

WORKING PAPER

**Technological Neutrality: Implications for Services Commitments and the
Discussions on E-Commerce**

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EXECUTIVE SUMMARY

The exponential progress in information technology and communications over the last two decades has significantly altered the nature, scope and mode of delivery of services, and holds potential for further, perhaps even more unpredictable evolution in the coming years. In this context, this study analyzes the implications of evolving technology in interpreting a Member's commitments inscribed in its Schedule of Specific Commitments under the GATS. We have particularly analyzed the risks and implications of a purely "technologically neutral" approach, where any service sector in any mode with a "None" commitment is seen as fully committed for that mode even if, at the time of undertaking commitments, the same service being supplied through that mode was not conceivable and potentially rendering meaningless the restrictions scheduled for delivering the same service through another mode which was perhaps the only possible mode for delivery for that service at that point in time.

The debate at the WTO appears to have been confined to fairly straitjacketed questions: (a) is GATS technologically neutral, and (b) how are the CPC classifications for service sectors to be interpreted. In these discussions, there appears to be some divergence of views, perhaps along the developed-developing country divide.

Our study analyses the Schedules of Specific Commitments of twenty (20) WTO Members, both developed and developing countries, in respect of Mode 1 ("Cross-Border supply") and Mode 3 ("Commercial Presence") across five (5) service sectors, Computer and Related Services; Construction and Related Engineering Services; Tourism and Travel Related Services; Road Transport Services; and Financial Services (focusing on Money Transfers/Electronic payment services). The reason for focusing on the supply of services through Mode 1 and Mode 3 is because a purely technologically neutral reading of GATS commitments of Members would have significant implications for countries that have scheduled full commitments for cross-border supply through Mode 1 while specifying restrictions for supply through commercial presence under Mode 3. This is particularly true in respect of service sectors analyzed in this study where the use of new technologies has often led to services which traditionally required commercial presence in a service recipient's country now being delivered cross-border without any human or commercial presence in the territory of the host country.

Where supply of a service becomes feasible through a mode not conceivable during the negotiations on commitments the very intention of Members' to schedule limitations in a particular mode of supply may stand subverted and act as a constraint on their regulatory space, including control on cross-border flows of data or localization requirements. For instance, Kenya which undertook full commitment in Mode 1 in Transport sector may find itself unable to 'adequately' regulate new modes of cross border supply of transport services such as Uber. In the construction sector, Canada and Argentina may not be able to place restrictions on delivery of construction services through 3D printing technology as they are fully committed in Mode 1 in Construction and Related Engineering Services.

Where technology leads to a service being potentially characterized as a "new service" or a variation of an already scheduled service, concerns may arise as to the sector under which it would be categorized and which commitments would extend to it. For instance, there may be confusion over whether cloud computing falls under Computer and Related Services or Telecommunications services. There may also be concerns over whether Uber supplies Transport Services or Business Services.

Further, a Member attempting to place regulations on cross-border flows of data / server localization requirements may be cautioned that such regulations made be considered as impeding service supply through Mode 1 in a manner that was unimaginable at the time it undertook full commitment in that mode.

In our assessment, the question to begin with, should not be whether GATS itself is “technologically neutral” or not. The clear answer to that question is that GATS does not regulate technological choices.

For a clear and accurate inquiry, the question should rather be: When a Member made a commitment on a ‘positive list’ basis in 1995 under the GATS, did technology exist to enable delivery of the committed service in a particular manner? If such technology did not exist, in our view, the correct interpretation of a schedule would be that such a commitment using a new or evolved technology, cannot simply be presumed. Any overarching interpretation that holds Members to ways of service delivery that simply did not exist at the time of making commitments, would turn the very purpose and intent of GATS positive listing of committed sectors, on its head. Such an interpretation could also have a chilling impact on future commitments for trade in services under FTAs, under both the positive or the negative list approaches.

A Member’s schedule of commitments must necessarily be assessed in light of the nature and intent behind a Member’s commitment at the time it was being made; and whether such a Member could have reasonably foreseen delivery of a service under a particular mode at the time of making the relevant commitment.

This study concludes with a few recommendations for countries to consider while scheduling. In particular, it highlights the approach taken by Japan in its recent FTAs, including under the CP-TPP, where it clearly reserves policy space for adopting and maintaining measures relating to services “*other than those recognized or other than those that should have been recognized by the Government of Japan owing to the circumstances at the date of entry into force of this Agreement*”. Further consideration and nuancing of this type of clarification on scope and ambit of commitments on services, will be crucial in order to preserve the ability of governments to regulate evolving technologies through evolving regulatory interventions.

TABLE OF CASES

<i>Short Title</i>	<i>Name of Case</i>
<i>China – Electronic Payment Services</i>	Panel Report, <i>China – Certain Measures Affecting Electronic Payment Services</i> , WT/DS413/R and Add.1, adopted 31 August 2012, DSR 2012:X, p. 5305
<i>China – Publications and Audio-visual Products</i>	Panel Report, <i>China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products</i> , WT/DS363/R and Corr.1, adopted 19 January 2010, as modified by Appellate Body Report WT/DS363/AB/R, DSR 2010: II, p. 261
<i>EC – Chicken Cuts</i>	Appellate Body Report, <i>European Communities – Customs Classification of Frozen Boneless Chicken Cuts</i> , WT/DS269/AB/R, WT/DS286/AB/R, adopted 27 September 2005, and Corr.1, DSR 2005: XIX, p. 9157
<i>US – Gambling</i>	Appellate Body Report, <i>United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services</i> , WT/DS285/AB/R, adopted 20 April 2005, DSR 2005: XII, p. 5663 (and Corr.1, DSR 2006: XII, p. 5475)
<i>US – Gambling</i>	Panel Report, <i>United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services</i> , WT/DS285/R, adopted 20 April 2005, as modified by Appellate Body Report WT/DS285/AB/R, DSR 2005: XII, p. 5797

LIST OF ABBREVIATIONS

3DP	3D Printing
B&B	Bed and Breakfast
CAD	Computer-Aided Design
CPC / UN CPC	United Nations Central Product Classification
<i>CPC Provisional</i>	1991 CPC Provisional Classification
CP-TPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRS	Computer and Related Services
CTS	Council for Trade in Services
CUP	China UnionPay, Co. Ltd.
EPS	Electronic Payment Services
EU / EC	European Communities
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GATS	General Agreement on Trade in Services
GVCs	Global Value Chains
ICT	Information, Communication and Technology
IT	Information Technology
JSIC	Japanese Standard Industrial Classification
MA	Market Access
MFN	Most Favoured Nation
NT	National Treatment
SOC	Schedule of Commitments
TBT	Technical Barriers to Trade Agreement
TPP	Trans-Pacific Partnership
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
US	United States
W/120	WTO Services Sectoral Classification List
WTO	World Trade Organization

I BACKGROUND AND OVERVIEW

The concept of “technological neutrality” in the interpretation of WTO Members’ Schedules of Commitment has assumed centre-stage in the ongoing discussions on ‘E-Commerce’ at the WTO, with some members seeking a mandate for negotiations in this area. There are several dimensions and issues which are part of the E-Commerce discussions, most unique among which is that it is an area that impacts negotiations on both goods and services. At the Second Ministerial Conference of WTO Members held in 1998, Members adopted the *Declaration on Global Electronic Commerce*, which called for the establishment of a work programme on e-commerce. The *Work Programme on Electronic Commerce*, adopted by the Members notes that: “Exclusively for the purposes of the work programme, and without prejudice to its outcome, the term ‘electronic commerce’ is understood to mean the production, distribution, marketing, sale or delivery of goods and services by electronic means”. Four WTO bodies were charged with the responsibility of carrying out the Work Programme: the Council for Trade in Services; the Council for Trade in Goods; the Council for TRIPS; and the Committee on Trade and Development. At the recently concluded Ministerial Conference at Buenos Aires in December 2017, WTO Members reiterated their commitment to continue the work programme. Parallel to this, 70 Members of the WTO expressed a higher level of ambition and intent and issued a Joint Statement announcing the initiation of “*exploratory work toward future WTO negotiations on trade-related aspects of e-commerce*”.

The Joint Statement at Buenos Aires reflects the growing support of several WTO Members for moving away from a work programme, to a negotiated outcome on the issue of e-commerce. The issue is however fraught with several complexities, not least among which is the fact that this is an evolving area for most countries, where the regulatory framework is yet to fully catch up with the rapid growth of technology. In the context of services negotiations under the WTO’s General Agreement on Trade in Services (GATS), an underlying principle is that Members undertake commitments on the basis of a positive list approach, which means that Members have the flexibility to choose the sectors wherein they can take commitments, and also circumscribe the contours of such commitment. Any overarching framework of rights and obligations at the WTO on E-commerce, could potentially reduce such policy space, unless care is taken.

Furthermore, given the very close linkages between any possible disciplines on E-Commerce and commitments on services, it is equally important that any commitments on service sectors is carefully worded in order to ensure that concept of neutrality of technology is not seen as leading to a presumption of delivery of services through channels of electronic commerce. On this specific issue, there has been some tension between Members on the scope and interpretation of existing commitments in view of the principle of ‘**technological neutrality**’. In a nutshell, some Members, particularly developed Members believe that the GATS is fundamentally technologically neutral, and Member commitments need to be interpreted in view of evolving technology, and not with the lens of technology that existed at the time the commitments were made. Others, particularly developing Members find this

view problematic, since this would essentially mean that services that simply were not in the contemplation of Members two decades back, are presumed to have been committed if technology evolves to deliver such services. As countries delve into deeper engagement on issues relating to E-commerce, it is important to have clarity on this issue.

The focus and thrust of this report is to assess the implications of Members' commitments on trade in services under the GATS. It begins by discussing the concept of "technological neutrality" and maps the discussions on this issue. It then reviews the schedule of commitments of twenty Members (both developed and developing countries), across five service sectors. The purpose of this is to assess the extent to which evolution of technology may influence interpretation of Member commitments on services. We focus in particular on Member commitments on Mode 1, i.e., the cross-border delivery of services, and Mode 3, which pertains to commercial presence. An entity that has a commercial presence in the territory of a Member is subject to laws and regulations of that Member. However, when a Member starts providing the same services through Mode 1, this may lead to a circumvention of the laws and regulations that the Member has put in place for supply of that service, perhaps not imagining that the delivery of such a service through Mode 1 would eventually become feasible. While non-discriminatory regulations can be maintained at all times, discriminatory regulations favouring domestic over and Foreign Service suppliers can be maintained to the extent that limitations on national treatment are specified in a Member's schedule. This makes the interplay between Mode 1 and Mode 3 commitments particularly interesting.

The WTO Secretariat has observed that as compared to Mode 3, there have been fewer commitments made by Members under Mode 1. But more fundamentally, many services may have simply have been perceived as not amenable to a Mode 1 delivery at the time of the Uruguay Round commitments. The term *Unbound** appears quite frequently in Member schedules with regard to Mode 1, to indicate lack of commitments due to technological barriers. However, the rapid evolution of technology is changing that perception. In this context, the following are the basic issues that need further discussion:

- As will be discussed below, where a Member has scheduled Mode 1 as *Unbound**, whether there is no change in the status of the entry as one of having taken no commitments, even where technology may have evolved to make the service delivery feasible.
- Where Mode 1 is scheduled as *None*, the evolution of technology over time, could possibly raise the concern that such Member cannot introduce market access/national treatment barriers for the cross-border supply of services. However, the fact remains that such Member could not even have imagined that technology would have evolved to make the actual cross-border supply feasible. Let us take the example of Construction and Related Engineering Services. A Mode 1 commitment may have been made envisaging the possibility of sharing engineering designs, or consultancy work on such services. However, the evolution of 3D printing may make the actual construction activity feasible through Mode 1. In such a scenario, when delivery of the complete services through Mode 1 could not be in the contemplation of a

Member at the time of scheduling, can evolution of technology be seen as an automatic evolution of a positive list of commitments? Many Members disagree with this overarching view, as will be discussed below.

- A related anomaly that arises is this: countries typically impose regulatory restrictions on service suppliers located in their territories; but may not have the ability to replicate the same on cross-border service suppliers. In such a scenario, would technological evolution and feasibility of Mode 1 simply make it possible to circumscribe the regulatory restrictions applicable on a Mode 3 service supplier? What implications would this have for the regulatory decision making of a country?
- Another issue that arises is whether the evolution of technology leads to the evolution of a new service, which cannot be seen as committed unless it has specifically been considered and envisaged by a Member.

These are some of the themes that underline the discussions below.

At the outset, we must add that given that WTO Members have mostly taken modest commitments under the Uruguay Round, the impact of any expansive interpretation of technological neutrality may not be very onerous with regard to a country's policy space. However, the implications become starker if a similar interpretation is transposed on the deeper and more expansive commitments on services under various free trade agreements (FTAs). Given the overall influence of the WTO on the principles and approaches to scheduling and interpretation of schedules in FTAs as well, this report, it is hoped, will provide some insights on issues that countries should keep in view given how evolution of technology is likely to significantly impact the scope and depth of their commitments.

This report is organized into the following parts:

Part II is a discussion of the concept of 'technological neutrality' and maps the views expressed by WTO Members on this issue;

Part III examines WTO Member commitments across the following sectors: Computer and Related Services; Construction and Related Engineering Services; Tourism and Travel Related Services; Road Transport Services; and Financial Services, with specific focus on Money Transfers/ Electronic payment services.

Part IV is the concluding section that draws the various elements of the study together.

II TECHNOLOGICAL NEUTRALITY: TRACING THE EVOLUTION OF THE CONCEPT

The story of ‘technological neutrality’ under trade in services discourse, appears to have its genesis in a statement in a Progress Report on a *"Work Programme on Electronic Commerce"*, dated 19 July 1999, prepared by the Council for Trade in Services for the General Council. The statement read as follows: *"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."*¹

It is important to underscore here the context in which this statement appears to have been made. The same Progress Report made an important observation by some Members on the need for further examination of such a complex issue.²

It is a fact that the GATS do not address itself to ‘technological issues’ regarding supply of services. Its focus is on supply and consumption of services.³ The architecture of GATS with regard to commitments is that Members need to set out specific commitments that they seek to undertake and specify the terms, conditions and limitations pertaining to the same.⁴ The Scheduling Guidelines, adopted by the Group of Negotiations on Services, strongly recommends, *inter alia*, that the committed sectors be defined as clearly as possible. The Scheduling Guidelines of 1993 asked Members to take a cautious approach while dealing with the issue of technology, and specify in sectors where technology could not be envisaged as being capable of a certain type of service delivery as *Unbound**. The Guidelines note that:⁵

In some situations, a particular mode of supply may not be technically feasible. An example might be the cross-border supply of hair-dressing services. In these cases, the term UNBOUND should be used. The asterisk should refer to a footnote which states "Unbound due to lack of technical feasibility". Where the mode of supply thought to be inapplicable is in fact applicable, or becomes so in the future, the entry means "unbound".*

The aforementioned observation appears to be a rejection of ‘technological neutrality’ in the scheduling of commitments, in that *Unbound* for lack of technological neutrality will

¹ Work Programme on Electronic Commerce *Progress Report to the General Council*, Adopted by the Council for Trade in Services on 19 July 1999, S/L/74. At para 4.

² Ibid.

³ Article I.2, GATS: “For the purposes of this Agreement, trade in services is defined as the supply of a service:

- (a) from the territory of one Member into the territory of any other Member;
- (b) in the territory of one Member to the service consumer of any other Member;
- (c) by a service supplier of one Member, through commercial presence in the territory of any other Member;
- (d) by a service supplier of one Member, through presence of natural persons of a Member in the territory of any other Member.

⁴ Article XX, General Agreement on Trade in Services

⁵ Group of Negotiations on Services, Explanatory Note: Scheduling of Initial Commitments, MTN.GNS/W/164, 3 September 1993. Para 47 of the Guidelines of 2001 (S/L/92), reflects this principle.

continue to be maintained as an *Unbound* entry even when technology may have evolved for the delivery of services. What clearly matters, therefore, is the intent of the parties while scheduling, and an acknowledgement that there is nothing automatic about evolution of technology delivering services.

This principle under the Scheduling Guidelines does not address itself to possible circumstances wherein the reach of technology could not have been anticipated at all. Let us assume, for example, that a country schedules Mode 1 for Construction and Related Engineering Services as *None*. While today, this could potentially mean that the construction service cross-border can be delivered as a 3D print, this was clearly not in the realm of contemplation in 1995 at the time of conclusion of the GATS. A *None* entry in the context of the understanding in 1995 for Mode 1 in Construction and Related Engineering Services, could only have been in respect of the possible advisory services relating to construction, or providing design elements, etc., which was clearly the only possibility of cross-border service supply.

The issue of relevance of technology has also been discussed further in the context of scheduling for Basic Telecommunication services. A note prepared by the Chairman of the Group of Basic Telecommunications in 1997,⁶ aimed at recording the “assumptions applicable to the scheduling of commitments in basic telecoms”, notes that “*Unless otherwise noted in the sector column, any basic telecom service listed in the sector column...may be provided through any means of technology*”.⁷

The above note is an acknowledgement that delivery of services may take different technological platforms, but that restrictions in the same are possible by specifying these in the schedule. However, this does not address circumstances in which Members could not have foreseen the emergence of a particular technology radically altering the delivery of a service, so as to be able to specify it in their schedules.

Issues relating to Scheduling under the GATS

The GATS approach to scheduling is often referred to as the “*positive list*” approach since each individual Member decides which sector and modes to commit, and how much market access and national treatment to provide. At the time of negotiation of the GATS, the Group of Negotiation on Services concluded the Guidelines for negotiations,⁸ which stated its objective as achieving precision and *clarity* in commitments. Scheduling of services commitments under the GATS largely follows the WTO Services Sectoral Classification List (“W/120”)⁹, which served the negotiations on trade in services throughout the Uruguay Round. It consists of eleven broad sectors as well as a residual category “Other Services Not Included Elsewhere”. These sectors are further divided into over 150 subsectors. As it is

⁶S/GBT/W/2/Rev.1, 16 January 1997

⁷ Ibid.

⁸ Group of Negotiations on Services, Explanatory Note: Scheduling of Initial Commitments, MTN.GNS/W/164, 3 September 1993. The current round of service negotiations relies on an updated version of the Guidelines adopted by the Council for Trade in Services in 2001- S/L/92.

⁹ Services Sectoral Classification List, Note by the Secretariat, MTN.GNS/W/120 dated July 10, 1991

intended to be comprehensive, each sector and various sub-categories include a residual range of "Other" services. Subsectors in the list, where possible, are annotated with relevant numbers of the 1991 Provisional Central Product Classification, which was prepared by the United Nations Statistics Division for the purpose of trade statistics. The W/120 references to the 1991 CPC Provisional Classification ("*CPC Provisional*"). The CPC Provisional classification in turn has corresponding explanatory notes which describe the nature of services covered thereof.

In China – Publications and Audiovisual Products, one of the issues considered by the panel was the electronic distribution of sound recordings, and China's commitments with regard to the same. The panel noted that "...evidence on the technical feasibility or commercial reality of a service at the time of the service commitment may constitute circumstances relevant to the interpretation of its scope under Article 32 of the Vienna Convention....At the same time, the significance of any evidence of lack of technical feasibility or absence of commercial reality of the service at the time of the service commitment would need to be carefully evaluated. We consider therefore that any evidence that sound recordings delivered in non-physical form were not, unlike today, technically possible or commercially practiced at the time China's Schedule was negotiated might, in principle, be relevant as a supplementary means of interpretation with respect to the scope of that commitment".¹⁰ The Panel went on to reject China's contention that the electronic distribution of sound recordings was a new phenomenon that did not exist at the time of China's accession.¹¹ Based on an analysis of the "circumstances of [the] conclusion" of China's accession, the Panel concluded that "*the electronic distribution of sound recordings was a reality long before China's accession and that China itself was aware of this development.*"¹²

In its eventual conclusion, the panel did not have to invoke the principle of technological neutrality, since it concluded, based on a reading of China's commitments that it covered distribution over both physical and non-physical media. Nevertheless, the principle it noted with regard to awareness of parties at the time of taking commitments, remains of key relevance in understanding the scope of the principle of technological neutrality. What remains material from the panel ruling is its observation that *evidence of lack of technical feasibility or absence of commercial reality of the service at the time of the service commitment*, is a supplementary means of interpretation that can be relied upon in an appropriate set of circumstances. This essentially arises from the commonsensical proposition that Members may actually schedule technological limitations only when these are within their realm of comprehension and understanding. In other words, a Member may have scheduled *Unbound** (to indicate unfeasibility due to limitations on technology), only if it was within its realm of understanding and anticipation that technology may actually evolve in a certain way.

¹⁰ Panel Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/R, para 7.1237

¹¹ *Ibid.* para 4.222.

¹² *Ibid.*

This needs to be kept in view in the context of rapidly evolving sectors such as “Internet services” or “Information, Communication and Technology” (ICT) services. The internet had certainly started emerging in the 1990s, however the current potential that it has achieved today, was certainly not something that could have been envisaged in the early 1990s when GATS commitments were negotiated. Increasing digitalization, whereby information is being transformed into digital form, and the enhanced use of information and communication technology, is leading to new ways of doing businesses and delivery of services. Other than the use of 3D technology as delivery of construction services cross-border, it is possible today to arrange for cross-border supply (mode 1) of road transport or even hotel transport services through the use of technology. As will be discussed later in this report, the classification of services under the United Nations Central Product Classification (UN CPC), do not contemplate actual presence and operation of taxis or hotels, for a particular service to fall within the broad description of ‘Road Transport’ or ‘Hotel services’, respectively. But clearly, the type of services rendered by entities such as Uber (for transport) or Air-bnb (for hotels) were simply not in contemplation in the 1990s.

The classification that was evolved in 1991 was subject to the understanding of what services existed at that point of time and how these could have been delivered then. Moreover, the objective of the UN Statistics Division is to accurately classify services, not to assess them from the perspective of commitments undertaken in respect of them. In that sense, there is a temporality to the nature and description of classification – it can always be updated, but commitments cannot just as easily be updated. This makes it all the more important to take emerging / evolving issues into account when assessing the commitments in a particular service sector.

WTO Secretariat Assessment and Members’ Views on Technological Neutrality

A review of WTO documentation reveals a few reports from the WTO Secretariat that signify broad and sweeping conclusions on the issue of technological neutrality in reading commitments under the GATS; but Members have largely expressed divergence of views. We will map the trends in views and discussions so far briefly, for enabling a better insight on this issue.

Our observation is that several developed countries appear to support an expansive notion of technological neutrality; while a few have cautioned on its implications. Developing countries have generally taken the view that the concept of technological neutrality cannot automatically be read into GATS commitments.

We map the views of key Members below.

Developed Members

The United States has fully supported the principle of technological neutrality. It has stated in a submission to the WTO on electronic commerce in February 1999 that *"there should be no question that where market access and national treatment commitments exist, they encompass*

*the delivery of the service through electronic means, in keeping with the principle of technological neutrality."*¹³

It is however interesting to note that despite this support for the principle of technological neutrality in GATS, the United States has implied in a different context that the use of different technology can cause similar services to fall under different classifications. With respect to one of its proposals before the Council for Trade in Services ("CTS"), the United States explained that technology was the main reason for the difference between "*postal and courier services*", and "*express delivery services*", and that while courier services were akin to messenger services, express services used advanced electronic technology and handled items from end-to-end in an integrated and time-sensitive manner.¹⁴ Brazil responded to this proposal by stating that it failed to see how a definition based on the utilization of advanced technology would justify a distinction between express delivery and what was traditionally viewed as courier services.¹⁵

In a meeting held in May 2001, Australia commented on the distinction between delivery of internet services and the content of internet services, noting that content, which could include educational material, or financial services, was covered under GATS sectoral classifications dealing with those subjects and that Members could make commitments in a technically neutral fashion for these sectors.¹⁶ In other discussions too, Australia has supported the principle of technological neutrality. It stated that an audiovisual content service would not need to be reclassified because it was delivered in a different way - for example by using an Internet delivery service.¹⁷ In 2014, in the context of a discussion on "new services" in the Committee on Trade in Services, Australia stated that there should be a distinction between a new means of delivery and a genuinely new service; and a technology-neutral approach to the identification of new services should be based on the end-use.¹⁸

More recently in 2015, the European Union and Canada have also both supported the principle of technological neutrality in GATS.¹⁹

Japan in a meeting of the CTS in 2001 expressed the view that the classification of certain activities that relied heavily on new communications technologies, such as the internet, would merit further analysis.²⁰ However, in a meeting in May 2003 Japan stated that technological

¹³ Work Programme on Electronic Commerce, Submission by the United States, WT/GC/16 dated 12 February 1999

¹⁴ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, Para 166

¹⁵ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, Para 174

¹⁶ Report Of The Meeting Held On 14 To 17 May 2001, Note By The Secretariat, Council For Trade In Services Special Session, S/CSS/M/9, dated 22 June 2001, para 187

¹⁷ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, Para 221

¹⁸ Report Of The Meeting Held On 18 September 2014, Note By The Secretariat, Committee on Specific, Commitments, S/CSC/M/71, 15 October 2014, para 1.8

¹⁹ Report Of The Meeting Held On 14 October 2015, Note By The Secretariat, Committee on Specific, Commitments, S/CSC/M/74 dated 27 November 2015

²⁰ Report Of The Meeting Held On 14 To 17 May 2001, Note By The Secretariat, Council For Trade In Services Special Session, S/CSS/M/9, dated 22 June 2001, para 55

neutrality applied to e-banking. This was in the specific context of a discussion in Basel which had highlighted that issues raised by cross-border e-banking were the same as those raised by cross-border banking by traditional means. Japan was of the view that e-banking was an extension of traditional banking, and financial regulators could conduct regulation and supervision on the basis of the principle of technological neutrality.²¹

Switzerland which was a party to the same meeting stated that the conclusions reached in Basel were in line with the general principle of technological neutrality, which in its view is *assumed* under the GATS.²²

A report of a CTS Meeting held in July 2001 records that Israel sought clarification on the legal implications of the term "technological neutrality" in a number of proposals.²³

Developing Countries

Developing countries have largely cautioned that the principle of technological neutrality cannot simply be assumed while assessing a commitment made by a Member in 1994, as this would result in constraining regulatory freedom of Members in a way not envisaged at the time of undertaking commitments.

For instance, in a meeting in June 1999, India expressed the view that it could not be presumed that the principle of technological neutrality applied automatically to all specific commitments of Members, as this would have legal and political consequences arising out of negotiations in the Uruguay Round and resulting commitments.²⁴ It reiterated this view in another meeting in October 2000, stating that having revisited the reports made by the subsidiary bodies to the General Council, India could not find any agreement by Members that these were conclusions that had been collectively reached.²⁵ In a subsequent meeting in July 2001, India stated that given the bottom-up approach of the GATS, the commitments for new services delivered through new technologies would have to be taken afresh and existing commitments would not apply to them.²⁶

As early as 1998, Egypt highlighted that the supply of services through electronic means has recently developed to an extent that many negotiators did not expect when GATS was negotiated.²⁷ It noted that countries were not aware at the time of entering into the GATS as regards the vast and complex implications of services delivery through electronic means. Egypt highlighted the impact of technology on the comparative strengths of the modes, for

²¹ Report Of The Meeting Held On 16 May 2003, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/40, 30 June 2003, para 30

²² Report Of The Meeting Held On 16 May 2003, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/40, 30 June 2003, Para 18

²³ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, para 186

²⁴ Report Of The Meeting Held On 22 And 24 June 1999, Council for Trade in Services, S/C/M/37 dated 20 July 1999

²⁵ Note On The Meeting Of 27 October And 8 November 2000, Committee on Trade and Development, WT/COMTD/M/31, 14 December 2000

²⁶ Report Of The Meeting Held On 9 May 2001, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/31 dated 1 June 2001, para 11

²⁷ Report Of The Meeting Held On 14 And 15 December 1998, Note by the Secretariat Council for Trade in Services, S/C/M/32 dated 14 January 1999, para 13

example by favouring the cross-border supply of services at the cost of commercial presence and movement of natural persons. Egypt reminded the Members that Members' commitments according to the various modes of supply were made on the assessment of the competitive strengths of modes at the time of the negotiations.

Thailand in May 2001 expressed reservations on Australia's proposals in favour of technological neutrality, and emphasized on the need for further thinking on this.²⁸

Later in July 2001, Venezuela noted that there is a need to preserve the right to formulate rules to be applied to services provided through new technologies for which countries have no undertakings, and noted that this was particularly true of third generation technologies that are emerging.²⁹ In the context of telecommunications, Venezuela expressed the view that it is each country's right to regulate and set norms for the internet and transactions on the internet in accordance with national policies.³⁰ In the same round of meetings, Saint Lucia challenged the notion of technological neutrality, stating that it could have far-reaching impact on future commitments, including across-the-board adoption of commitments in terms of the removal of barriers, the extension of commitments in one sector to a complimentary sector, or the adoption of regulatory principles without regard to the discretion built into the GATS.³¹

In a meeting in October 2001, Cuba stated that the definition of technological neutrality was not included in the GATS, as it had been introduced in the negotiation on basic telecommunications in a very specific context.³² Cuba further stated that developing countries could consider when the concept of technological neutrality would affect their flexibility and their right to condition entry to their markets depending on the technology to be used, and perhaps transferred.

Turkey, in a series of meetings in 2001 in CTS, claimed that it not clear whether technological neutrality means that countries should not require a specific technology for granting licenses to service providers. Turkey asserted that technology importing countries had to have the right to choose the proper technology to be imported. Brazil has also requested clarification of the term "technological neutrality" stating that there were doubts as to the exact meaning of that term in regards to the energy sector given that there seemed to be a number of different interpretations by delegations.

Uruguay in a meeting of the Committee on Trade in Financial Services in 2003 stated that the concept of "technological neutrality" was not in the GATS. It challenged the legal interpretation of the Swiss delegation to this effect, highlighting that there was no agreement

²⁸ Report Of The Meeting Held On 14 To 17 May 2001, Note By The Secretariat, Council For Trade In Services Special Session, S/CSS/M/9, dated 22 June 2001, para 182

²⁹ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, para 201

³⁰ Ibid.

³¹ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, para 204

³² Report Of The Meeting Held On 5, 8 And 12 October 2001, Note by the Secretariat, Council for Trade in Services, Special Sessions, S/CSS/M/12 dated 28 November 2001, para 143

among Members on the issue.³³ In the same meeting, Malaysia supported this position.³⁴ Philippines also stated that, as indicated by several Members in various meetings of the Committee, technological neutrality was not a basic assumption of the GATS. It was not provided for, either explicitly or implicitly, in the GATS.³⁵

Panama has presented a novel solution while acknowledging the mode-related problems on account of technological development, and stated that Members could look at the possibility of considering e-commerce as a fifth mode of services delivery under GATS, which would allow Members to get around the problem of distinguishing between the first two modes.³⁶

The MERCOSUR countries in 2001 submitted a joint communication to the General Council where it identified the “so-called concept of technological neutrality” as an issue that would “require further analysis.”³⁷

There is some support of the principle of technological neutrality among certain developing countries. For instance, Hong Kong has supported the principle of technological neutrality.³⁸ Korea has stated that the US position on technological neutrality is “important.”³⁹ Hungary has stated that e-commerce is neither a new form of trade nor a sector in itself, but simply trade with electronic means, and this should be considered in the conduct of the work programme.⁴⁰

What is however clear from a perusal of the various Member submissions highlighted above, is that there is no consensus or “general view” in relation to technological neutrality, and Members have held widely divergent perspectives on the same. Even countries which have supported technological neutrality in certain contexts have diverged from that position in other contexts – such as the United States in above.

However, documents from the Secretariat do not acknowledge this divergence of views. In a meeting of the Council for Trade in Services Special Session held in 1999, Members debated, among other things, the scope of GATS with respect to the electronic delivery of services.⁴¹ The Chairman stated that there was a “general view” as regards the “technological neutrality

³³ Report Of The Meeting Held On 16 May 2003, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/40, 30 June 2003, para 28

³⁴ Report Of The Meeting Held On 16 May 2003, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/40, 30 June 2003, para 35

³⁵ Report Of The Meeting Held On 16 May 2003, Note by the Secretariat, Committee on Trade in Financial Services, S/FIN/M/40, 30 June 2003, para 16

³⁶ Minutes Of Meeting, Held in the Centre William Rappard on 8 and 9 May 2001 WT/GC/M/65, dated 18 June 2001, para 112

³⁷ Electronic Commerce: Horizontal And Sectoral Issues Which Require Further Analysis, Communication from MERCOSUR, WT/GC/W/434 dated 7 May 2001

³⁸ Report Of The Meeting Held On 9 To 12 July 2001, Note by the Secretariat, Council for Trade in Services Special Session, S/CSS/M/10, 21 September 2001, para 210

³⁹ Report Of The Meeting Held On 14 To 17 May 2001, Note By The Secretariat, Council For Trade In Services Special Session, S/CSS/M/9, dated 22 June 2001, para 205

⁴⁰ Minutes Of Meeting, Held in the Centre William Rappard on 8 and 9 May 2001 WT/GC/M/65, dated 18 June 2001, para 107

⁴¹ Report Of The Meeting Held On 14 To 17 May 2001, Note By The Secretariat, Council For Trade In Services Special Session, S/CSS/M/9, dated 22 June 2001, para 205

of the Agreement [GATS]”; however, India had expressed disagreement in the very same meeting.⁴²

As recently as February 2015 in a document titled “*Background Information by the Secretariat*”⁴³ the Secretariat reiterated that there was a “*general view*” in the meetings of the Council for Trade in Services in 1999 that the means of delivery does not alter specific commitments under GATS, and that the GATS is technologically neutral as it does not contain any provisions that distinguish between the different technological means through which a service may be supplied.⁴⁴ This generic statement simply belies and ignores the various nuances in the positions taken by different Members on this issue, as mapped above. The views of most developing countries remain unacknowledged and a few developed countries’ perspectives appear to being portrayed as the “general view.”

In the rising clamor for negotiations on e-commerce, country positions on the issue of technological neutrality increasingly appear to be getting muted. Given its close and intrinsic link with trade in services commitments, it is important that Members understand and take an informed view on this subject. We hope that the discussions that follow will help clarify this aspect.

III UNDERSTANDING SCHEDULING ACROSS SELECT SERVICES SECTORS

The GATS do not offer a definition of “services”, but services need to be identified and classified for the operation of the Agreement, especially for the scheduling of specific commitments on market access and national treatment. There is no obligation on WTO Members to use any particular classification system in undertaking commitments. Nevertheless, an informal document produced for the services negotiation during the Uruguay Round, the Services Sectoral Classification List (W/120), was used and continues to be used as the principal guiding classification system, not only in the WTO, but also in bilateral and plurilateral services trade negotiations outside of the WTO.

The W/120 list is a streamlined classification consisting of 12 categories and over 150 sub-headings. It refers to the UN Provisional Central Product Classification list of 1991 (“CPC Provisional”), which existed at the time of the Uruguay Round negotiations. The W/120 appears much more aggregated than the CPC Provisional, and contains CPC Provisional references for majority of the sub-headings. The CPC Provisional is far more granular and disaggregated in its approach, which comprises of classes, sub-classes and explanatory notes. In *United States – Gambling*, the Appellate Body observed: “[a]s the CPC is a decimal system, a reference to an aggregate category must be understood as a reference to all of the constituent parts of that category. Put differently, a reference to a three-digit CPC Group should, in the absence of any indication to the contrary, be understood as a reference to all

⁴² Report Of The Meeting Held On 22 And 24 June 1999, Council for Trade in Services, S/C/M/37 dated 20 July 1999

⁴³ Work Programme On Electronic Commerce, Background Information By The Secretariat, JOB/GC/73, 6 February 2015

⁴⁴ Work Programme On Electronic Commerce, Background Information By The Secretariat, JOB/GC/73, 6 February 2015, para. 4.12 and 4.18

the four-digit Classes and five-digit Sub-classes that make up the 6 group; and a reference to a four-digit Class should be understood as a reference to all of the five-digit Sub-classes that make up that Class."⁴⁵

In addressing the issue of how to describe committed sectors and sub-sectors in the schedule of specific commitments under the GATS, the 1993 Secretariat's Explanatory Note on the Scheduling of Initial Commitments in Trade in Services ("1993 Scheduling Guidelines") urged governments to use W/120 to the extent possible when scheduling services commitments. It states that:

The legal nature of a schedule as well as the need to evaluate commitments, require the greatest possible degree of clarity in the description of each sector or sub-sector scheduled. In general, the classification of sectors and sub-sectors should be based on the Secretariat's revised Services Sectoral Classification List. Each sector contained in the Secretariat list is identified by the corresponding Central Product Classification (CPC) number. Where it is necessary to refine further a sectoral classification, this should be done on the basis of the CPC or other internationally recognized classification (e.g. Financial Services Annex). The most recent breakdown of the CPC, including explanatory notes for each sub-sector, is contained in the UN Provisional Central Product Classification. If a Member wishes to use its own sub-sectoral classification or definitions it should provide concordance with the CPC.... If this is not possible, it should give a sufficiently detailed definition to avoid any ambiguity as to the scope of the commitment.

A WTO Working Paper from 2015 has observed that Members' have from the beginning had concerns or lack of confidence with the system's adequacy in fully capturing and reflecting the universe of services, due to rapid and constant development in services.⁴⁶ It notes that the WTO Committee on Specific Commitments, at its "inaugural" meeting in 1996, tasked the Secretariat to "carry out analytical work in the area of sectoral classification" because "the service sectoral classification was quite possibly incomplete and out of date. This has been a standing agenda item of the Committee since then."⁴⁷ Despite this, the Working Paper notes that while W/120 remains unchanged since 1991, CPC Provisional, the source for the and annotations in W/120, has been revised and updated several times, with the latest versions being the CPC Version 2 and Version 2.1 that were published in 2008 and 2015 respectively, stating in each of its introductions that "*all previous draft versions become obsolete*". A question that remains unanswered is whether W/120 is still adequate to serve current and future services trade negotiations as it is based on the CPC Provisional of 1991.⁴⁸ This aspect will be discussed further in our assessment of the sector specific classification issues below.

⁴⁵ Appellate Body Report, United States - Measures Affecting the Cross-Border Supply of Gambling and Betting Services, WT/DS/285/AB/R, para. 200. Original Note on the decimal system: "The CPC hierarchy consists of Sections designated by one-digit codes, Divisions designated by two-digit codes, Groups designated by three-digit codes, Classes designated by four-digit codes, and Subclasses designated by five-digit codes."

⁴⁶ Ruosi Zhang, *Covered or Not Covered: That is the Question*, WTO Working Paper ERSD-2015-11 (November 2015)

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

For the purpose of this study, the Schedules of Specific Commitments of twenty (20) WTO Members in respect of Mode 1 (“Cross-Border supply”) and Mode 3 (“Commercial Presence”) have been reviewed in respect of the following five (5) service sectors as per the WTO Services Sectoral Classification List (“W/120”):

- (i) Computer and Related Services – CPC 84
- (ii) Construction and related Engineering Services – CPC 512; 513; 514+516; 517; 511+515+518
- (iii) Tourism and Travel Related Services – CPC 641-643; 7471; 7472
- (iv) Transport Services – with specific focus on Road Transport Services (excluding Maintenance, repair and support service) – CPC 7121+7122; 7123; 7124
- (v) Financial Services – with specific focus on Money Transfers / Electronic Payment services

The 20 WTO Members whose specific commitments in the aforesaid sectors have been examined for the purpose of this study are as follows: (i) India; (ii) U.S.; (iii) European Union; (iv) Japan; (v) Australia; (vi) Canada; (vii) Pakistan; (viii) Bangladesh; (ix) China; (x) Indonesia; (xi) Thailand; (xii) Philippines; (xiii) Kenya; (xiv) South Africa; (xv) Tanzania; (xvi) Nigeria; (xvii) Uganda; (xviii) Argentina; (xix) Brazil and (xx) Mexico.

A detailed mapping of specific commitments scheduled by the aforementioned WTO Members under the GATS has been provided as **Annexure-1**.

Our focus is specifically on GATS commitments scheduled by the twenty (20) specified countries under Mode 1 (“Cross-border supply”) and Mode 3 (“Commercial presence”) in respect of the identified service sectors. The reason for focusing on the supply of services through Mode 1 and Mode 3 is because a purely technologically neutral reading of GATS commitments of Members would have significant implications for countries that have scheduled full commitments for supply through Mode 1 (“Cross-border supply”) while specifying restrictions for supply under Mode 3 (“Commercial Presence”), particularly in respect of service sectors identified in this study. The intent of the Members at the relevant time behind such scheduling is of great relevance, as it is entirely plausible that such commitments were taken without any foresight or understanding as to how technology would be capable of evolving and changing the means and methods of supplying services over time. For example, that services in the nature of construction or hotel / lodging could one day be delivered across borders without the physical presence of the service supplier in the host country would not have been reasonably foreseeable at the time GATS commitments were being undertaken in the mid-late 1990’s. It must be noted that of the specified twenty (20) countries, while many have opted to schedule supply through Mode 1 as “Unbound*” in view of its technical unfeasibility at the time of undertaking GATS commitments in the mid-late 1990’s, especially in sectors for “Construction Service” and “Tourism Services”, some have taken full commitments for Mode 1 supply of such services while specifying restrictions for supply under Mode 3. In such cases, any technologically neutral and expansive reading of a Member’s commitments for Mode 1 supply can restrict a Member’s ability to impose regulatory requirements / restrictions it sought to make applicable through the same.

IIIA COMPUTER AND RELATED SERVICES – CPC 84 (“CRS”)

The W/120 and CPC Provisional description of the various sub-sectors under this category of services is explained in the table below.

	UN CPC	W/ 120 B. Computer and Related Services
	841 842 843 844 845+ 849	a. Consultancy services related to the installation of computer hardware b. Software implementation services c. Data processing services d. Data base services e. Other
W/ 120	UN CPC	UNCPC description
Ba	841	<u>Consultancy services related to the installation of computer hardware</u> : assistance services to the clients in the installation of computer hardware and computer networks.
Bb	842	<u>Software implementation services</u> : all services involving consultancy on, development and implementation of software, and defines "software" as the sets of instructions required to make computers work and communicate, which may include a number of different programmes developed for specific applications (application software) and situations in which the customer may have a choice of ready-made off-the-shelf programmes (packaged software), specifically developed programmes for its requirements (customized software) or a combination of the two. The sub-categories are:
	8421	<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	<u>Systems analysis services</u> : include analysing the clients' needs, defining functional specification, and setting up the team, as well as project management, technical coordination and integration and definition of the systems architecture
	8423	<u>Systems design services</u> : include technical solutions, with respect to methodology, quality-assurance, choice of equipment software packages or new technologies, etc.
	8424	<u>Programming services</u> : the implementation phase, i.e. writing and debugging programmes, conducting tests, and editing documentation
	8425	<u>Systems maintenance services</u> : 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 and specialist work, such as conversions
Bc	843/ 8431	<u>Data processing services</u> : or "input preparation services" include data recording services such as key punching, optical scanning or other methods for data entry
	8432	<u>Data-processing and tabulation services</u> consisting of services such as data processing and tabulation services, computer calculating services, and rental of computer time
	8433	<u>Time-sharing services</u> : UNCPC states that there is no clear distinction between 8432 and 8433, noting that computer time only is bought; if it is bought from the customer's premises, telecommunications services are also bought. Data processing or tabulation services may also be bought from a service bureau.
	8439	<u>Other data processing services</u> : consisting of 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
Bd	844	<u>Data base services</u> : all services provided from primarily structured databases through a communication network. The UNCPC specifically excludes "data and message transmission services" which it classifies under telecommunications services (as 7523) and excludes documentation retrieval services classified as library services (as 96311)
Be	849	Other computer services: services for which UNCPC lists two sub-categories
	8491	Data preparation services: services for clients not involving data processing services
	8499	Other computer services n.e.c.: training staff of clients and other professional services

Of the above, it is interesting to note that the sub-sector on Data Processing services (CPC 843), is classified in W/120 under both “Computer and Related Services” (“CRS”), as well as under Telecommunication Services. In fact, there has been growing recognition of how CRS may not be classifiable as an independent category. In the evolution of the UN CPC discussions, under CPC Version 1.1, which emerged in 2002, CRS was bifurcated under two broad areas: “*Other Business Professional, Technical and Business Services*” (CPC 83), and “*Telecommunications services; Information retrieval and supply services*” (CPC 84). Further evolution has occurred in the most recent CPC classification- CPC Version 2.1, of 2015, which continues the characterization as “*Professional/ Business services*” (CPC 83), as well as under “*Internet Telecommunication services*”, as a sub-category under “*Telecommunication services*” (CPC 84). Under both CPC versions, aspects relating to installation and maintenance of computer hardware and software appear under different sub-categories of services. This indicates recognition that CRS cannot be straitjacketed as a distinct area of service, and that regulatory issues and concerns, especially in relation to the telecommunication services could be a relevant aspect for consideration.

A group of WTO Members in 2007 issued a communication titled “Understanding on the scope and coverage of CPC 84 – Computer and Related Services” (“2007 Understanding on CRS”)⁴⁹ to attempt to explain the range of services within the ambit of CRS. The Annex to the Understanding on CRS explains as follows:

“3. Computer and related services, regardless of whether they are delivered via a network, including the Internet, include all services that provide any of the following or any combination thereof:

- consulting, adaptation, strategy, analysis, planning, specification, design, development, installation, implementation, integration, testing, debugging, updating, support, technical assistance, or management of or for computers or computer systems;*
- consulting, strategy, analysis, planning, specification, design, development, installation, implementation, integration, testing, debugging, updating, adaptation, maintenance, support, technical assistance, management or use of or for software⁵⁰;*
- data processing, data storage, data hosting or database services;*
- maintenance and repair services for office machinery and equipment, including computers and*
- training services for staff of clients, related to software, computers or computer systems, and not elsewhere classified.*

⁴⁹Understanding on the scope of coverage of CPC 84 - Computer and Related Services, Communication From Albania, Australia, Canada, Chile, Colombia, Croatia, The European Communities, Hong Kong China, Japan, Mexico, Norway, Peru, The Separate Customs Territory Of Taiwan Penghu, Kinmen And Matsu, Turkey And The United States, Committee on Specific Commitments, S/CSC/W/51; TN/S/W/60 dated January 26, 2007

⁵⁰Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991; FN 2: 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.

4. In many cases, computer and related services enable the provision of other services⁵¹ by both electronic and other means. However, in such cases, there is an important distinction between the computer and related service (e.g., web-hosting or application hosting) and the other service³ enabled by the computer and related service. The other service, regardless of whether it is enabled by a computer and related service, is not covered by CPC 84.”

IIIA.1 WTO Secretariat’s summary and overview of commitments

While most WTO Members refer to the W/120 and therefore the CPC Provisional in their classification of services for the purpose of scheduling commitments, certain countries do not make an express reference to it. In 2009 the WTO Secretariat prepared a Background Note on Computer and Related Services⁵², in which it has noted the following:

- (i) Commitments on computer and related services are included in 83 of the GATS schedules (counting the EC-12 schedules one). Of these, commitments in each of the sub-sectors under CRS is as follows:
 - (a) CPC 841: Consultancy services related to the installation of hardware: 73 schedules
 - (b) CPC 842: Software implementation services: 78 schedules
 - (c) CPC 843: Data processing services: 76 schedules
 - (d) CPC 844: Data base services: 69 schedules
 - (e) CPC 845: "Other" computer services: 51 schedules
- (ii) Overall, 60 governments (counting the EC-12 individually), or 72 per cent of those with commitments, list all five subsectors. Reflecting the relatively unregulated nature of these services, entry of sector-specific limitations are rare, although limitations indicated in the horizontal section of schedules would apply.
- (iii) The incidence of full commitments is high; depending on the subsector concerned, between 62 and 70 per cent of schedules containing computer services list no limitations on commercial presence. Commitments on consumption abroad with no limitations are slightly more common, and are reflected in around 65 and 72 per cent of schedules.
- (iv) No industrialized economies have inscribed "unbound" in a subsector or mode of supply. This is an entry more commonly found in developing economies' schedules. At least half of developing economies with commitments on the sector listed cross-border supply as "unbound" for database services and consultancy related to the installation of hardware (subsectors a. and d.).
- (v) Where sector-specific limitations are listed, they more frequently relate to commercial presence and most of them concern the type of legal entity required and restrictions on the level of participation of foreign equity.

⁵¹ Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991; FN 3: E.g., W/120.1.A.b. (accounting, auditing and bookkeeping services), W/120.1.A.d. (architectural services), W/120.1.A.h. (medical and dental services), W/120.2.D (audiovisual services), W/120.5. (educational services).

⁵² Computer and Related Services, Background Note by Secretariat, S/C/W/300, dated 22nd June, 2009

- (vi) On national treatment, restrictions related to residency and licensing/registration appear in a few schedules. The sector-specific limitations listed under presence of natural persons usually concern quantitative limitations of the number of persons and are slightly more common in respect to sub-service (a), consultancy services related to the installation of hardware.
- (vii) No Members have listed MFN exemptions specific to computer and related services. However, given the importance of commercial presence and movement of natural persons, some of the horizontal MFN exemptions listed relating to these modes of supply may be relevant.

IIIA.2 Evolution of the CRS Sector

Given the unprecedented growth in technology over the past two decades, the services described under CRS have undergone significant changes since the introduction of the W/120 and time of scheduling of GATS commitments for most WTO Members. With “digital convergence” some services that were earlier regarded as distinct (with distinct service providers and regulatory regimes) are now provided by the same or similar service providers using related technology. This has made it increasingly difficult to distinguish, for instance, between computer services, value added telecommunication services, and audio-visual services. As discussed above, even in the early 1990s in W/120, the service “data processing” appears twice: both under CRS as well as under telecommunications (sharing the same CPC reference 843).

The WTO Secretariat has addressed issues in the Background Note on Telecommunications⁵³ and the Background Note on CRS.⁵⁴

- (i) In the Background Note on Telecommunications, the Secretariat has identified definitional issues with regard to “data processing services” being listed under both telecommunications and CRS. The Background Note suggests that the key distinction to bear in mind for clarification is the distinction between “use” and “supply” of a service. If telecommunications are the “means of delivery” then the core service would be the different. Alternatively, if the supplier of a different service also owns and operates its own networks, hence supplying both telecommunications and the overlaying services, then more than one sector in a Members’ schedule would be relevant for assessing the supplier’s GATS benefits and entitlements.⁵⁵
- (ii) In the Background Note on CRS, the Secretariat has observed that certain computer services have become nearly impossible to distinguish from value-added telecommunications services and that integrated offerings of CRS subsectors identified in the GATS Classification makes it increasingly difficult to distinguish among

⁵³ Telecommunications Services, Background Note by Secretariat, S/C/W/299 dated 10th June 2009

⁵⁴ Computer and Related Services, Background Note by Secretariat, S/C/W/300, dated 22nd June, 2009

⁵⁵ Telecommunications Services, Background Note by Secretariat, S/C/W/299 dated 10th June 2009, para. 11

them.⁵⁶ It also observed that terms used in the corresponding CPC definitions are fairly outdated.⁵⁷

As discussed above, the UN CPC Version 2.1 has a far more evolved manner in which it views CRS. Fundamentally, it no longer uses the term “Computer and Related Services”, and instead the overall class under which computing related services appear is *Information Technology*.

A comparison between the classification systems under the 1991 CPC Provisional and CPC Ver. 2.1, with regard to computer related services, is as follows:

Table 1: Comparison of CPC Provisional and CPC 2.1

CPC Provisional	CPC Version 2.1
841 – Consultancy services relating to the installation of computer hardware	8313 – IT consulting and support services
842 – Software implementation services	8313 – IT consulting and support services
844 – Database services	
845 – Maintenance and repair services of office machinery and equipment including computers	8712 - Maintenance and repair services of office and accounting machinery 8713 - Maintenance and repair services of computers and peripheral equipment 8714 - Maintenance and repair of transport machinery and equipment 8715 - Maintenance and repair services of other machinery and equipment
849 – Other computer services n.e.c.	

In 2015, an expert group on International Statistical Classifications of the UN Statistics Division discussed issues provided by the WTO on a list of service descriptions that may not be covered in the CPC Provisional in a sufficiently clear way. The discussions during these meetings on the UN CPC Version 2.1 are insightful with regard to the difference in views even among experts, on the classification of three aspects which have emerged as a result of evolution of technology: Cloud Computing, Search Engine Services and Social Media services. These are briefly discussed below.

(i) Cloud Computing

These are services provided using computer facilities over the internet, involving the “on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the internet with pay-as-you-go pricing.”⁵⁸ The discussions reveal difference of views on whether this falls within existing services classification such as database or storage service, or a combination of data processing and telecommunications, or a “new service.”⁵⁹

⁵⁶ Computer and Related Services, Background Note by Secretariat, S/C/W/300, dated 22nd June, 2009, Para 8.

⁵⁷ Computer and Related Services, Background Note by Secretariat, S/C/W/300, dated 22nd June, 2009, Para 8.

⁵⁸ “What is Cloud Computing”, Amazon Web Services, available online at <https://aws.amazon.com/what-is-cloud-computing/>

⁵⁹ “New issues requiring guidance in the Central Products Classification System,” Meeting of the Expert Group on International Statistical Classifications on 19-22 May 2015, United Nations Department Of Economic And Social Affairs Statistics Division, ESA/STAT/AC.289/20 dated 12 May 2015

(ii) Search Engine Services

These services involve online search engines enabling searching, indexing as well as ranking of search results on the internet. Since the revenue essentially comes from advertising on the websites, it led to the question as to whether this falls in advertisement services, CRS, or telecommunications.⁶⁰

(iii) Social Media Services

Similar questions have been raised in respect of social network services – whether it is a commercial service at all, and whether it should be regarded as a new service or an advertising service.⁶¹

The fact that there is no conclusive view on the aforementioned services reflects the divergence in views not only among WTO Members, but between experts of technology as well. In such a scenario, the cloak of “technological neutrality” cannot be used to subsume an assumption that commitments in CRS without qualification, would mean that new services such as cloud computing or search engines or social media services, are all encompassed within its overall purview.

Subsequent discussions regarding the UN CPC classifications, as to what would amount to “new services” has revealed more divergent views.⁶² Some discussants identified a number of services that were not explicitly referred to either in W/120 nor the CPC Provisional, and suggested that there should be a technical discussion with a view to acquiring a better understanding of these complex services. The response of a representative of the UN Statistics Division however was that statisticians did not treat any services as “new,” and that the general rule is to look at whichever service in the list most resembled the one provided. According to him, not all services were explicitly provided in the CPC but they were still part of the existing categories, since services provided through new means of delivery were classified as the same categories as those delivered through traditional means. With respect to services for which no “traditional equivalent” seemed to exist, they were classified according to those they most resembled, considering the type of the products delivered and the use of the services. He also noted that if there was a need to separately identify different means of delivery for statistical purposes, new sub-categories could be created in a revision process.

It may however not be appropriate to simply transpose the clinical manner in which statisticians look at the issue of classification, to the challenges of interpreting what WTO Members have committed. This is an area where there are some differences in the way in which Members approach this issue. A snapshot of views of some Members is provided below:

⁶⁰ New issues requiring guidance in the Central Products Classification System, Meeting of the Expert Group on International Statistical Classifications on 19-22 May 2015, United Nations Department Of Economic And Social Affairs Statistics Division, ESA/STAT/AC.289/20 dated 12 May 2015

⁶¹ “New issues requiring guidance in the Central Products Classification System,” Meeting of the Expert Group on International Statistical Classifications, on 19-22 May 2015, United Nations Department Of Economic And Social Affairs Statistics Division, ESA/STAT/AC.289/20 dated 12 May 2015

⁶² Report of the Meeting of the Committee of Specific Commitments held on 14th October, 2015, Note By The Secretariat, Committee on Specific, Commitments, S/CSC/M/74 dated 27 November 2015

The United States has cautioned Members against classifying "new services" as a way to weaken existing commitments, stating that such services could be accommodated in the existing classification system. The United States also believes that the implications of "new services" for the existing commitments would be for a dispute panel to decide.⁶³

Similar to the United States, the EU has noted the need to keep in view two fundamental principles:⁶⁴

- (i) *First*, that GATS commitments were subject to a positive description of sectors. When considering classification, the key issue would be the sectoral description of commitments and the ability to interpret that description.
- (ii) *Second*, there was no mandatory classification of services in the WTO. As a result, despite W/120 and the CPC, there was variation among schedules in terms of classification, which entailed different commitments at the same level. In addition, the residual "other" categories in the classification might also capture a lot of services. The forthcoming work should be focused on how to develop classification tools which would be future-proof, and that there was no need for a category of "new services", which in EU's view creates unnecessary confusion.

Numerous developing countries such as India, China Brazil and Ecuador have been wary of the above interpretation on the existing commitments of the Members. India believes that the discussion on classification issues should not have any implications on existing commitments. New services should not affect the scope of commitments that had been undertaken on the basis of a positive list approach and based on their stage of development. This is particularly relevant in India's view, as the fundamental philosophy of the GATS was to provide Members with regulatory freedom. This view has been echoed by China, Brazil and Ecuador.

Specifically, with regard to the issue of Cloud Computing, and other emerging computer services, the divergence of views is quite revealing. These are explained further below.

WTO Members on the Classification of Cloud Computing

The Council for Trade in Services and the Committee on Specific Commitments have held sustained discussions on cloud computing since 2011. Much of this discussion has arisen as a response to a Communication from the United States in 2011 titled "*Work Program on Electronic Commerce: Ensuring that Trade Rules Support Innovative Advances in Computer Applications and platforms, such as Mobile Applications and the Provision of Cloud Computing Services.*"⁶⁵ In this, the United States makes the following observations:

⁶³ Report Of The Meeting, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/71 dated 18 September 2014, para 1.5

⁶⁴ Report Of The Meeting, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/71 dated 18 September 2014, para 1.6

⁶⁵ *Work Program on Electronic Commerce: Ensuring that Trade Rules Support Innovative Advances in Computer Applications and platforms, such as Mobile Applications and the Provision of Cloud Computing Services*, Communication from the United States, S/C/W/19, dated 20th September, 2011.

- (i) While cloud computing represents a novel way to access software electronically over the Internet, it can also be viewed as a return to the early days of computing, where users often accessed remotely-managed mainframe computers for their computing needs. Thus, the CPC Provisional categories from the 1990s cover similar functions.
- (ii) The United States cited a Background Note by WTO Secretariat in 2009⁶⁶, stating that when determining under which category a certain activity is classified, *“a key distinction to bear in mind is that between use and supply, wherein telecommunications may be used as a ‘means of delivery’ for many other services. Suppliers of such services as computer services, audiovisual services and other communications-enabled services, classified elsewhere in the GATS list, are common examples of users of telecommunications networks and services.”* Thus, the category of computer and related services remains the fundamental locus for cloud computing under the GATS and telecommunications is an enabling service for the provision of cloud computing rather than being the core of the service.

The discussions undertaken by the other Members at the WTO have been largely in response to the United States’ attempt to characterize Cloud Computing as CRS. Some of the points raised by various Members with regard to this issue are explained below.

- (i) China has stated that cloud computing clearly overlapped with both computer-related services and telecommunications services. In addition, cloud computing was a highly integrated new service based on ICT technology. Therefore, it could not simply be classified as falling either under computer-related services or telecommunications services.⁶⁷ It noted that for cloud computing, the Internet was not a simple carrier or channel. Rather, it was closely related to the formation and innovation of the service model. As a matter of fact, in China, computer-related services providers and telecom operators could act both as providers and users of cloud computing services; and were already providing cloud computing services together with many other services. Therefore, China suggests further discussion and research should be undertaken regarding cloud computing services and their classification.⁶⁸
- (ii) Canada has taken the view that the "Understanding on the scope of coverage of CPC 84 - Computer and Related Services"⁶⁹ already provided a useful clarification on the scope of commitments taken under the GATS relating to many of the services provided through cloud computing, such as data storage or processing services. However, there are other services that were provided through the use of

⁶⁶ Telecommunications Services: Background Note by the Secretariat, Council for Trade in Services, S/C/W/299 dated 10th June 2009

⁶⁷ Report Of The Meeting Held On 23 March 2012, Note By The Secretariat, Council For Trade In Services, S/C/M/109, Para 66-69

⁶⁸ *Ibid*

⁶⁹ Understanding on the scope of coverage of CPC 84 - Computer and Related Services, Communication From Albania, Australia, Canada, Chile, Colombia, Croatia, The European Communities, Hong Kong China, Japan, Mexico, Norway, Peru, The Separate Customs Territory Of Taiwan Penghu, Kinmen And Matsu, Turkey And The United States, Committee on Specific Commitments, S/CSC/W/51; TN/S/W/60 dated January 26, 2007

software in the cloud, such as online taxation preparation services, that would be classified elsewhere under the GATS, as it was an “enabled service.” Canada suggests further promotion of the Understanding as being a useful means to provide further clarity to the issue.⁷⁰

- (iii) European Union has taken the view that cloud services consisted of a combination of data processing, data storage and database services. In that respect, the European Union has disagreed that cloud computing would be a new service or a value-added telecom service. Cloud computing makes use of the internet and telecommunication infrastructure, but telecommunications in this instance is only a means of delivery, not the core of the service being provided. In the same way, cloud computing itself could be an enabling service, e.g. allowing for a better and more efficient processing of banking data, that would not make cloud a financial service either. In conclusion, the European Union has concurred with the view of the United States that cloud computing is a CRS.⁷¹
- (iv) Korea has treated cloud computing both as Computer and Related Services (CRS) and telecommunications in its schedules and was open to any discussion that might bring clarity to the existing classification system.⁷² In Korea, a service provider that owns network facilities to provide a service has to obtain a general license, as it is considered a facilities-based telecom operator. Such operators have been made subject to foreign investment restrictions, while there were no market access restrictions in Korea’s schedule of commitments for CRS suppliers.
- (v) India has cautioned that any discussion on “new services” such as cloud computing could have a bearing on the interpretation of existing commitments. India has also highlighted that its domestic industry was at that time still at the early stages of absorbing cloud computing. It involves challenging issues such as security, privacy, inter-operability, standards, reliability – and hence requires further deliberation before agreeing to discuss this issue.⁷³ Further, India has expressed its concerns regarding the benefits of discussing cloud computing, given that it is a near-monopolistic market of one Member alone holding most of the global market.⁷⁴

Similar issues have been discussed at the WTO in the context of other potentially “new” services such as search engine services and social media services. For instance, China questioned whether a search engine service provided by Google was within the scope of services defined in the GATS. China noted that when using a search engine service, the user did not need to pay, since the search engine company's revenue was generated from its advertising business. As the GATS covered only services provided on a commercial basis,

⁷⁰Report Of The Meeting Held On 18 March 2015, Note By The Secretariat, Council for Trade in Services S/C/M/122 dated 1 May 2015, Para 4.23

⁷¹Report Of The Meeting Held On 18 March 2015, Note By The Secretariat, Council for Trade in Services S/C/M/122 dated 1 May 2015, Para 4.33

⁷²Report Of The Meeting Held On 18 March 2015, Note By The Secretariat, Council for Trade in Services S/C/M/122 dated 1 May 2015, Para 4.24

⁷³Report Of The Meeting Held On 30 September 2011, Note By The Secretariat, Council For Trade In Services, S/C/M/107, S/C/M/107, para 154

⁷⁴Ibid

the question was under which category search engine services should fall – advertising platform services, telecommunication or computer-related services. China noted that the 1991 CPC Provisional seemed inadequate to reflect the commercial reality or business model behind these services.⁷⁵

In the case of social networking services like Facebook, the same question arose. Users communicate with each other through the platform without paying any fees and the suppliers of social networking services collect their revenue from advertising services. China's preliminary view was that social networking services were not commercial services but could be considered as a type of new service.⁷⁶

IIIA.3 Implications of Existing CRS Commitments of Members

While there is still debate on how cloud computing services should be classified, it would be interesting to observe the impact of classifying the same as CRS, on the existing commitments taken by Members in this field.

In this regard, the commitments taken by Members in Mode 1 and Mode 3 in data processing and other services are summarized below. The objective of this exercise is to identify how Members who have taken commitments under “data processing” will be affected in the event that “cloud computing” is regarded as being simply a part of “data processing” rather than a “new service” requiring reclassification.

Table 2: Mode 1 and Mode 3 Commitments of Members in “Data Processing” and “Other” Services

Sub-Sector	Mode 1	Mode 3
<u>Data processing services (CPC 843) + Data base services (CPC 844)</u>	<u>Full Commitment:</u> U.S., European Union, Japan and Argentina have taken full commitments in Mode 1 for all sub-sectors in CRS, including data processing and data base services. Australia, Canada, South Africa, China and Mexico have taken full commitments in Mode 1 for data processing services.	<u>Full Commitment:</u> U.S., European Union and Argentina have taken full commitments across all sub-sectors, including data processing. Australia and Canada have taken full commitment for data processing. South Africa and Pakistan have taken full commitments for data base services and data processing services.
	<u>Partial Commitment</u> Indonesia has taken full commitments in Mode 1 for computer time sharing services, a sub-section of data processing services.	<u>Partial Commitment:</u> China has taken full commitment in certain sub-sectors of data processing services – viz. Input preparation services (CPC 8431), Data processing and tabulation services (CPC 8432), Time-sharing services (CPC

⁷⁵ Report Of The Meeting Held On 7 May 2014, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/70 dated 11 June 2014

⁷⁶ Report Of The Meeting Held On 7 May 2014, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/70 dated 11 June 2014

Sub-Sector	Mode 1	Mode 3
		<p>8433).</p> <p>Indonesia has taken commitments only in Computer Time Sharing Services (CPC 84330) but has restrictions on number of service providers and paid up capital for foreign companies.</p> <p>India has scheduled an incorporation requirement with a foreign equity ceiling in data processing services under Mode 3 for Market Access, and has taken full commitment for National Treatment.</p> <p>Japan has undertaken full commitments for data processing services in Mode 3 for Market Access but has maintained certain restrictions for National Treatment.</p> <p>Thailand has foreign-equity restrictions in both Market Access and National Treatment.</p> <p>Mexico has taken partial commitments in Mode 3 for data processing services.</p>
	<p><u>No Commitment:</u></p> <p>India, Brazil, Philippines, Thailand, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments in Mode 1 under CRS.</p>	<p><u>No Commitment:</u></p> <p>Brazil, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments in Mode 3.</p>
<p><u>“Other” services (CPC 849)</u></p>	<p><u>Full Commitment:</u></p> <p>Australia, Canada, South Africa, China and Mexico have taken full commitments in Mode 1.</p> <p>Indonesia has taken full commitments in Mode 1 for computer time sharing services, a sub-section of data processing services.</p>	<p><u>Full Commitment:</u></p> <p>EU, Argentina and Canada have taken full commitment in Mode 3.</p>

As can be observed from the Table 2 above, some countries have undertaken full commitment in Mode 1 for all sub-sectors in CRS, and some have undertaken full commitment for data processing specifically. The total Members who have undertaken full commitment in data processing are:

- (i) Developed countries: United States, European Union, Japan, Australia, Canada
- (ii) Developing countries: Argentina, South Africa, China, Mexico

If cloud computing is regarded as part of CRS, then these countries have *already* committed to full market access in Cloud Computing even before the classification of the service as such has been unanimously agreed by the WTO Membership.

Of the developed countries, certain countries such as United States and European Union have expressed before the Council in Trade in Services that cloud computing is a part of the existing classification in CPC Provisional and falls under CRS, as noted above. Canada has agreed with this view. Thus, it would not go against the scheduling intent of these countries or cause any regulatory difficulty if their schedules are interpreted in this manner.

However, that is not the case for all Members, particularly the developing countries. A case in point is China. China disagrees that cloud computing is solely CRS, and believes that certain elements of it are a part of telecommunications services. In the Chinese market, cloud services are provided as a value-added service by telecom providers. Thus, China regulates the same as value added telecommunications. However, China has taken full commitment in data processing, database services and time-sharing services under CRS while it maintains market access limitations on both Mode 1 and Mode 3 for telecommunications. Clearly, if cloud computing is regarded as simply a form of data processing under CRS for the purpose of interpreting market access commitments of China, then it would result in a clear disconnect between its intention at that time of scheduling and the subsequent interpretation of its schedule.

South Korea also regulates its cloud service providers through its domestic regulatory regime for telecommunications. In South Korea, a service provider that owns network facilities to provide a service has to obtain a general license for being considered a facilities-based telecom operator. South Korea subjects such operators to foreign investment restrictions, while there were no market access restrictions in both Modes 1 and 3 for CRS suppliers. Hence the treatment of cloud computing as data processing would also cause regulatory problems for Korea.

The impact of interpretation of the schedules of various Members in this manner would mean that localization requirements that violate Article XVI cannot be maintained by these Members if it has not scheduled the same. This is particularly problematic for developing countries since there is a large gap between them and developed countries in terms of the state of technological progress and access to technology. It is important that developing countries have the regulatory freedom to pursue measures to bridge this gap. A note by the Secretariat of the Council for Trade in Services records the importance of this issue for developing countries, and states that effective participation in electronic commerce requires access to computers and related equipment at world prices, to efficient telecommunication services and to training.⁷⁷

This is an issue that has been brought up at multiple discussions in the WTO in the recent past. For instance, Turkey has observed that concentrating on facilitating market access in the

⁷⁷The Work Programme On Electronic Commerce, Note by the Secretariat, Council for Trade in Services, S/C/W/68 dated 16 November 1998, Para. 13

ICT sector without addressing digital inequalities and the digital gap amongst Members could only lead to unbalanced outcomes.⁷⁸

South Africa too, as noted above, has taken full commitments with regard to data processing. At a meeting in June 2015, it stated that there is a need to achieve a better understanding of so-called "new services", "bundled services" or "enabled services" that other Members had been paraphrasing in the context of digital economy. South Africa has also explained that when Members had scheduled their commitments during the Uruguay Round, most of these services had not existed or been imagined. In its submission, it has also explained that it is in the process of drafting a cyber security law and believes that cloud computing has much to do with security issues, corporate or national security issues. It has taken the position that discussions on issues such as cloud services should not be deemed to have any interpretative connotation on specific commitments.⁷⁹

India, although not having undertaken commitments in Mode 1 for data processing, has also expressed these concerns. At the same meeting of June, 2015 it stated that any discussion on new or hybrid services should not have any impact on the scope of existing commitments. India has taken the position that existing commitments cannot be extended to new services. Members had undertaken GATS commitments based on the positive list approach and following the classification of W/120 which was based on the CPC Provisional. Services that had not existed at that point of time had not been mentioned in CPC and W/120. Hence, India has emphasized that there was a temporal aspect of the existing commitments.⁸⁰

The prospective interpretation of certain existing commitments as covering services that have newly emerged would subvert the principle of "positive listing" in that no Member is bound by a commitment that it did not specifically undertake. Further, it would lead to heightening the already large digital divide, since the market for cloud computing services is currently organized in such a manner that one developed Member alone holds most of the market as observed by India.⁸¹ Hence, the benefits of interpreting developing Members' schedules as more open than they intended, would only accrue to the developed Members. The corresponding interpretation for developed countries would not result in any advantages for developing countries, as they do not possess any significant service suppliers in technology-based sectors like cloud computing.

⁷⁸Report Of The Meeting Held On 23 March 2012, Note By The Secretariat, Council For Trade In Services, S/C/M/109, para. 158

⁷⁹ Report Of The Meeting Held On 2 June 2015, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/73 dated 17 June 2015, Para 1.8

⁸⁰ Report Of The Meeting Held On 2 June 2015, Note By The Secretariat, Committee on Specific Commitments, S/CSC/M/73 dated 17 June 2015, Para 1.10

⁸¹Report Of The Meeting Held On 30 September 2011, Note By The Secretariat, Council For Trade In Services, S/C/M/107, S/C/M/107, para 154

IIIB CONSTRUCTION AND RELATED ENGINEERING SERVICES – CPC 51

The Services Sectoral Classification List (W/120) provides for “Construction and Related Engineering Services” which is divided into the following Groups:

A. General construction work for buildings (CPC Provisional 512)

This item includes construction work (including new work, additions, alterations and renovation work⁸² for all types of buildings, residential or non-residential, whether privately or publicly owned.

B. General construction work for civil engineering (CPC Provisional 513)

This item covers construction work for structures other than buildings such as highways and streets, railways and airfield runways, bridges and tunnels, waterways and harbours, dams, pipelines, communication and power lines, mining and manufacturing plants, and stadia and sports grounds.

C. Installation and assembly work (CPC Provisional 514, 516)

This item includes such activities as the assembly and erection of prefabricated constructions, installation work for heating and air conditioning, water plumbing, gas fitting, electrical wiring, fire alarm construction, insulation, fencing and lift construction.

D. Building completion and finishing work (CPC Provisional 517)

This item covers special trade construction work for the completion and finishing of buildings such as glazing, plastering, painting, floor and wall tiling, carpeting, carpentry, interior fitting and decoration, ornamentation fitting.

E. Other (CPC Provisional 511, 515, 518)

This item includes pre-erection work at construction sites, as well as special trade construction work such as foundation work, water well drilling, roofing, concrete work, steel bending and erection, and masonry work. It also covers renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator.

IIIB.1 WTO Secretariat's summary and overview of commitments

The Background Note on Construction and Related Engineering Services⁸³ has noted the following trends in commitments made by Members in this sector:⁸⁴

- (i) A total of 79 GATS schedules (counting the EC-12 schedule as one) have recorded commitments in at least one of the five sub-sectors of “Construction and Related Engineering Services” as it is called in W/120. Of these, commitments in each of the sub-sectors under Construction and Related Engineering Services is as follows⁸⁵:
 - (a) CPC 512: General Construction Work for Buildings: 68 schedules
 - (b) CPC 513: General Construction Work for Civil Engineering: 70 schedules
 - (c) CPC 514+516: Installation and Assembly Work: 67 schedules
 - (d) CPC 517: Building Completion and Finishing Work: 59 schedules
 - (e) CPC 511+515+518: "Other" services: 53 schedules

⁸² Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991; FN 14: Although repair and maintenance work is not explicitly mentioned in the 1991 provisional UN CPC description, it may be assumed that they would normally be included, unless involving services which belong elsewhere in the classification.

⁸³ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009

⁸⁴ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; Para 52 - 67

⁸⁵ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; Para 54

- (ii) The aforesaid 79 GATS schedules (counting the EC-12 schedule as one) represent roughly 60 per cent of all WTO Members and includes twelve least-developed countries.⁸⁶

Overview of commitments under Modes 1 and 3

The focus of our study is on supply through Mode 1 (Cross Border Supply) and Mode 3 (Commercial Presence). The purpose of this is to assess the extent to which Members may have specified restrictions on the supply of service through Commercial Presence (i.e. Mode 3), and the extent to which the supply of the service through Mode 1 has been committed, with or without similar restrictions. With this in view, the table below describes the commitments taken by each country in Mode 1 and Mode 3.

Table 3: Commitments taken by each country in Mode 1 and Mode 3 under Construction and Related Engineering Services:

*(Note: Unbound * entry in the table below indicates that commitments are not being taken on account of the mode of delivery being 'technically not feasible'. As seen below, several countries have kept the sub-sectors under Mode 1 as Unbound *)*

Sub-Sector	Mode 1	Mode 3
<u>Pre-erection work and Construction Sites (CPC 511)</u>	<u>Full Commitment:</u> Argentina has undertaken full commitments for both MA and NT.	<u>Full Commitment:</u> US (except Marine Dredging), Brazil (since 5 years after the WTO Agreement coming into force) and Argentina have undertaken full commitment.
	<u>Partial Commitment:</u> Canada has taken full commitments in both MA and NT, except for limitations on cabotage in MA. However, it has excluded from the scope of its commitments "site preparation work for mining" (5115).	<u>Partial Commitment:</u> EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed. Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions. Canada has undertaken full commitments except in "5115 - site preparation and mining." China has undertaken partial commitments on MA based on ownership structure, financing, and "difficulty" of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO. Mexico has undertaken full commitment in NT for "special work" which it has cited as CPC 511, and partial commitment in MA with foreign investment restriction. Indonesia has undertaken partial commitment with joint operation / joint venture formation requirements for both MA and NT. It is unbound for 51110 – Site investigation work and 51113, which has no corresponding CPC reference.
	<u>No Commitment:</u> India, Australia, Brazil, South Africa, Philippines, Thailand, Mexico, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments in this sub-sector.	<u>No Commitment:</u> India, Australia, Philippines, Thailand, Pakistan, South Africa, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have undertaken no commitments.

⁸⁶ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009, Para 53[FN 42: *Burundi (5 sub-sectors), Cambodia (5), Democratic Republic of Congo (2), Gambia (1), Haiti (4), Lesotho (4), Malawi (5), Nepal (29), Sierra Leone (5), Solomon Islands (2), Togo (1) and Zambia (5)*]

Sub-Sector	Mode 1	Mode 3
	<p><u>Unbound*</u>:</p> <p>China, EU, Japan and United States have scheduled “Unbound*” due to lack of technical feasibility for both MA and NT.</p> <p>Indonesia has scheduled “Unbound*” for part of CPC 511, excluding CPC 51110 and 5113</p> <p>EU has however taken full commitment in 5111 - Site investigation work 5114 - Excavating and earthmoving work. Japan has excluded for mining from commitments.</p>	
<u>Construction work for buildings (CPC 512)</u>	<p><u>Full Commitment:</u></p> <p>Canada and Argentina have undertaken full commitment in both MA and NT.</p>	<p><u>Full Commitment:</u></p> <p>US (except Marine Dredging), Brazil (5 years after the WTO Agreement coming into force), South Africa, Argentina and Australia have taken full commitments (Brazil five years after GATS).</p>
		<p><u>Partial Commitment:</u></p> <p>EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed.</p> <p>Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions.</p> <p>Canada has undertaken full commitment in MA and partial commitment in NT.</p> <p>China has undertaken partial commitments on MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO.</p> <p>Indonesia has undertaken partial commitments on both MA and NT with joint operation / joint venture formation requirements for both MA and NT. It has taken no commitments for CPC 51210</p> <p>Mexico has undertaken full commitment in NT for certain sub-sectors and partial commitment in MA with foreign investment restriction.</p> <p>Thailand has taken commitments subject to foreign equity restrictions in NT and subject to Horizontal commitments in MA.</p>
	<p><u>No Commitment:</u></p> <p>India, Pakistan, Philippines, Mexico, Thailand and Brazil, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>	<p><u>No Commitment:</u></p> <p>India, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>
	<p><u>Unbound*</u></p> <p>EU, US, China, South Africa, Australia and Japan have scheduled “Unbound*” due to lack of technical feasibility for both MA and NT.</p> <p>Indonesia has scheduled “Unbound*” for part of CPC 512, excluding CPC 51210</p>	
<u>Construction work for civil engineering (CPC 513)</u>	<p><u>Full Commitment:</u> Canada and Argentina have taken full commitments.</p>	<p><u>Full Commitment:</u></p> <p>US (except Marine Dredging), Australia and South Africa have taken full commitment. Brazil has taken full commitment in NT and full commitment after 5 years of the WTO Agreement coming into in MA (till then no entry).</p>

Sub-Sector	Mode 1	Mode 3
	<p><u>Partial Commitment:</u></p> <p>Canada has taken full commitments in both MA and NT, except for limitations on Cabotage in MA. It has only scheduled this commitment for part of the sub-sector (highways, airports, harbours, dams, stadia, pipelines, bridges, mining, manufacturing, rail, power, communications facilities).</p>	<p><u>Partial Commitment:</u></p> <p>India has scheduled commitments for part of the sub-sector. In NT it has taken full commitment and for MA it has a foreign equity ceiling.</p> <p>China has undertaken partial commitments on MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO.</p> <p>EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed.</p> <p>Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions</p> <p>Canada has undertaken full commitment in NT and partial commitment in MA. It has only scheduled this commitment for part of the sub-sector (highways, airports, harbours, dams, stadia, pipelines, bridges, mining, manufacturing, rail, power, communications facilities).</p> <p>Mexico has for certain sub-sectors undertaken full commitment in NT and partial commitment in MA with foreign investment restriction.</p> <p>Thailand has taken commitments subject to foreign equity restrictions in NT and subject to Horizontal commitments in MA.</p> <p>Indonesia has undertaken partial commitment with joint operation / joint venture formation requirements for both MA and NT.</p> <p>Pakistan has taken full commitment in NT and partial commitment in MA for part of the sector i.e. CPC 5132 and 5133.</p>
	<p><u>No Commitment:</u></p> <p>Brazil, Argentina, Philippines, Mexico, Thailand, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>	<p><u>No Commitment:</u></p> <p>Argentina, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>
	<p><u>Unbound*:</u></p> <p>US, Japan, Australia, South Africa, China, Indonesia and EU have scheduled “Unbound*” for lack of technical feasibility for both MA and NT.</p> <p>Pakistan has scheduled “Unbound*” for CPC 5132 (bridges, elevated highways, tunnels and subways) and 5133 (construction work for civil engineering for waterways, harbours, dams and other waterworks), has not scheduled commitments under the remaining four-digit levels.</p> <p>India has scheduled “Unbound*” for a part of the sub-sector</p>	
<u>Assembly and erection of prefabricated constructions (CPC 514)</u>	<p><u>Full Commitment:</u></p> <p>Argentina and Canada have taken full commitment.</p>	<p><u>Full Commitment:</u></p> <p>Argentina, US (except Marine Dredging), Canada, South Africa, Brazil (5 years after the WTO Agreement coming into force) and Australia have taken full commitment.</p>
	<p><u>Partial Commitment:</u></p>	<p><u>Partial Commitment:</u></p> <p>EU has taken full commitment for NT, but specific members have</p>

Sub-Sector	Mode 1	Mode 3
		<p>maintained restrictions in MA while others have not committed.</p> <p>Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions.</p> <p>China has undertaken partial commitments on MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO.</p> <p>Indonesia have undertaken partial commitments on both MA and NT only for CPC 5140 with joint operation / joint venture formation requirements.</p>
	<p><u>No Commitment:</u></p> <p>India, Brazil, Philippines, Thailand, Pakistan, Mexico, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>	<p><u>No Commitment:</u></p> <p>India, Thailand, Pakistan, Mexico, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>
	<p><u>Unbound*:</u></p> <p>US, Australia, EU, China, South Africa and Japan have scheduled “Unbound*” for lack of technical feasibility for both MA and NT.</p> <p>Indonesia has scheduled “Unbound*” for only CPC 5140 in both MA and NT. No commitments for rest of the sector.</p>	
<u>Special trade construction work (CPC 515)</u>	<p><u>Full Commitment:</u></p> <p>Argentina has taken full commitment.</p>	<p><u>Full Commitment:</u></p> <p>US (except Marine Dredging), Argentina and Canada have taken full commitment.</p>
	<p><u>Partial Commitment:</u></p> <p>Canada has taken full commitment in both MA and NT except for limitations on Cabotage in MA,</p>	<p><u>Partial Commitment:</u></p> <p>China has taken partial commitment in MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO.</p> <p>EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed.</p> <p>Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions.</p> <p>Mexico has taken full commitment in NT and partial commitment in MA subject to foreign investment restrictions and relevant approvals.</p> <p>Indonesia has taken partial commitments on both MA and NT only for CPC 5155 with joint operation / joint venture formation requirements.</p>
	<p><u>No Commitment:</u></p> <p>India, Australia, Mexico, Thailand, South Africa, Brazil, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>	<p><u>No Commitment:</u></p> <p>India, Australia, South Africa, Thailand, Brazil, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.</p>
	<p><u>Unbound*:</u></p> <p>US, China, Japan and EU have scheduled “Unbound*” for lack of technical feasibility for both MA and NT.</p> <p>Indonesia has scheduled “Unbound*” for only CPC 5155 (steel bending and erection including welding).</p>	

Sub-Sector	Mode 1	Mode 3
<u>Installation Work (CPC 516)</u>	<u>Full Commitment:</u> Canada and Argentina have taken full commitment.	<u>Full Commitment:</u> US (except Marine Dredging), Australia, Argentina, Brazil (5 years after the WTO Agreement coming into force), South Africa and Canada have taken full commitment
		<u>Partial Commitment:</u> EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed. Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions. China has taken partial commitment in MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO. Thailand has taken commitments subject to foreign equity restrictions in NT and subject to Horizontal commitments in MA. Mexico has committed part of the sub-sector, with no restrictions in NT and foreign investment restrictions in MA.
	<u>No Commitment:</u> India, Pakistan, Brazil, Mexico, Indonesia, Thailand, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.	<u>No Commitment:</u> India, Pakistan, Indonesia, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.
	<u>Unbound*:</u> US, China, South Africa, Japan, Australia and EU have scheduled “Unbound*” due to lack of technological feasibility in both MA and NT.	
<u>Building completion and finishing work (CPC 517)</u>	<u>Full Commitment:</u> Canada and Argentina have taken full commitments.	<u>Full Commitment:</u> US (except Marine Dredging), Argentina, South Africa, Canada and Australia have taken full commitments.
		<u>Partial Commitment:</u> EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed. Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions. China has taken partial commitment in MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO.
	<u>No Commitment:</u> India, Brazil, Indonesia, Mexico, Thailand, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.	<u>No Commitment:</u> India, Brazil, Indonesia, Mexico, Thailand, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.
	<u>Unbound*:</u> US, China, South Africa, Japan, Australia and EU have scheduled “Unbound*” due to lack of technological feasibility in both	

Sub-Sector	Mode 1	Mode 3
	MA and NT.	
<u>Renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator (CPC 518)</u>	<u>Full Commitment:</u> Argentina has taken full commitment in both MA and NT.	<u>Full Commitment:</u> US (except Marine Dredging), Argentina and Canada have taken full market access commitments.
	<u>Partial Commitment:</u> <u>Canada has taken full commitments in both MA and NT except for limitations on Cabotage in MA</u>	<u>Partial Commitment:</u> EU has taken full commitment for NT, but specific members have maintained restrictions in MA while others have not committed. Japan has undertaken full commitment in MA and NT, but the NT commitment is stated to be subject to horizontal restrictions. China has committed part of the sector, with restrictions in MA based on ownership structure, financing, and “difficulty” of Chinese enterprises to do it alone and full commitment on NT 3 years after its accession to the WTO. Indonesia has taken partial commitments on both MA and NT with joint operation / joint venture formation requirements.
	<u>No Commitment:</u> India, Mexico, Thailand, South Africa, Australia, Brazil, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.	<u>No Commitment:</u> India, Mexico, Thailand, South Africa, Australia, Brazil, Pakistan, Philippines, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments.
	<u>Unbound*:</u> US, Indonesia, China (part of the sector), Japan, EU have scheduled “Unbound*” due to lack of technological feasibility in both MA and NT.	

Observations from Summary of Member Commitments in Mode 1 and Mode 3

As can be observed from Table 3 above, Members have hardly undertaken commitments in Mode 1, and the incidence of full commitment is extremely rare. Developing countries like India, Brazil, Philippines, Thailand, Mexico, have not taken Mode 1 commitments in any of the sub-sectors. Only Argentina and Canada have scheduled full commitments in Mode 1 in certain sub-sectors. No Member has scheduled full commitments in Mode 1 across the entire sector for Construction and Related Engineering Services.

The incidence of “Unbound*” is particularly high in Mode 1 for Construction Services. The US, EU, China, South Africa, Indonesia and Pakistan have scheduled “Unbound*” in all of the sub-sectors in which they have an entry against Mode 1. The very high incidence of “Unbound*” indicates a common understanding between Members that such services could not have been supplied cross-border at the time of scheduling of commitments.

With new advances in technology however, it is increasingly conceivable that certain aspects of construction services could potentially be supplied cross-border. Such technology can be perfected in the foreseeable future to a point where certain areas of construction services, can be provided entirely through Mode 1, without requiring a local presence at any stage. Such

technologies include additive manufacturing or 3D printing, which is discussed in detail below.

Countries that have scheduled their commitments as Unbound*, have taken no commitments even when the technology becomes feasible. However, the risk arises for those few countries that have taken commitments in Mode 1. While the non-availability of technology in the early 1990s may not have led countries to imagine the possibility of aspects such as 3D printing for delivery of construction services, the fact that they have taken full commitments in Mode 1, could possibly be seen as a commitment depending on availability of technology. This aspect is discussed in greater detail below.

IIIB.2 The Impact of 3D Printing on the Construction Sector

3D Printing (“3DP”) is a technological innovation that relies on additive manufacturing to construct objects directly from a computer-aided design (“CAD”) data, adding different materials, layer by layer, with the help of a 3D printer.⁸⁷

A 3D printer operates similarly to a conventional printer in that they convert data or information from a digital source into a tangible product.⁸⁸ 3D Printers deposit material in the appropriate manner for a construction, by following a computer “blueprint” which could be in the form of a digital file⁸⁹ or a 3D scan of a physical object, which is known as the “CAD.”⁹⁰ Anyone who has access to the CAD can download the same and use it with a 3D printer to print a three dimensional replica of the design contained in the CAD.

With increased sophistication in 3DP technology, it is possible for 3D printing to revolutionize the manner in which numerous industries operate, including the construction sector. Complex shapes can be produced automatically from a CAD without any tooling, dies and fixtures that are traditionally needed in construction⁹¹ and reduces and in some cases completely eliminates the need for human intervention and labour.

Application of 3DP to Construction:

There have been numerous efforts to change and update traditional construction strategies in a way that reduces the need for human resources, high capital investments and additional formworks.⁹² This has led to the rise in research interest in employing 3D printing for building and construction, a recent example of which is the “Wasp project”, an initiative for

⁸⁷“Trade Regulation in a 3D Printed World – A Primer”, Kommerskollegium, National Board of Trade, Sweden.

⁸⁸*Ibid*

⁸⁹*See Ibid* Footnote 27: The digital file can be created in a variety of ways. Users can design a file on one of a variety of computer programs for three-dimensional modeling, such as AutoCAD or SolidWorks. Other users may download open source design files.

⁹⁰*Ibid*

⁹¹ Yi Wei Daniel Tay, Biranchi Panda, Suvash Chandra Paul, Nisar Ahamed Noor Mohamed, Ming Jen Tan & Kah Fai Leong, *3D Printing Trends In Building And Construction Industry: A Review*, Journal - Virtual and Physical Prototyping, Volume 12, 2017 - Issue 3

⁹²*Ibid*

printing houses in situ using materials from the immediate area.⁹³ Though these efforts are currently at a preliminary stage it is predicted that by 2025 3D printing can compete at higher scale part counts as compared to today.⁹⁴

The Service Element of 3DP:

The advent of 3D printing could potentially raise numerous services-related issues under the GATS and commitments of Members thereunder. The first issue is whether a CAD file that is traded across borders is a “digital product” that should be treated as a good in digital form, or it constitutes a part of services trade. The National Board of Trade, Sweden has taken the view that the “3D file is of no use unless being used as an input for another object...it is part of a production process and not for final consumption...these characteristics show that 3DP files are services.” However, there has been very little discussion at the WTO on what kind of services are provided by the cross-border exchange of 3DP files. Discussions, if any, have centered around TRIPS and TBT issues related to 3DP, not the services element of it.

At a recent report to the Trade Policy Review Body from the Director-General on Trade-related developments, the exchange of 3DP files has been characterized as simply “data flows” as follows:

“Digital trade is underpinned by data flows. In addition to being at the core of innovations such as cloud computing, the Internet of Things and Additive manufacturing (including 3D printing), data flows also underpin trade less directly by enabling control and coordination along global value chains (GVCs) or by enabling trade facilitation measures. Data flows are thus a means of production, an asset that can be traded, a way of delivering some services, and the means of organizing GVCs.”⁹⁵

It should be noted that as of right now, there is no WTO discipline on data flows specifically. Thus, in theory, countries are free to restrict the flow of data in any manner. However, any regulation on 3DP files may have significant implications on specific services such as “Engineering Design Services” or “Construction and Related Services” and the commitments of the Members thereunder. This issue has been assessed below.

Classification of 3DP Services:

There are different kinds of services that can potentially be affected by 3D printing services. This note does not address the services that may be enabled by 3DP, but rather focuses on the service sectors that 3DP as a service can fall under. The two possible ways of classifying this service are as follows:

⁹³Oliver Balch “Building by numbers: how 3D printing is shaking up the construction industry”, The Guardian, (International Edition), 31 January 2017 <available at: <https://www.theguardian.com/sustainable-business/2017/jan/31/building-by-numbers-how-3d-printing-is-shaking-up-the-construction-industry>>

⁹⁴“Four factors that will determine the future of 3D printing”<available at: <http://www.smitherspira.com/resources/2015/october/the-future-of-3d-printing>>

⁹⁵Report To The TPRB From The Director-General On Trade-Related Developments, Trade Policy Review Body, WT/TPR/OV/W/11 dated 10 July 2017, Box 3.8

- i. “Engineering services” (CPC 8672) under “Architectural, engineering and other technical services” (CPC 867) - Although there has been no discussion on this issue , it may be argued that the transmission of 3DP designs online alongside specialized advice related to the construction, may be regarded as “Engineering Design Services” where the CAD is a form of “Engineering Design” that is downloaded by the service recipient to print three dimensional replicas of the same on a 3D printer. As can be seen from the box below, engineering design services encompass “plans...specifications and cost estimates” as well as “services during the construction phase.”

CPC 86722 Engineering design services for the construction of foundations and building structures

Structural engineering design services for the load-bearing framework of residential and commercial, industrial and institutional buildings. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase.

Exclusion: Engineering services for buildings if they are an integral part of the engineering design service for a civil work or production plant or facility.

CPC 86723 Engineering design services for mechanical and electrical installations for buildings

Mechanical and electrical engineering design services for the power system, lighting system, fire alarm system, communication system and other electrical installations for all types of buildings and/or the heating, ventilating, air conditioning, refrigeration and other mechanical installations for all types of buildings. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase.

CPC 86724 Engineering design services for the construction of civil engineering works

Engineering design services for the construction of civil engineering works, such as bridges and viaducts, dams, catchment basins, retaining walls, irrigation systems, flood control works, tunnels, highways and streets including interchanges and related works, locks, canals, wharves and harbours works, water supply and sanitation works such as water distribution systems, water, sewage, industrial and solid waste treatment plants and other civil engineering projects. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase. Included are engineering design services for buildings if they are an integral part of the engineering design for a civil engineering work.

- ii. Construction and Related Engineering Services (CPC 51) -

The other classification under which 3D printing services are likely to be classified would be under “Construction and Related Engineering Services.”

A construction service provider may provide a full package of consultation, support and a readily printable CAD for which even the print command can be executed remotely from the location of the service provider who may be located cross-border. This would leave the service recipient to buy only the 3D Printer and the material as specified by the construction service

supplier. In this manner, the need for a local construction service provider may be completely eliminated.

The Background Note of the WTO Secretariat on Construction and Related Engineering Services has also observed that at the time of the Uruguay Round, construction services were defined as encompassing the “design “and “implementation “of structures and productive facilities. This definition reflects the two phases of the construction process. The *design phase* usually entails conceptual assessments and feasibility studies, followed by decisions regarding the site, type of structure and sources of financing. The *implementation phase* (sometimes characterized as “physical construction”) starts only once the firm that will design and manage the construction has been selected, final plans have been submitted and officially approved, general contractors and subcontractors selected, and financing arranged.⁹⁶ The Background Note observes that it is the production *process* that is exported, while the final output is located in the host country. In light of this, it is concluded that in the final stages, some form of local “presence” or “establishment” is generally necessary.⁹⁷ However, this may not necessarily be the case in the near future with greater integration of the design and implementation elements of construction, through new technology such as 3DP that has the potential to provide both phases of the construction services without any local presence or establishment.

The Background Note also envisaged a greater role for Mode 1 supply of services under this sector in future, as design and production are becoming increasingly integrated. It highlights the role of information technologies and advanced communications systems which would allow, more and more design and conception related services to be conducted cross-border.⁹⁸

Construction services tend to be regulated in most countries in respect of activities that occur within a country. However, 3DP could potentially circumvent some of the regulations that may otherwise apply to the local supplier of construction services. What can then be enforced is the specifications relating to the actual construction product itself; however, requirements relating to the construction service provider, such as any capitalization requirements, or restrictions on repatriation, etc., would not have any relevance.

IIIB.3 Implications on Services Commitments on Members

The Background Note has observed that with advanced communications systems, blueprints and designs can be transmitted electronically, and possibly certain pre-erection work such as site investigation may be conducted cross-border. It further observed that given the

⁹⁶ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; Para 13; *FN 11 in Background Note on Construction and Related Engineering Services*: Lee, J. and Walters, D. (1989), "International Trade in Construction, Design, and Engineering Services"; pp. 6-7.

⁹⁷ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; Para 20,

⁹⁸ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; Para 75(i), *FN 48 in Background Note on Construction and Related Engineering Services*: Engineering News-Record, for instance, reports that the oil, gas and chemical process industries have been successfully using virtual design and construction for more than thirty years to make sure that all engineering and procurement specifications are correct. This must be ensured *before* construction begins on the enormous, complex and expensive facilities the industry requires. Source: Engineering News-Record (ENR) Insider, "Virtual Design and Construction: Digital-Modelling Veterans Want Data For Life Cycles", 9 August 2009.

interrelationship with architectural, engineering and related advisory and project management services, Mode 1 commitments in these services could be all the more relevant.⁹⁹

The cross-border supply of Construction and Related Engineering Services could have significant implications on the nature of regulatory controls that may practically be enforced against an entity engaged in the sector. It may allow a cross-border service supplier to bypass the kind of regulatory controls that are imposed on Mode 3 service suppliers, such as requirements of commercial presence linked to effectiveness for enforcement of regulatory actions. This may include, for instance, compliance with specific standards or codes of conduct by such suppliers. In sectors such as construction in the petroleum industry in India, there are requirements for the use of local construction workers for pipeline construction. Such measures would be scheduled under Mode 3 for Members seeking to use them, but no Member would have scheduled them under Mode 1 as it could not have been envisaged that construction services could be provided cross-border in the early 90s. Thus, if a Member has undertaken full commitment in Mode 1 under the assumption that only blueprints or general consultation aspects of construction can be transmitted cross border, then such a Member may be restricted from putting up regulatory restraints on 3D printing in construction services at a later point in time, being bound by its earlier “full commitment” in Mode 1.

Further, a Member would have to be careful in respect of enacting any measures restricting the cross-border flow of data into the country, in case such a restriction affects the transmission of CAD across borders. Even though there is no discipline on data flows per se, the same could potentially be seen as affecting commitments of Members under Mode 1 in construction services.

The implications of a fully technologically neutral approach for a Member who has scheduled “None” in Mode 1 for both Market Access and National Treatment, are as follows:

- (i) If 3DP is interpreted or agreed as being part of construction services, then such a Member cannot maintain any of the measures listed in Article XVI of the GATS in respect of cross-border supply of construction services, since it has not scheduled the same;
- (ii) Such a Member would also be bound by Article XVII of GATS in respect of cross-border supply of construction services, if 3DP is regarded as part of construction services, and not be capable of maintaining any restrictions on the flow of data that may be seen as discriminatory;
- (iii) In the event that a Member enacts disciplines against cross border flow of data that affects the trade in construction or engineering through the exchange of 3DP files and associated advice from construction firms located outside its borders, then it may face a non-violation complaint under Art. XXIII, GATS for nullifying or impairing the benefits of the Member from who the 3DP files are restricted.

⁹⁹ Construction and Related Engineering Services, Background Note by Secretariat, S/C/W/302, dated 18th September, 2009; FN 44. Regarding advisory services related to construction, see <http://www.infrastructureworld.com>. Infrastructure World LLC is an international investment and advisory firm providing strategic and implementation advice on the development of major infrastructure projects.

In our assessment, the sub-sectors that may be significantly affected by 3DP are: (a) Construction work for buildings (CPC 512); (b) Construction work for civil engineering (CPC 513); (c) Special trade construction work (CPC 515); (d) Building completion and finishing work (CPC 517).

In most of these sub-sectors, the two countries that have undertaken full commitment for Mode 1 are Canada and Argentina. Argentina has also undertaken full commitment in Engineering Services. Thus, Argentina is significantly constrained as mentioned above, in respect of measures it may employ.

As pointed out earlier, a large number of countries have scheduled “Unbound*” in each sub-sector under Mode 1, reflecting a clear understanding that in 1994, most of these services were not seen as being technically feasible in Mode 1. These countries have remained free to regulate the sector as and when it develops, since they have maintained an adequate degree of regulatory flexibility by scheduling “Unbound*.” However, countries like Argentina and Canada which have scheduled “None” in many sub-sectors for Mode 1 have not retained that flexibility.

IIIC FINANCIAL SERVICES

“Financial Services” under the Services Sectoral Classification List¹⁰⁰ comprises:

A. “All insurance and insurance-related services” and

B. “Banking and other financial services”.

For the purposes of the current study, our focus with respect to Financial Services is on the sub-sector involving “payment and money transmission” services, which is part of “Banking and other financial services”. The sub-sector involving “payment and money transmission” services has been classified as follows:

The GATS Annex on Financial Services at Para 5(a)(viii) reads: “All payment and money transmission services, including credit, charge and debit cards, travelers’ cheques and bankers’ drafts” under “Banking and other financial services” (excluding insurance) as an activity involving Financial Services.

The relevant CPC entry is CPC 81339** - All payment and money transmission services:

Explanatory Note: Other services auxiliary to financial intermediation, not elsewhere classified, e.g. services related to the implementation of monetary policy.

While scheduling their commitments with regard to “*payment and money transmission services*”, some countries have taken their commitments as per the W/120 which follows UNCPD Provisional 1991 while others have made their commitments based on the GATS Annex on Financial Services.

The reason for the focus on this sub-sector is because of its relevance for online payment and transfers through electronic means. It would for instance include electronic payment services for all types of payment card transactions. A Mode 1 commitment on this sector would therefore mean that an entity that is not located in the territory of a Member can provide such services. This may act as a constraint for a country that has taken Mode 1 commitments, from placing regulatory restrictions such as restrictions on the issuer of such payment services, or on the equipment used for such services.

The China-Electronic Payments Dispute

Aspects relevant to the present sub-sector: “Payment and Money Transmission” services were the subject of a dispute before the WTO Panel being *China - Certain Measures Affecting Electronic Payment Services*¹⁰¹ (“China - EPS / CUP”). In this case, the dispute was focused on the commitments relating to “electronic payment services” (“EPS”), which the U.S. claimed

¹⁰⁰ Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991

¹⁰¹ Panel Report, China – Certain Measures Affecting Electronic Payment Services, WT/DS413/R and Add.1, adopted 31 August 2012, DSR 2012:X, p. 5305

consists of *"services through which transactions involving payment cards ... are processed and through which transfers of funds between institutions participating in the transactions are managed and facilitated."* A dispute by the U.S. was instituted against China in view of several measures taken by China, which included requirements that mandated the use of China UnionPay, Co. Ltd. (CUP) as the sole supplier of electronic payment services for all domestic transactions denominated and paid in China's domestic currency. U.S. concern was that this excludes the possibility of using electronic payment services offered by competing entities such as MasterCard and Visa.

China's Schedule of Commitments had relied on the classifications under the GATS Annex on Financial Services. The sub-category relating to Paragraph 5(a)(viii) of the GATS Annex on Financial Services dealing with *"All payment and money transmission services, including credit, charge and debit cards, travelers' cheques and bankers' drafts (including import and export settlement)"*, appears in China's SOC as sub-clause (d). The specific aspects in China's schedule are as follows:

<i>Sector or sub-sector</i>	<i>Limitations on Market Access</i>	<i>Limitations on National Treatment</i>
7. Financial Services ... B. Banking and Other Financial Services (excluding insurance and securities) Banking services as listed below: ... d. All payment and money transmission services, including credit, charge and debit cards, travellers' cheques and bankers' drafts (including import and export settlement); ...	(1) Unbound except for the following: - Provision and transfer of financial information, and financial data processing and related software by suppliers of other financial services; - Advisory, intermediation and other auxiliary financial services on all activities listed in subparagraphs (a) through (k), including credit reference and analysis, investment and portfolio research and advice, advice on acquisitions and on corporate restructuring and strategy. 3) The schedule specifies several eligibility / qualification requirements for a foreign service supplier to conduct local currency business, and client limitations on local currency business listed in the MA column.	(1) None (3) Geographic restrictions and client limitations on local currency business listed in the MA column are applicable on Foreign Financial Institutions

The U.S. had argued before the WTO panel that certain Chinese measures affecting the supply of electronic payment services were inconsistent with China's GATS commitments under the heading *"All payment and money transmission services, including credit, charge and debit cards, travelers' cheques and bankers drafts (including import and export settlement)"*. The U.S.

argued that the services at issue were electronic payment services for payment card transactions, whose key components consisted of "the processing infrastructure, network, and rules and procedures, which facilitate, manage, and enable transaction information and payment flows, and which provide system integrity, stability and financial risk reduction".¹⁰²

The U.S. argued that dispute that China's schedule as extracted above, encompassed commitments on payment and transmission services under Mode 1, which would allow their credit card companies to provide services without being located in China. The Panel rejected the US view that China's Schedule includes a cross-border (Mode 1) market access commitment to allow the supply of EPS into China by foreign EPS suppliers. However, the Panel found that China's Schedule includes a market access commitment that allows foreign EPS suppliers to supply their services through commercial presence (Mode 3) in China, so long as a supplier meets certain qualifications requirements related to local currency business.

It is significant in this regard to note that China had expressed its Mode 1 commitment in a limited manner, which is the reason why the cross-border rendering of "payment and transfer" services was excluded from its schedule. With regard to Mode 3 however, it was held that it would not be possible for it to maintain any discriminatory practices against foreign service suppliers.

IIIC.1 WTO Secretariat's Summary and Overview of Member Commitments

The WTO Secretariat has prepared a Background Note¹⁰³ on Financial Services where it has observed broad trends of commitments made by countries for the sector in relation to "Payment and Money Transmission" under Financial Services, which are as follows:

- (i) WTO Members have made more commitments in financial services than in any other sector except tourism.¹⁰⁴ As of today, 110 schedules (counting the EU-15 as one) contain commitments in at least one financial services subsector.¹⁰⁵
- (ii) A total of the 101 GATS (counting EU-15 as one schedule) schedules contain commitments on "Banking and Other Financial Services". Out of these 101 schedules, 89

¹⁰²Panel Report, *China- Audio-visual Services*, WT/DS 363/R, para 7.26

¹⁰³ Financial Services, Background Note by the Secretariat, S/C/W/312, S/FIN/W/73 dated 7th February, 2010

¹⁰⁴ Financial Services, Background Note by the Secretariat, S/C/W/312, S/FIN/W/73 dated 7th February, 2010, Para 139

¹⁰⁵ Financial Services, Background Note by the Secretariat, S/C/W/312, S/FIN/W/73 dated 7th February, 2010, Para 139

schedules provide for commitments under “Payment and Money Transmission” services, i.e. 88 per cent of all schedules making commitments on “Banking and Other Financial Services” provide for commitments under “Payment and Money Transmission” services. This represents that 64% of the total membership of the WTO of 139 countries (counting EU-15 as one) have taken commitments with respect to “Payment and Money Transmission” services.¹⁰⁶

- (iii) Of these, it is only 21 Members that have made full commitments under “Payment and Money Transmission” services, while 30 schedules provide for partial commitments and 50 schedules make no commitments for the same. Further under Mode 3, a total of 17 schedules have made full commitments under “Payment and Money Transmission” services, while 71 schedules provide for partial commitments and 12 schedules make no commitments for the same.¹⁰⁷

Overview of Commitments under Modes 1 and 3

The focus of our study is on Mode 1 (“Cross-Border supply”) and Mode 3 (“Commercial presence”). The purpose of this is to assess the extent to which members may have specified restrictions on the supply of services through commercial presence (i.e. Mode 3) and the extent to which the supply of the same service through Mode 1 has been committed, with or without similar restrictions. With this in view the table below describes the commitments taken by each country in Mode 1 and Mode 3.

Table 4: Mode 1 and Mode 3 Commitments of Members in Financial Services in relation to “Payment and Money Transmission”

Sector	Mode 1:	Mode 3:
7. FINANCIAL SERVICES:		
B. Banking and other financial services:		
a. All payment and money transmission services – CPC 81339** /	Full Commitment: <u>Canada, Indonesia, Kenya and Nigeria</u> have taken full commitments <u>European Union</u> ’s schedule, restrictions under Mode 1 on supply of Banking and Other Financial	Full Commitment: <u>Argentina and Nigeria</u> have taken full commitments for both Market Access and National Treatment.

¹⁰⁶ Financial Services, Background Note by the Secretariat, S/C/W/312, S/FIN/W/73 dated 7th February, 2010, Table 15 at Pg. 72

¹⁰⁷ Financial Services, Background Note by the Secretariat, S/C/W/312, S/FIN/W/73 dated 7th February, 2010, Table 16 at Pg. 73

<p>Para 5(a)(viii), GATS Annex on Financial Services</p>	<p>Services which includes “Payment and Money Transmission” services appear only on Market Access in respect of Belgium, Italy and Ireland and all other members have taken full commitments on Market Access and National Treatment for supply of the same under Mode 1.</p> <p><u>Japan</u> has committed to the whole sector of “Banking and Other Financial Services” and its only restriction with respect to Mode 1 supply applies to investment management services and there are no restrictions with respect to “Payment and Money Transmission” services</p>	
	<p>Partial Commitment:</p> <p><u>U.S.</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment.</p> <p><u>Australia</u> has scheduled restrictions under Market Access and taken not scheduled commitments under National Treatment</p> <p><u>China</u> has scheduled restrictions under both Market Access and National Treatment</p> <p><u>Philippines’</u> schedule specifies overarching requirement of commercial presence under Market Access without specifying the nature of such commercial presence or the manner in which the same be established and undertakes full commitments under National Treatment.</p>	<p>Partial Commitment:</p> <p><u>India, U.S., Japan, Australia, South Africa, China, Thailand and Indonesia</u> have scheduled restrictions under both Market Access and National Treatment</p> <p><u>European Union’s</u> schedule has specified various restrictions under both Market Access and National Treatment for several members</p> <p><u>Canada’s</u> schedule has specified various restrictions under both Market Access and National Treatment for separate territories</p> <p><u>Brazil, Philippines, Mexico</u> have scheduled restrictions under Market Access and has taken full commitments under National Treatment. Philippines’ schedule lists various restrictions as to (I) Forms of Commercial Presence and (II) Scope of Operations</p> <p><u>Pakistan</u> has scheduled restrictions under Market Access and has taken full commitments under National Treatment</p> <p><u>Kenya</u> has taken full commitments only on Market Access but has scheduled “Unbound” i.e. no commitments on National Treatment.</p>
	<p>No Commitment:</p> <p>India, South Africa, Brazil, Argentina, Mexico, Pakistan, Tanzania, Uganda and Bangladesh have not taken any commitments under Mode 1.</p> <p><u>Thailand’s</u> schedule full commitments are made in Market Access for Mode 1 supply in Banking and Other Financial Services is confined to financial</p>	<p>No Commitment:</p> <p><u>Tanzania, Uganda, Bangladesh</u> have not taken any commitments</p>

	advisory and financial data processing. For all other sub-sectors including “Payment and Money Transmission” services Thailand scheduled “Unbound” under Market Access i.e. no commitments. For the same sector, Thailand makes full commitments for National Treatment under Mode 1.	
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The main observations based on the scheduling above, are as follows:

- i. Full commitments on Mode 1 have been made by Canada and Japan, and three developing countries: Indonesia, Kenya and Nigeria. These countries may face difficulties in imposing restrictions such as need for location of the online payment service provider in their territory.
- ii. China has left Mode 1 Unbound, except for certain specified sub-sectors, (discussed in the context of the WTO dispute explained above).
- iii. Many developing countries, including India, have not committed Mode 1 in the subsector of ‘Payments and Transfers’. This essentially means that their ability to impose restrictions on Mode 1 delivery of such services, is well-preserved.
- iv. On Mode 3 however, India and several other countries have taken commitments. India’s commitment in this regard is in sync with the prevailing FDI regime, which allows for investors to locate their investments in the territory of such country, and through that, engage in the provision of payment and money transfer services. Such investments would be subject to prevalent non-discriminatory regulations pertaining to such Mode 3 investments.

III D ROAD TRANSPORT

The sector of Transport Services under the Services Sectoral Classification List¹⁰⁸ comprises of:

- A. “Maritime Transport Services”;
- B. “Internal Waterways Transport”;
- C. “Air Transport Services”;
- D. “Space Transport”;
- E. “Rail Transport Services”;
- F. “Road Transport Services”;
- G. “Pipeline Transport”;
- H. “Services Auxiliary to all modes of transport”;
- I. “Other Transport Services”.

For the purposes of the current study, our focus will be towards the sub-sector for “F. Road Transport Services”, in relation to which we will specifically assess commitments under “a. Passenger Transport” (CPC 7121 + 7122); “b. Freight Transportation” (CPC 7123) and “c. Rental of commercial vehicles with operator” (CPC 7124) which have been described below:

F. ROAD TRANSPORT SERVICES:

- a. CPC 7121 + 7122 – Passenger Transportation:

CPC 7121: Another scheduled passenger transportation:

CPC 71211 - Urban and suburban regular transportation:

Explanatory note: Urban and suburban regularly scheduled multi-stop passenger transportation via highways and other modes of land transport. Services classified here are motor-bus, tramway, trolley bus and similar services generally rendered on a franchise basis within the confines of a single city or group of contiguous cities. These services are provided over predetermined routes on a predetermined time schedule, may provide pick-up and discharge of passengers at any scheduled stop, and are open to any user. Exclusion: Urban and suburban passenger transportation by railway are classified in subclass 71112.

CPC 71212 - Urban and suburban special transportation:

Explanatory note: Scheduled transportation by school buses to carry pupils between their homes and school, between schools etc., within the borders of a single city or group of contiguous cities. Included is scheduled transportation between an urban centre and airports or stations in this urban centre or in suburban locations by motor-bus and multi-passenger airport limousine, with driver. These services are provided over predetermined routes on a predetermined time schedule. They generally have a restricted category of users. Most individual trips involve either pick-ups or discharges, but not both. Exclusion: Taxi services are classified in subclass 71221 and other non-scheduled chauffeur-driven hired car services are classified in subclass 71222 (Rental services of passenger cars with operator).

CPC 71213 - Interurban regular transportation:

¹⁰⁸ Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991

Explanatory note: Inter-urban regularly scheduled highway passenger transportation by motor-bus, including passenger accompanying baggage transportation.

CPC 7122: Other non-scheduled passenger transportation:

CPC 71221 - Taxi services:

Explanatory note: Motorized taxi-cab services, including urban, suburban and interurban. These services are generally rendered on a distance-travelled basis, for a limited duration of time, and to a specific destination. Taxi services provided by passenger carrying motorcycles are included. Exclusions: Animal-drawn and man-drawn taxi services are classified in subclass 71224 (Passenger transportation by man- or animal-drawn vehicles). Water and air taxi services are classified in subclass 72219 (Other passenger transportation) and 73120 (Non-scheduled passenger transportation by air), respectively.

CPC 71222 - Rental services of passenger cars with operator:

Explanatory note: Chauffeur-driven hired car services, wherever delivered, except taxi services. These services are generally supplied on a time basis to a limited number of passengers, and frequently involve transportation to more than one destination.

CPC 71223 - Rental services of buses and coaches with operator:

Explanatory note: Chauffeur-driven hired bus and motor coach services, generally rendered on a time and distance basis. They frequently involve transportation to more than one destination.

CPC 71224 - Passenger transportation by man- or animal-drawn vehicles:

Explanatory note: Passenger transportation by man- or animal-drawn vehicles or conveyances and by pack animals, provided that the services of a driver are provided with the vehicles or animals. Exclusion: Animal-drawn freight and passenger vehicle rental services without the services of a driver are classified in subclass 83102 (Leasing or rental services concerning goods transport vehicles without operator) and 83105 (Leasing or rental services concerning other land transport equipment without operator), respectively.

CPC 71229 - Other non-scheduled passenger transportation n.e.c.:

Explanatory note: Passenger transportation by non-scheduled vehicles with driver, not elsewhere classified. Exclusion: Passenger transportation by non-scheduled motor-buses, chartered buses and tour and sightseeing buses is classified in subclass/71223 (Rental services of buses and coaches with operator).

b. CPC 7123 – Freight Transportation:

CPC 71231 - Transportation of frozen or refrigerated goods:

Explanatory note: Transportation by road of frozen or refrigerated goods, in specially refrigerated trucks and cars.

CPC 71232 - Transportation of bulk liquids or gases:

Explanatory note: Transportation by road of bulk liquids or gases in special tank trucks. These vehicles may also be refrigerated.

CPC 71233 - Transportation of containerized freight:

Explanatory note: Transportation by road of individual articles and packages assembled and shipped in specially constructed shipping containers designed for ease of handling in transport.

CPC 71234 - Transportation of furniture:

Explanatory note: Transportation of furniture by road over any distance. Exclusion: Furniture transportation by transoceanic shipment is classified in subclass 72123 (Transportation of containerized freight).

CPC 7122: Another non-scheduled passenger transportation:

CPC 71221 - Taxi services:

Explanatory note: Motorized taxi-cab services, including urban, suburban and interurban. These services are generally rendered on a distance-travelled basis, for a limited duration of time, and to a specific destination. Taxi services provided by passenger carrying motorcycles are included. Exclusions: Animal-drawn and man-drawn taxi services are classified in subclass 71224 (Passenger transportation by man- or animal-drawn vehicles). Water and air taxi services are classified in subclass 72219 (Other passenger transportation) and 73120 (Non-scheduled passenger transportation by air), respectively.

CPC 71222 - Rental services of passenger cars with operator:

Explanatory note: Chauffeur-driven hired car services, wherever delivered, except taxi services. These services are generally supplied on a time basis to a limited number of passengers, and frequently involve transportation to more than one destination.

CPC 71223 - Rental services of buses and coaches with operator:

Explanatory note: Chauffeur-driven hired bus and motor coach services, generally rendered on a time and distance basis. They frequently involve transportation to more than one destination.

CPC 71224 - Passenger transportation by man- or animal-drawn vehicles:

Explanatory note: Passenger transportation by man- or animal-drawn vehicles or conveyances and by pack animals, provided that the services of a driver are provided with the vehicles or animals. Exclusion: Animal-drawn freight and passenger vehicle rental services without the services of a driver are classified in subclass 83102 (Leasing or rental services concerning goods transport vehicles without operator) and 83105 (Leasing or rental services concerning other land transport equipment without operator), respectively.

CPC 71229 - Other non-scheduled passenger transportation n.e.c.:

Explanatory note: Passenger transportation by non-scheduled vehicles with driver, not elsewhere classified. Exclusion: Passenger transportation by non-scheduled motor-buses, chartered buses and tour and sightseeing buses is classified in subclass/71223 (Rental services of buses and coaches with operator).

CPC 7123 – Freight Transportation

CPC 7124 – Rental of commercial vehicles with operator:

Explanatory note: Truck and other motorized freight vehicle rental services, with driver. Exclusions: Animal-drawn freight vehicle rental services with drivers are classified in subclass 71236 (Freight transportation by man- or animal-drawn vehicles). Rental services in connection with client-driven trucks are classified in subclass 83102 (Leasing or rental services concerning goods transport vehicles without operator).

IIID.1 Overview of Commitments under Modes 1 and 3:

The focus of our study is on Mode 1 (“Cross-Border supply”) and Mode 3 (“Commercial presence”). The purpose of this is to assess the extent to which members may have specified restrictions on the supply of services through commercial presence (i.e. Mode 3) and the extent to which the supply of the same service through Mode 1 has been committed, with or without similar restrictions. With this in view, the table below describes the commitments taken by each country in Mode 1 and Mode 3:

Table 5: Mode 1 and Mode 3 Commitments of Members in Road Transport Services

(Note: Unbound * entry in the table below indicates that commitments are not being taken on account of the mode of delivery being 'technically not feasible')

Sector / Sub-sector:	Mode 1:	Mode 3:
F. ROAD TRANSPORT SERVICES:		
a. Passenger transportation - CPC 7121 + 7122:	<u>Full Commitment:</u> <u>Kenya</u> while taking full commitments for supply under Mode 1 has taken no commitments for supply under Mode 3.	<u>Full Commitment:</u> <u>South Africa</u> has taken full commitments
	<u>Partial Commitment:</u> <u>U.S.</u> has scheduled only "Interurban Regular Transport" (CPC 71213) for which it has taken full commitments since January, 1997 for both Market Access and National Treatment <u>Canada</u> has taken partial commitments only for CPC 71221 - Taxi services: 71222 – "Rental services of passenger cars with operator", 71223 – "Rental services of buses and coaches with operator" and no other sub-classes	<u>Partial Commitment:</u> <u>U.S.</u> has scheduled only "Interurban Regular Transport" (CPC 71213) for which it has taken full commitments since January, 2001 for both Market Access and National Treatment <u>European Union</u> has scheduled restrictions for CPC 71213- "Interurban regular transportation" and 7122 - "Other non-scheduled passenger transportation" and no other sub-classes <u>Canada</u> has taken scheduled restrictions for CPC 71221 - Taxi services: 71222 - Rental services of passenger cars with operator, 71223 - Rental services of buses and coaches with operator and no other sub-classes <u>Australia</u> has made commitments only for CPC 71213 – "Interurban regular transportation", 71214 – "Passenger transportation by man- or animal-drawn vehicles" and 7122 – "Other non-scheduled passenger transportation", not including regular urban bus services for which it has taken full commitments <u>Thailand</u> has scheduled restrictions for CPC 7122 – Other non-scheduled passenger transportation <u>Mexico</u> has scheduled restrictions for CPC 71211 for "Tramway Services" and "Subway Service", but under sub-sector "I. Other Transport Services" <u>Philippines</u> has taken partial commitments under Market Access and full commitments under National Treatment for Mode 3 under this sub-sector.

Sector / Sub-sector:	Mode 1:	Mode 3:
	<p><u>No Commitment:</u></p> <p>India, European Union, Japan, Australia, South Africa, Brazil, Argentina, Thailand, China, Indonesia, Pakistan, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments</p>	<p><u>No Commitment:</u></p> <p>India, Japan, Brazil, Argentina, China, Indonesia, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments</p> <p><u>Kenya</u> while taking no commitments for supply under Mode 3 has taken full commitments for supply under Mode 3.</p>
	<p><u>Unbound*:</u></p> <p>Philippines and Mexico while taking commitments under Mode 3 have scheduled “Unbound*”.</p> <p><u>Mexico</u> has scheduled CPC 71211 for “Tramway Services” and “Subway Service” only and but under sub-sector “I. Other Transport Services”</p> <p><u>Philippines</u> has scheduled the entire sub-sector</p>	<p><u>Unbound*:</u></p> <p>-</p>
b. Freight Transportation - CPC 71213:	<p><u>Full Commitment:</u></p> <p><u>Kenya</u> while taking full commitments for supply under Mode 1 has taken no commitments for supply under Mode 3.</p> <p><u>China</u> while taking full commitments for supply under Mode 1 has scheduled restrictions for supply under Mode 3 for Market Access.</p>	<p><u>Full Commitment:</u></p> <p>South Africa has taken full commitments</p>
	<p><u>Partial Commitment:</u></p> <p><u>U.S.</u> commitments are limited to transportation of cargo that has either an origin or a destination outside the U.S. for which it has taken full</p>	<p><u>Partial Commitment:</u></p> <p><u>U.S.</u> commitments are limited to transportation of cargo that has either an origin or a destination outside the U.S. for which it has taken full commitments since January, 2000 for both Market Access and National Treatment.</p>

Sector / Sub-sector:	Mode 1:	Mode 3:
	<p>commitments since January, 2000 for both Market Access and National Treatment.</p> <p><u>Canada</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment only for CPC 71231 – “Transportation of frozen or refrigerated goods”, 71232 – “Transportation of bulk liquids or gases”, 71233 – “Transportation of containerized freight”, 71234 – “Transportation of furniture”</p>	<p><u>European Union</u> has scheduled restrictions for both Market Access and National Treatment.</p> <p><u>Japan</u> has scheduled restrictions for both Market Access and National Treatment.</p> <p><u>Australia</u> has scheduled commitments only for CPC 71231 – “Transportation of frozen or refrigerated goods”, 71232 – “Transportation of bulk liquids or gases”, 71233 – “Transportation of containerized freight”, 71234 – “Transportation of furniture” for which it has taken full commitments</p> <p><u>Canada</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment only for CPC 71231 – “Transportation of frozen or refrigerated goods”, 71232 – “Transportation of bulk liquids or gases”, 71233 – “Transportation of containerized freight”, 71234 – “Transportation of furniture”</p> <p><u>Brazil</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment only for CPC 71231 – “Transportation of frozen or refrigerated goods”, 71232 – “Transportation of bulk liquids or gases”, 71233 – “Transportation of containerized freight”, 71234 – “Transportation of furniture”</p> <p><u>Thailand</u> has scheduled restrictions under both Market Access and National Treatment only for CPC 71231 – “Transportation of frozen or refrigerated goods”, 71232 – “Transportation of bulk liquids or gases”, 71233 – “Transportation of containerized freight”.</p> <p><u>China and Philippines</u> have taken partial commitments under Market Access and full commitments under National Treatment. Both, <u>China and Philippines</u> have scheduled the entire sub-sector</p>
	<p><u>No Commitment:</u></p> <p>India, European Union, Australia, South Africa, Brazil, Argentina, Thailand, Indonesia, Mexico, Pakistan, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments under</p>	<p><u>No Commitment:</u></p> <p>India, Argentina, Indonesia, Mexico, Pakistan, Kenya, Nigeria, Tanzania, Uganda, Bangladesh have not taken any commitments</p> <p><u>Kenya</u> while taking no commitments for supply under Mode 3 has taken full commitments for supply under Mode 3.</p>

Sector / Sub-sector:	Mode 1:	Mode 3:
	this sub-sector.	
	<u>Unbound*:</u> Philippines and Japan have scheduled “Unbound*”. Both <u>Philippines and Japan</u> have scheduled the entire subsector.	<u>Unbound*:</u> -
c. Rental of commercial vehicles with operator - CPC 7124:	<u>Full Commitment:</u> <u>Kenya</u> has taken full commitments. Kenya while taking full commitments for supply under Mode 1 has taken no commitments for supply under Mode 3.	<u>Full Commitment:</u> <u>Canada</u> has taken full commitments
	<u>Partial Commitment:</u> <u>Canada</u> has scheduled restrictions under Market Access while taking full commitments under National Treatment.	<u>Partial Commitment:</u> <u>Thailand</u> has scheduled restrictions under both Market Access and National Treatment while scheduling only CPC 71223 – “Rental services of buses and coaches with operator”
	<u>No Commitment:</u> India, U.S., European Union, Japan, Australia, South Africa, Brazil, Argentina, China, Philippines, Thailand, Mexico, Indonesia, Pakistan, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments	<u>No Commitment:</u> India, U.S., European Union, Japan, Australia, South Africa, Brazil, Argentina, China, Philippines, Mexico, Indonesia, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have taken no commitments. <u>Kenya</u> while taking no commitments for supply under Mode 3 has taken full commitments for supply under Mode 3.

With reference to the sector for “Passenger Transport” (CPC 7121 + 7122) under Road Transport Services, the Background Note for Land Transport Services has noted that, “overall, the level of commitments for passenger transportation seems low: between 12.8 and 18.9 per cent of Members depending on the subsector”¹⁰⁹. This trend also appears in the context of the twenty

¹⁰⁹ Land Transport Services, Part I – Generalities and Road Transport, Background Note by the Secretariat, S/C/W/60, dated 28th October, 1998; Para 73

(20) specified countries as is evident from the mapping of commitments in the table above: a total of eleven (11) countries have not scheduled any commitments, neither under Mode 1 nor under Mode 3 (fifteen (15) countries have taken no commitments for supply under Mode 1 and twelve (12) have taken no commitments for supply under Mode 3).

None of the twenty (20) countries under our study have taken full commitments under both Mode 1 and Mode 3. However, Kenya has taken full commitments for supply of passenger services under Mode 1, and South Africa has taken full commitments for Mode 3 supply. The Background Note attributes the low level of commitments to “a certain political sensitivity where urban public transport is concerned, probably linked to the extent to which it is subsidized and to the monopolies enjoyed by the concession-holders in exchange for the performance of public service obligations”¹¹⁰. Apart from Kenya, only two (2) other countries, the U.S. and Canada have scheduled any commitments for Mode 1 (“cross-border supply”) supply of passenger transport services, that too only for certain sub-classes and not the entire sub-sector¹¹¹. In comparison, eight (8)¹¹² of the ten (10) specified countries that have made commitments for passenger transport have scheduled commitments under Mode 3 (“commercial presence”). The high incidence of “no commitments”, especially for Mode 1 supply of “a. Passenger transport” services (CPC 7121 + 7122) may be indicative of the fact that it was not reasonably foreseeable for the Members of such services being delivered cross-border under Mode 1 at the time of making these commitments in 1994. A higher incidence of commitments for supply of passenger services under Mode 3 (“commercial presence”) indicates that Members were willing to allow trade in services classified under “a. Passenger transport” services (CPC 7121 + 7122), but did not foresee the possibility of doing so under Mode 1. Two (2) countries, Mexico and the Philippines have scheduled “Unbound*” due to lack of technical feasibility under Mode 1.¹¹³ This also reflects the understanding amongst the Members at the relevant time of undertaking GATS commitments that services of the nature as classified under CPC 7121 + 7122 could only be delivered through physical presence of the service provider in the host country.

¹¹⁰ Land Transport Services, Part I – Generalities and Road Transport, Background Note by the Secretariat, S/C/W/60, dated 28th October, 1998; Para 71

¹¹¹ U.S. has scheduled only “Interurban Regular Transport” (CPC 71213) for which it has taken full commitments since January, 1997 for both Market Access and National Treatment; Canada has taken partial commitments only for CPC 71221 - Taxi services; 71222 – “Rental services of passenger cars with operator”, 71223 – “Rental services of buses and coaches with operator” and no other sub-classes

¹¹² South Africa (full commitment); U.S.; European Union; Canada; Australia; Thailand; Mexico and Philippines (partial commitment)

¹¹³ Mexico has scheduled only CPC 71211 for “Tramway Services” and “Subway Service”, but under sub-sector “I. Other Transport Services”; Philippines has scheduled the entire sub-sector

In the present day and age however, with the advent of technology and with quantum leaps in innovation and ability to provide a vast variety of services remotely through the internet, Mode 1 supply (“cross-border supply”) of certain sub-classes of “Passenger Transport” without the physical presence of the service provider in the host country has become a commercial reality. Countries that have scheduled “Unbound*” are adequately protected in terms of policy space but those who scheduled “None” do not retain the same flexibility. However, there is no significant risk in this sector, as not many countries have undertaken full commitments in Mode 1.

IIID.2 Recent Developments in the Road Transportation Sector with the Rise of

Aggregators: The Case of Uber

In recent times, technology-enabled business platforms play an important role in facilitating services trade by connecting suppliers and sellers efficiently and at low cost, based on their collection and analysis of user data.¹¹⁴ For example, Uber functions as a transportation aggregator connecting consumers and suppliers of transportation services across several cities in the world. Uber operates through the accumulation of data on a centralized platform that simultaneously aggregates supply and demand from two sides of a marketplace (the rider and the driver), giving rise to “bi-directional” business model that has transformed the transportation sector.¹¹⁴

Classification of Services: Given the nature of the services provided by Uber which involves enabling passengers to hire taxis and rental cars, the service could be classified within the sub-sector “Passenger Transport” (CPC 7121 + 7122), and more specifically:

- a. CPC 71221 – Taxi Services¹¹⁵
- b. CPC 71222 – Rental Services of passenger cars with operator¹¹⁶

However, a view has also been expressed that: *“If Uber is a transport service, then its operations are subject to the GATS Mode 3 commitments; if a business service, then its operation is subject to mode 1 commitments in the business service sector.”*¹¹⁷ The question of classifying it as

¹¹⁴ Nigel Cory And Stephen Ezell, Crafting An Innovation-Enabling Trade In Services Agreement, Information Technology & Innovation Foundation (June 2016), available online at <http://www2.itif.org/2016-tisa-services.pdf>

¹¹⁵ **Explanatory Note:** Motorized taxi-cab services, including urban, suburban and interurban. These services are generally rendered on a distance-travelled basis, for a limited duration of time, and to a specific destination. Taxi services provided by passenger carrying motorcycles are included. **Exclusions:** Animal-drawn and man-drawn taxi services are classified in subclass 71224 (Passenger transportation by man- or animal-drawn vehicles). Water and air taxi services are classified in subclass 72219 (Other passenger transportation) and 73120 (Non-scheduled passenger transportation by air), respectively.

¹¹⁶ **Explanatory Note:** Chauffeur-driven hired car services, wherever delivered, except taxi services. These services are generally supplied on a time basis to a limited number of passengers, and frequently involve transportation to more than one destination.

¹¹⁷ STD/CSSP/WPTGS(2017)3, *Measuring Digital Trade: Towards A Conceptual Framework*, Working Party On International Trade In Goods And Trade In Services Statistics, Statistics Directorate Committee On Statistics And Statistical Policy, 06-Mar-2017.

“business services” arises because Uber does not own the means of transport and hence the service may be seen by some as merely connecting suppliers and consumers of transportation services, rather than being transportation service itself. However, as per GATS Article XXVIII (g), a “service supplier” means “any person that supplies a service”, whereby “person” also includes a “juridical person”. Neither the GATS nor the Services Sectoral Classification List (W/120) or the UNCPC Provisional 1991 in its “Explanatory Notes” in relation to the aforementioned UNCPC Classifications, stipulate any requirement as to ownership of the car / vehicle by the service provider itself.

Thus, the mere fact that companies such as Uber do not “own” the car / vehicle would not necessarily preclude them from providing services in the nature of the aforesaid classifications under the UNCPC Provisional 1991.

Uber provides its services across a variety of on-line platforms such as websites and web-based mobile phone applications. Even though using the services of Uber entails face to face interaction between the driver and the rider, much of the work (routing, payments, matching, of drivers with riders etc.) is performed remotely by Uber using its servers that are located outside the country in which the service consumption takes place.

For instance, in India, Uber launched its services in 2013 through Uber India Technology Private Limited, a subsidiary of Uber Technologies Inc. headquartered in the U.S. Its Dutch subsidiary - “Uber BV” executes service agreements with users of the Uber application.¹¹⁸ The phone-based technology that is provided to users, known as the “Uber Platform”, was developed by “Uber Technologies Inc.” based in the U.S. This provides a software that can be downloaded by users on their mobile phones located anywhere outside the country, and this software connects the users of taxi services to drivers.

The nature of the services provided by Uber gives rise to a host of issues: including questions regarding classification of services, location of service provider, and the mode of service supply.

At the outset, it needs to be highlighted that since India has not taken any commitments under Mode 1, there are absolutely no fetters for it to place regulatory requirements on the services supplied by Uber. In fact, the Central Government issued an advisory in 2015, on the regulation of Indian IT-based transport aggregator companies, such as Uber, Ola and TaxiForSure (Aggregators) that recommended that these businesses should obtain a license. Following this, several states in India have started requiring that these services obtain a license. For greater legal certainty, amendments to the Motor Vehicles Act are currently under consideration.

¹¹⁸ <https://www.uber.com/legal/terms/in/>

Even in the EU, the European Court of Justice has clarified that Uber is a taxi service, and not merely a software service provider. It noted that “an intermediation service such as that at issue in the main proceedings, the purpose of which is to connect, by means of a smartphone application and for remuneration, non-professional drivers using their own vehicle with persons who wish to make urban journeys, must be regarded as being inherently linked to a transport service and, accordingly, must be classified as ‘a service in the field of transport’ within the meaning of Article 58(1) TFEU”.

Location of Service Provider:

Having established companies like Uber as transportation service providers, the second question that arises is the location of the service provider. Uber often has a local presence in the country in which they are providing services, such as Uber Technologies Pvt. Ltd. in India which is established under the Companies Act, 1956. This company co-ordinates with the driver partners, and performs other specific local roles. However, the contract of the service recipient is with Uber BV, which is located in Netherlands. The contract also states that the applicable law in the event of an arbitration would be the law of Netherlands. The software that is downloaded by the user was developed by Uber Technologies Inc., the US-based company. Thus, it is not the Indian company which provides the services, or from whom the software is downloaded. It does not enter into service agreements with Indian users.

It should be noted that the data collected by Uber in various countries to enable it to provide its services are not stored in the respective countries. Such data is usually stored and processed in Uber’s centralized servers which are located outside the country. Uber also uses proprietary technology of Google and Apple to provide geolocation services that are intrinsic to the transportation services that it provides.

All of these make it difficult to establish the precise location of the service supplier and the mode through which a service is being delivered – thus, not making it particularly easy to assess scheduling intentions at a time when none of this could have been foreseen.

Regulatory Freedom – Localization Issues

In light of the above, if a Member requires localization of servers in the interest of data protection or any other regulatory aim, it may be argued by Uber that this has the impact of restricting supply of transportation services through Mode 1. It could be seen as a National Treatment violation if like service suppliers in the territory of the Member are not subjected to similar restraints. Further, if the transfer of data is crucial and indispensable for the provision of the services, then it may also argue to be a non-violation complaint on account of nullification or

impairment of “benefit it could reasonably have expected to accrue to it under a specific commitment” of the Member (GATS Art. XXIII). So far, no Member has challenged a data localization requirement in dispute settlement before the WTO but the possibility remains, especially when it may be seen as violating a Mode 1 commitment of a Member.

The emergence and use of new technology as deployed by Uber has the effect of enabling a service to be provided across borders in a way that was not foreseen or conceivable at the time of a Member scheduling its commitments. In such cases a principle of absolute technological neutrality can result in subverting the clear intent of a Member in scheduling mode-specific limitations on commitments and restrict a Member’s regulatory space. There has yet to be any discussion amongst the WTO Members regarding these issues from a GATS commitment perspective, although some of these issues are under discussion as part of the ongoing deliberations on E-commerce.

The repercussions of a de-contextualized, strict interpretation of commitments in situations like this would be especially problematic in respect of countries that have undertaken full commitments for Mode 1, while taking no commitments under Mode 3 (“commercial presence”). Of the twenty (20) specified countries, only Kenya has taken full commitments for Mode 1 for “Passenger transport” (CPC 7121 + 7122) which includes CPC 71221 – “Taxi Services” and / or CPC 71222 – “Rental Services of passenger cars with operator”. Kenya has also taken no commitments under Mode 3.

As per the Background Note, restrictions scheduled under Mode 3 in relation to passenger transport “are typically: economic need tests (specially for taxis, limos and bus services), citizenship requirement, natural persons only or, to the contrary, incorporation required, establishment required, numerical quotas, exclusive licences by zones and routes, and authorization required and not extended to foreign-registered vehicles”¹¹⁹. In view of the ability for these services to now be supplied electronically through web / internet based platforms, countries who have taken full commitments for Mode 1 supply have essentially given up significant regulatory space for oversight of these services because a cross-border service supplier can potentially circumvent the restrictions that a Member has put on Mode 3 supply.

In contrast, countries that have scheduled “Unbound*” due to lack of technical feasibility or have scheduled “Unbound” i.e. taken no commitments for supply of CPC 71221 – “Taxi Services” and / or CPC 71222 – “Rental Services of passenger cars with operator” appear to be better placed to accommodate the supply of these outside traditional means and electronically through web / internet-based platforms. As per the GATS Scheduling Guidelines, where a schedule states

¹¹⁹ Land Transport Services, Part I – Generalities and Road Transport, Background Note by the Secretariat, S/C/W/60, dated 28th October, 1998; Para 73

“Unbound*” and the mode of supply thought to be inapplicable is in fact applicable or becomes so in the future, the entry means “Unbound”¹²⁰, i.e. no commitments. This preserves regulatory space for countries to regulate services in the nature of CPC 71221 and CPC 71222 when being delivered cross-border through Mode 1. Of the twenty (20) specified countries, only Philippines has scheduled “Unbound*” for the whole of “Passenger and Freight Transport” services under the sector for Road Transport Services, which therefore includes CPC 71221 – “Taxi Services” and / or CPC 71222 – “Rental Services of passenger cars with operator”¹²¹.

¹²⁰Explanatory Note, Scheduling of Initial Commitments in Trade in Services, MTN.GNS/W/164 dated 3rd September, 1993, Para 23(d) at Pg. 11

III E. TOURISM AND TRAVEL RELATED SERVICES

The sector of Tourism and Travel Related Services under the Services Sectoral Classification List¹²² comprises of A. “Hotels and Restaurants” (CPC 641 – 643); B. “Travel Agencies and tour operator services” (CPC 7471); C. “Tourist guides services” (CPC 7472) and D. “Others”. For the purposes of the current study, our focus in this Report will be on the sub-sectors for “Hotel and other Lodging Services” (CPC 641) and “Travel agencies and tour operators’ services” (CPC 7471). The sector of Tourism and Travel Related Services is comprised of the following sub-sectors:

A. CPC 641-643 – Hotels and restaurants (incl. catering)

CPC 641: Hotel and other Lodging Services

Explanatory Note: Lodging accommodations provided to transients. **Exclusions:** Food and beverage serving services are classified in groups 642 and 643, respectively. Residential lodging services are classified in division 82 (Real estate services).

CPC 64110 – Hotel Lodging Services

Explanatory Note: Lodging and related services typically provided by hotels. Related services comprise services normally furnished with and included in the lodging price and include room service, desk service, mail service and bellboy service. Hotels also generally make available other services such as parking, food, beverages, entertainment, swimming pools, banquet, convention and meeting facilities. Resort hotels may provide extensive recreational facilities. These various services are included here, if provided as a part of the price of lodging. If they are priced separately, they are classified according to the service provided. The services rendered by hotels are generally more complete than those offered by motels and other lodging places.

CPC 6412 – Motel Lodging Services

Explanatory Note: Lodging and related services typically provided by motels, including all services normally included in the price of lodging. Motels are typically located along highways or thoroughfares and cater specifically to the needs of people travelling by car. Parking is thus generally included. The services rendered are generally less complete than full hotel service.

CPC 6419 – Other Lodging Services

CPC 64191: Children’s holiday camp services:

Explanatory Note: Lodging and related services provided by children's holiday camps. Included are all other services provided by such camps in connection with the provision of lodging.

CPC 64192: Holiday center and holiday home services

Explanatory Note: Lodging and related services provided by adult or family holiday camps, vacation bungalows and similar holiday homes. Included are all other services provided by such establishments in connection with the provision of lodging.

CPC 64193: Letting Services of furnished accommodation

Explanatory Note: Lodging and related services provided by rooming houses, boarding houses, cabins, private apartments and homes and similar lodging facilities. Most of these units provide only lodging, although some may include food serving services. **Exclusions:** Hotel and motel lodging services are classified in subclass 64110 and 64120, respectively.

¹²² Note by the Secretariat, Services Sectoral Classification List, MTN.GNS/W/120 dated 10th July, 1991

CPC 64194: Youth hostel and mountain shelter services

Explanatory Note: Lodging and related services provided by school dormitories, residence halls, youth hostels, mountain shelters and similar facilities. These services are distinguished from full hotel service by the lesser extent of service provided and by the specific group of the population to whom such services are rendered.

CPC 64195: Camping and caravanning site services

Explanatory Note: Lodging and related services provided by trailer and recreational vehicle parks, campsites and similar facilities. Such services include provision of the site only or of the site and the tent or trailer situated thereon. ***Exclusions:*** Rental services of residential mobile home sites are classified in subclass 82101 (Renting or leasing services involving own or leased residential property).

Rental services of caravans and trailers for use off-site are classified in subclass 83105 (Leasing or rental services concerning other land transport equipment without operator).

CPC 64196: Sleeping car services and sleeping services in other transport

Explanatory Note: Sleeping-car services and similar services in other transport media, e.g. aboard ferry boats.

CPC 64199: Other lodging services

Explanatory Note: Lodging and related services of a type not elsewhere classified.

CPC 642: Food Serving Services:

CPC 64210: Meal serving services with full restaurant services:

Explanatory Note: Food preparation and serving services and related beverage serving services furnished by restaurants, cafes and similar eating facilities providing full service consisting of waiter service to individual customers seated at tables (including counters or booths), with or without entertainment. Included are such services provided by restaurants, bars, nightclubs and similar facilities, operated in hotels or other lodging places or in transport facilities, e.g. in trains or aboard ships. ***Exclusion:*** Serving services of beverages without prepared food are classified in subclass 64310, if without entertainment, and in 64320, if with entertainment.

CPC 64220: Meal serving services in self-service facilities:

Explanatory Note: Food preparation and serving services and related beverage serving services furnished by eating facilities that provide a range of pre-cooked foods from which the customer makes individual selections and is billed accordingly. These facilities provide seating but no individual waiter service; they are often known as cafeterias.

CPC 64230: Caterer Services, providing meals to outside:

Explanatory Note: Food preparation and serving services provided by caterers to groups, on the premises or elsewhere. Included are related beverage serving services.

CPC 64290: Other food serving services:

Explanatory Note: Other food preparation and serving services and related beverage services furnished, e.g. by refreshment stands.

CPC 643: Beverage Serving Service for consumption on the premises:

CPC 64310: Beverage service services with entertainment

Explanatory Note: Beverage serving services, mostly alcoholic beverages, delivered by bars and similar facilities, without entertainment. Included are such services provided by bars operated in hotels or other lodging places or in transport facilities, e.g. in trains or aboard ships. ***Exclusion:*** Serving services for food and beverages are classified in subclass 64210 (Meal serving services with full restaurant service).

CPC 64320: Beverage serving services without entertainment

Explanatory Note: Beverage serving services, mostly alcoholic beverages, delivered by bars, nightclubs and similar facilities, with entertainment. ***Exclusion:*** Serving services for food and related beverages are classified in subclass 64210 (Meal serving services with full restaurant service).

CPC 7471 – Travel agencies and tour operators' services

Explanation Note for CPC 74710: Services rendered for passenger travel by travel agencies tour operators, and similar services; travel information, advice and planning services; services related to arrangement of tours, accommodation, passenger and baggage transportation; ticket issuance services. These services are provided on a fee or contract basis.

C. CPC 7472 – Tourist guides services

Explanation Note for CPC 74720: Tourist guide services by tourist guide agencies and own-account tourist guides. ***Exclusions:*** Services by own-account hunting guides are included in subclass 96419 (Other sporting services). Personal escort services are included in subclass 97090 (Other services n.e.c.).

D. Others

WTO SECRETARIAT'S SUMMARY AND OVERVIEW OF THE MEMBERS' COMMITMENTS:

The WTO Secretariat has prepared a Background Note¹²³ on Tourism and Travel Related Services where it has observed broad trends as to commitments made by countries for the sector on Tourism and Travel Related Services, which are as follows:

- (i) 133 WTO Members have made GATS commitments in Tourism and Travel Related Services as defined under Section 9 of the Services Sectoral Classification List. This level is greater than for any other sector, and indicates the desire of most Members to expand their tourism sectors and to increase inward FDI as part of efforts to promote economic growth.¹²⁴
- (ii) The percentage of Members making no commitments ("Unbound") is significantly higher for Mode 1 (cross-border supply) than for other modes, posing potential difficulties, for the supply of travel agency and tour operators services via ecommerce,¹²⁵
- (iii) A small number of WTO Members (8) have made no GATS tourism commitments.¹²⁶

OVERVIEW OF COMMITMENTS UNDER MODE 1 AND MODE 3:

¹²³ Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009

¹²⁴ Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 44

¹²⁵ Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 45

¹²⁶ Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 45

The focus of our study is on Mode 1 (“Cross-Border supply”) and Mode 3 (“Commercial presence”). The purpose of this is to assess the extent to which members may have specified restrictions on the supply of services through commercial presence (i.e. Mode 3) and the extent to which the supply of the same service through Mode 1 has been committed, with or without similar restrictions. With this in view the table below describes the commitments taken by each country in Mode 1 and Mode 3:

Table 6: Mode 1 and Mode 3 Commitments of Members in Travel and Tourism Related Services

*(Note: Unbound * entry in the table below indicates that commitments are not being taken on account of the mode of delivery being ‘technically not feasible’)*

Sector	Mode 1:	Mode 3:
9. TRAVEL AND TOURISM RELATED SERVICES:		
A. Hotels and Restaurants (incl. catering) - CPC 641 - 643:	Full Commitment: U.S., Canada, Argentina, China, Nigeria, Tanzania and Uganda have taken full commitments in the sector.	Full Commitment: U.S., Australia, Argentina, Pakistan, Kenya and Nigeria have taken full commitments.
	Partial Commitment: <u>South Africa</u> ’s schedule has only covered CPC 641 – “Hotel and Other Lodging Services” for which it has scheduled “Unbound” (“no commitments”) for except for catering for which “None” has been scheduled (“full commitment”) under Market Access and scheduled “None” (“full commitments”) under National Treatment. <u>Indonesia</u> has not scheduled as per classifications provided by W/120 or UNCPC Provisional 1991 and has taken full commitments only for Hotels, Marinas, Golf Courses and Sport facilities	Partial Commitment: <u>India</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment for Hotels and other Lodging Services for CPC Ex. 641 and has not scheduled commitments for CPC 642 - “Food Serving Services” and CPC 643 – “Beverage Serving Services for consumption on premises” <u>European Union</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment for CPC 641-643 - “Hotels and Restaurants” <u>Japan</u> has scheduled full commitments under Market Access and scheduled restrictions under National Treatment for CPC 6411 – “Hotel Lodging Services”, 6412 – “Motel Lodging Services”, 64194 – “Youth Hostel and Mountain Shelter Services”, 6421 – “Meal services with full restaurant services”, 6422 – “Meal services in self-service facilities”, 6431 – “Beverage Services with entertainment”, 6432 - “Beverage Services without entertainment” and 6423 – “Catering Services”. <u>Canada</u> has scheduled restrictions under both Market Access and National Treatment for Mode 3 but has taken full commitments under Mode 1 <u>South Africa</u> ’s schedule covers only CPC 641 – “Hotels

Sector	Mode 1:	Mode 3:
		<p>and Restaurants” (including catering) for which it has taken full commitments for both Market Access and National Treatment.</p> <p><u>Brazil’s</u> schedule covers only CPC 641 – “Hotel and Lodging Services” & 642 – “Food Serving Services” for which it has taken full commitment under Market Access and scheduled restrictions under National Treatment.</p> <p><u>China</u> has scheduled restrictions under Market Access and taken full commitments under National Treatment for Mode 3 but has taken full commitments under Mode 1</p> <p><u>Philippines</u> has not scheduled as per classifications provided by W/120 or UNCPC Provisional 1991 and has scheduled restrictions under Market Access and taken full commitment under National Treatment for “Tourism accommodation facilities” and Specialty Restaurants</p> <p><u>Thailand</u> has scheduled restrictions under both Market Access and National Treatment for CPC 64110 – “Hotel Lodging Services”, 64210 – “Restaurant Services”; CPC 64230 – “Catering Services”</p> <p><u>Mexico’s</u> schedule has provided for CPC 6411 – “Hotel Lodging Services”, 6412 – “Motel Lodging Services”, 64192 & 64193 – “Board and lodging in guest houses and furnished accommodation”, 64194 - “Youth Hostel and Temporary Camping facilities”, 64195 – “Camping facilities for mobile homes (trailer parks)”, 6431 – “Canteens, Bars and Taverns”, 6432 - “Cabarets and night-clubs” and CPC 642 - “Restaurant Services” for which it has scheduled restrictions under Market Access and taken full commitments under National Treatment.</p> <p><u>Indonesia</u> has not scheduled as per classifications provided by W/120 or UNCPC Provisional 1991 and has scheduled restrictions under both Market Access and National Treatment only for Hotels, Marinas, Golf Courses and Sport facilities</p> <p><u>Tanzania</u> has scheduled restrictions under Market Access and taken no commitments National Treatment.</p> <p><u>Uganda</u> has scheduled restrictions under Market Access and taken full commitment under National Treatment.</p> <p><u>Bangladesh’s</u> schedule provides for CPC 641 – “Five Star Hotel and Lodging Services for which it has scheduled</p>

Sector	Mode 1:	Mode 3:
		restrictions under Market Access and taken full commitments under National Treatment.
	No Commitment: <u>Brazil and Thailand</u> have not taken any commitments.	No Commitment:
	Unbound*: <u>India</u> has scheduled “Unbound*” (technically infeasible) for Hotels and other Lodging Services for CPC Ex. 641 and has not scheduled commitments for CPC 642 - “Food Serving Services” and CPC 643 – “Beverage Serving Services for consumption on premises” <u>European Union</u> has scheduled “Unbound*” (technically infeasible) for CPC 641-643 - “Hotels and Restaurants” except for “catering” for which “None” has been scheduled (“full commitment”) <u>Japan</u> has scheduled “Unbound*” (technically infeasible) for CPC 6411 – “Hotel Lodging Services”, 6412 – “Motel Lodging Services”, 64194 – “Youth Hostel and Mountain Shelter Services”, 6421 – “Meal services with full restaurant services”, 6422 – “Meal services in self-service facilities”, 6431 – “Beverage Services with entertainment”, 6432 - “Beverage Services without entertainment” except for Catering Services and CPC 6423 – “Catering Services” for which “None” has been scheduled (“full commitment”) <u>Australia</u> has scheduled “Unbound*” (technically infeasible) for CPC 641, 642, 643 – “Hotel and Restaurant Services” <u>Philippines</u> has not scheduled as classifications provided by W/120 or	Unbound*: -

Sector	Mode 1:	Mode 3:
	<p>UNCPC Provisional 1991 and has scheduled “Unbound*” (technically infeasible) for “Tourism accommodation facilities” and Specialty Restaurants</p> <p><u>Mexico</u> has scheduled “Unbound*” (technically infeasible) for CPC 6411 – “Hotel Lodging Services”, 6412 – “Motel Lodging Services”, 64192 & 64193 – “Board and lodging in guest houses and furnished accommodation”, 64194 - “Youth Hostel and Temporary Camping facilities”, 64195 – “Camping facilities for mobile homes (trailer parks)”, 6431 – “Canteens, Bars and Taverns”, 6432 - “Cabarets and night-clubs” and “None” has been scheduled (“full commitment”) only for CPC 642 (Restaurant Services)</p> <p><u>Pakistan</u> has scheduled “Unbound*” (technically infeasible) for CPC 641-643 – “Hotel and Restaurant Services” for both Market Access and National Treatment</p> <p><u>Kenya</u> has scheduled “Unbound*” (technically infeasible) for “Hotels and restaurants” (CPC 641 – 643) for both Market Access and National Treatment</p> <p><u>Bangladesh</u> has scheduled “Unbound*” (technically infeasible) for “Five Star Hotels and Lodging Services” (CPC 641) and has not scheduled any other sub-class</p>	
B. Travel agencies and tour operators’ services - <u>CPC 7471:</u>	<p>Full Commitment:</p> <p>U.S., European Union, Japan, South Africa, Argentina, China, Indonesia, Kenya, Nigeria and Uganda have taken full commitments</p>	<p>Full Commitment:</p> <p>Australia, South Africa, Argentina, Pakistan, Kenya and Nigeria</p>
	<p>Partial Commitment:</p>	<p>Partial Commitment:</p>

Sector	Mode 1:	Mode 3:
	<p><u>Australia</u> has scheduled restrictions as to commercial presence requirements under Market Access and taken full commitments under National Treatment</p> <p><u>Canada</u> has scheduled restrictions under both Market Access and National Treatment</p> <p><u>Philippines</u> has scheduled restrictions as to commercial presence requirements under Market Access and taken full commitments under National Treatment</p>	<p><u>India</u> has scheduled restrictions as to incorporation with foreign equity under Market Access and taken full commitments under National Treatment</p> <p><u>U.S., European Union, Philippines, Mexico and Uganda</u> have scheduled restrictions under Market Access and taken full commitments under National Treatment</p> <p><u>Japan and Canada</u> have taken full commitments under Market Access and scheduled restrictions under National Treatment</p> <p><u>Canada</u> has taken full commitments under Market Access and scheduled restrictions under National Treatment</p> <p><u>China, Thailand and Indonesia</u> have scheduled restrictions under both Market Access and National Treatment</p>
	<p>No Commitment:</p> <p>India, Brazil, Thailand, Mexico, Pakistan, Tanzania and Bangladesh have not taken any commitments</p>	<p>No Commitment:</p> <p>Brazil and Tanzania have not taken any commitments</p>
C. Tourist Guide Services - <u>CPC 7472:</u>	<p>Full Commitment:</p> <p>U.S., Australia, Argentina, Kenya and Nigeria have taken full commitments</p>	<p>Full Commitment:</p> <p>European Union, Australia, South Africa, Kenya and Nigeria</p>
	<p>Partial Commitment:</p> <p>European Union has scheduled restrictions under Market Access for certain countries and taken full commitments under National Treatment</p>	<p>Partial Commitment:</p> <p>U.S. and Mexico have scheduled restrictions under Market Access and taken full commitments under National Treatment</p> <p>Japan has scheduled full commitments under Market Access and scheduled restrictions under National Treatment.</p>
	<p>No Commitment:</p> <p>India, Canada, Brazil, China, Philippines, Thailand, Mexico, Indonesia, Pakistan, Tanzania, Uganda and Bangladesh have taken no commitments</p>	<p>No Commitment:</p> <p>India, Canada, Brazil, Argentina, China, Philippines, Thailand, Indonesia, Pakistan, Tanzania, Uganda and Bangladesh have taken no commitments.</p>
	<p>Unbound*:</p> <p>Japan and South Africa have</p>	<p>Unbound*:</p>

Sector	Mode 1:	Mode 3:
	scheduled “Unbound*” for technical unfeasibility under both Market Access and National Treatment	-
<u>D. Others</u>	Full Commitment: U.S. and Argentina have taken full commitments in the sector, though their schedules do not specify the nature of Tourism and Travel Services contemplated under the sub-sector “D. Others”	Full Commitment: U.S. and Argentina have taken full commitments in the sector, though their schedules do not specify the nature of Tourism and Travel Services contemplated under the sub-sector “D. Others”
	Partial Commitment: -	Partial Commitment: Thailand has scheduled restrictions under both Market Access and National Treatment for D. Others which it specifies as “Hotel Management Services”
	No Commitment: India, European Union, Japan, Australia, Canada, South Africa, Brazil, China, Philippines, Mexico, Indonesia, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments. Thailand has taken no commitments for D. Others which it specifies as “Hotel Management Services”	No Commitment: India, European Union, Japan, Australia, Canada, South Africa, Brazil, China, Philippines, Mexico, Indonesia, Pakistan, Kenya, Nigeria, Tanzania, Uganda and Bangladesh have not taken any commitments.

Of the twenty (20) countries specified for the purpose of this study, certain countries have undertaken full commitment in Mode 1 but have scheduled limitations in Mode 3 the particular sector / sub-sector. They are as follows:

- a. U.S. has undertaken full commitments in Mode 1 but scheduled limitations in Mode 3 for “Travel Agencies and Tour Operators”, “Tour Guide Services.”
- b. Certain Members of the European Union and China have undertaken full commitment in Mode 1 but have scheduled limitations in Mode 3 for “Travel Agencies and Tour Operators Services.”

- c. Canada and China have taken partial commitments for Mode 3 in “Hotels and Restaurants” while undertaking full commitment in Mode 1.
- d. Mexico has undertaken full commitment in Mode 1 but has scheduled limitations in Mode 3 for Restaurant Services.
- e. Tanzania has undertaken full commitment in Mode 1 but has scheduled limitations in Mode 3 for “Hotels of four stars and above.”
- f. Uganda has undertaken full commitment in Mode 1 but has scheduled limitations in Mode 3 for “Hotels and restaurants” and “Travel Agencies / Tour Operators.”

The Background Note by the Secretariat for Tourism and Travel Related Services has noted that the level of commitments taken in this sector is greater than for any other sector.¹²⁷ Furthermore, the Background Note has also observed that all WTO Members with commitments in this sector have included commitments on sub-sector “A. Hotels and Restaurants” (CPC 641 – 643).¹²⁸ However, the Background Note has also noted that the most common restriction appearing with respect to this sub-sector i.e. CPC 641 – 643 is the scheduling of Mode 1 supply (“Cross-Border supply”) as “Unbound*” due to lack of technical feasibility¹²⁹. The same can be concluded from the mapping of commitments of the twenty (20) specified countries at **Annexure 1**, where we see that a total of nine (9) countries¹³⁰ have scheduled the “Unbound*” for Mode 1 supply in this sub-sector (CPC 641 – 643) citing lack of technical feasibility.

Advances in technology over the last 2 decades have led to an increased ability to provide a vast variety of services remotely through the internet, which would have otherwise been unforeseeable at the time Members were scheduling GATS commitments. With reference to sub-sector “A. Hotels and Restaurants” (CPC 641 – 643) this is especially true in the context of CPC 641 – “Hotel and Lodging” with the emergence of companies like “Airbnb Inc.” and “Hostel world Group Plc”.

Airbnb Inc. operates the app *Airbnb* which is an online marketplace / hospitality service, enabling people to lease or rent short-term lodging including vacation rentals, apartment rentals, homestays, hostel beds, or hotel rooms. The company does not own any lodging; it is merely a broker and receives percentage service fees (commissions) from both guests and hosts in conjunction with every booking. Similarly, Hostelworld Group Plc operates a hostel-focused online booking platform through its “**Hostelworld**” flagship brand, as well as under “**Hostelbookers**” and “**Hostels.com**” brands. The company provides software and data

¹²⁷Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 44

¹²⁸Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 45

¹²⁹Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 46

¹³⁰European Union, Japan, South Africa, Mexico, India, Australia, Pakistan, Kenya and Bangladesh

processing services that facilitate hostel, B&B, hotel, and other accommodation bookings worldwide. These companies provide services remotely over the internet across a variety of on-line platforms such as websites and web-based mobile phone applications. Provision of services over web / internet-based platforms potentially allows these service providers to reach out and deliver services to recipients / consumers all across the world without requiring any commercial / physical presence in the service recipient's country.

It must however be noted that there has yet to be any discussion amongst the WTO Members as to whether services of the nature provided by companies like "Airbnb" are covered by classifications under CPC 641 – "Hotel and lodging services" or at all by W/120. In the event that services of the nature provided by "Airbnb" are in fact considered to be within the scope of CPC 641, provision of such services would constitute Mode 1 supply ("Cross-Border supply"). Services provided by companies such as Airbnb and Hostelworld could be classified within the sub-sector "A. Hotels and Restaurants" (CPC 641 – 643), and more specifically:

- c. CPC 64110 - Hotel lodging services¹³¹
- d. CPC 64120 – Motel lodging services¹³²
- e. CPC 64193 - Letting services of furnished accommodation¹³³
- f. CPC 64194 - Youth hostel and mountain shelter services¹³⁴

It must also be noted that neither the W/120 nor the CPC Provisional in its "Explanatory Notes" stipulate any requirement as to ownership of the subject property, i.e. the hotel, motel, hostel, cabin, apartment, home etc. by the service provider itself. The mere fact that companies such as Airbnb or Hostelworld do not "own" the property would not preclude them from providing services in the nature of the aforesaid classifications under the UNCPC Provisional 1991.

¹³¹**Explanatory Note:** Lodging and related services typically provided by hotels. Related services comprise services normally furnished with and included in the lodging price and include room service, desk service, mail service and bellboy service. Hotels also generally make available other services such as parking, food, beverages, entertainment, swimming pools, banquet, convention and meeting facilities. Resort hotels may provide extensive recreational facilities. These various services are included here, if provided as a part of the price of lodging. If they are priced separately, they are classified according to the service provided. The services rendered by hotels are generally more complete than those offered by motels and other lodging places.

¹³²**Explanatory Note:** Lodging and related services typically provided by motels, including all services normally included in the price of lodging. Motels are typically located along highways or thoroughfares and cater specifically to the needs of people travelling by car. Parking is thus generally included. The services rendered are generally less complete than full hotel service.

¹³³**Explanatory Note:** Lodging and related services provided by rooming houses, boarding houses, cabins, private apartments and homes and similar lodging facilities. Most of these units provide only lodging, although some may include food serving services.

¹³⁴**Explanatory Note:** Lodging and related services provided by school dormitories, residence halls, youth hostels, mountain shelters and similar facilities. These services are distinguished from full hotel service by the lesser extent of service provided and by the specific group of the population to whom such services are rendered.

The Background Note of the WTO Secretariat on Tourism Services has also noted that the percentage of Members making no commitments ("Unbound") is significantly higher for Mode 1 ("Cross-Border Supply") than for other modes. According to the Background Note, this may pose potential difficulties, especially for the supply of "B. Travel Agency and Tour Operators services" (CPC 7471) via ecommerce, which the Background Note has identified as a significant export opportunity for many developing countries.¹³⁵ Of the twenty (20) specified countries, seven (7) countries¹³⁶ have not taken any commitments for Mode 1 supply of "B. Travel Agency and Tour Operators services" (CPC 7471), while two (2) other countries, Australia and Philippines have specified restrictions as to the requirement of commercial presence for supply of these services under Mode 1.

Such classification could have significant implications on the interpretation of commitments undertaken by the countries for the abovementioned sectors. If the emergence of new technology has the effect of enabling a service to be provided across borders in a way that was not foreseen or conceivable at the time of a Member scheduling its commitments, then a principle of absolute technological neutrality can result in subverting the clear intent of a Member in scheduling mode-specific limitations on commitments, and restrict a Member's regulatory space.

In light of the same it appears that countries who scheduled "None" i.e. took full commitments for Mode 1 supply under the sector for Tourism and Travel Related Services, for more specifically in relation to "A. Hotels and Restaurants"- CPC 641 – 643 and "B. Travel Agency and Tour Operators services" - CPC 7471 risk giving up significant regulatory space for oversight of these services which it would have otherwise implemented by applying restrictions on Mode 3 supply though commercial presence of the service provider in the host country. For CPC 641 – 643, a total of seven (7) of the twenty (20) specified countries have taken full commitments under Mode 1, of which four (4): China, Canada, Tanzania and Uganda have also scheduled restrictions under Mode 3. For CPC 7471, a total of ten (10) of the twenty (20) specified countries have taken full commitments under Mode 1, of which four (6): U.S., European Union, Japan, China, Indonesia and Uganda have also scheduled restrictions under Mode 3.

In contrast, countries that have scheduled "Unbound*" due to lack of technical feasibility or have scheduled "Unbound" i.e. taken no commitments for supply of "A. Hotels and Restaurants"- CPC 641 – 643 appear to be better placed to accommodate the supply of these services outside traditional means and electronically through web / internet-based platforms. A total of nine (9)

¹³⁵ Tourism Services, Background Note by the Secretariat, S/C/W/298, dated 8th June, 2009, Para 45

¹³⁶ India, Brazil, Thailand, Mexico, Pakistan, Tanzania and Bangladesh

countries¹³⁷ of the twenty (20) specified countries have scheduled the “Unbound*” for Mode 1 supply in this sub-sector (CPC 641 – 643) citing lack of technical feasibility. As per the GATS Scheduling Guidelines, where a schedule states “Unbound*” and the mode of supply thought to be inapplicable is in fact applicable or becomes so in the future, the entry means “Unbound”¹³⁸, i.e. no commitments. This effectively preserves regulatory space for countries to regulate services in the nature of “A. Hotels and Restaurants”- CPC 641 – 643 when being delivered cross-border through Mode 1 without any commercial presence in the host country.

¹³⁷European Union, Japan, South Africa, Mexico, India, Australia, Pakistan, Kenya and Bangladesh

¹³⁸Explanatory Note, Scheduling of Initial Commitments in Trade in Services, MTN.GNS/W/164 dated 3rd September, 1993, Para 23(d) at Pg. 11

IV CONCLUSIONS AND RECOMMENDATIONS

Our analysis of sector-wise commitments taken by twenty (20) identified WTO Members, leads to the clear conclusion that there may be risks associated with interpreting the commitments of Members under GATS as purely technologically neutral, particularly for service sectors that have witnessed radical change in technology. Some of these risks are highlighted in the sections that follow.

(i) *Unforeseen Regulatory Concerns due to Unforeseen Technology; Classification related concerns*

The advent of technology often leads to services being specialized to an extent that there is doubt as to whether the service in question is a “new service” or a variation of an already scheduled service. This can also give rise to concerns about classification, i.e., which service sector a certain service would be categorized under.

CRS is one such example of a sector that has undergone rapid changes in the nature of services and ways of delivery due to the unprecedented growth in technology over the past two decades. The services described under CRS in the CPC Provisional have undergone significant specialization since the time of scheduling of GATS commitments for most WTO Members. With the rise of “digital convergence” some services that were earlier regarded as distinct (with distinct service providers and regulatory regimes) are now provided by the same or similar service providers using related technology. This has made it increasingly difficult to distinguish, for instance, between computer services, value added telecommunication services, and audio-visual services.

This obviously has a corresponding impact on the evolution of regulatory concerns in a sector over time. An example of this is seen in the evolution of the services of cloud computing. As our assessment indicates, cloud computing can be argued to be an evolved or specialized form of “data processing” services under “Computer and Related Services” in the CPC Prov. Today, cloud computing is used by industries and governments alike in a way that leads to several regulatory concerns that were not relevant to data processing in early nineties when GATS was being negotiated or even a few years later when the EU came out with the proposal on the Understanding on the scope of coverage of CPC 84. For example, the issue of transferring data to other jurisdictions or revealing the data to third parties for advertisement purposes would not have arisen in 1994-95, while it is of paramount importance in 2018. Yet, a Member who wishes to enact legislation governing cloud computing services today, after having undertaken full commitment in data processing in 1994, may find its hands tied if the interpretation taken is that commitments in data processing extend to commitments on cloud computing.

If the emergence of a new technology – is not just a new “means of delivery” – but throws up a host of new regulatory challenges that could not have been envisaged, then the implications of absolute technological neutrality under the GATS could potentially result in a very restrictive regulatory regime for Members. This would go against the principle of balancing between rights and obligations of Members as far as domestic regulatory policy is concerned, which is a key principle of the GATS.

(ii) *Subversion of Mode-specific Scheduling Intentions*

It must be noted Members’ commitments under various modes of supply were made on their own assessment of competitive strengths of modes at the time of the negotiations – a fact noted by Egypt in a series of CTS meetings in 1998.¹³⁹ This being completely altered due to lack, or changes of technology may leave Members with a situation where their regulatory intentions are at odds with their mode-specific competitive strength.

As discussed earlier, the WTO Secretariat’s Background Note on Construction and Related Services describes the sector as comprising two stages, the design phase and the implementation phase, both of which are part of construction services. Though designs could have been transmitted electronically, and possibly certain pre-erection work may be conducted cross-border, common understanding at the time of scheduling of commitments would have been that the output is physical in nature and it is the production *process* that is exported. However, with the advent of 3D printing and other allied technologies, it has become conceivable that even the actual task of construction could be conducted through remote cross-border instructions without requiring commercial presence. This may allow a cross-border service supplier to bypass the kind of regulatory controls that are usually scheduled under Mode 3 for service suppliers, such as incorporation, qualifications, licensing, economic needs tests etc. that Members would not have otherwise scheduled under Mode 1 as it could not have been envisaged that construction services could be provided cross-border in the early 1990s. A Member may therefore be constrained from putting up regulatory restraints on 3D printing in construction services at a later point in time if it had earlier made “full commitment” in Mode 1.

The concept of positive listing of commitments hinges on Members having regulatory autonomy to decide the degree and extent of market access under each mode in each sector. If new technologies enable certain services to be provided across border in a way that was not conceivable at the time of scheduling, then a principle of absolute technological neutrality would result in subverting the clear intent of a Member in scheduling mode-specific limitations on commitments.

¹³⁹Report Of The Meeting Held On 14 And 15 December 1998, Note by the Secretariat Council for Trade in Services, S/C/M/32 dated 14 January 1999, para 13

(iii) Risk of De-facto assumption of e-commerce obligations without there being any mandate to do so

Another crucial problem that arises as a corollary of the above issue is as follows. In the ongoing discussions on E-commerce at the WTO, Members are discussing issues such as “cross border flow of data” and “localization of servers”. While certain developed Members (such as the US, Japan and others) are keen on taking these discussions forward, developing countries including India have resisted turning this into a negotiating mandate. At this early stage of discussion, if a certain interpretation of commitments results in a de-facto restriction of Members’ capacity to enact regulations relating to data flows or localization, then that would subvert the whole point of proceeding with caution on e-commerce negotiations.

Examples of this risk have been provided in our analysis of the Construction and Related Engineering Services sector, and the Transportation sector. In the analysis of Member commitments in the Construction and Related Engineering Services, we have pointed out that it is now possible to supply construction services through Mode 1 by sharing 3DP files over the internet. In the event that a Member (who has undertaken a commitment of “None” in Mode 1 in the construction sector) enacts disciplines against cross border flows of data that has the impact of impeding the exchange of 3DP files online in some manner, then the service supplier may consider that its capacity to supply construction services through Mode 1 has been restricted, without such a restriction having been scheduled. Thus, the Member who is enacting the restriction may face a complaint from the Member supplying construction services. This may take the form of a non-violation complaint under Art. XXIII, GATS for nullifying or impairing the benefits of the service-supplying Member. A technologically neutral reading of the Member’s commitment may lead to such Member being effectively restrained from enacting restrictions on “cross-border data flows.” This is problematic because WTO Members have not even decided on a negotiating mandate for E-commerce.

Another example comes from the transportation sector, where the business model of Uber is such that it does not always require a local presence or localization of servers to provide its services. Assuming that a Member forces localization of servers as a requirement for such a Member while having undertaken a “None” commitment in the transportation sector, and such a Member finds this to be an unscheduled restriction to market access / national treatment / files a non-violation complaint, it would amount to restriction of a Member’s capacity to enact localization requirements.

Divergence of Viewpoints on Technological Neutrality

In view of the risks in interpreting GATS commitments of members as technologically neutral, as discussed in Part III of this Report, and the WTO Secretariat's hasty and unfounded position that the technological neutrality of the GATS commitments is a "general view" amongst WTO Members, it becomes important to emphasize that there is no consensus, understanding or agreement between Members that GATS is technologically neutral.

The divergence of views between Members has been captured in our discussions in Part II of this study. Based on our analysis, it appears that several developed countries such as the U.S. and the EU appear to support a technologically neutral interpretation of GATS commitments; while a few have cautioned on its implications. Developing countries on the other hand have generally taken the view that the concept of technological neutrality cannot automatically be read into GATS commitments and is a subject that requires further analysis. Concerns of developing countries in this regard arise in view of the gap between them and the developed countries in terms of the state of technological progress and access to technology and the emphasis of developing countries on preserving regulatory freedoms to pursue measures towards bridging this gap. Any view that simply assumes that GATS commitments are to be interpreted as technologically neutral would therefore be premature and risk ignoring the various nuances in the positions taken and concerns raised by different Members on this issue.

In this regard, it is also important to emphasize that the Preamble to the GATS itself recognizes *"the right of Members to regulate, and to introduce new regulations, on the supply of services within their territories in order to meet national policy objectives and, given asymmetries existing with respect to the degree of development of services regulations in different countries, the particular need of developing countries to exercise this right."*

Scheduling Intent of Members and Lessons of Future Negotiations

In our assessment, the debate and discussions in technological neutrality is simply obfuscating the issue. It is perhaps an incorrect question to begin with to even ask whether the GATS is technologically neutral. It is a matter of fact that the GATS do not dictate use of any specific technology. ***But that certainly does not mean that Member commitments are assumed to expand and evolve with evolving technologies in positive listing of commitments.***

The frame of analysis would need to be what was the understanding of a Member while making a commitment. If a certain service was not technically feasible at the time of the scheduling of the commitment, then it could not have been part of the "intent" of such Member. **This is discussed in China – Audio Visuals where the Panel noted that the "evidence of the technical**

feasibility or commercial reality” of the service at the time of scheduling are factors that are relevant in interpreting a commitment.

The Panel also concurred with the Appellate Body in *EC – Chicken Cuts* in the view that “*the circumstances of the conclusion [of a treaty] should be ascertained over a period of time ending on the date of the conclusion.*” In *China – Audio Visuals*, the panel undertook the exercise of inspecting evidence presented by the parties suggesting that electronic distribution of music had become a commercial reality before the entry of force of China’s GATS Schedule.

Based on our assessment, the question that Member need to consider is whether the evolution of technology has changed the delivery of services to such an extent that:

- (a) the nature of the service undergoes a change and/or merits reclassification; *or*
- (b) the original service sector in which commitments were undertaken is too wide or too narrow to capture the range of services that have evolved due to new technology; *or*
- (c) the distinction between different modes of service supply is no longer clear due to the change in means of delivery.

Members need to build a consensus on how the evolution of technology would impact both, the classification of services and the reading of services commitments under the GATS.

However, till such time there is any general consensus on these issues, Members also need to be careful in the language they adopt in future commitments whether under the GATS or in future FTAs. In this regard, Members may find it useful to look at the language adopted by Japan in its FTAs with Chile, Mexico and Switzerland as an example for guidance. Japan has made the following reservation on new services in Japan-Chile, Japan-Mexico, Japan-Switzerland FTAs:

"Japan reserves the right to adopt or maintain any measure relating to new services other than those recognized or that should have been recognized owing to the then circumstances at the time of entry into force of this Agreement by the Government of Japan. Japan reserves the right to adopt or maintain any measure relating to the supply of services in any mode of supply in which those services were not technically feasible at the time of entry into force of this Agreement. Any services classified positively and explicitly in JSIC (Japanese Standard Industrial Classification) or United Nations Provisional Central Product Classification (CPC), 1991, at the time of entry into force of this Agreement should have been recognized by the Government of Japan at that time."

Under the Trans-Pacific Partnership Agreement, Japan has taken an overarching reservation in respect of All Sectors, labeled as “*Unrecognized*” or “*Technically Unfeasible Services*”, in respect of ‘Cross-border trade in Services.’ Here again Japan states that it “*reserves the right to*

adopt or maintain any measure relating to services other than those recognized or other than those that should have been recognized by the Government of Japan owing to the circumstances at the date of entry into force of this Agreement.”

Japan’s reservation as extracted above, is also reflective of the reservations and concerns that a major developed country has with regard to evolving technologies and its implications for commitments. Further consideration and refinement of their approach is necessary by all countries in order to effectively secure the right to exercise regulatory discretion on any new service that emerges after the concerned agreement comes into force.
