



The **E15** Initiative

STRENGTHENING THE GLOBAL TRADE AND INVESTMENT SYSTEM
FOR SUSTAINABLE DEVELOPMENT



Analysis of Data Localization Measures Under WTO Services Trade Rules and Commitments

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Policy Brief

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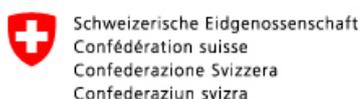
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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
CPC	Central Product Classification
FTA	Free-Trade Agreement
GATS	General Agreement on Trade in Services
OECD	Organisation for Economic Co-operation and Development
TiSA	Trade in Services Agreement
TPP	Trans-Pacific Partnership
WTO	World Trade Organization

This policy brief confirms that key data-related issues confronting companies in the global digital economy can be addressed through the existing framework of rules under the World Trade Organization's (WTO) General Agreement on Trade in Services (GATS). In particular, the policy brief establishes that when WTO Members undertake commitments on trade in services, GATS rules protect international trade in services, including rights to store, process and deliver data across borders.

Although GATS rules can provide solid protection for international trade in the digital economy and for cross-border data flows generally, the extent of protection ultimately depends on the scope of commitments made by WTO Members. Many WTO Members have made significant GATS commitments to protect free trade in digital services,¹ but broader commitments are needed by more countries in order to increase business security in global markets.

Due to the lack of progress in the WTO Doha Round negotiations, since 1997 there has been no progress on improving the bound coverage of GATS commitments at the multilateral level. Countries have therefore attempted to make progress outside of the multilateral trading system in regional free trade agreements (FTAs) and in the plurilateral Trade in Services Agreement (TiSA) by improving market access commitments and by clarifying substantive rules affecting the digital economy. The Trans-Pacific Partnership (TPP) FTA includes specific provisions that improve legal certainty by clarifying countries' obligations not to restrict e-commerce and digital trade.² Other FTAs currently under negotiation such as the Trans-Atlantic Trade and Investment Partnership between the United States and the European Union and the TiSA are likewise expected to include provisions concerning cross-border data flows.

This policy brief focuses on the application of existing GATS rules and commitments to measures affecting digital services and cross-border data flows in global markets. 'E-commerce' disciplines under recent FTAs concerning the cross-border movement of data and the cross-border supply of data-related services do not apply to some important countries that currently restrict or have proposed to restrict cross-border data flows, but have made applicable WTO commitments. Therefore, existing WTO disciplines will remain crucial as long as new-generation rules do not cover relevant countries and sectors.

BACKGROUND

The digital economy is driven by the supply of services across borders, through cables, satellites and clouds that connect services suppliers and customers all over the world. Leveraging market scale is key to business success in the digital economy due to the significant cost of establishing

and maintaining data centers where digital information is stored and processed. Therefore, many digital businesses target the entire world as their market, and seek to supply their services with the most efficient infrastructure and means of delivery. In this Internet era of trade in goods and services, small, medium and large businesses can supply services globally from online platforms using new or existing computing resources, removing limitations of who can participate in global trade and how. Depending on business models, technology and market demand drive decisions of whether to produce and deliver services from one central location, or whether infrastructure or platforms should be replicated in various locations and countries to supply services most efficiently and securely.³

For many years, digital companies developed globally based on efficient business models and countries welcomed their services which provided essential support for business innovation and competitiveness, including small and medium sized enterprises that would otherwise have limited access to global markets. However, industrial policy creep has begun in some countries, and governments have begun to limit international access to their digital markets and to require the development or use of local infrastructure, to condition market access on the local storage and processing of data, and to limit or even prohibit market access by foreign suppliers of Internet services.⁴ Such government interventions have major implications for access to competitive digital services, and for the viability of trade in digital services that depends on the flow of data and services across borders.

1 | A reference to WTO/GATS commitments on Computer and Related Services is included in Annex 1.

2 | See Trans-Pacific Partnership, Article 14.11: Cross-Border Transfer of Information by Electronic Means; and Article 14.13: Location of Computing Facilities. <https://medium.com/the-trans-pacific-partnership/electronic-commerce-87766c98a068#.78bnqrcz1> (visited 18 February 2016).

3 | Many studies have established the security and reliability advantages of not storing all information in one place or in one jurisdiction. See, e.g. Patrick S. Ryan, Sarah Falvey, Ronak Merchant, "When the Cloud Goes Local: The Global Problem with Data Localization", *Computer*, vol.46, no. 12, pp. 54-59, Dec. 2013, doi:10.1109/MC.2013.402; see also Leviathan Security Group, "Value of Cloud Security", <http://www.leviathansecurity.com/cloudsecurity/> (visited 1 March 2016): "Our conclusions are that companies trying to build local storage solutions equivalent to cloud-based storage products face significant challenges, especially in hiring qualified security staff and in defending their data in the face of large-scale events such as tsunamis, hurricanes, and earthquakes."

4 | See Chander, Anupam and Le, Uyen P., *Breaking the Web: Data Localization vs. the Global Internet* (April 2014). Emory Law Journal; UC Davis Legal Studies Research Paper No. 378. Available at SSRN: <http://ssrn.com/abstract=2407858>. See also, Statement of Ed Black, President & CEO The Computer & Communications Industry Association "International Data Flows: Promoting Digital Trade in the 21st Century", Subcommittee on Courts, Intellectual Property, and the Internet Committee on the Judiciary, U.S. House of Representatives, 3 November 2015, <http://cdn.cciainet.org/wp-content/uploads/2015/11/EBBlack-Intl-Data-Flows-Testimony-Nov2015.pdf> (visited 28 January 2016). A comprehensive catalogue of government restrictions on trade in digital services has been most recently compiled by the European Centre for International Political Economy (ECIPE) (on file with the author; publication forthcoming).

This policy brief provides a legal framework to assess the WTO consistency of certain government 'localization' interventions affecting the digital economy.

TRADE IN DIGITAL SERVICES AND DATA LOCALIZATION

Government measures that restrict or prohibit the cross-border flow of data and require the local storage and processing of data have become known as 'data localization measures.' Data localization requirements often relate to digital industrial policy or economic protectionism, but can also concern the protection of citizens' privacy and government's police powers and national security interests.

This policy brief proceeds from the WTO-based approach that potential justifications for data localization measures are not considered in the initial assessment of compliance with GATS rules and commitments. Consistent with WTO jurisprudence, only after treaty violations are established do we assess whether data localization measures might be justified under the relevant exceptions.

The policy brief does not single out measures actually applied by specific countries, but rather analyzes illustrative data localization measures and their consistency with GATS rules and commitments.

A. LOCAL DATA STORAGE REQUIREMENTS

Several governments have implemented or are considering measures requiring service suppliers to store data on servers located on their territory.⁵ Such measures restrict or prohibit cross-border services supply and force companies to replicate data storage infrastructure, which adds costs for additional data management and compliance, for local facilities and power, and can reduce data security.⁶ For example, some localization requirements mandate that social networks and search engines must store information on servers within their jurisdictions. Such data storage requirements are anathema to the 'global platform' business model that most digital services suppliers apply to achieve greatest efficiency.

B. LOCAL DATA PROCESSING REQUIREMENTS

Governments have also instituted requirements to localize data processing within their territories.⁷ Local data processing requirements limit both the core service of 'data processing' where data is entered, manipulated, presented and managed on a contract basis, as well as the data processing attendant to international business transactions in many services sectors including financial services, accountancy, legal, advertising and Internet search services.

Some governments condition approval of the cross-border transfer of data on local data storage or processing. In many circumstances, such requirements can restrict or, *de facto*, prohibit cross-border trade in services, and must be analyzed in the context of applicable WTO/GATS rules and commitments.

SCOPE AND MEANING OF GATS COMMITMENTS

A. MEANING OF TRADE IN SERVICES THROUGH MODE 1

Article I:2 of the GATS defines cross-border 'trade in services' as the supply of a service: "(1) from the territory of one Member into the territory of any other Member".⁸ In addition, Article XXVIII(b) of the GATS defines the 'supply of a service' as including "the production, distribution, marketing, sale and delivery of a service." Therefore, the GATS definition of 'trade in services' includes "the production, distribution, marketing, sale and delivery of a service through" mode 1, otherwise known as 'cross-border' trade in services. Mode 1 trade in services includes the cross-border flow of data as required to produce, distribute, market, sell and deliver services internationally.

⁵ See materials referenced at note 4 *supra*.

⁶ See, note 3 *supra* and accompanying references.

⁷ See materials referenced at note 4 *supra*.

⁸ In addition, Article I:2 of the GATS includes the following three modes of supply:
(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.

According to the Guidelines for the Scheduling of Specific Commitments Under the GATS (the 'Scheduling Guidelines'),

The modes are essentially defined on the basis of the origin of the service supplier and consumer, and the degree and type of territorial presence which they have at the moment the service is delivered.⁹

The Scheduling Guidelines provide the following explanations of the cross-border supply of services (i.e., through mode 1):

"Service supplier not present within the territory of the Member"; and

"Service delivered within the territory of the Member, from the territory of another Member".¹⁰

The typical business model for trade in digital services concerns mode 1 because services are supplied "from the territory of one Member into the territory of any other Member". The supply of such services necessarily requires the cross-border flow of customer and business data.

This policy brief will establish that in sectors where a WTO Member has made commitments on the supply of digital services through mode 1, 'data localization' measures may not be applied to covered services or service suppliers.

B. WTO JURISPRUDENCE AND TRADE IN DIGITAL SERVICES

WTO panels and the Appellate Body have provided helpful interpretations and principles of construction to clarify the scope and meaning of GATS provisions related to digital services trade, including through mode 1. The following discussion highlights the most pertinent principles developed in WTO jurisprudence concerning the cross-border supply of services.

1. Mode 1 does not require the supplier's presence or operation in a foreign country

In *Mexico – Telecoms*, the panel addressed the issue

whether... cross-border supply between two Members under [mode 1] occurs only if the supplier itself operates, or is present, on the other side of the border, or if cross-border supply can occur also if a supplier simply "hands off" traffic at the border.¹¹

After considering the meaning of Article I:2(a) of the GATS based on its text, context and objective and purpose, the panel concluded that services "handed off" at the border "without United States' suppliers operating, or being present in some way, in Mexico, are services which are supplied cross-border within the meaning of Article I:2(a) of the GATS."¹²

The lesson from *Mexico – Telecoms* that can be applied to digital services trade is that the supply of services "from the territory of one Member into the territory of any other Member" without any operation or presence in the destination country constitutes the supply of services under mode 1, that is protected where a Member has scheduled full commitments. This finding is consistent with the Scheduling Guidelines that, under mode 1, the "[s]ervice supplier [is] not present within the territory of the Member". Therefore, where a Member has scheduled full mode 1 commitments on digital services, it may not condition the supply of cross-border services on the services suppliers' presence or operation within its territory.

2. GATS commitments cover all means of supplying services

In *US – Gambling*, the WTO Appellate Body found that the United States had "undertaken to provide full market access for cross-border services, so was obliged not to maintain any of the types of measures listed in the six sub-paragraphs of Article XVI:2", including numerical quotas.¹³ Even though the United States allowed the supply of the relevant services within the United States on a non-remote basis, the Appellate Body ruled that

[a prohibition on one, several or all means of delivery cross-border] is a "limitation on the number of service suppliers in the form of numerical quotas" within the meaning of Article XVI:2(a) because it totally prevents the use by service suppliers of one, several or all means of delivery that are included in mode 1.¹⁴

The relevant take-away from this ruling for digital services trade is that 'remote' supply through all possible means of delivery, including all means of cross-border telecommunications, must be allowed in order to comply with a full mode 1 commitment. Conversely, where an unlimited market access commitment exists, a Member's prohibition of even a single means of delivery through mode 1 will give rise to a violation, even if alternative means of 'non-remote' or local delivery are allowed, or if supply is permitted through other means of delivery or modes of supply.

9 | Scheduling Guidelines, S/L/92, 28 March 2001, para. 26.

10 | Scheduling Guidelines, para. 26 (table), emphasis in original.

11 | *Mexico – Telecoms*, para. 7.28.

12 | *Mexico – Telecoms*, para. 7.45.

13 | WTO Appellate Body Report, *United States - Measures Affecting the Cross-Border Supply of Gambling and Betting Services ("US – Gambling)*, WT/DS285/AB/R, para. 215.

14 | WTO Appellate Body Report, *US – Gambling*, para. 239, citing Panel Report, *US – Gambling*, WT/DS285/R, para. 6.338 (bracketing in original); see also *ibid.* at para. 238 ("[W]e are of the view that limitations amounting to a zero quota are quantitative limitations and fall within the scope of Article XVI:2(a).").

3. GATS commitments cover technological evolutions in means of supplying services

In *US – Gambling*, the WTO panel confirmed that mode 1 commitments cover the supply of services through electronic means.¹⁵ Then, in *China – Publications and Audiovisual Products*, the panel and Appellate Body resolved the issue of whether GATS commitments cover technological developments that were not contemplated at the time commitments were undertaken. China took the position that its commitments on distribution services only covered products in physical form, and not in digital form. The United States argued before the panel that “the GATS is sufficiently dynamic so that Members need not renegotiate the Agreement or their commitments in the face of ever-changing technology”. The United States cited the panel’s statement in *US – Gambling* that “the GATS does not limit the various technologically possible means of delivery under mode 1.”¹⁶ The Appellate Body confirmed that the terms used in China’s GATS Schedule (‘sound recording’ and ‘distribution’) are sufficiently generic that what they apply to may change over time and with technological development.¹⁷

Based on WTO jurisprudence, aspects of the GATS should be considered a ‘living agreement’ under which the scope and meaning of commitments evolve to accommodate technological advances, specifically concerning new forms of service delivery, but also covering digital services that fall within the coverage of existing commitments.

4. GATS commitments cover all services necessarily included within the scope of the sectoral definition

GATS jurisprudence takes a broad and pragmatic approach to defining the coverage of commitments. In *China – Electronic Payments*, the panel reviewed previous WTO case law in order to determine the scope of services covered by specific commitments. The panel found that

- because “the GATS covers all services except those supplied in the exercise of governmental authority, it follows that a Member may schedule a specific commitment in respect of any service”;¹⁸
- a commitment covering a services ‘sector’ includes
 - (i) with reference to a specific commitment, one or more, or all, subsectors of that service, as specified in a Member’s Schedule,
 - (ii) otherwise, the whole of that service sector, (including all of its subsectors,¹⁹ and
- “A description of a service sector in a GATS schedule does not need to enumerate every activity that is included within the scope of that service, and is not meant to do so. A service sector or subsector in a GATS schedule thus includes not only every service activity specifically named within it, but also any service activity that falls within the

scope of the definition of that sector or subsector referred to in the schedule.”²⁰

Based on these rulings, the panel in *China – Electronic Payments* held that a “‘sector’ may include “any service activity that falls within the scope of the definition of that sector”, whether or not these activities are explicitly enumerated in the definition of that sector or subsector.²¹ As applied to the dispute on *Electronic Payments*, the ruling meant that

there cannot be any “payment service” and “money transmission service” if the payment is not effected and the money not transferred from the customer’s account to the merchant’s account. In that sense and referring to the finding cited above, these activities, even though they are not explicitly listed in [the relevant] subsector, are necessarily included within the scope of the definition of that subsector because they must operate together for the payment and money transmission service to be supplied. The fact that they are not specifically listed under the subsector at issue does not matter, as stated by the panel in *China – Publications and Audiovisual Products*.²²

This ruling is relevant to the interpretation of the scope and coverage of digital services commitments because they frequently involve many different services, and trading realities necessarily require services to operate together to deliver an integrated service to customers, of course including the transfer of data between customers and service suppliers.

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

16 *China – Publications and Audiovisual Products*, WT/DS363/R, para. 7.1160.

17 *China – Publications and Audiovisual Products*, WT/DS363/AB/R, para. 296.

18 Panel Report, *China – Certain Measures Affecting Electronic Payment Services* (“*China - Electronic Payments*”), WT/DS413/R, para. 7.177, citing Appellate Body Report, *US – Gambling*, para. 180.

19 *Id.*, at paras 7.177-78, citing GATS Article XVIII(e).

20 Panel Report, *China – Publications and Audiovisual Products*, para. 7.1014.

21 Panel Report, *China – Electronic Payments*, para. 7.179.

22 *Id.*, at para. 7.180 (underlining added).

DATA LOCALIZATION MEASURES AND GATS MARKET ACCESS OBLIGATIONS

This section applies the method established under WTO jurisprudence for analyzing compliance with *Market Access* commitments under Article XVI of the GATS. The recent panel report in *Argentina - Financial Services* confirms the required approach to the legal analysis of alleged violations as follows:

7.391. In *US – Gambling*, the Appellate Body defined the legal standard to be followed under Article XVI:2 of the GATS. In examining Article XVI:2, in particular its subparagraphs (a) and (c), the Appellate Body explained:

This text suggests that Antigua was required to make its *prima facie* case by first alleging that the United States had undertaken a market access commitment in its GATS Schedule; and, secondly, by identifying, with supporting evidence, how the challenged laws constitute impermissible “limitations” falling within Article XVI:2(a) or XVI:2(c).⁵⁶⁷

⁵⁶⁷ Appellate Body Report, *US – Gambling*, para. 143. Subsequently, the panels in *China – Publications and Audiovisual Products* and *China – Electronic Payment Services* followed the same approach. See Panel Reports, *China – Publications and Audiovisual Products*, para. 7.1354 and *China – Electronic Payment Services*, para. 7.511.²³

Where a Member has inscribed “None” in the “Limitations on market access” column in its schedule, it has made a full specific commitment for the referenced services.²⁴ If such a full specific commitment exists, the Member must positively comply with Article XVI:1 and may not maintain any of the measures covered by the subparagraphs of Article XVI:2.²⁵ Article XVI of the GATS on *Market Access* sets out the following rules relevant to cross-border services supply:

1. With respect to market access through the modes of supply identified in Article I, each Member shall accord services and service suppliers of any other Member treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its Schedule.
2. In sectors where market-access commitments are undertaken, the measures which a Member shall not maintain or adopt either on the basis of a regional subdivision or on the basis of its entire territory, unless otherwise specified in its Schedule, are defined as:

- (a) limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;
- (b) limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test; [and]
- (c) limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test[.]²⁶

Where a Member has undertaken full specific commitments on the supply of digital services through mode 1, the Member must accord digital services suppliers “treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its Schedule”, and may not apply an ‘impermissible limitation’ listed under Article XVI:2. The following sections review data localization measures in the light of these obligations.

A. WTO/GATS ANALYSIS OF DATA LOCALIZATION MEASURES

For the purpose of this analysis, we assume that ‘the measure’ is a law requiring local data storage or conditioning cross-border data transfer on local data storage, or prohibiting or restricting the transfer out of a Member’s territory of business and personal data. We also assume that the measure ‘affects’ trade in data base or data processing services, on which the Member has undertaken an unlimited specific commitment for supply through mode 1, under the headings:

1. BUSINESS SERVICES	CPC Section
B. Computer and Related Services	
c) Data processing services	843
d) Data base services	844

²³ Panel Report, *Argentina – Measures Relating to Trade in Goods and Services (Argentina – Financial Services)*, WT/DS/453/R, para. 7.391.

²⁴ Appellate Body Report, *US – Gambling*, para. 215.

²⁵ *Id.*

²⁶ The final three limitations not included here are not relevant to the supply of services through mode 1.

1. Scope and coverage of the GATS commitment

The CPC provisional system provides the following coverage and description of “Data base services” and “Data processing services”, referred to below as “data services”:

As noted above, GATS commitments in a particular sector cover “the whole of that service sector, including all of its subsectors.”²⁷ In order to confirm the full scope of the classification, we must reference the CPC provisional classification 84 and its subsectors, together with their explanatory notes. In the case of classification 844, these references confirm that the classification group includes “[a]ll services provided from primarily structured databases through a communication network.”²⁸ Both expert analysis and the application of the interpretative rules outlined above indicate that a wide range of digital business and consumer services fall under this heading, including cloud-based business-to-business services, social network and search engine services.²⁹ On-line data storage services therefore fall under sectoral classification CPC prov. 844.

The “data processing services” described above cover a host of services from simple data entry and manipulation to complex, Internet-based software management and business platforms based on central data sharing, processing and complex cloud computing. Technological developments also raise the possibility of new means of delivering these services, including through cloud-based platforms and mobile applications.

Further to the interpretive principles discussed above, even though ‘data transfer’ is not explicitly listed in the subsector

for “data base services”, the transfer of data is necessarily included within the definition and scope of the ‘data base services’ sector because these services must operate together in order for the data base services to be supplied at all.³⁰ Similar to the WTO panel’s ruling in *China – Electronic Payments* concerning the transfer of payments from customers to merchants, trade in ‘data base services’ – especially across borders – cannot take place if related data is not transferred internationally between customers and services suppliers. Therefore, the scope of GATS commitments on ‘data base services’ under mode 1 necessarily includes the cross-border transfer of business and customer data.

27 See note 15 above and accompanying text. In addition, with respect to the application of the CPC system, the Appellate Body in *US – Gambling* usefully explained that

As 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 the four-digit Classes and five-digit Sub-classes that make up the 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.

Appellate Body Report, *US – Gambling*, para. 200 (footnotes omitted).

28 See United Nations Statistics Division, <http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=84400> (visited 10 October 2015).

29 R. Weber and M. Burri, *Classification of Services in the Digital Economy* (Springer 2012) p. 118.

30 See discussion in Section III.B.4 above.

CPC prov. Subclass	Explanatory note
84310 - Input preparation services	Data recording services such as key punching, optical scanning or other methods for data entry.
84320 - Data processing and tabulation services	Services such as data processing and tabulation services, computer calculating services, and rental services of computer time.
84330 - Time sharing services	This seems to be the same type of services as 84320. 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. In both cases the services might be time sharing processed. Thus, there is no clear distinction between 84320 and 84330.
84390 - Other data processing services	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.
84400 – Data base services	All services provided from primarily structured databases through a communication network. Exclusions: Data and message transmission services (e.g. network operation services, value-added network services) are classified in class 7523 (Data and message transmission services). Documentation services consisting in information retrieval from databases are classified in subclass 96311 (Library services).

2. Compliance with the GATS Annex of Telecommunications

The GATS Annex on Telecommunications ('Telecoms Annex') reinforces the conclusion reached immediately above and ensures that Members' specific commitments on trade in services are not undermined by restrictions on cross-border data flows. Paragraph 5(c) of the GATS Telecoms Annex sets out the binding obligation that in every services sector where WTO Members have made commitments,

[e]ach Member shall ensure that service suppliers of any other Member may use public telecommunications transport networks and services for the movement of information within and across borders, including for intra-corporate communications of such service suppliers, and for access to information contained in data bases or otherwise stored in machine-readable form in the territory of any Member. (Emphasis added.)

This provision absolutely confirms that from the inception of the GATS, Members knew that cross-border data flows are a necessary element of all international trade in services. This specific rule requires the host Member (in our case, the country applying the data localization measure) to ensure that suppliers of all scheduled services, including 'data base services' and 'data processing services', may move information across borders and may access information stored in data bases on the territory of other Members.

Based on this provision, WTO Members may not restrict "the movement of information within and across borders" (i.e., cross-border data flows) in connection with scheduled services.³¹ The GATS Telecoms Annex also provides context for interpreting the scope and meaning of other GATS rules and commitments concerning trade in relation to cross-border data flows, especially for rebutting any suggestion that Members did not intend to allow cross-border data flows in connection with the supply of cross-border services.

3. Compliance with GATS market access commitments

Assuming the existence of full commitments on data services supplied through mode 1, we next assess whether the measure constitutes an impermissible market access 'limitation' falling under Article XVI:2. We recall that the 'measure' at issue in effect prohibits the transfer out of the country of business and personal data, for example data stored through cloud-based applications, or data collected when consumers use search engines or register on social networks in connection with the supply of data services.

Data localization measures limit, *de jure* or *de facto*, cross-border trade in 'data-base services' and 'data processing services' and other relevant services trade, including by restricting data transfers across borders. As discussed above, the definition of 'supply of a service' includes the 'production' and 'delivery' of the service. The cross-border transfer of data is essential for the 'production' and 'delivery' of data services through mode 1. This further supports the conclusion that the

cross-border supply of data services by definition includes the transfer of data across borders.

As in *US – Gambling*, the data localization measure here applies a "limitation on the number of service suppliers" in the form of a numerical quota within the meaning of Article XVI:2(a) where it "totally prevents the use by service suppliers of one, several or all means of delivery that are included in mode 1." In particular, the measure applies a 'zero quota' on the supply of data services by any means of cross-border delivery of the services. As the WTO panel held in *Mexico – Telecoms* concerning the supply of services through mode 1, a foreign service supplier, here of data services, must be allowed to supply services cross-border without being present or operating in the territory of the destination country.

A WTO panel and the Appellate Body would also find the measure is a "limitation on the total number of service operations or on the total quantity of service output" within the meaning of Article XVI:2(c), as in *US – Gambling*.³² The *Gambling* panel understood "'service operations' to mean activities comprised in the production of a service" and "'service output' to mean the result of the production of the service."³³ Data localization measures totally prevent 'services operations' relating to the cross-border transfer of data, thus preventing the production of any service through cross-border supply, in violation of GATS Articles XVI:1 and XVI:2(c).

Finally, in addition to reviewing the scope and meaning of GATS commitments on 'data-base services' and 'data processing services', the WTO panel or Appellate Body will consider other sources for contextual interpretation, including the text and context of the GATS. The GATS Telecoms Annex, in addition to providing a basis for substantive claims, will be referenced to interpret the scope and meaning of commitments on cross-border data base services. A key issue for interpretation will be whether Members intended business and personal data to be transferred across borders in the context of commitments on international trade in services. As noted above, the GATS Telecoms Annex requires that "[e]ach Member shall ensure that service suppliers of any other Member may use public telecommunications transport networks and services for the movement of information

31 Paragraph 5(d) of the GATS Telecoms Annex also makes clear that a Member may take such measures as are necessary to ensure the security and confidentiality of messages, subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade in services.

Therefore, WTO Member governments may pursue important public policy goals like privacy and confidentiality as long as trade is not restricted in an illegitimate manner. This exception should be considered in the context of the discussion below of the *General Exceptions* under GATS Article XIV.

32 Appellate Body Report, *US – Gambling*, para. 373.

33 Panel Report, *US – Gambling*, para. 6.349.

within and across borders.”³⁴ This obligation leaves no doubt that WTO Members knew that the cross-border flow of data must be allowed in the context of cross-border services trade subject to GATS commitments. Finally, the exceptions provided under paragraph 5(d) of the GATS Telecoms Annex and under Article XIV of the GATS will be referenced to confirm the positive rule that services trade covers the transfer of data across borders consistent with provisions of the GATS. This analysis leads to the conclusion that, where a WTO Member has scheduled commitments on the cross-border supply of data services, the Member may not, consistent with its WTO obligations, prohibit the transfer of business and personal data out of its territory, or require ‘data localization.’

4. Compliance with GATS National Treatment rules

The National Treatment rule under the GATS applies in all sectors where specific commitments have been undertaken and prohibits Members from discriminating in favour of their domestic companies. The National Treatment rule is set out in Article XVII of the GATS and provides as follows:

1. In the sectors inscribed in its Schedule, and subject to any conditions and qualifications set out therein, each Member shall accord to services and service suppliers of any other Member, in respect of all measures affecting the supply of services, treatment no less favourable than that it accords to its own like services and service suppliers.³⁵
2. A Member may meet the requirement of paragraph 1 by according to services and service suppliers of any other Member, either formally identical treatment or formally different treatment to that it accords to its own like services and service suppliers.
3. Formally identical or formally different treatment shall be considered to be less favourable if it modifies the conditions of competition in favour of services or service suppliers of the Member compared to like services or service suppliers of any other Member.

WTO jurisprudence has established a three-part test to assess compliance with the above provisions:

- (1) a commitment exists on national treatment in the relevant sector and mode of supply;
- (2) the measures affect the supply of services in the relevant sector and mode of supply; and
- (3) the measures accord to services or service suppliers of any other Member treatment less favourable than that accorded to national like services and service suppliers.³⁶

For the purpose of this policy brief, we again assume that data localization measures affect the supply of services in all committed sectors and modes of supply. Therefore, we need only assess whether the data localization measures accord less favourable treatment to foreign suppliers of affected services.

Previous research has established that data localization requirements increase costs of supplying services for foreign competitors.³⁷ In particular, an augmented product market regulatory index has been established to analyze all regulatory barriers on data, including data localization, and to calculate resulting domestic price increases,³⁸ which necessarily reflect increased costs for foreign suppliers. As noted above, due to the significant cost of establishing and maintaining data centers leveraging market scale is the key to success in the digital economy.

Data localization in the context of data services essentially requires foreign suppliers to duplicate expensive infrastructure, security and services support in local markets, therefore according less favourable treatment to foreign suppliers. Even if data localization measures apply ‘formally identical’ treatment to national and foreign suppliers (e.g., all suppliers must store data locally), the measures modify the conditions of competition in favour of national suppliers, so are considered to be ‘less favourable’ under GATS Article XVII:3.

We consider that, where a WTO Member has scheduled commitments on the cross-border supply of data services, it will be very difficult for the Member to argue that data localization measures requiring foreign suppliers to duplicate infrastructure and services or to pay for outsourced local storage are consistent with GATS National Treatment rules.

34 | GATS Annex on Telecommunications, para. 5(c) (underlining added).

35 | Specific commitments assumed under this Article shall not be construed to require any Member to compensate for any inherent competitive disadvantages which result from the foreign character of the relevant services or service suppliers.

36 | See Panel Reports, *Argentina – Goods and Services*, para. 7.448; *China – Electronic Payment Services*, para. 7.641; *China – Publications and Audiovisual Products*, para. 7.944; and *EC – Bananas III*, para. 7.314.

37 | See Leviathan Security Group, “Quantifying the Cost of Forced Localization” available at <http://www.leviathansecurity.com/cloudsecurity/> (visited 8 March 2016).

38 | M. Bauer, et al, “The Costs of Data Localisation, Friendly Fire on Economic Recovery”, ECIPE Occasional Paper No. 3/2014.

EXCEPTIONS TO GATS RULES AND COMMITMENTS

This policy brief applies existing WTO/GATS rules and commitments to data localization measures, so potential exceptions are mentioned here only as a reference for future consideration. In summary, nothing in the GATS prevents Members from regulating trade in services in a reasonable, objective and impartial manner to protect important government and societal interests, like public order and consumer privacy. At the same time, Members must respect their market access commitments and their obligations not to apply unnecessary or disguised restrictions on services trade or to discriminate against foreign suppliers in a manner that is protectionist or arbitrary.

Article XIV of the GATS includes *General Exceptions* to its rules as follows:

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or a disguised restriction on trade in services, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures:

- (a) necessary to protect public morals or to maintain public order;
- (b) necessary to protect human, animal or plant life or health;
- (c) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement including those relating to:
 - (i) the prevention of deceptive and fraudulent practices or to deal with the effects of a default on services contracts;
 - (ii) the protection of the privacy of individuals in relation to the processing and dissemination of personal data and the protection of confidentiality of individual records and accounts;
 - (iii) safety...[.]

A Member invoking an exception under Article XIV "bears the burden of demonstrating that its measure, found to be

WTO-inconsistent, satisfies the requirements of the invoked defense."³⁹ The WTO Appellate Body applies a 'two-tiered analysis' of measures that Members seek to justify under Article XIV of the GATS. Under this analysis

[a] panel should first determine whether the challenged measure falls within the scope of one of the paragraphs of Article XIV. This requires that the challenged measure address the particular interest specified in that paragraph and that there be a sufficient nexus between the measure and the interest protected. The required nexus - or "degree of connection" - between the measure and the interest is specified in the language of the paragraphs themselves, through the use of terms such as "relating to" and "necessary to". Where the challenged measure has been found to fall within one of the paragraphs of Article XIV, a panel should then consider whether that measure satisfies the requirements of the chapeau of Article XIV.⁴⁰

Exceptions are certainly relevant to the analysis of data localization measures, including concerning the protection of individual privacy and other state interests. However, the scrutiny applied in WTO cases is objective and fact-based, so justifications may be rejected unless the facts of the case confirm a "sufficient nexus between the measure and the interest protected." In any case, the WTO analysis of exceptions will require a determination of whether data localization is "'necessary' - that is, that there be no 'reasonably available', WTO-consistent alternative - [which] reflects the shared understanding of Members that substantive GATS obligations should not be deviated from lightly."⁴¹ In addition, measures cannot be justified where they undermine the government's stated objective, whether public order, privacy or any other based alleged for the measure.⁴² WTO Members agreed upon this approach in order to prevent abuse of the exception by distinguishing between measures that are protectionist and those that advance legitimate government interests in an agreed manner. WTO practice and jurisprudence suggests that so far this approach has served the Membership well and will continue to be applied in future cases.

39 | Appellate Body Report, *US – Gambling*, para. 309.

40 | *Id.*, at para. 292.

41 | *Id.*, at para. 308.

42 | The Appellate Body has ruled that a measure cannot be justified as an exception to WTO rules when the reasoning behind the measure "bear[s] no rational connection to the objective falling within the purview of a paragraph of Article XX, or would go against that objective." Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, 3 December 2007, para. 227. In this connection, see references at note 3 discussion the data security implications of data localization measures.

This limited discussion of exceptions is intended only to confirm that, while Members retain the right to protect important government interests, they must ensure that measures purported to advance such interests are both 'necessary' and narrowly tailored to achieve a legitimate objective, and cannot be disguised restrictions on digital trade. Guidelines to help countries comply with international commitments without compromising national interests have been developed by various international bodies, including APEC⁴³ and the OECD⁴⁴.

CONCLUSIONS

An analysis of existing WTO law leads to the conclusion that data localization measures violate existing GATS rules and commitments to allow unrestricted cross-border trade in digital services and cross-border data flows. WTO Members and suppliers of digital services have every reason to believe that WTO jurisprudence will continue to accord practical meaning to commitments on cross-border trade in services, including on cross-border data flows and digital trade involving new technologies.

In view of the strength and coverage of WTO law, GATS rules should continue to play a central role in providing legal certainty and encouraging effective and non-discriminatory regulation of the digital economy, and should be invoked in support of free trade advocacy and in dispute settlement proceedings where necessary to maintain an open global market for trade in digital services.

43 | APEC Privacy Framework, http://www.apec.org/Groups/Committee-on-Trade-and-Investment/~/_media/Files/Groups/ECSCG/05_ecsg_privacyframewk.ashx (visited 30 January 2016).

44 | OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, <http://www.oecd.org/sti/ieconomy/oecdguidelinesonthe-protectionofprivacyandtransborderflowsofpersonaldata.htm> (see link to 2013 updates) (visited 30 January 2016).

ANNEX 1

List of all WTO Member GATS commitments on Computer and Related Services including data base services (CPC 843) and data processing services (CPC 844)

See details of specific commitments at data <http://i-tip.wto.org/services/default.aspx>

1 BUSINESS SERVICES

Russian Federation BUSINESS SERVICES

1.B Computer and Related Services

Albania

- a) Consultancy Services Related to the Installation of Computer Hardware (841)
- b) Software Implementation Services (842)
- c) Data Processing Services (843)
- d) Data Base Services (844)
- e) Other (845+849)

Antigua and Barbuda

- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

Argentina

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Database services (CPC 844)
- e) Other (CPC 845 + 849)

Armenia

- a) Consultancy Services Related to the Installation of Computer Hardware (CPC 841)
- b) Software Implementation Services (CPC 842)
- c) Data Processing Services (CPC 843)
- d) Data Base Services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)
- f) Other computer services, including data preparation services (CPC 849)

Australia

- a) Consultancy services related to the installation of computer hardware (841)
- b) Software implementation services (842)
- c) Data processing services (843)
- e) Maintenance and repair services of office machinery and equipment including computers (845)

Austria

- a) Consultancy services related to the installation of computer hardware (8410)
- b) Software implementation services (842)
- c) Data processing services (843)
- d) Data base services (844)
- e) Other (845, 8491)

Barbados

- b) Software implementation services (CPC 842)

Botswana

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data-processing services (CPC 843)
- d) Data-base services (CPC 844)
- e) Other Maintenance and repair services of office machinery and equipment including computers (CPC 845)

Brunei Darussalam

- a) Consultancy services related to the installation of computer hardware
- b) Software implementation
- c) Data processing services
- d) Database services (841, 842, 843, 844, 845 + 849)

Bulgaria

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services Systems and software consulting services (CPC 8421) Systems analysis services (CPC 8422) Systems design services (CPC 8423) Programming services (CPC 8424) Systems maintenance services (CPC 8425)
- c) Data processing services (CPC 843)
- d) Database services (CPC 844)
- e) Other Maintenance and repair services of office machinery and equipment including computers (CPC 845) Data preparation services (CPC 8491)

Cabo Verde

Computer and related services (CPC 84)

Cambodia

- a) Consultancy services related to the installation of computer hardware (CPC 841) (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843) (d) Data base services (CPC 844) (e) Other (CPC 845+849)

Canada

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b*) Software implementation services, including systems and software consulting services, systems analysis,

design, programming and maintenance services, excluding those listed under Financial Services 7Bl (CPC 842*)

c*) Data processing services, including processing, tabulation and facilities management services, excluding Communications Services 2Cn and Financial Services 7Bl (CPC 843*)

d*) Data base services, excluding those listed under Financial Services 7Bl (CPC 844*) e) Maintenance and repair services of office machinery and equipment including computers (CPC 845) Other computer services (CPC 849)

China

- a. Consultancy services related to the installation of computer hardware (CPC 841)
- b. Software implementation services (CPC 842) - Systems and software consulting services (CPC 8421) - Systems analysis services (CPC 8422) - Systems design services (CPC 8423) - Programming services (CPC 8424) - Systems maintenance services (CPC 8425)
- c. Data processing services (CPC 843) - Input preparation services (CPC 8431) - Data processing and tabulation services (CPC 8432)
 - Time-sharing services (CPC 8433)
 - Maintenance and repair services (CPC 63, 6112 and 6122)
 - Maintenance and repair services of office machinery and equipment including computers (CPC 845 and 886) - Rental and leasing services (CPC 831, 832, excluding CPC 83202)

Colombia

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Data base services (CPC 844)

Costa Rica

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

Croatia

- a) Consulting services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC844)
- e) Other (CPC 845-849)

Cuba

- b) Software implementation services Systems and software consulting services (CPC 84210)
 - Systems analysis services (CPC 84220)
 - Programming services (CPC 84240)
 - Systems maintenance services (CPC 84250)

Cyprus

- a) Consultancy Services Related to the Installation of Computer Hardware
- b) Software Implementation Services
- c) Data Processing Services
- d) Data Base Services

Czech Republic

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Other (CPC 845 + 849)

Dominican Republic

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Other Maintenance and repair services of office machinery and equipment, including computers (CPC 845)
 - Other computer services (CPC 849)

Ecuador

- (a) Consulting services for installation of computer equipment (CCP 841)
- (b) Software implementation services (CCP 842)
- (c) Data processing services (CCP 843)
- (d) Data base services (CCP 844)

El Salvador

- c) Data processing services Solely: Input preparation services (84310); data processing services (84320); time sharing services (84330); other data processing services (84390)

Estonia

- B. Computer and Related Services (CPC Division 84)

European Union

- a) Consultancy Services related to the Installation of Computer Hardware (CPC 841)
- b) Software Implementation Services (CPC 842)
- c) Data Processing Services (CPC 843)
- d) Data Base Services (CPC 844)
 - Maintenance and Repair (CPC 845)
- e) Other Computer Services (CPC 849)

Finland

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Maintenance and repair, other (CPC 845 + CPC 849)

The Gambia

(CPC: 841, 842, 843, 844, 845, 849)

Georgia

- a) Consultancy Services Related to the Installation of Computer Hardware (CPC 841)
- b) Software Implementation Services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)
- e) Data preparation services (CPC 849 exc.8499)

Guatemala

- B. Computer services Consultancy services related to computers and data processing (CPC 84100-84390) (including: software implementation services, systems analysis, data processing, time sharing services, preparation of inputs or digitalization)

Honduras

Consultancy services related to computers and data processing (CPC 84100-84390) (includes software implementation services, systems analysis, data processing, time-sharing, data preparation)
Software development (CPC 8420) (includes programming services)

Hong Kong, China

Consultancy services related to the installation of computer hardware: these are limited to consultancy on type and configuration of hardware with or without associated software and do not include sale or manufacture of hardware

Software implementation services: these are limited to activities in connection with analysis, design and programming of systems ready to use, maintenance of existing systems, as well as training of personnel in respect of the use of such systems. Duplicating purchased software developed by other enterprises is not included.

Data processing and data base services: these are limited to processing or tabulation of data, data base development, data storage, optical character recognition, microfiling and microfilming services

Hungary

- a) Consultancy services related to the installation of computer hardware
- b) Software implementation services
- c) Data processing services
- d) Data base services

Iceland

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software development (including software implementation) (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Other

India

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)

Indonesia

Consultancy Services related to the installation of computer hardware (CPC 841)
Software implementation Services (CPC 842)

Israel

- a) Consultancy services related to the installation of hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c), d) Data processing and database services (CPC 843 excluding 84330)

Jamaica

- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

Japan

- B. Computer and Related Services (excluding services of air transport computer reservation system) (841, 842, 843, 844, 845, 849)

Jordan

- a) Consultancy Services Related to the Installation of Computer Hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)
- f) Other computer services (CPC 849)

Kazakhstan

Computer and related services (CPC 84)

Korea, Republic of

- a. Consultancy Services Related to the installation of Computer Hardware [841]
- b. Software Implementation Services [842]
- c. Data Processing Services [843]
- d. Data Base Services [844]
- e. Other [845, 849]

Kuwait, the State of

- a) Consultancy services related to the installation of computer hardware
- b) Software implementation services
- c) Data processing services
- d) Data base services

Kyrgyz Republic

- B. Computer and Related Services (CPC 841-845, 849)

Lao People's Democratic Republic

- B. Computer and Related Services (CPC 84)

Latvia

- B. Computer and related Services (except airline computer reservation systems) a) Consultancy Services Related to the Installation of Computer Hardware (CPC 841) b) Software Implementation services (CPC 842) c) Data Processing Services (CPC 843) d) Data base services (CPC 844) e) Other (CPC 845+849)

Lesotho

- (a) Consultancy services related to the installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Data base services (CPC 844)
- (e) Maintenance and repair services of office machinery and equipment including computers (CPC 8450)

Liechtenstein

- (CPC 841 - CPC 845, CPC 8491)

Lithuania

- B. Computer and related services (CPC 841, 842, 843, 844, 845-849)

Malaysia

- Consultancy services related to the installation of computer hardware (841)
- Consultancy services related to software implementation covering advisory and implementation services for customised software (842)
- Computer software development services covering development of new software for general application, including, ready-made software packaged for general application (842*)
- Database services (8440)

Maldives

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

Mexico

- c) Systems analysis and data processing (CPC 843)

Moldova, Republic of

- (a) Consultancy services related to the installation of computer hardware; (CPC 841)
- (b) Software implementation services; (CPC 842)
- (c) Data processing services; (CPC 843)
- (d) Data base services; (CPC 844)
- (e) Other (CPC 845+849)

Montenegro

- Computer and related services (CPC 84) Montenegro subscribes to the "Understanding on the scope of coverage of Computer Services - (CPC 84)" attached in Annex I.

Morocco

(CPC 841)

Nepal

- (a) Consultation services related to the installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Data base services (CPC 844)
- (e) Maintenance and repair service of office machinery and equipment including computers (CPC 845)
- (f) Other computer services - Data preparation services (8491) - Other computer services (CPC 8499)

New Zealand

- a) Consultancy services related to the installation of computer hardware (841)
- b) Software implementation services (842)
- c) Data processing services (843)
- d) Data base services (844)

Nicaragua

- Consultancy services related to the installation of computer hardware (CPC 841) Software implementation services (CPC 842) Data processing services (CPC 843) Data base services (CPC 844)

Norway

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

- e) Maintenance and repair services for office equipment including computers and other computer services (CPC 845, CPC 849)

Oman

- a) Consultancy services related to the installation of computer hardware
- b) Software implementation services
- c) Data processing services
- d) Data base services
- e) Other

Pakistan

Consultancy services related to the installation of computer hardware (CPC No. 841)
Software implementation services (CPC No. 842)
Data processing services (CPC No. 843)
Data base services (CPC No. 844)

Panama

- (a) Consultancy on installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services. Exclusively: input preparation services; data processing services; [time sharing services] (CPC 84310, 84320, 84330)
- (d) Data base services (CPC 844)
- (e) Others: Exclusively: maintenance and repair of hardware (CPC 845)

Papua New Guinea

- a. Consultancy services related to installation of computer hardware

Poland

Computer and related services (CPC 841, 842, 843, and 844)

Qatar

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)

Romania

- a) Consultancy services related to the installation of computer hardware (841)
- b) Software development and implementation services (842)
- c) Data processing services and data-entry (843)
- d) Data-base services (844)
- d) and e) Computer services which are an integral part of the delivery of services of other categories (845+849)

Samoa

Computer and Related Services (CPC 84 except CPC 845)

Saudi Arabia, Kingdom of

- B. Computer and Related Services a.-e.(CPC 841-45 and 849)

Seychelles

Computer and related services (CPC 84)

Sierra Leone

- B. Computer Related Services (Sub-sectors a-e)

Singapore

Information Technology Consultancy Services
Computer Services The services covered are: - Software development - Systems Integration Services - Data processing - Data base services Telecommunication-related services are excluded [See Value-Added Network (VAN) services]

Slovak Republic

- a) Consultancy Services Related to the Installation of Computer Hardware (CPC 841)
- b) Software Implementation Services (CPC 842)
- c) Data Processing Services (CPC 843)
- d) Data Base Services (CPC 844)
- e) Other (CPC 845 + CPC 849)

Slovenia

- a) Consultancy Services related to the Installation of Computer Hardware (CPC 841)
- b) Software Implementation Services (CPC 842)
- c) Data Processing Services (CPC 843)
- d) Data Base Services (CPC 844)
- e) Other (CPC 845+849)

South Africa

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 8450)

Swaziland

Consultancy services related to the installation of computer hardware (CPC 841)

Sweden

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Other (CPC 845+849)

Switzerland

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)

- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
- e) Other - Maintenance and repair services of office machinery and equipment including computers (CPC 845)
 - Data preparation services (CPC 8491)

Chinese Taipei

- B. Computer and Related Services (excluding the computer airline reservation system services) (841, 842, 843, 844, 845, 849)

Tajikistan

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Database services (CPC 844)
- e) Maintenance and repair services of office machinery and equipment including computers (CPC 845)
- f) Other computer services (CPC 849)

Thailand

- a) Consultancy services related to the installation of computer hardware (CPC 84100)
- b) Software implementation services (excluding programming and systems maintenance services) (CPC 84210+84220 +84230)
- c) Data processing services (excluding those provided over public telecommunications network) (CPC 84310+84320 +84330+84390)
- d) Data base services (excluding those provided over public telecommunications network) (CPC 84400)

The former Yugoslav Republic of Macedonia

- (a) Consultancy services related to the installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Data base services (CPC 844)
- (e) Other (CPC 845+849)

Tonga

- (a) Consultancy services related to installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Data base services (CPC 844)
- (e) Other (CPC 845 + 849)

Trinidad and Tobago

- b) Software Development (8421)
 - Information services e.g. drafting and engineering services, digitizing and vectoring, data entry, remote telemarketing (843)

Turkey

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 840)

Ukraine

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Data base services (CPC 844)
 - Maintenance and repair services of office machinery and equipment including computers (CPC 845)
 - Data preparation services (CPC 849)

United Arab Emirates

- a) Consultancy services related to the installation of computer hardware (CPC - 841)
- b) Software implementation services (CPC - 842)
- c) Data processing services (CPC - 843)
- d) Data base services (CPC - 844)

United States of America

- B. COMPUTER AND RELATED SERVICES (MTN. GNS/W/120 a) - e), except airline computer reservation systems)

Uruguay

- a) Consultancy services related to the installation of computer hardware (CPC 841)
- b) Software implementation services (CPC 842)
- c) Data processing services (CPC 843)
- d) Database services (CPC 844)
- e) Others (CPC 849)

Vanuatu

- (CPC 84)

Venezuela, Bolivarian Republic of

- B. Computer and related services (CPC Division 84)

Viet Nam

- B. Computer and Related Services (CPC 841-845, CPC 849)

Yemen

- (a) Consultancy services related to the installation of computer hardware (CPC 841)
- (b) Software implementation services (CPC 842)
- (c) Data processing services (CPC 843)
- (d) Database services (CPC 844) (e) Other (CPC 845, 849)

Implemented jointly by ICTSD and the World Economic Forum, the E15 Initiative was established to convene world-class experts and institutions to generate strategic analysis and recommendations for government, business, and civil society geared towards strengthening the global trade and investment system for sustainable development.



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