European Communities and Their Member States – Schedule of Specific Commitments*. GATS/SC/31, 15 April 1994.
- WTO. *European Communities and Their Member States – Schedule of Specific Commitments*. GATS/SC/31/Suppl. 3, 11 April 1997.
- WTO. *The United States of America – Schedule of Specific Commitments – Supplement 2*. GATS/SC/90/Suppl.2, 11 April 1997.
- WTO. *The Geneva Ministerial Declaration on Global Electronic Commerce*. WT/MIN(98)/DEC/2, 25 May 1998.

- WTO. *Work Programme on Electronic Commerce – Adopted by the General Council on 25 September 1998*. WT/L/274, 30 September 1998.
- WTO. *Work Programme on Electronic Commerce – Submission by the United States*. WT/GC/16, G/C/2, S/C/7, IP/C/16, WT/COMTD/17, 12 February 1999.
- WTO. *Guidelines for the Scheduling of Specific Commitments under the General Agreement on Trade in Service (GATS) – Adopted by the Council for Trade in Services on 23 March 2001*. S/L/92, 28 March 2001.
- WTO. *Second Dedicated Discussion on Electronic Commerce under the Auspices of the General Council – Summary by the Secretariat of the Issues Raised*. WT/GC/W/475, 20 June 2002.
- WTO. *Work Programme on Electronic Commerce – Submission from the European Communities*. WT/GC/W/497, 9 May 2003.
- WTO. *Communication from the European Communities and Their Member States – Conditional Initial Offer*. TN/S/O/EEC, 10 June 2003.
- WTO. *United States – Revised Services Offer*. TN/S/O/USA/Rev.1, 28 June 2005. Accessed July 1, 2019. <https://www.carecprogram.org/uploads/US-Revised-Services-Offer.pdf>.
- WTO. *Sixth Dedicated Discussion on Electronic Commerce under the Auspices of the General Council – Summary by the Secretariat of the Issues Raised*. WT/GC/W/556, 30 November 2005.
- WTO. *Joint Statement on Electronic Commerce*. WT/L/1056, 25 January 2019.
- WTO. *Joint Statement on Electronic Commerce Initiative – Communication from the United States*. INF/ECOM/5, 25 March 2019.
- WTO. *Joint Statement on Electronic Commerce Initiative – List of the Key Elements and Ideas on Electronic Commerce*. INF/ECOM/7, 25 March 2019.

WTO. *Joint Statement on Electronic Commerce Initiative – Communication from China*. INF/ECOM/19, 24 April 2019.

WTO. *Joint Statement on Electronic Commerce – EU Proposal for WTO Disciplines and Commitments Relating to Electronic Commerce – Communication from the EU*. INF/ECOM/22, 26 April 2019.

WTO. *Joint Statement on Electronic Commerce – Communication from the Republic of Korea*. INF/ECOM/31, 9 May 2019.

Other Official Documents

European Commission. *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation*. COM(97)623, 3 December 1997.

European Commission. *Towards a New Framework for Electronic Communications Infrastructure and Associated Services – The 1999 Communications Review*. COM(1999)539, 10 November 1999.

OECD. *Recommendation of the Council concerning Guidelines governing the Protection of Privacy and Transborder Flows of Personal Data (2013)*. C(80)58/FINAL, as amended on 11 July 2013 by C(2013)79, 2013.

Office of the United Nations High Commissioner for Human Rights. *Guidelines for the Regulation of Computerized Personal Data Files – Adopted by General Assembly Resolution 45/95 of 14 December 1990*. Geneva, Switzerland: UN, 1990.

Official Journal of the European Communities. *Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of*

information society services, in particular electronic commerce, in the Internal Market (Directive on Electronic Commerce). OJ L 178/1, 17 July 2000.

Official Journal of the European Communities. *Directive 2002/21/EC of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive)*. OJ L108/33, 24 April 2002.

Official Journal of the European Union. *Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive)*. 15 April 2010.

Official Journal of the European Union. *Directive (EU) 2018/1808 of the European Parliament and of the Council of 14 November 2018 amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) in view of changing market realities*. OJ L 303/69, 28 November 2018.

UN. *Provisional Central Product Classification*. ST/ESA/STAT/SER.M/77, 1991.

UN. *Central Product Classification (CPC) Version 2.1*. ST/ESA/STAT/SER.M/77/Ver2.1, 2015.

USGPO. *Federal Register*. 80 FR 2078. January 15, 2015.

Media, Online Sources, and Others

Atkinson, Robert D. “Testimony before the Committee on Ways on Means Trade Subcommittee – Hearing on “Expanding U.S. Digital Trade and Eliminating

- Barriers to Digital Exports”,” 2016. Accessed July 1, 2019. <http://www2.itif.org/2016-expanding-us-digital-trade.pdf>.
- Bacchus, James. “Was Buenos Aires the Beginning of the End or the End of the Beginning?: The Future of the World Trade Organization.” *Cato Institute Policy Analysis*, no. 841, 2018. Accessed July 1, 2019. <https://www.cato.org/publications/policy-analysis/was-buenos-aires-beginning-end-or-end-beginning-future-world-trade>.
- Bookman, Samantha. “Where Netflix, YouTube and HBO Now fit in the OTT industry.” *FierceVideo*, May 6, 2015. Accessed July 1, 2019. <https://www.fiercevideo.com/special-report/where-netflix-youtube-and-hbo-now-fit-ott-industry>.
- Buttarelli, Giovanni. “Less is Sometimes More.” *European Data Protection Supervisor*, December 18, 2017. Accessed July 1, 2019. https://edps.europa.eu/press-publications/press-news/blog/less-sometimes-more_en.
- CBPRs. “APEC CBPR System.” Accessed July 1, 2019. <http://cbprs.org/>.
- CEPII. “Gravity.” Accessed July 1, 2019. http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8.
- Cisco. “Visual Networking Index Global Fixed and Mobile Internet Traffic Forecasts.” Accessed July 1, 2019. <https://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>.
- Cisco. “Visual Networking Index: Forecast and Trends, 2017-2022 White Paper.” February 27, 2019. Accessed July 1, 2019. https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html#_Toc532256796.

- Cory, Nigel. "Cross-Border Data Flows: Where Are the Barriers, and What Do They Cost?." Information Technology & Innovation Foundation, May 1, 2017. Accessed July 1, 2019. <https://itif.org/publications/2017/05/01/cross-border-data-flows-where-are-barriers-and-what-do-they-cost>.
- Cory, Nigel. "The Ten Worst Digital Protectionism of 2018." Information Technology & Innovation Foundation, January 28, 2019. Accessed July 1, 2019. <https://itif.org/publications/2019/01/28/ten-worst-digital-protectionism-and-innovation-mercantilist-policies-2018>.
- Cory, Nigel and Robert D. Atkinson. "Financial Data Does Not Need or Deserve Special Treatment in Trade Agreements." Information Technology & Innovation Foundation, April 25, 2016. Accessed July 1, 2019. <https://itif.org/publications/2016/04/25/financial-data-does-not-need-or-deserve-special-treatment-trade-agreements>.
- Costello, Sam. "Internet Streaming: What It Is and How It Works." *Lifewire*, December 17, 2018. Accessed July 1, 2019. <https://www.lifewire.com/internet-streaming-how-it-works-1999513>.
- Council of Europe. "Convention 108 and Protocols." Accessed July 1, 2019. <https://www.coe.int/en/web/data-protection/convention108-and-protocol>.
- Council of Europe. "Modernisation of Convention 108." Accessed July 1, 2019. <https://www.coe.int/en/web/data-protection/convention108/modernised>.
- Crosby, Daniel. "Analysis of Data Localization Measures Under WTO Services Trade Rules and Commitments." *The E15 Initiative – Strengthening the Global Trade System*. International Centre for Trade and Sustainable Development and World Economic Forum, 2016. Accessed July 1, 2019. <http://e15initiative.org/>

[publications/analysis-of-data-localization-measures-under-wto-services-trade-rules-and-commitments/](#).

Drake, William J. “Background Paper for the Workshop on Data Localization and Barriers to Transborder Data Flows.” *World Economic Forum*, 2016. Accessed July 1, 2019. http://www3.weforum.org/docs/Background_Paper_Forum_workshop%2009.2016.pdf.

ECIPE. “Digital Trade Estimates Project.” Accessed July 1, 2019. <https://ecipe.org/dte/>.

ECIPE. “Digital Trade Estimates Report.” Accessed July 1, 2019. <https://ecipe.org/dte/dte-report/>.

ECIPE. “Digital Trade Estimate Database.” Accessed July 1, 2019. <https://ecipe.org/dte/database/>.

European Commission. “Adequacy Decisions – How the EU Determines if a Non-EU Country Has an Adequate Level of Data Protection.” Accessed July 1, 2019. https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/adequacy-decisions_en.

European Commission. “Questions and answers on the public consultation on the AVMSD.” Accessed July 1, 2019. <https://ec.europa.eu/digital-single-market/en/news/questions-and-answers-public-consultation-avmsd>.

Google. “Enabling Trade in the Era of Information Technologies: Breaking Down Barriers to the Free Flow of Information.” Accessed July 1, 2019, https://static.googleusercontent.com/media/www.google.com/ko//googleblogs/pdfs/trade_free_flow_of_information.pdf.

Hartridge, David. “Remark at the WTO Symposium on Cross-Border Supply of Services on 29 April 2005.” Accessed July 1, 2019. https://www.wto.org/english/tratop_e/serv_e/sym_april05_e/sym_april05_e.htm.

- Hoekman, Bernard and Petros C. Mavroidis. "Regulatory Spillovers and the Trading System: From Coherence to Cooperation." *The E15 Initiative – Strengthening the Global Trade System*. International Centre for Trade and Sustainable Development and World Economic Forum, 2015. Accessed July 1, 2019. <http://e15initiative.org/publications/regulatory-spillovers-and-the-trading-system-from-coherence-to-cooperation/>.
- IAB. "Video Advertising Glossary." Accessed July 1, 2019. <http://dvglossary.www2.iab.com/>.
- Kelly, Makena. "Netflix becomes first streaming company to join the MPAA." *The Verge*, January 22, 2019. Accessed July 1, 2019. <https://www.theverge.com/2019/1/22/18193568/netflix-joins-mpaa-motion-picture-association-internet>.
- OECD. "OECD-WTO Balanced Trade in Services Statistics." Accessed July 1, 2019. <http://www.oecd.org/sdd/its/balanced-trade-in-services.htm>.
- Open Net. "A Comment on the Bill on Comprehensive Broadcasting (in Korean)." Accessed July 1, 2019. <https://opennet.or.kr/15618>.
- Sternburg, Ali. "Crucial USMCA Intermediary Protections Are Consistent with U.S. Law." *Disruptive Competition Project*, December 7, 2018. Accessed July 1, 2019. <http://www.project-disco.org/21st-century-trade/120718-crucial-usmca-intermediary-protections-are-consistent-with-u-s-law/#.XSCGduj7R6s>.
- USFCC. "FCC Proposes to Modernize MVPD Definition." December 19, 2014. Accessed July 1, 2019. <https://www.fcc.gov/document/fcc-proposes-modernize-mvpd-definition>.
- USTR. "US Submits Revised Services offer to the WTO." May 31, 2005. Accessed July 1, 2019. https://ustr.gov/archive/Document_Library/Press_Releases/2005/May/US_Submits_Revised_Services_offer_to_the_WTO.html.

- USTR. “USTR Releases Updated NAFTA Negotiating Objectives.” November 17, 2017. Accessed July 1, 2019. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/november/ustr-releases-updated-nafta>.
- Wiseapp. “Netflix users soar by three times compared to same month last year (in Korean).” October 22, 2018. Accessed July 1, 2019. <https://m.post.naver.com/viewer/%20postView.nhn?volumeNo=16932291&memberNo=32291422&vTtype=VERTICAL>.
- WTO. “Members and Observers.” Accessed July 1, 2019. https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm.
- WTO. “Telecommunications services.” Accessed July 1, 2019. https://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_e.htm.
- WTO. “Integrated Trade Intelligence Portal (I-TIP).” Accessed July 1, 2019. <http://i-tip.wto.org/services/SearchResultGats.aspx>.
- WTO Press Release. “WTO Disputes Reach 400 Mark.” November 6, 2009. Accessed July 1, 2019. https://www.wto.org/english/news_e/pres09_e/pr578_e.htm.

WTO Panels and Appellate Body Reports

List of full case names and references for short form citations used in the thesis.

Argentina – Financial Services: Argentina – Measures Relating to Trade in Goods and Services; Panel Report, WT/DS453/R, adopted 9 May 2016; Appellate Body Report, WT/DS/453/AB/R, adopted 9 May 2016.

Brazil – Retreaded Tyres: Brazil – Measures Affecting Imports of Retreaded Tyres; Panel Report, WT/DS332/R, adopted 17 December 2007; Appellate Body Report, WT/DS332/AB/R, adopted 17 December 2007.

Canada – Autos: Canada – Certain Measures Affecting the Automotive Industry; Panel Report, WT/DS139/R, WT/DS142/R, adopted 19 June 2000; Appellate Body Report, WT/DS139/AB/R, WT/DS142/AB/R, adopted 19 June 2000.

Canada – Periodicals: Canada – Certain Measures Concerning Periodicals; Panel Report, WT/DS31/R and Corr.1, adopted 30 July 1997; Appellate Body Report, WT/DS/31/AB/R, adopted 30 July 1997.

China – Audiovisuals: China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products; Panel Report, WT/DS363/R, adopted 19 January 2010; Appellate Body Report, WT/DS/363/AB/R, adopted 19 January 2010.

China – Electronic Payment Services: China – Certain Measures Affecting Electronic Payment Services; Panel Report, WT/DS413/R, adopted 31 August 2012.

EC – Asbestos: European Communities – Measures Affecting Asbestos and Asbestos-Containing Products; Panel Report, WT/DS135/R and Add. 1, adopted 5 April 2001; Appellate Body Report, WT/DS135/AB/R, adopted 5 April 2001.

EC – Bananas III: European Communities – Regime for the Importation, Sale and Distribution of Banana; Panel Report, WT/DS27/R/USA, adopted 25 September 1997; Appellate Body Report, WT/DS27/AB/R, adopted 25 September 1997.

EC – Computer Equipment: European Communities – Customs Classification of Certain Computer Equipment; Panel Report, WT/DS62/R, WT/DS67/R, WT/DS68/R, adopted 22 June 1998; Appellate Body Report, WT/DS62/AB/R, WT/DS67/AB/R, WT/DS68/AB/R, adopted 22 June 1998.

- EC – IT Products*: European Communities and Its Member States – Tariff Treatment of Certain Information Technology Products; Panel Report WT/DS375/R, WT/DS376/R, WT/DS377/R, adopted 21 September 2010.
- EC – Tariff Preferences*: European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries; Panel Report, WT/DS246/R, adopted 20 April 2004; Appellate Body Report, WT/DS/246/AB/R, adopted 20 April 2004.
- Japan – Alcoholic Beverages II*: Japan – Taxes on Alcoholic Beverages; Panel Report, WT/DS8/R, WT/DS10/R, WT/DS11/R, adopted 1 November 1996; Appellate Body Report, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996.
- Korea – Dairy*: Korea – Definitive Safeguard Measure on Imports of Certain Dairy Products; Panel Report, WT/DS98/R, adopted 12 January 2000; Appellate Body Report, WT/DS98/AB/R, adopted 12 January 2000.
- Korea – Beef*: Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef; Panel Report, WT/DS161/R, WT/DS169/R, adopted 10 January 2001; Appellate Body Report, WT/DS161/AB/R, WT/DS169/AB/R, adopted 10 January 2001.
- Mexico – Telecom*: Mexico – Measures Affecting Telecommunication services; Panel Report, WT/DS204/R, adopted 1 June 2004.
- Russia – Traffic in Transit*: Russia – Measures Concerning Traffic in Transit; Panel Report, WT/DS512/R, adopted 26 April 2019.
- US – Gambling*: United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services; Panel Report, WT/DS285/R, adopted 20 April 2005; Appellate Body Report, WT/DS285/AB/R, adopted 20 April 2005.

US – Gasoline: United States – Standards for Reformulated and Conventional Gasoline;
Panel Report, WT/DS2/R, adopted 20 May 1996; Appellate Body Report,
WT/DS2/AB/R, adopted 20 May 1996.

US – Shrimp: United States – Import Prohibition of Certain Shrimp and Shrimp Products;
Panel Report, WT/DS58/R and Corr.1, adopted 6 November 1998; Appellate
Body Report, WT/DS58/AB/R, adopted 6 November 1998.

International Arbitration Awards

Isla de Palmas Case (Netherlands v United States): 2 *Reports of International Arbitration
Awards* 831.

국문초록

아날로그 체제 하의 디지털무역 자유화: 디지털무역에 관한 세 가지 연구

디지털기술의 발달로 국제무역의 양상이 디지털무역 중심으로 변모하고 있다. 본 논문에서는 디지털무역을 국경간 데이터 이전을 포함하여 전자적 수단을 통해 이루어지는 상품 및 서비스의 국경간 거래로 폭넓게 정의한다. 이를 바탕으로 세계무역기구(WTO)를 중심으로 한 다자통상체제 내에서 디지털무역 자유화를 이루기 위한 방안을 모색한다.

디지털서비스의 국경간 무역을 법의 지배에 기초한 국제통상규범으로 규율하기 위해서는 기술중립성 원칙을 우선적으로 확고히 정립해야 한다. 기술중립성 원칙을 통해 그동안 WTO 전자상거래 작업계획에서 논의되었던 디지털무역의 쟁점을 상당부분 해소할 수 있다. 우선, 전자적 수단을 통해 전송되는 서비스에 서비스무역협정(GATS)을 적용할 수 있다는 점이 분명해진다. 또한 비차별원칙의 적용에 앞서 전통적 수단으로 제공되는 서비스와 전자적으로 전송되는 서비스간 동종성 판단이 가능해진다. 마지막으로 GATS 양허표를 기술발전에 따라 유연하게 해석하는데 있어 중요한 이론적 근거가 확립된다.

US-Gambling 사건과 *China-Audiovisuals* 사건에서 기술중립성이 쟁점으로 제기되었지만 WTO의 패널과 상소기구는 기술중립성 원칙에 대한 판단을 유보하였다. 기술중립성 원칙에 대해 WTO 회원국 사이에 컨센서스가 형성되지 못하였고 문화상품이라는 민감한 내용이 사건에서 다루어졌기 때문인 것으로 풀이된다. 그러나 디지털 시대에 적용되는 국제통상규범의 예측가능성

및 법적 확실성을 확보하기 위해서는 기술중립성 원칙이 무엇보다 중요하다. 이에 본 논문은 양자간 차원, 복수국간 차원, 다자간 차원 등을 통해 국제통상체제 내에 기술중립성 원칙을 정립하는 방안을 제안한다.

디지털무역 자유화가 이루어지기 위해서는 자유로운 국경간 데이터 이전이 필수적이다. 그러나 전세계적으로 국경간 데이터 이전을 필요이상으로 제한하는 조치가 취해지고 있어 디지털무역이 저해되는 문제가 발생한다. 본 논문의 두번째 장에서는 이에 대한 통상법적, 경제적 분석을 진행한다.

각국의 국경간 데이터 이전 제한조치는 규율 범위에 따라 일반적 접근방식과 분야별 접근방식으로 구분할 수 있으며 규정의 조건에 따라 지리적 기반 접근방식과 위험 기반 접근방식으로 구분할 수 있다. 중력모형과 디지털제한지수를 주요 변수로 사용한 계량분석 결과, 국경간 데이터 이전 제한조치가 디지털무역장벽으로 작용할 뿐만 아니라 기술혁신을 저해하여 서비스의 수출을 감소시키는 것으로 나타났다. 또한 상이한 데이터 규제수준을 유지하는 국가간에는 상대적으로 서비스무역량이 적은 것으로 나타나 데이터 이전에 관해 국제적으로 통일된 규범체계가 필요할 것으로 보인다.

WTO 는 국제무역분야의 유일한 다자기구이므로 국경간 데이터 이전 규범도 WTO 체제 내에서 다루어져야 한다. 자유로운 데이터 이전과 활용을 촉진하는 국제통상규범을 제정하기 위해 본 논문은 GATS 수평적 양허에 국경간 데이터 이전을 기재하는 방안, 데이터 종류에 따라 서로 다른 수준으로 데이터 이전을 허용하는 방안, 최소한의 개인정보보호 국제표준을 제정하는 방안, 데이터 제한조치가 허용되는 예외적인 경우로서 ‘적법한 공공정책 목적’을 구체화하는 방안을 제시한다.

컴퓨터기술과 정보통신기술의 발전으로 가장 큰 변화를 겪고 있는 서비스 분야가 시청각서비스 분야이다. GATS 서비스 분류체계에서는 명확히 구분되는 컴퓨터및관련서비스, 통신서비스, 시청각서비스의 구별이 융복합기술의 발달로

점점 모호해지고 있다. 특히 전통적인 방송매체를 활용하지 않는 국경간 온라인 동영상제공서비스(OTT 동영상서비스)가 급속도로 성장하고 있지만 WTO/GATS 체제 내에서는 이에 대한 분류가 명확하지 않아 혼란이 가중되는 상황이다. 특히 시청각서비스 자유화에 대한 EU와 미국의 전통적인 입장 차이가 OTT 동영상서비스의 시장개방을 둘러싼 논의로 이어지고 있다. 본 논문은 OTT 동영상서비스 분야에서 EU와 미국의 협상전략을 파악하고 우리나라에 대한 시사점을 도출한다.

EU는 우루과이라운드 이후 줄곧 컴퓨터서비스 또는 통신서비스와 방송서비스를 엄격히 구분하고 문화예외를 내세워 시청각(방송)서비스를 무역협상 논의에서 제외하는 협상전략을 펴고 있다. 또한 EU는 모든 유형의 OTT 동영상서비스에 국내영상물 쿼터를 부과한다. 이를 토대로 볼 때, EU는 향후 협상에서도 OTT 동영상서비스를 시청각(방송)서비스로 간주하여 이를 양허하지 않는 전략을 취할 가능성이 크다. 이에 반해, 미국은 시청각서비스의 자유화를 적극 옹호하는 입장으로 시청각서비스를 영상물 제작과 전송으로 세분화하여 전송에 관련된 서비스는 최대한 개방한다는 목표를 세운 것으로 파악된다. 또한 도하라운드에서 OTT 동영상서비스를 포함하는 기타 커뮤니케이션서비스라는 새로운 분류체계를 도입하는 전략을 수립했다. 국내적으로는 선형(linear) 서비스와 비선형(non-linear) 서비스를 구분하여 비선형 OTT 동영상서비스에 대한 규제를 완화하였다. 향후 무역협상에서는 비선형 OTT 동영상서비스를 전통적인 시청각서비스에서 제외하여 이에 대한 전면적인 시장개방 양허를 협상상대방에게 요구하는 전략을 실시할 것으로 예상된다.

우리 통상협상가들과 국내 미디어정책결정자들은 EU와 미국의 이러한 협상전략의 차이를 파악하고 이에 대응하면서 개방을 통해 우리 문화산업의 경쟁력을 키우는 방향으로 통상정책을 펼쳐야 한다.

디지털무역의 규모와 경제적 영향력이 커지면서 새로운 유형의 무역제한조치인 디지털무역장벽들이 등장하고 있다. 이에 디지털통상규범의 중요성이 더욱 부각되고 있지만 아날로그 시대에 만들어진 WTO/GATS 규범만으로는 디지털무역 자유화를 완벽히 이루어내기 어렵다. 때마침 WTO 복수국간 전자상거래 협상이 본격적으로 시작되어 새로운 논의의 장이 열렸다. 본 논문이 전통적인 통상규범을 유연하게 해석하고 미비점을 보완하여 기존의 국제통상체제 내에서 디지털무역과 관련된 예측가능성과 법적 확실성을 확보하는데 공헌할 수 있길 바란다.

주요어 : 디지털무역, 전자상거래, 국제통상체제, 기술중립성, 국경간 데이터 이전,
OTT 동영상서비스

학 번 : 2015-30703

ACKNOWLEDGEMENTS

I cannot thank enough Professor Ahn Dukgeun, my thesis advisor, as well as Emeritus Professor Bark Taeho (SNU), my life advisor, for their insightful guidance and encouragement throughout my Ph. D. program. I truly enjoyed intelligent discussions with them and those discussions indeed helped me discover the delight of academic research. Moreover, whenever I desperately needed some help out of frustration, their warm-hearted words pulled me out of an endless tunnel to see the bright side of life.

I am deeply indebted to Professor Rhee Yeongseop (SNU), Professor Lie Han-Young (Chung-Ang University), and Professor Lee Jaemin (SNU), members of my thesis committee for priceless comments and advice. It is my honor to have them in my thesis committee.

Lectures at GSIS, SNU given by Professors Paik, Jin-Hyun, Cheong Young-Rok, Kim Chong-Sup, Eun Ki-Soo, Park Tae Gyun, Jeong Hyeok, Kim Taekyoon, have always intrigued me to find out more on interdisciplinary research subjects. I absolutely believe that I could never have had such a great experience out of GSIS, SNU. I hope these excellent legacies of GSIS, SNU continue for a great length of time.

It was absolutely my pleasure to study and work together with my academic family members including Dr. Lee Hyo-young, Dr. Je Hyun-jung, Dr. Kim Minjung, Dr. Shin Wonkyu, Kim Kyoung-hwa, Kim Hyerim, and Kim Nayoung. Particularly, among many others, Dr. Yoo Ji Yeong and Park Jeongjoon have been not only my great friends, colleagues, and lunch mates but also advisors, counselors, and critics. Forgive me that I

cannot come up with any other fabulous English expression to describe how much I am grateful to work with you guys during the doctoral course.

I also would like to express my sincere gratitude to Professor Oh Joon Seok (Sookmyung Women's University), Professor Choi Chang Hwan (Dankook University), Professor Noh Jaeyeon (Yeungnam University), Dr. Ahn Minho, Dr. Hur Nan-y, Kim Bo Kyung, Kang Eunhye, Cha Jieun, Rhee Sarah, Yu Woosik, Kim Minju, Na Aram, Kim Jieun, Kang Minkyu, Kang Hyein, Jung Yunjeong, Park Sooryung.

Thank you mom and dad for your love and support. Thank you Aunt Myungsoon, my sister, Yeonjeong, brother-in-law, Dr. Shim Sungbo, and my adorable two nieces, Minha and Yoonha (I have yet to see you, Yoonha, but I have already begun to love you). And lastly, my special thanks go to...me. You finally made it. Well done, Dongchul.