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For discussion

# Towards a Handbook on Measuring Digital Trade: Status Update



## **Towards a Handbook on Measuring Digital Trade: Status Update <sup>1</sup>**

*Digital trade – defined as all cross-border transactions that are either digitally ordered (i.e., cross-border e-commerce), digitally facilitated (by platforms), or digitally delivered – has been growing in importance. Demand for detailed statistics cover policy areas such as market access, trade facilitation, competition, cross-border data flows and privacy. In response to these policy demands, and as explicitly asked by the G20, the inter-agency Task Force on International Trade Statistics, supported by an Expert Group of more than 20 developed and developing countries is currently developing a Handbook on Measuring Digital Trade. The Handbook equally builds on two inventories of measurement practices run by the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF) among more than 70 countries. This paper describes the progress made thus far and seeks the Committee’s view on the planned next steps.*

1. The Internet and digitalisation are fundamentally changing the way people, businesses and governments interact. This has led to a new phase of globalisation underpinned by the movement of data across national borders, changing the nature, patterns and actors in international trade in goods and services. While digitally related transactions are not new, the current scale of transactions and the emergence of new (and disruptive) players transforming production processes and industries are unprecedented.
2. Despite the growing importance of what is commonly referred to as ‘digital trade’, little empirical and internationally comparable information currently exists, inhibiting a full understanding of the scale and policy challenges of digital trade. This reflects both the lack of a common understanding and definition of digital trade and the conceptual and practical measurement challenges involved.
3. To fill this gap, and as explicitly asked by the G20, the inter-agency Task Force on International Trade Statistics (TFITS), supported by an Expert Group of more than 20 developed and developing countries is currently developing a Handbook on Measuring Digital Trade (the Handbook) (see Annex 2 for an outline and Annex 3 for the draft Chapter 2 of the Handbook – Conceptual Framework). The Handbook equally builds on two inventories of measurement practices run by the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF) among more than 70 countries (see Annex 1).
4. At its October 2017 meeting, the IMF’s Committee on Balance of Payments Statistics (the Committee) concluded that there was a need to advance this work, and requested that an update of progress be provided at the 2018 Committee meeting. This note

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<sup>1</sup> Prepared by Ms. Fabienne Fortanier, OECD and Ms. Silvia Matei, Balance of Payments Division, STA

presents an overview of the progress that has been made to-date and seeks the Committee's view on the planned next steps.

### **A. Motivation and Policy Context**

5. An important motivator for the development of the Handbook has been the growing need for better evidence to assist analysts, businesses and policy makers in developing policies and strategies that can capitalize on, or manage the risks of, digital trade. This is evident for example from the high priority given to this topic by the G20 Trade and Investment Working Group<sup>2</sup>, which in turn reflects the potential impact of digital trade in a number of domains, including:

- (i) market access (digitization is increasing the blurring of lines between goods and services, where different rules apply);
- (ii) trade facilitation (countries' *de minimis* customs provisions are currently being reviewed in light of the need for faster clearance procedures and improved risk management);
- (iii) development impact (on the one hand, digitalization presents significant new scope for developing countries' producers (particularly small and medium-sized enterprises (SMEs)) to penetrate foreign markets; while on the other hand, many developing economies still lag in terms of IT infrastructure and skills, which may reduce their ability to fully participate in, and benefit from, digital trade;
- (iv) competition (disruptive players, such as digital intermediation platforms (e.g., Airbnb), are transforming the 'rules of the game' in their target industries); and
- (v) data flows-related issues (new concerns related to data privacy, security, and consumer protection, resulting in, for example, restrictions on cross-border data flows, hence trade distortions).

### **B. Digital Trade and the Digital Economy**

6. The conceptual framework that is introduced by the Handbook (see Annex 3) is developed in accordance with existing statistical accounting standards (in particular, the *Balance of Payments and International Investment Position Manual*, sixth edition (*BPM6*) and the *System of National Accounts 2008 (2008 SNA)*), and in parallel with broader international efforts (involving many stakeholders including Eurostat, the IMF, OECD, UNCTAD, WTO and World Customs Organization (WCO)).

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<sup>2</sup> A draft paper including a definition and typology of digital trade, as well as recommendations was presented by the OECD to the 2018 G20 Trade and Investment Working Group meeting in Argentina.

7. Recognizing the importance of aligning the methodological concepts and measurement of digitization across macroeconomic statistics, the efforts put into the development of the Handbook have moved in parallel with those focused on measuring the impact of digitization on GDP estimates, including the OECD Advisory Expert Group on Measuring GDP in a Digitalised Economy<sup>3</sup>, which is currently working on developing a satellite account. This satellite account allows for a multidimensional analysis of the digital economy including an output (producer), demand (product), and enabling (investment) perspective and thereby avoids proposing a single definition.

8. International trade however, being fundamentally underpinned by international *transactions*, is somewhat less affected by this multi-dimensionality, and therefore lends itself to having a single definition of digital trade. Nevertheless, a number of thorny conceptual and compilation issues remain that are unique to international trade, especially in relation to partner details, as illustrated in the Handbook.

9. The Handbook also acknowledges the broader scope of international investigations into factors that drive digitalization, motivating the development of indicators that look for example at take-up of digital tools (e.g., use of digital tools, mobile money services) as pursued by OECD’s ‘Going Digital’ project, IMF’s Financial Access Survey (FAS), UNCTAD’s indicators of E-commerce Readiness, or the “*eTrade for All*” initiative.

### **C. Digital Trade: Concepts, Definitions and Proposed Treatment of Flows**

10. Chapter 2 of the Handbook sets out the conceptual framework for measuring digital trade, including definitions of the central concepts and proposals for the treatment of the trade flows in particular as it concerns digital intermediary platforms.

#### **Conceptual framework and definitions**

The two determining criteria as to whether a trade transaction should be considered digital or not are: (i) whether it was facilitated by digital tools, i.e. it was either ordered on-line (as e-commerce), or (ii) digitally delivered, as, for example, downloadable products. These two not-mutually-exclusive criteria therefore form the underlying, and unifying, principle for including cross-border transactions within the definition of digital trade. One important additional element concerns the role of digital intermediary platforms (described in more detail below), both because of their important role in the digital economy as well as the fact that they raise specific compilation challenges. Therefore, even if in principle all transactions through digital intermediary platforms are either digitally ordered or digitally

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<sup>3</sup> See OECD (2017) ‘Issue paper on a proposed framework for a satellite account for measuring the digital economy’, COTE: STD/CSSP/W PNA(2017)10.

delivered, digital intermediary platforms feature additionally in the conceptual framework and definition of digital trade as used in this Handbook

11. The Handbook therefore defines digital trade as all international trade flows that are either digitally ordered, digital intermediary platform-enabled, or digitally delivered. In turn, these three dimensions are defined as follows:

- Digitally ordered trade transactions include all international trade transactions that classify as the sale or purchase of a good or service, conducted over computer networks by methods specifically designed for receiving or placing orders (following the existing definition of ecommerce, but including additional clarification that e.g. in-app purchases should also be considered in scope).
- Digital intermediary platform-enabled trade transactions include all international trade transactions via digital intermediary platforms, which in turn are defined as online interfaces that facilitate, for a fee, the direct interaction between multiple buyers and multiple sellers, without the platform taking economic ownership of the goods or providing the services that are being sold.
- Digitally delivered trade transactions include all trade transactions involving products (predominantly services) that are delivered remotely over ICT networks, following the definitions developed by the TGServ Task Group and the TFITS for ICT-enabled services.

12. The nature of the transaction is hence the key determinant for distinguishing digital trade flows from non-digital ones. However, the conceptual framework also includes dimensions describing the good that is traded and the actors (buyers/sellers) that are involved, in recognition of the analytical and policy need for more detailed statistics.

13. With respect to the product that is traded, the conceptual framework identifies three categories; goods, services and information/data. The first two refer to the classical breakdown of trade statistics, and may be broken down further, including into classifications related to digitalisation. Information, or data, is introduced as a separate product category in addition to goods and services, to explicitly refer to those cross-border data exchanges where *no* monetary transaction takes place. Importantly, this broadens the scope of measurement beyond the traditional statistical notion of cross-border trade in goods and services, to recognize the significant economic benefits that accrue from international flows of data (including when these occur between related enterprises).

14. With respect to the actors involved, the conceptual framework builds on the work in the area of e-commerce, where businesses, consumers and governments are distinguished as key actors (buyers and sellers) in e.g. Business-to-Business (B2B) or Business-to-Consumer (B2C) transactions. The framework aligns the terminology with that used in the SNA for institutional sectors.

## Proposed Treatment of Trade Flows Related to Digital Intermediary Platforms

15. As noted above, the rise of digital intermediary platforms has raised important conceptual and measurement challenges. The distinction of digital intermediary platforms from other online business models matters because, with current accounting rules, the recording of transactions enabled by intermediaries will necessarily differ from those of electronic retailers (e-vendors) or from dedicated internet sites of brick and mortar retailers (webshops). Given the similarity in business models of these latter two categories with their 'offline' counterparts, the conceptual statistical treatment of transactions by e-vendors and webshops is no different than that of 'regular', 'off-line' wholesalers or retailers. For example, if an e-vendor (essentially an 'online merchant'), located in country A, purchase a good (and in theory, potentially, also services) from country B, the value of the purchased good/service will be recorded as a negative export in the balance of payments of country A, while the subsequent sale by the e-vendor to a buyer in country C would be considered an export for country A (following the accounting standards of *BPM6* for merchanting transactions). For webshops used as a direct sales channel by the enterprise that produces the product, the recording of trade transactions would follow that of 'regular' exports and imports.

16. In contrast, the recording of transactions facilitated via digital intermediary platforms requires a more sophisticated treatment. In these cases, the good or service that is being intermediated by the digital intermediary platform is never owned by them, and so the flows (exports/imports of the intermediary) must be recorded net of the value of goods/services being intermediated. Such a separate identification of the intermediation fee (as a trade-related service) from the product that is sold is required either if the fee is explicitly charged (e.g. as a percentage of each transaction, to be paid by buyer, supplier, or both), or, if the fee is implicitly charged, when the digital intermediary platform retains a certain percentage of the transaction from the seller.

17. Following the 'ownership' principle that underpins the accounting frameworks, the only transaction that should be recorded in international trade statistics would be the cross-border provision of intermediation services to both the seller and the buyer, in line with the (typically) explicit intermediation fees charged. This is also called a 'net recording' of the associated transactions. Such a net recording is preferred because a) a 'gross' recording would inflate trade in ways that are not economically meaningful; b) a net recording correctly reflects the core principle of change in economic ownership that underpins balance of payments and national accounts transaction statistics (as digital intermediary platforms are not the economic owners of the goods and services that they facilitate, in contrast to for example merchants) and c) a net recording of transactions also best reflects, in the context of merchandise trade, the physical flows of the goods which these statistics aim to reflect.

18. The residency of the buyer, seller, and digital intermediary platform needs to be carefully considered in the recording of the associated trade flows. For example, the goods or services produced by residents may be intermediated via a non-resident digital intermediary platform, or via a domestic (resident) digital intermediary platform. At the same time, the goods or services purchased by a resident from resident sellers – traditionally not considered to be an international trade transaction – may be facilitated by a non-resident digital intermediary platform. To illustrate the proposed net recording of these trade flows involving different countries of residency, Table 2.2 in Annex 3 provides an overview of all possible combinations.

*Digital intermediary platforms enabling the sharing economy*

19. An important sub-set of digital intermediary platforms are those that facilitate consumer-to-consumer (C2C) transactions, which are also called peer-to-peer transactions and are part of the sharing economy<sup>4</sup>, such as, for example, Airbnb, TaskReddit, or BlaBlaCar. These digital intermediary platforms are focused primarily<sup>5</sup> on facilitating transactions between individual consumers (and not businesses), and provide temporary access to a good (typically an asset, such as their property or car) or a service (typically renting out their labour and/or skills) for a fee, without a transfer of ownership from one consumer to the other (i.e. the second-hand economy is excluded). To the extent that the sharing economy transactions facilitated by digital intermediary platforms have an international dimension, the transactions should be recorded as described above and in Table 2.2 in Annex 3.

**D. Current Status of the Handbook and Next Steps**

20. The Handbook is the fruit of several initiatives and inter-agency collaborative efforts pursued over recent years to address the broad measurement challenges related to digital trade. As part of these collective efforts, the OECD developed an initial conceptual and measurement framework for digital trade (see also OECD, 2017)<sup>6</sup>, which subsequently formed the basis for two stocktaking exercises (surveys) by the OECD and IMF, in 2017 and in 2018, among their respective members (see also Annex 1). These exercises aimed to collect views of countries (statistical offices and central banks) on the conceptual and measurement framework, and formed a large inventory of measurement practices on all

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<sup>4</sup> Noting that the concept of the sharing economy pre-dates digital intermediary platforms and does not by definition include *only* those sharing transactions facilitated online, although in common use the two are increasingly equated.

<sup>5</sup> If not entirely

<sup>6</sup> See OECD (2017) ‘Measuring Digital Trade: Towards a Conceptual Framework’, OECD/CSSP/WPTGS(2017)3



aspects related to digital trade, providing important inputs into the preparation of the Handbook.

21. The conceptual framework and the results of the stocktaking surveys have been presented and discussed at a variety of relevant statistical fora, including the TFITS meetings of 2016 and 2017 (the latter including an Expert Group Meeting), the 2017 and 2018 OECD Working Party on Trade in Goods and Services (WPTGS) meetings, the Eurostat Working Groups on Balance of Payments and on Trade in Services Statistics (2017/2018), and IMF BOPCOM 2017, which all concluded that it presented a strong foundation for further work. The conceptual framework was equally used in discussions, held in parallel, on measuring the digital economy involving national accounts experts, where it was also supported.

22. In particular, the OECD WPTGS 2018 meeting resulted in a series of conclusions regarding several substantive items included in the conceptual framework, including:

- Broad agreement regarding (the clarifications of) the definition of cross-border digitally ordered (e-commerce) transactions, although further work was required to determine whether transactions through apps such as WeChat were also in scope;
- Strong support for a net recording of trade flows related to digital intermediation platforms;
- A need for further research on warehouses managed by non-resident digital intermediaries (set up to serve, in addition, foreign markets), and how these transactions related in particular to merchanting.
- There was also a strong call to consider whether classification systems (in particular industry classifications) were well equipped to deal with the challenges of digital trade.

23. Finally, the meeting proposed that the OECD-IMF stocktaking survey be updated regularly to monitor progress, and to further support the development of methodological guidance, as necessary.

24. First drafts of Chapters 1-5 were disseminated among TFITS Expert Group members early August 2018, and revised drafts, incorporating comments and supplementary country examples, of all core chapters of the Handbook were discussed in-depth at the TFITS and its Expert Group on Digital Trade on 11-12 October 2018 with a view to developing a final draft that will be disseminated for a global consultation through the TFITS members before the end of 2018. The Handbook is to be finalized in early 2019 for presentation to the UN Statistical Commission.

***Questions for the Committee:***

1. *What are the Committee members' views on the definition of digital trade and the conceptual measurement framework in Section C of this paper (as currently presented in draft Chapter 2 of the Handbook and detailed in Annex 3)?*
2. *Does the Committee agree with the proposed net recording of trade flows related to Digital Intermediation Platforms?*
3. *Does the Committee support a third stocktaking survey to be jointly undertaken by the OECD and IMF to monitor progress in the compilation of digital trade measures?*

## **Annex 1: THE OECD-IMF STOCKTAKING QUESTIONNAIRES ON COUNTRY OPINIONS AND PRACTICES ON MEASURING DIGITAL TRADE**

1. As part of the collective efforts to address the broader measurement challenges related to digital trade, the OECD and the IMF have conducted two main stocktaking exercises, in 2017 and in 2018, among their respective Members. The stocktaking exercises aimed to collect views of countries (statistical offices and central banks) on the conceptual and measurement framework for digital trade that is currently presented in Chapter 2, as well as to develop a large inventory of measurement practices on all aspects related to digital trade.
2. The first survey was developed and sent out among OECD members (35) and OECD key partner countries and invitees (10) in early 2017. 35 responses were received and the results were presented at the March 2017 OECD Working Party on Trade in Goods and Services (WPTGS). The IMF sent out the same survey later that year to a selection of 51 non-OECD countries, targeting institutions responsible for balance of payments compilation, from which 39 responses were received. The joint results, including the views of 74 countries in total, were presented at the IMF BOPCOM meeting in October 2017<sup>7</sup>.
3. The second survey was conducted simultaneously by OECD and IMF in early 2018, to a similar set of countries, with 38 responses from OECD members and key partners and 38 responses from countries approached by IMF. The joint results, for 76 countries, were presented at the OECD WPTGS meeting in March 2018<sup>8</sup>. As per the conclusions of this meeting, the survey questions of both surveys will be combined into an online tool to exchange experience and monitor progress, to further support the national work in developing statistics on digital trade.
4. A short summary of the combined responses to the 2018 survey is presented below.

### **1.1 Digitally ordered trade - transactions in goods and services**

5. The definition of digitally ordered trade follows the existing definition of ecommerce and includes “all international trade transactions that classify as the sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders.” While this definition remains

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<sup>7</sup> More information about the survey questions and results can be found in the OECD-IMF paper presented to IMF BOPCOM, here: <https://www.imf.org/external/pubs/ft/bop/2017/pdf/17-07.pdf>

<sup>8</sup> More information about the survey questions and the results can be found here: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPTGS\(2018\)3&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPTGS(2018)3&docLanguage=En)

appropriate and robust, some concerns have emerged particularly concerning new types of transactions, which were covered in the questionnaire. Respondents typically agreed with these clarifying questions (and by proxy the existing definition), confirming a common understanding of cross-border ecommerce. For example, 99% of respondents agreed that digitally ordered trade transactions should cover ‘in-app’ purchases; 94% that they should cover transaction made through bidding platforms (although an improved understanding on how these platforms operate (e.g. are they intermediaries or actual suppliers) and their wide range of activities (e.g. financial markets and securities) was considered necessary); 83% agreed that when a trade transaction is concluded via offline ordering processes, but subsequent follow-up orders are made via digital ordering systems, only the follow-up orders should be considered as ecommerce; and 86% agreed that ecommerce should not include offline transactions formalized using digital signatures.

6. Further investigation is necessary to assess whether cross-border purchases made via online chat functions (such as WeChat) should also be considered ‘digitally ordered’ (68% of respondents agreed). An important factor here is whether these systems can be considered to be ‘specifically designed for the purpose of giving or receiving orders’, which may arise increasingly due to fast technological developments e.g. AI robots can now handle orders via online chat.

7. Several countries noted to have already have undertaken cross-border ecommerce studies (several of which are summarized in the draft Handbook), or indicated that this was part of future plans and investigations. In discussing future work, the use of credit card data was a common theme.

#### ***Identifying digitally ordered transactions in customs data***

8. Customs authorities often specify a minimum value and/or a minimum amount of duties and taxes below which no duties and/or taxes will be collected. The recent and ongoing increase in cross-border digital trade may have led to an increase in the share of below-the-threshold trade, and countries are reviewing their estimation methodologies. Two important new data sources have emerged that may allow for these estimations to be improved: (simplified) electronic customs declarations that enterprises engaged in ecommerce may use to facilitate customs clearance and trace packages across borders; and postal data (with similar information) such as collected internationally by the United Postal Union (UPU).

9. Approximately one-third of respondents indicated that such electronic customs declarations were used in their country, and that this source was investigated or used in their statistics.

## 1.2 Digital intermediary platforms

10. An important characteristic of digitalization is the advent of digital intermediary platforms that facilitate (cross-border) digital trade in goods and services, which present significant challenges (elaborated in Chapter 2 of the draft Handbook), related to their exact definition and identification (particularly non-residents), the breakdown of transactions into the payments of intermediation services and the value of the good or service that is provided, as well as the geographical attribution of these flows.

11. The 2017 stocktaking survey indicated that imports facilitated by non-resident digital intermediaries were difficult to (separately) identify, but that new data sources, such as credit card data, were being explored. When asked if recent improvements had been made in measuring payments to non-resident digital intermediaries, many countries mentioned current investigations that revolved around the use of credit card data, although there is an understanding that this may not deliver all details that are required. Several countries noted the possibility of capturing these transactions in their international trade in services surveys (under the EBOPS category – Trade-related services), although often with difficulties in capturing data from non-resident intermediaries. Questions were also raised in regard to the industry classification of intermediaries.

### *Exports via digital intermediaries*

12. From the view point of suppliers, digital intermediaries provide an opportunity to access foreign markets in a relatively low-cost way, which can help SMEs in particular to access international markets. When asked if they could identify the number of enterprises (and the value of the trade) using digital intermediaries (resident or non-resident) to access international markets, countries generally responded that while some information is collected on the use of digital intermediaries e.g. via ICT, retail trade, or international trade surveys, a distinction between resident and non-resident channels was not possible from these sources.

### *Digital intermediaries in travel services*

13. Travel services are among those where online platforms have been particularly disruptive. Contrary to most other services transactions, which are measured via enterprise surveys, travel services are often captured by surveying the demand-side (tourism expenditure surveys), which could include breakdowns between services booked online versus non-digital purchases. The results from the stocktaking survey indicated that several countries are now able to determine if the trade was digitally ordered or booked through on online digital intermediates.

### 1.3 Digitally delivered transactions

14. Digitally delivered transactions are consistent with what is described by the TGServ Task Group as ICT-enabled services, i.e. services products delivered remotely over ICT networks. They involve downloadable products, such as software, e-books, data and database services, which are often also digitally ordered, but also include services that are ordered ‘analogously’, but delivered online, such as consultancy services, or certain intra-firm cross-border transactions, including those involving data.

15. The 2017 stocktaking survey indicated that in particular fully digital products (digitally ordered and downloadable) may not always be well-captured in trade in services statistics. At the same time, new data sources were actively explored to better measure such flows.

16. When asked, 12% of respondents reported having made progress in measuring digitally downloadable products since the previous year, using new data sources including MOSS (only in Europe), credit card data and online payment methods (e.g. PayPal). It was noted however by some countries that while information on digitally downloadable products is or will be available, a breakdown between cross-border and domestic transactions would place too much burden on respondents.

## Annex 2: Handbook on Measuring Digital Trade: draft annotated Table of Contents

*The TFITS Handbook on Measuring Digital Trade aims to cover both conceptual challenges as well as compilation practices, to support the measurement of digital trade.*

*This document presents a draft Table of Contents of the Handbook, which reflects discussions in a number of fora, including, importantly, the TFITS October 2017 Expert Group Meeting on Digital Trade, but also those at the OECD WPTGS (2017 and 2018), Eurostat (BOP WG 2017 and 2018), IMF BOPCOM (2017), UNCTAD e-commerce week (2017), the WCO Ecommerce Working Groups, and many bilateral exchanges with countries and other IOs. This document also builds on the TFITS report on Digital Trade to the UNSC which took place in March 2018.*

*In preparing this draft TOC, as many references to all the work by IOs and countries have been included as possible. The first few pages include the broad overview of the structure of the handbook. The subsequent pages include more details, including in some cases, parts of drafted texts.*

### Front matter

#### ***Preface***

Short preface, preferably signed by Chief Statisticians of all contributing IOs.

#### ***Acknowledgements of contributors***

This section provides an overview of main contributors, the fora in which Digital Trade was discussed, as well as the overall process towards the development of the Handbook.

#### ***Table of contents***

Table of contents.

### Chapter 1. Introduction [~5-10 pages]

#### ***1.1. Introduction***

This section describes the context of, and motivation for, the development of the Handbook, highlighting the important changes in recent years due to digitalisation.

#### ***1.2. Policy questions on digital trade***

This section provides an overview of the current policy questions on digital trade, related to for example market access (including the new opportunities digital trade may present for SMEs and for developing countries), trade facilitation, regulation, competition, cross-border data flows and privacy, as well as the potential blurring of different modes of the supply of services.

### ***1.3. Digital Trade and the Digital Economy***

This section describes the relationship between the statistical work on measuring Digital Trade (involving predominantly the trade and BOP statisticians) and the strongly related activities in the National Accounts community on measuring the Digital Economy. The section will illustrate the strong coherence between these activities at the conceptual level, while at the same time pointing out how the different subject areas, answering to different policy questions, may develop more granular estimates in different areas. For example, trade partner attribution is more important in the context of digital trade than in the development of an overall satellite account for measuring the digital economy (where digital trade of course also features), while the consequences of digitisation on price and volume measurements are among the important considerations in National Accounts than in trade (even if volume measures of trade remain of interest).

### ***1.4. Measuring Digital Trade and its enabling environment***

The TFITS Handbook of Digital Trade focuses on measuring what part of cross-border trade flows are digitally ordered, digitally facilitated, or digitally delivered. Important work has however been developed by various organisations on related measures. Ecommerce readiness indicators are a key example, and assess to what extent economies have the institutional and technical enabling environment necessary to develop and benefit from (cross-border) ecommerce. This section will briefly review this work and provide references to relevant literature and ongoing developments.

### ***1.5. Structure of the Handbook***

This section describes the main structure of the Handbook, providing an overview of the main chapters and their inter-relationships.

## **Chapter 2. Conceptual framework for digital trade [~15 pages]**

### ***2.1. Introduction***

Introduction to Chapter 2.

### ***2.2. Conceptual framework and definition of Digital Trade***

This section provides an overview of the conceptual framework, building on OECD (2017), OECD-IMF (2017), as well as the discussions in various fora and the two OECD-IMF stocktaking exercises. Digital trade covers all cross-border trade transactions that are digitally ordered, digitally facilitated or digitally delivered.

### ***2.3. Digitally ordered transactions***

This section elaborates on the conceptual definition of digitally ordered transactions, following the existing definitions of ecommerce, but introducing an explicit cross-border dimension. In addition, the results of the OECD-IMF stocktaking, which amongst others asked for further guidance on the types of transactions to be included in cross-border ecommerce, will be presented.



#### ***2.4. Digitally facilitated transactions: the role of intermediary platforms***

This section discusses the role of online platforms that facilitate cross-border trade transactions. It presents the a typology of different types of platforms, and elaborates in particular on the ideal treatment of trade transactions facilitated by digital *intermediary* platforms, which differs from that of other platforms in that the intermediation fee – whether paid by the buyer, supplier or both – is separately identified (i.e. transactions are recorded on a net basis).

#### ***2.5. Digitally delivered transactions***

The concept of digitally delivered transactions predominantly relates to services, and follows the current concept of ICT-enabled services. This section describes these transactions in more detail.

#### ***2.6. Digital products versus digital transactions***

Digital products and digital trade transactions do not necessarily amount to the same thing. For example, shoes can be ordered online, but are in themselves not digital products. However, some consensus has been reached that digitally delivered transactions by definition involve digital products. This section explains these differences and reviews existing classifications of goods and services that have been proposed to capture ‘digital’, products, including for example ICT goods and services.

#### ***2.7. Cross-border data flows supporting monetary transactions***

An important feature of digitisation has been the growth in cross-border data flows. To the extent that these are explicitly charged, they are typically included in existing trade statistics (e.g. database services). However, business models have been developed to use ‘free’ data as input, typically to sell advertising services. Important questions remain on the conceptual treatment of these flows, which are presented in this section.

#### ***2.8. Actors involved in digital trade***

Digitisation greatly facilitated the direct engagement in international trade transactions of other actors than businesses, in particular individual consumers (households). This section relates the distinctions the literature on ecommerce (B2B, B2C, C2C/the sharing economy) to the breakdowns by institutional sector in the traditional accounting frameworks.

#### ***2.9. Towards a typology of Digital Trade transactions***

Combining the main dimensions of digital trade, this section introduces a typology, with examples, of the different transactions involved in Digital Trade. While a full breakdown of trade transactions across all the different dimensions combined (digitally ordered / facilitated / delivered; goods / services; different actors) will clearly be beyond the feasibility of many statistical offices, this typology can help countries develop and position their first sets of statistics and support systematic developments going forward.

## Chapter 3. Compiling *digitally ordered* goods and services [~15-20 pages]

### 3.1. Introduction

Introduction to Chapter 3, which presents current approaches and possible extensions necessary to measure *digitally ordered* goods and services (cross-border ecommerce). In addition to highlighting individual country examples, throughout the chapter, results from the 2017 and 2018 OECD-IMF stocktaking questionnaire will be presented.

### 3.2. Enterprise and household expenditure surveys

This section reviews ongoing work to use enterprise and household ICT use and expenditure surveys, which may include questions on the cross-border dimension of ecommerce. Methodologies to better identify the institutional sectors involved (as well as the different types of enterprises) are also presented.

>> *examples: Eurostat ICT use enterprise/household surveys; Israel household expenditure survey; Canada enterprise surveys; Thailand online shopping survey, ...*

### 3.3. Data linking: new approaches and challenges

To refine existing measures, data linking, in particular of trade (customs records) and business statistics, provides a highly valuable road forward. This section describes the first insights and conclusions from such work, highlighting at the same time new conceptual challenges, such as the treatment of warehouses.

>> *Examples: German TEC/STEC approach; ...*

### 3.4. Customs and postal data (merchandise trade)

This section addresses the concerns related to the growing volume of small-value transactions due to ecommerce, with implications of estimates for trade below the *de minimis* threshold. The section reviews the challenges related work by the WCO, and postal authorities (led by UPU, also in combination with WTO, UNCTAD and OECD) to better measure cross-border ecommerce merchandise transactions. It addresses concerns related to growing volume of small-value transactions.

>> *examples: China Customs, UPU-OECD-WTO-UNCTAD projects*

## Chapter 4. Compiling transactions facilitated by digital platforms [~10-15 pages]

### 4.1. Introduction

Introduction to Chapter 4, which presents current approaches and possible extensions necessary to measure *digitally facilitated* transactions. Throughout the chapter, results from the 2017 and 2018 OECD-IMF stocktaking questionnaire will be presented, in addition to the specific country examples.

### 4.2. Identifying digital intermediation platforms

This section highlights approaches for identifying digital intermediation platforms, following the definitions and conceptual framework outlined in 2.4. It is expected it will result in recommendations regarding the extent to which existing industry

classifications may have to be adaptation to improve identification of these enterprises.

>> *Examples: Banque de France (manual),*

#### **4.3. Compiling transactions facilitated by platforms, including non-resident platforms**

This section elaborates on methods to separately identify cross-border trade transactions that are facilitated by digital intermediation platforms

>> *examples: Statistics Netherlands approach using big data*

#### **4.4. Measuring the intermediation fee**

This section reviews methodologies to break down the gross flows between the intermediation fee and the goods or services provided (gross versus net recording).

>> *Examples: tbd*

#### **4.5. Digital platforms and the sharing economy**

This section provides suggestions to overcome the compilation challenges related to consumer-to-consumer transactions via platforms (as part of the sharing economy).

>> *Examples: UK*

#### **4.6. Digital platforms in travel and tourism statistics: supply and demand side compilation approaches**

This section summarises experiences of several countries in identifying the role of digital platforms in tourism and travel statistics, using either supply or demand side sources.

>> *Examples: Italy (Spain, France, seem to have similar approaches?)*

## **Chapter 5. Compiling digitally delivered transactions [~15-20 pages]**

### **5.1. Introduction**

Introduction to Chapter 4, which presents current approaches and possible extensions necessary to measure *digitally delivered* transactions. Digitally delivered transactions typically cover services, although the rise of 3D-printing may lead to goods also being considered to be digitally delivered. Throughout the chapter, results from the 2017 and 2018 OECD-IMF stocktaking questionnaire will be presented, in addition to the specific country examples.

### **5.2. Compiling digitally delivered transactions using ITSS surveys**

This section will review ongoing work by countries to better identify services that are actually digitally delivered (as opposed to a wider selection of potentially digitally delivered services), emphasising the relationships with mode 1 provision of services.

>> *Examples: Costa Rica, wider UNCTAD project, US, Canada*

### ***5.3. Compiling digitally delivered transactions using MOSS***

Particularly in the EU context, the creation of the mini-one-stop-shop (MOSS) facility to help enterprises that provide online services with declaring VAT in all EU countries

>> *Examples: Denmark, Ireland*

### ***5.4. Compiling digitally delivered transactions using credit card transactions***

For services digitally delivered to consumers/households, whether by enterprises (B2C) or via the ‘sharing’ economy (C2C), several countries use credit card data to identify the relevant transactions. This section reviews this experience and identifies benefits and caveats of using CC data.

>> *Examples: e.g. Belgium, Denmark, Finland, Iceland, Israel, Mexico, Portugal, Norway and Slovakia*

### ***5.5. Compiling digitally delivered transactions using other sources***

Several countries have specific data collections for targeted digitally delivered services, such as online gaming. This section reviews several of these approaches.

>> *Examples: UK, Denmark*

### ***5.6. Digital financial services***

Financial services provided by non-bank entities. In particular in developing countries, financial services are increasingly provided via mobile phones, via telecom operators. This section describes the collection of data for such transactions and classification of the services involved.

>> *example: Uganda*

## **Chapter 6. Identifying ‘digital’ goods and services [~15-20 pages]**

### ***6.1. Introduction***

Chapter 6 reviews existing and proposed classifications of goods and services that aim to identify ‘digital’ products (e.g. ICT goods and services, trade in ideas, digital enabling products, etc.), building on existing EBOPS, HS and/or CPC classifications. This chapter explains the differences and similarities between the various classifications and their respective uses. The chapter highlights the importance of properly distinguishing between the digital *nature of the transactions*, and the digital *nature of the product*: for example, while the nature of transaction may be digital, the product may not be (e.g. clothes ordered online). Vice versa, much trade in ICT goods, or digital enablers, such as computers or mobile phones, may still be ordered in an ‘analogue’ fashion.

The chapter also provides an overview of national efforts towards measuring cross-border data flows.

### ***6.2. ICT products***

This section summarises the current classification of ICT goods, as defined in the OECD 2011 Guide to the Information Society.

>> *Examples: application of classification on existing IMTS data for selected economies/groups.*

### **6.3 ICT services**

This section summarises the current classification of ICT services as defined by the UNCTAD TGServ Task Force.

>> Examples: application of classification on existing EBOPS data for selected economies/groups

### **6.4 EBOPS complementary groupings relevant for Digital Trade (services + services)**

This section reviews the existing EBOPS complementary groupings that have a particularly strong connection with Digital Trade as they primarily involve IPPs, including in particular audio-visual transactions, cultural transactions, and computer software transactions. This section could also introduce more concrete definitions of these groupings by specifying in particular the HS-codes that would fall under the relevant goods components of these complementary groupings, which have not yet been specified in the MSITS 2010 or its compilation guide.

>> *Examples: application of classification on existing EBOPS and IMTS data for selected economies/groups*

### **6.5. Trade in digitised ideas**

Reflecting the rise of ‘trade in ideas’ – cultural and creative expressions, technologies, designs, brands, know-how – and the role of digitization in facilitating this trade, WTO has outlined a new classification to shed more light on trade in these intellectual property related products (IPPS), taking the form of produced or non-produced assets, and which can be recorded in the exchanges of tangible products as well as intangible (services). This section summarizes these ideas and could also introduce more concrete definitions of these groupings by specifying in particular the HS-codes.

>> *Examples: application of classification on existing EBOPS and IMTS data for selected economies/groups*

### **6.6. Enabling products**

Discussions in the context of National Accounts related to Measuring the Digital Economy indicated that an important complement required to understand the digital economy- including trade - is to look at the products that *enable* digitalisation and can be understood as complementary drivers of digital transformation. What should be included under ‘enablers’ is an open question for now, although some consensus seems to be emerging that in any case ICT equipment assets, software and database assets, telecommunication and internet access, Communication infrastructure, Data, and Cloud computing should be included. This section will summarise the latest conclusions from this debate.

## **Chapter 7. Conclusions and next steps [~5 pages]**

This chapter will summarise the main recommendations and propose next steps. It is likely that it will contain not only recommendations to compilers, but also for the

international statistical community at large, e.g. with respect to changes in industry classifications to allow for a better identification of digital intermediary platforms, for example.

### **Backmatter**

A series of Annexes, as well as a Glossary of key terms and their definitions, will be included in the Handbook.

## Annex 3: Draft (version as of October 2018) of Chapter 2 ‘A Conceptual Framework for Measuring Digital Trade’ of the Handbook on Measuring Digital Trade

### 2.1 Introduction

The core purpose of this Handbook is to define and provide guidance on the measurement of digital trade transactions. A key requirement for such work is the development of a definition for digital trade and a framework for identifying its separate and distinct components, which are presented in this chapter. Importantly, this framework – and this Handbook in general – are fully aligned with similar efforts in the context of the national accounts, of which the objective is to better understand and measure the digital economy (see chapter 1).

Before presenting the conceptual framework in detail, it is useful to review some of the principal considerations that have shaped it and, consequently, the definition of digital trade. Overall, and considering the need for statistics to be relevant for policy making, the overarching objective is to identify, define and measure those aspects where digitalisation has transformed the nature of trade. Considering that products are a core dimension of trade statistics, and noting that digitalisation has given rise to many new goods and services, an obvious starting point would be to consider a breakdown of international transactions in digital products (however these are defined, see also below) and non-digital products.

However, this would not fully capture all the implications of digitalisation for trade. Indeed, one of the most significant impacts of digitalisation has been its ability to shrink the space between consumers and producers, providing both with previously unimaginable access to markets. Producers today, whether through their own websites or through intermediaries, are now able to advertise and sell their products globally, bringing, in turn, significant benefits to consumers through greater choice and cheaper prices. Most of these transactions involve however *non-digital* goods or services, and would therefore fall outside the scope of a product-based definition of digital trade.

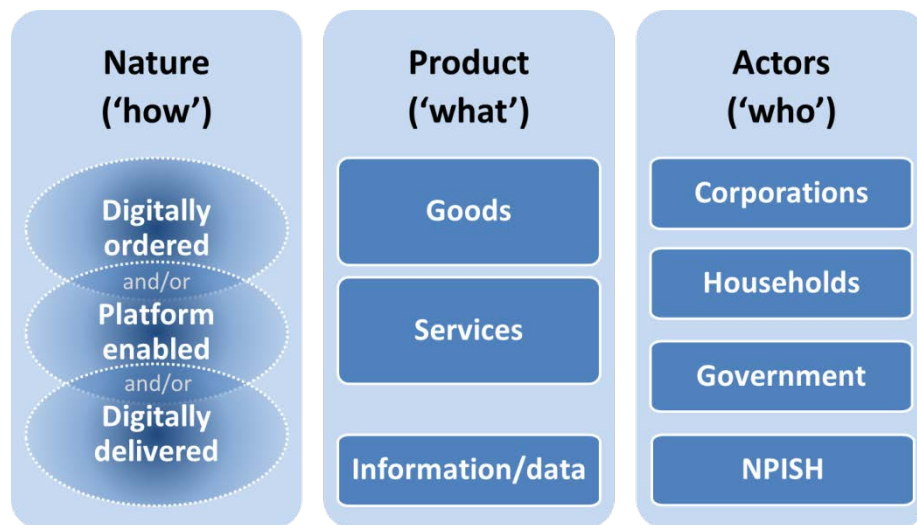
Instead, the two determining criteria as to whether a trade transaction should be considered digital or not are whether it was facilitated by digital tools, i.e. it was either ordered on-line (as e-commerce), or digitally delivered, as, for example, downloadable products.

These two not-mutually-exclusive criteria therefore form the underlying, and unifying, principle for the including cross-border transactions within the definition of digital trade. That is to say, the definition of digital trade is based on *the nature of the transaction*, and *not* on the nature of the product that is traded. One important additional element concerns however the role of digital intermediary platforms (described in more detail below), both because of their important role in the digital economy as well as the fact that they raise specific compilation challenges. Therefore, even if in principle all transactions through digital platforms are either digitally ordered or digitally delivered, these feature additionally in the conceptual framework and definition of digital trade as used in this Handbook: ***all international trade flows that are either digitally ordered, digital intermediary platform-enabled, or digitally delivered.*** Each of these three dimensions of digital trade will be defined further in this chapter.

## 2.2 The conceptual framework and definition of Digital Trade

As noted above, the nature of the transaction – digitally ordered, digital intermediary platform-enabled, or digitally delivered – is the overarching defining characteristic of digital trade. However, also of interest, particularly because there may be differential impacts, and indeed compilation demands, is the nature of the products transacted and of the actors involved. Of particular relevance, for example, in analyses of the sharing economy or the gig economy (described in more detail below), are transactions between households facilitated by digital intermediary platforms. To accommodate these needs, the conceptual framework for digital trade developed below (see Figure 2.1) introduces these additional dimensions, which are discussed in more detail below.

**Figure Error! No text of specified style in document..1. Conceptual Framework for Digital Trade**



The first dimension of the framework involves the digital nature of the transaction ('how'), which is the core determinant of which parts of trade are defined as digital.

The second dimension, 'product', identifies what is being traded, and is broken down into three categories; goods, services and information/data. The first two refer to the classical breakdown of trade statistics. These can in turn be broken down further, including into classifications related to digitalisation. A variety of different approaches have been proposed to operationalise such a breakdown, such as ICT products, digital enabling products, digitised ideas, and these are reviewed in chapter 6. As these methods are all based on existing HS or EBOPS classifications, they do not impose immediate conceptual or statistical compilation challenges for international trade<sup>9</sup>.

<sup>9</sup> It is important to flag that within the context of the National Accounts (and the Digital Economy Satellite Accounts), 'digital' are defined as only being related to services, and involving only those services that are digitally delivered (regardless of whether they were digitally ordered). This follows from the consideration that while many goods today embody aspects of digitalisation, may enable digitalisation, and are

(continued)



The second pillar of the framework also introduces information, or data, as a separate product to consider in addition to goods and services, to explicitly refer to those cross-border data exchanges where *no* monetary transaction takes place. Importantly, this broadens the scope of measurement beyond the traditional statistical notion of cross-border trade in goods and services, in order to recognise the significant economic benefits that accrue from international flows of data (including when these occur between related enterprises). These often fall below the radar of conventional trade statistics, but are increasingly important conduits and determinants of related trade flows. Research is ongoing within the statistics community to better estimate these flows, and indeed to consider whether such flows should be included within the production boundary for GDP and by extension, trade (see also Section 2.3.2.).

The last dimension of the framework looks at the *actors* involved. Building upon the work in the area of e-commerce, where businesses, consumers and governments are distinguished as key actors (buyers and sellers) in e.g. Business-to-Business (B2B) or Business-to-Consumer (B2C) transactions, the framework aligns the terminology with that used in the SNA. Additional breakdowns that are possible and that are being considered by the national accounts community under the broader work programme could include, within Digital Economy satellite accounts, the size and sector of corporations (for example to provide information on the role (and take-up) of digitalised tools by SMEs, or to distinguish financial and non-financial corporations), as well as the role of each actor as buyer, seller or digital intermediary platform.

Each of these dimensions is discussed in more detail below. For several components, it is possible to build upon methodological and conceptual work that has already been developed; which is made explicit below. For others, additional guidance has been developed to make the framework useful (and practical) for measurement by statistical offices and/or central banks.

### **The nature of the transaction: digitally ordered**

The first dimension that helps identify digital trade involves cross-border transactions that are *digitally ordered*, that is, international trade in goods and services that reflects e-commerce, which in turn is defined as follows:

*“An e-commerce transaction is the sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders.”<sup>10</sup>*

The definition includes some additional clarifications/guidance that stipulate that it is the ordering process that is key in determining whether a transaction is considered e-commerce – and by extension, digitally ordered and within scope for digital trade. In this sense, the payment and ultimate delivery of the goods or services do not also have to be conducted online. Transactions can involve participants from all institutional

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often in part the outcome of digitalisation (for example internet-enabled refrigerators and cars and, of course, computers or smartphones), this does not make them, in and of themselves, digital. The digital economy satellite account does however recognise the importance of certain categories of goods, such as ICT and enablers, and includes these within the framework.

<sup>10</sup> OECD, Guide to Measuring the Information Society, 2011

sectors, and cover orders made over the web, extranet or via electronic data interchange (EDI, see Box 2.1). Excluded are orders made by phone, fax or manually typed email.

Importantly, following this definition implies that the total value of a cross-border transaction that is ordered online (via ecommerce) is considered to be digital trade.

**Box Error! No text of specified style in document..1. Electronic Data Interchange**

Electronic Data Interchange is the computer-to-computer transmission of (business) data – such as shipping orders, purchase orders, invoices, and requests for quotations – in a standard format using agreed standards. The messages are composed and processed without human intervention, which increases the speed of order processing, and reduces errors. It is used in a wide variety of industries including food, retail, logistics, and manufacturing in order to efficiently manage supply chains.

Discussions with statistical compilers that were held in the course of developing this Handbook concluded that additional guidance was necessary to ensure a correct interpretation of the definition of digitally ordered trade transactions in practice, in particular as new forms of digital ordering (e.g. via apps) were emerging. The 2<sup>nd</sup> round of the OECD-IMF stocktaking survey<sup>11</sup>, with more than 70 replying countries, included a range of questions to identify where additional guidance was needed with respect to what should be covered<sup>12</sup> in digitally ordered trade transactions. Responses indicated that there was broad unanimity that:

- Digitally ordered trade in goods and services should cover 'in-app' purchases (100% agreed)
- Digitally ordered trade in goods and services should include transactions via online bidding platforms (95% agreed)
- When a trade transaction is concluded via offline ordering processes, but subsequent follow-up orders are made via digital ordering systems, only the follow-up orders should be considered as e-commerce (80% agreed)
- Digitally ordered trade in goods and services should *not* cover offline transactions formalised using digital signatures (86% agreed)

Uncertainty remains, however, with respect to the treatment of purchases of goods or services via online chat functions, such as WeChat. On the one hand, WeChat and related systems are typically not specifically designed for placing orders (as per the e-commerce definition), but instead receive manually composed messages similar to emails. On the other hand, rapid technological change, particularly the rise of Artificial Intelligence means that robots can now handle orders via online chat, and so

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<sup>11</sup> See Box 1.1 in Chapter 1

<sup>12</sup> The focus was on what should be covered by the definition. This does not imply that all these elements needs to be separately identified in digital trade statistics

arguably such transactions could be classified as e-commerce. This remains an area of deliberation and research.

### **The nature of the transaction: digital intermediary platform enabled transactions**

An important characteristic of digitalisation is the emergence of digital intermediary platforms such as Airbnb, Booking.com, Uber, eBay and Amazon that facilitate transactions in goods and services. These platforms nearly always have an electronic ordering component, and typically the goods and services advertised can only be paid for electronically. Even if in some cases it is possible to make orders using analogue methods, the platform itself is the only mechanism through which consumers can see the advertised products. To the extent that they enable transactions between consumers, digital intermediary platforms considered to facilitate the ‘sharing economy’.

The reason for a separate distinction of digital intermediary platform-enabled transactions (from digitally ordered and digitally delivered transactions) in the framework described above is indeed the underlying nature of the business model and in particular the matching nature of the platforms, which is of particular analytical and policy interest. In addition, in the absence of economic ownership by the platform of the goods and services that are provided, the statistical treatment of the related cross-border transactions poses particular measurement challenges, especially when platforms are not resident in the country where the intermediation services are consumed.

There are also a number of other complicating features that need to be considered. In addition to introducing an international dimension to what hitherto was, and still at first sight remains, a domestic transaction, digital intermediary platforms present additional measurement challenges in terms of precisely defining the type of service that is traded. For example, since Uber does not own cars, questions are raised as to whether the services it provides are transport services or business services (e.g. trade-related services). In a recent case heard by the European Court of Justice (December 2017), the Court ruled that Uber was in the business of providing transport services (which are excluded from EU rules permitting freedom to provide services) and not (as argued by Uber) in the business of providing computer services, which are governed by the directive on services in the EU internal market. Although statistical standards do not have to follow these rulings, the point well illustrates the nature of challenges for measurement, but also for trade policy, as commitments under GATS may differ by the type of service concerned. Also, whether the driver is considered an employee of Uber – a question all the more relevant as several legal cases have ruled that they should be considered as such – has implications for the classification of the service by GATS mode of supply (e.g. Mode 3 versus Mode 1).

### ***Defining digital intermediary platforms***

Many different types of business models exist to sell or deliver goods or services using digital tools, and clearly not all enterprises that are active online are digital intermediary platforms. Both the World Customs Organisation (WCO) as well as the

OECD Tax Policy Center<sup>13</sup>, amongst others, have developed typologies of new, online business models. While the terminology differs (for example, the OECD work on tax policy, following Hagiu and Wright (2015)<sup>14</sup> uses ‘multi-sided platforms’ while the WCO uses ‘e-platforms’), both identify key criteria to define digital intermediary platforms, including (1): there are multiple buyers and multiple sellers that interact directly (2) the platform itself does not own the goods nor does it supply the services that are being sold. Based on these criteria, *digital intermediary platforms can be defined as online interfaces that facilitate, for a fee, the direct interaction between multiple buyers and multiple sellers, without the platform either taking economic ownership of the goods nor providing the services that are being sold.*

Digital intermediary platforms therefore only provide matching or intermediation services. As such, digital intermediary platforms differ from what could be described as electronic retailers or e-vendors, which may also sell a wide variety of different products and operate exclusively online, but who own all the products being sold<sup>15</sup>. Table 2.1 provides a simple overview and examples that can help to differentiate digital intermediary platforms from electronic retailers or e-vendors, which operate exclusively online and own all of the wide variety of products they sell, and from dedicated internet sites of brick-and-mortar retailers (referred to as *webshops*), which own all the products they sell and focus on only selling products under a company’s own brand.

**Table Error! No text of specified style in document..1. A typology of online business models**

	Digital intermediary platform	E-vendor	Webshop
Number of sellers	Multiple	1 (the e-vendor)	1 (the webshop owner)
Economic ownership of the products sold	No	Yes	Yes
Product offer	A wide range of products and (competing) brands; but no ‘own’ products	A wide range of products and (competing) brands, which may include ‘own’ branded/produced products,	Predominantly ‘own’ products
Metaphor	“Online market-place”	“Online supermarket/ wholesaler”	“Online specialty shop”
Examples	Amazon market place, Alibaba, Uber, Airbnb, eBay, Etsy, TaskRabbit	Amazon e-commerce, JD.com, Zalando, Netflix, Tencent, Spotify	Company webshops (e.g. Philips, Samsung, Ikea, Zara)

### ***The recording of trade transactions associated with Digital Intermediary Platforms***

The distinction of digital intermediary platforms from other online business models matters because, with current accounting rules, the recording of transactions enabled by intermediaries will necessarily differ from those of electronic retailers (*e-vendors*) or via dedicated internet sites of brick and mortar retailers (*webshops*). Given the similarity in business models of these latter two categories with their ‘offline’

<sup>13</sup> OECD (2018) *Tax challenges arising from digitalisation – Interim Report 2018*, Paris: OECD.

<sup>14</sup> Hagiu, A. and Wright, J. (2015) ‘Multi-Sided Platforms’, *International Journal of Industrial Organization*, Vol. 43,

<sup>15</sup> Note that these two business models may co-exist within the same enterprise group: for example Amazon Ecommerce (an e-vendor) as opposed to Amazon Marketplace (a digital intermediary platform).

counterparts, the conceptual statistical treatment of transactions by e-vendors and webshops is no different than that of ‘regular’, ‘off-line’ wholesalers or retailers<sup>16</sup>. For example, if an e-vendor (essentially an ‘online merchant’), located in country A, purchase a good (and in theory, potentially, also services) from country B, the value of the purchased good/service will be recorded as a negative export in the balance of payments of country A, while the subsequent sale by the e-vendor to a buyer in country C would be considered an export for country A; following the accounting standards of BPM6 for merchanting transactions<sup>17</sup>. For webshops used as a direct sales channel by the enterprise that produces the product, the recording of trade transactions would follow that of ‘regular’ exports and imports.

In contrast, the recording of transactions facilitated via digital intermediary platforms requires a more sophisticated treatment. In these cases, the good or service that is being intermediated by the digital intermediary platform is never owned by them, and so the flows (exports/imports of the intermediary) must be recorded net of the value of goods/services being intermediated. Such a separate identification of the intermediation fee (as a trade-related service) from the product that is sold is required either if the fee is explicitly charged (e.g. as a percentage of each transaction, to be paid by buyer, supplier, or both), or, if the fee is implicitly charged (when the digital intermediary platform retains a certain percentage of the transaction from the seller).

This treatment may sound like a marginal distinction from those for transactions through e-vendors and webshops. However, for the digital trade (as well for the digital economy), it can matter greatly, in particular for the intermediation of goods or services where the ultimate buyer and seller are resident in the same country but the digital intermediary platform operates from another.

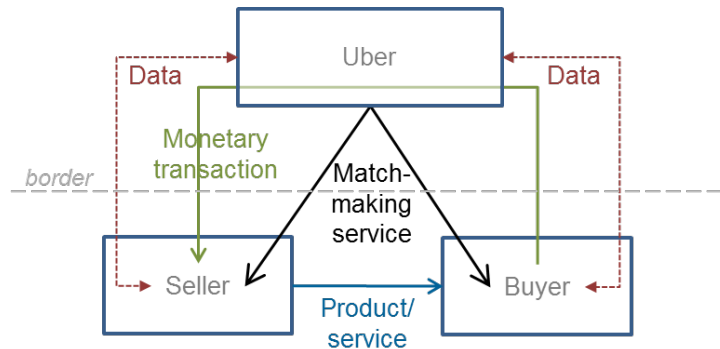
To illustrate the complexities involved, Figure 2.2 describes the example of an Uber transaction. In the “physical world”, a taxi would have to pass in front of a customer who would pay for the ride in cash or card. However, the Uber App adds a new tradable digital service which enables the transaction by matching the car driver and the customer and managing payment. The transaction between the driver (seller) and the rider (buyer) takes place in a particular country, but the supporting transactions, that include the provision of the matching services, payments and insurance coverage, are potentially provided from another country. Furthermore, the consumer may be a non-resident, in the case of tourists, which adds another layer of complexity.

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<sup>16</sup> However, the separate identification of the trade flows associated with these types of enterprises will be very useful for policy purposes, and, considering that the ordering process in both these cases is digital (i.e. over computer networks by methods specifically designed for the purpose of receiving or placing orders), the associated cross-border trade flows should be recorded as part of digital trade.

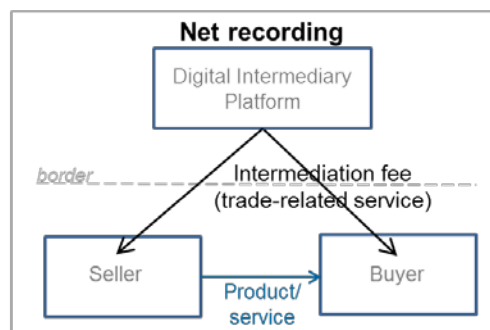
<sup>17</sup> Recognising the complexity of partner country attribution of merchanting transactions, it is typically considered to follow the partner country of the

**Figure Error! No text of specified style in document..2. Example of transactions via digital intermediary platforms: unpacking an Uber transaction**



Following the flows in Figure 2.2 and the ‘ownership’ principle that underpins the accounting frameworks, the only transaction that should be recorded in international trade statistics would be the cross border provision of intermediation services to both the seller and the buyer, in line with the (typically) explicit intermediation fees charged<sup>18</sup>. This is also called a ‘net recording’ of the associated transactions, and is illustrated in Figure 2.3. Such a net recording is preferred because a) a gross recording would inflate trade in ways that are not economically meaningful; b) a net recording correctly reflects the core principle of change in economic ownership that underpins Balance of Payments and National Accounts transaction statistics (as digital intermediary platforms are not the economic owners of the goods and services that they facilitate, in contrast to for example merchants) and c) a net recording of transactions also best reflects, in the context of merchandise trade, the physical flows of the goods which these statistics aim to reflect.

**Figure Error! No text of specified style in document..3. Proposed net recording of trade transactions related to digital intermediary platforms**



<sup>18</sup> An alternative view that emerged during discussions in developing this Handbook was to follow the money and record cross-border ‘gross’ transactions, with the intermediary paying for the services and selling them on. However this violated the ownership principle, and the majority of countries agreed that the flows should be recorded on a net basis.

In cases where no explicit intermediation fee is charged to the final consumer, a Eurostat Task Force recently advocated a simplified treatment, which treats the price paid by the consumer as equivalent to the basic price (after accounting for taxes/subsidies), while recording a corresponding entry of intermediate consumption by the producer that reflects the intermediation service provided to both the producer and the consumer. In other words, for simplicity, assume that only the producer (seller) pays the intermediation fee. While this may be a practical way forward to compile statistics for those cases where no further information is available, doing so masks the interaction of households and digital trade. This Handbook therefore advocates splitting digital intermediary platforms into those that ultimately mainly serve households, and other intermediaries (see the section on sharing economy below) as a way of unmasking this detail.

As the example above illustrates, the residency of the buyer, seller, and digital intermediary platform needs to be carefully considered in the recording of the associated trade flows. For example, the goods or services produced by residents may be intermediated via a non-resident digital intermediary platform, or via a domestic (resident) digital intermediary platform. At the same time, the goods or services purchased by a resident from resident sellers – traditionally not considered to be an international trade transaction – may be facilitated by a non-resident digital intermediary platform<sup>19</sup>. To illustrate the proposed net recording of these trade flows involving different countries of residency, Table 2.2 provides an overview of all possible combinations.

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<sup>19</sup> As noted elsewhere, ITSS surveys may struggle to cover transactions involving non-resident digital intermediation platforms. Furthermore, even in cases where such digital intermediation platforms headquartered overseas have some resident commercial presence, these entities may only have narrow functions such as advertising, and therefore do not (or cannot) report statistics related to trade between consumers and the overseas DIP.

**Table Error! No text of specified style in document..2. Recording of trade transactions involving digital intermediary platforms**

Seller	Platform	Buyer	Treatment of transacted product	Treatment of Intermediation services
<i>If the seller pays the intermediation fee OR if no explicit intermediation fee is charged to the final consumer</i>				
Ctry A	Ctry A	Ctry B	Import by country B from country A	None (domestic transaction)
Ctry A	Ctry B	Ctry B	Import by country B from country A	Import by country A from country B
Ctry A	Ctry B	Ctry A	None (domestic transaction)	Import by country A from country B
Ctry A	Ctry B	Ctry C	Import by country C from country A	Import by country A from country B
<i>If the buyer pays the intermediation fee</i>				
Ctry A	Ctry A	Ctry B	Import by country B from country A	Import by country B from country A
Ctry A	Ctry B	Ctry B	Import by country B from country A	None (domestic transaction)
Ctry A	Ctry B	Ctry A	None (domestic transaction)	Import by country A from country B
Ctry A	Ctry B	Ctry C	Import by country C from country A	Import by country C from country B
<i>If both the seller and the buyer pay an intermediation fee</i>				
Ctry A	Ctry A	Ctry B	Import by country B from country A	Import by country B (of <i>part</i> of the intermediation services) from country A (the remainder of the intermediation services reflect a domestic transaction)
Ctry A	Ctry B	Ctry B	Import by country B from country A	Import by country A (of <i>part</i> of the intermediation services) from country B (the remainder of the intermediation services reflect a domestic transaction)
Ctry A	Ctry B	Ctry A	None (domestic transaction)	Import by country A from country B
Ctry A	Ctry B	Ctry C	Import by country C from country A	Import by country C (of <i>part</i> of the intermediation services) from country B and import by country A (of the remainder of the intermediation services) from country B

### *The sharing economy*

An important sub-set of digital intermediary platforms are those that facilitate consumer-to-consumer (C2C) transactions, which are also called peer-to-peer transactions and are part of the sharing economy<sup>20</sup>. Building on work by the ONS<sup>21</sup> and Statistics Canada<sup>22</sup> on defining and measuring the sharing economy, these digital intermediary platforms fulfil all the criteria as defined above, but are *in addition* focused primarily on facilitating transactions between individual consumers (and not businesses), and provide temporary access to a good (typically an asset, such as their property or car) or a service (typically renting out their labour and/or skills) for a fee, without a transfer of ownership from one consumer to the other (i.e. the second-hand economy is excluded).

<sup>20</sup> Noting that the concept of the sharing economy pre-dates digital intermediary platforms and does not by definition include *only* those sharing transactions facilitated online, although in common use the two are increasingly equated.

<sup>21</sup> ONS UK (2017) 'The feasibility of measuring the sharing economy: November 2017 progress update', <https://www.ons.gov.uk/economy/economicoutputandproductivity/output/articles/thefeasibilityofmeasuringthesharingeconomy/november2017progressupdate>

<sup>22</sup> Statistics Canada (2017) 'The sharing economy in Canada', *Statistics Canada Daily*, <https://www150.statcan.gc.ca/n1/daily-quotidien/170228/dq170228b-eng.htm>



The digital intermediary platforms that facilitate the sharing economy can in principle involve any activity, although property or accommodation rental (e.g. via Airbnb), transportation services (ride-sharing, e.g. BlablaCar, Lyft), labour-renting services (e.g. TaskRabbit), and collaborative finance (e.g. Kickstarter) are among the most well-known categories.

To the extent that the sharing economy transactions facilitated by digital intermediary platforms have an international dimension (i.e. either the consumer providing the (access to a) good or service, the consumer purchasing it, or the digital intermediary platform facilitating the transaction is a non-resident), the transactions should be recorded as described above in Table 2.2.

### **The nature of the transaction: digitally delivered transactions**

The third dimension of the nature of digital trade transaction is referred to as *digitally delivered*. The concept of digitally delivered transactions is based on the definition and methodology for measuring information and communication technology (ICT)-enabled services, which were developed by the Task Group on Measuring Trade in ICT Services and ICT-enabled Services (TGServ), of the Partnership on Measuring ICT for Development, in collaboration with Inter-Agency Task Force on Statistics of International Trade in Services (TFITS).

As such, *digitally delivered* trade transactions can be defined as *all cross-border transactions that are delivered remotely over ICT networks – i.e. over voice or data networks, including the internet, in an electronically downloadable format*. Examples include software, e-books, data and database services. Goods, as physical items, cannot be digitally delivered. Although 3D printing may in the future be classified as digitally delivered goods (if these transactions are deemed to be fundamentally different from trade in services (of 3D blueprints) transactions), this Handbook for simplicity assumes that only services can be digitally delivered.

A strong overlap exists with the classifications of trade in services by Mode of Supply. By definition, all digitally *delivered* trade transactions are delivered via Mode 1 (cross-border supply)<sup>23</sup>, although not all transactions (but likely a very large percentage) that are delivered via Mode 1 are digitally delivered trade transactions (as regular mail may be also used).

## **2.3 Products relevant for digital trade**

### **Digital goods and services**

The conceptual framework presented in Figure 2.1 uses the digital nature of *transactions* to identify digital trade within regular trade flows. However, the nature of the *product* – in particular whether goods or services can be split into ‘digital’ and ‘non-digital’ ones – forms a supplementary dimension in identifying trade flows that may be relevant in discussions about digitalisation. It is important to note that digital *products* and *digital trade transactions* do not necessarily amount to the same thing.

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<sup>23</sup> Note that this is not the case for *all* cross-border transactions classified as digital trade, which may also contain digitally ordered goods or services that are physically delivered.

For example, shoes can be ordered online (a digital transaction), but are in themselves not considered to be digital products.

In the area of trade statistics, the work on identifying digital products has thus far mainly focused on services. For example, work initiated by UNCTAD's TGServ aims to identify ICT services as another complementary grouping in the Extended Balance of Payments Services Classification (EBOPS) 2010. Recent work by WTO (cf. Magdeleine and Maurer, 2017) proposes to identify trade in *digitised ideas* as another approach, building on existing EBOPS 2010 complementary groupings that include not only services but also goods, such as audio-visual transactions (which include audio-visual services, licenses to reproduce and/or distribute audio-visual products, and audio-visual goods), or computer software transactions (which include computer software services, licenses to reproduce and/or distribute software, and computer software goods).

Furthermore, consensus has also been reached in the national accounts community<sup>24</sup>, that all products that are digitally delivered should be considered to be digital products. Likewise, the margin (or intermediation fee) produced by digital intermediary platforms is also considered to be part of the digital economy and hence a digital service (currently not separately identified in the EBOPS classification but, if captured at all, typically included under trade-related services).

Finally, the WTO Information Technology Agreement (ITA), first adopted in 1997 and extended in 2015, currently covers (entirely or partially) 270 HS 6-digit products that will enjoy duty free treatment when imported by economies that are members of the agreement. Including a range of consumer products as well as intermediate inputs, the ITA list covers around 80% of the products that are also included in the definition of ICT products (UNCTAD, 2015<sup>25</sup>).

In all the above cases, existing product classifications (HS, CPC) can be used to clearly define and identify digital products. However, to complement on-going discussions in this area, this Handbook additionally suggests to develop special aggregations that can further inform discussions on digital trade, namely to develop measures of trade in digital products broken down by the nature of the exchange – e.g. digitally ordered, digital intermediary platform-enabled, and/or digitally delivered.

### **Cross-border data flows supporting monetary transactions**

[Section to be developed further in light of on-going discussions on measurement].

Traditional statistics on international trade identify how cross-border transactions involve either goods or services. However, considering its growing importance and policy relevance, the notion of digital trade introduces a third category: information or data. In the conceptual framework, the item *information/data* refers primarily to exchanges of data/information where there is *no* monetary exchange. If there *is* an explicit monetary transaction - i.e. purchases/sales of data - then these transactions should, in theory, be picked up as trade in services transactions.

<sup>24</sup> See OECD (2017) 'Summary of responses of the Advisory Group: Survey on Digital Economy typology' Paper to be presented at the OECD WPNA meeting, November 2017 (cote: STD/CSSP/WPNA(2017)1)

<sup>25</sup> [http://unctad.org/en/PublicationsLibrary/tn\\_unctad\\_ict4d05\\_en.pdf](http://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d05_en.pdf)

The data flows that do not result in a monetary transaction per se, may indeed support one however (such as generating advertising revenue<sup>26</sup>). For example, a social networking site such as Facebook, or search engines such as Google, offers "free" services to users who, in exchange, provide their data or view advertisements<sup>27</sup>. There is no monetary transaction between Facebook or Google and their users (and in terms of existing international standards, no trade). However, the data collected by these enterprises form the basis of their revenues from advertisers. While the advertising revenue monetary flow is captured in trade statistics, the data flows upon which they depend are not. It is clear that this raises issues concerning consumer surpluses and indeed at the international level who is ultimately financing those surpluses. For example free digital products (such as Facebook or Google) are in general available to all, but the funding model (advertising) does not differentiate among countries. In other words, advertisers (and ultimately consumers through paying higher prices) in one country may be indirectly generating consumer surpluses in another.

In a similar manner, and because they are free, the international accounting system does not in general impute transactions related to the use of public goods (such as open-source or free software). Again, this raises issues concerning the measurement of consumer surpluses but also potentially policies, such as anti-dumping and competition policies, if the freely available software is designed to gain market share with a view to the introduction of subsequent priced models.

Finally, the accumulation of individuals' data by enterprises is relevant. Although no monetary transaction takes place, the social network does build an asset from the data that is collected, and may value this asset and include it as a non-financial asset on its balance sheet. While it is not yet clear if this is a produced or non-produced asset, it may become important in trade in services statistics or other BOP items if these assets are located across country boundaries.

## 2.4 Actors involved in digital trade

International trade is traditionally considered to take place between enterprises – and to a lesser extent between enterprises and governments. However, technological change has provided individual consumers (households) with the possibility to purchase goods and services from foreign suppliers on a scale that was hitherto impossible. Similarly, the possibility to sell online has lowered – or has the potential to lower – the barriers to export, allowing especially smaller firms to market their products abroad.

The conceptual framework recognises these developments through its breakdown of actors by (SNA) institutional sectors: households, non-financial corporations, government and financial corporations<sup>28</sup>. Importantly, the institutional sector

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<sup>26</sup> These advertising services may be part of international trade transactions when the advertiser and those selling advertising services are resident in different countries

<sup>27</sup> 'viewership services', see <https://www.bea.gov/system/files/papers/WP2016-3.pdf>

<sup>28</sup> This list is generally considered to reflect the *domestic* institutional sectors and is completed with the 'rest of the world', reflecting all non-domestic partners. Clearly these can in turn be dissected by institutional

(continued)

breakdown provides for an easy concordance with the approach used in discussions on e-commerce: ‘Business-to-Business’ (B2B), ‘Business-to-Consumer’ (B2C) or ‘Consumer-to-Consumer’ (C2C) transactions:

- ***Business-to-Business (B2B)***. Trade transactions that involve two enterprises. This has been the main mode of international trade in the past and initial studies indicate that the bulk of cross-border e-commerce transactions is accounted for by these types of transactions.
  - ***Intra-firm trade*** or transactions between related enterprises. An important sub-set of B2B trade transactions involves the transactions between enterprises that are part of the same enterprise group (multinational enterprise). In the area of trade in services, such trade flows are already identified as transactions between related enterprises (BPM6, MSITS2010).
- ***Business-to-Consumer (B2C)***. Trade transactions that involve businesses selling directly to households, bypassing traditional retailers. This type of cross-border transaction is thought to have grown substantially with the rise of the internet and e-commerce.
- ***Consumer-to-Consumer (C2C)***. Trade transactions that involve two consumers (households). While traditionally, such cross-border transactions were rare (even if domestic transactions did occur), information and communication technologies have allowed platforms like Airbnb and eBay to develop and mediate such cross-border transactions. Likewise, similar platforms have created a significant increase in the self-employed (and part-time self-employed). Measurement problems may arise from the fact that the relevant units, and their related transactions, could be classified to the corporate rather than the household sector in the national accounts; developing clearer guidelines in these areas will be the subject of further work in this Handbook.
- ***Business-to-Government (B2G)***. Trade transactions that involve businesses selling to governments.

## 2.5 Valuation of digital trade transactions

Considering the importance of alignment with existing methodological frameworks, not in the least to be able to compare ‘digital’ trade with ‘non-digital’ trade, the valuation of digital trade transactions follows that presented in the existing statistical frameworks of BPM6 (in case of constructing digital trade within the context of the Balance of Payments) or IMTS (in case of constructing digital merchandise trade transactions).

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sector, and considering the focus on international trade transactions, it is assumed that these all involve the ‘rest of the world’.

## 2.6 Coverage

An important motivation for investigating digital trade and aiming to improve its measurement is the consideration that current trade statistics may not fully capture all international trade transactions, with particular digitally ordered *and* digitally delivered transactions often identified as risking to be not fully covered. However, at the same time, and particularly when introducing new data sources, it is important to also consider (and eliminate) the risk of double counting.

## 2.7 Towards a typology of digital trade transactions

The main dimensions developed above can be used to classify and typify digital trade transactions, which will facilitate the subsequent measurement discussions. In many cases the dimensions may overlap or occur simultaneously. While a full breakdown of trade transactions across all the different dimensions combined (digitally ordered / intermediary platform enabled / delivered; goods / services; B2B / B2C / C2C / B2G etc.) will clearly be beyond the feasibility of many statistical offices, this typology can help countries develop and position their first sets of statistics and support systematic developments going forward.

Table 2.3 provides a series of examples of how such a complete multidimensional breakdown would look, limiting the examples in the first instance to B2B, B2C and C2C transactions, as well as to goods and services only, partly for brevity, and partly because further (conceptual and measurement) challenges arise, and investigations will be needed, with respect to data flows and B2G.

**Table 2.3 Examples of digital trade transactions**

What	How			Who	Description	Transaction example
	Digitally ordered	Platform enabled	Digitally Delivered			
Good	Y	N	N	B2B	An enterprise in country A purchases a good directly from a supplier in country B.	A firm purchases a component used in its production via its EDI.
Good	Y	N	N	B2C	A consumer in country A purchases a good (for final consumption) directly from a supplier in country B.	A consumer purchases an article of clothing from a company's webshop.
Good	Y	Y	N	B2B	An enterprise in country A purchases a good from a supplier in country B via an online platform located in country A, country B or C.	A firm orders office furniture from another firm via eBay.
Good	Y	Y	N	B2C	A consumer in country A purchases a good (for final consumption) from a supplier in country B via an online platform located in country A, country B or C.	A consumer orders a physical book on Amazon.
Good	Y	Y	N	C2C	A consumer in country A purchases a good (for final consumption) from another consumer in country B via an online platform located in country A, B or C.	A consumer purchases second-hand goods via eBay.
Service	Y	N	N	B2B	An enterprise in country A purchases a service online directly from a supplier in country B, and the service is delivered physically.	A firm purchases a transportation service from another firm via a website.
Service	Y	N	N	B2C	A consumer in country A purchases a service online directly from a supplier in country B, and the service is delivered physically.	A tourist purchases a hotel stay via the hotel's website.
Service	Y	Y	N	B2B	An enterprise in country A purchases a service from a supplier in country B via an online platform located in country A, B or C, and the service is delivered physically.	A firm purchases standardised maintenance or repair services.
Service	Y	Y	N	B2C	A consumer in country A purchases a service from a supplier in country B via an online platform located in country A, B or C, and the service is delivered physically.	A tourist orders a transportation service through Uber.
Service	Y	Y	N	C2C	A consumer in country A purchases a service from another consumer in country B via an online platform located in country A, B or C, and the service is delivered physically.	A tourist purchases accommodation services via AirBnB.
Service	Y	N	Y	B2B	An enterprise in country A purchases a service online directly from a supplier in country B, and the service is delivered digitally.	A firm purchases standardised computer services.
Service	Y	N	Y	B2C	A consumer in country A purchases a service online directly from a supplier in country B, and the service is delivered digitally.	A consumer purchases a life insurance policy.
Service	Y	Y	Y	B2B	An enterprise in country A purchases a service from a supplier in country B via an online platform located in country A, B or C, and the service is delivered digitally.	A firm orders a logo design from a graphical design firm via a platform for graphical designers.
Service	Y	Y	Y	B2C	A consumer in country A purchases a service from a supplier in country B via an online platform located in country A, B or C, and the service is delivered digitally.	A firm subscribes to a music streaming service.
Service	Y	Y	Y	C2C	A consumer in country A purchases a service from a consumer in country B via an online platform located in country A, B or C, and the service is delivered	A consumer orders a knitting pattern from another consumer via Ravelry.

					digitally.
Service	N	N	Y	B2B	An enterprise in country A places an <i>offline</i> order for a service directly from a supplier in country B, and the service is delivered digitally.
					A firm purchases bespoke consultancy services, or business process outsourcing (BPO), services.
Service	N	N	Y	B2C	A consumer in country A purchases a service <i>offline</i> directly from a supplier in country B, and the service is delivered digitally.
					A foreign student purchases educational services with online lectures.
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