



Study on measuring international digital trade in the Arab region



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United Nations
Beirut

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United Nations publication issued by ESCWA, United Nations House, Riad El Solh Square, P.O. Box: 11-8575, Beirut, Lebanon.

Website: www.unescwa.org.

Acknowledgements

This report was prepared by Thierry Coulet, an independent consultant on digital trade, in cooperation with a team from Cluster 4 on Statistics, Information Society and Technology at the Economic and Social Commission for Western Asia (ESCWA) comprising Wafa Aboul Hosn, Majed Hamoudeh and Mohamad Nawar Alawa. Overall supervision of the report drafting process was provided by Juraj Riecan and Haidar Fraihat, the former and current Cluster 4 Leads, respectively.

ESCWA is grateful to the Islamic Development Bank Institute specifically Sami Al Suwailem, Areef Suleman and Abu Camara for their guidance, support and inputs during the drafting process. In addition, ESCWA would like to acknowledge the financial support provided by the Islamic Development Bank. This has also contributed to the (a) translation into Arabic the Handbook On Measuring Digital Trade, Version 1, published in 2019 by the Organisation for Economic Co-operation and Development (OECD), the World Trade Organization (WTO) and the International Monetary Fund (IMF) and

which provides guidance on international statistical standards; (b) prepare the present study, which provides an overview of current efforts to measure digital trade in Arab countries and capacity building needs, and; (c) design an online questionnaire.

Those activities will further strengthen the capacity of Arab national statistical offices to measure digital trade, design surveys, coordinate with national partners with a view to harmonizing relevant definitions and concepts, and collect and generate data to inform evidence-based policies.

The Cluster 4 team would, moreover, like to acknowledge the invaluable input provided by a number of experts during the process to design the questionnaire on information and communications technology (ICT) in business, which was spearheaded by the Palestinian Central Bureau of Statistics, including Torbjorn Fredriksson at the United Nations Conference on Trade and Development (UNCTAD) and Barbara Carmelina D'Andrea at WTO.

Executive summary

The present report provides an overview of a study conducted following the High-level Seminar on the Future of Economic Statistics for the Arab Region, organized by ESCWA in Riyadh in January 2020 in cooperation the United Nations Statistics Division and the Islamic Development Bank. The Seminar identified a number of regional priorities in the area of economic statistics, including the importance of digitalization in e-commerce and global value chains, and issued a number of key recommendations.

Digital trade has become a priority area for countries, and any legal provisions on digital trade and data are likely to influence how easily data flows across borders, the extent to which the Internet can be regulated, and the application of new technologies, all of which have implications for governments, large and small businesses, consumers and workers. Mechanisms for measuring digital trade and relevant statistical methodologies are, however, still in their infancy. Currently, the most important international methodological reference in that area is the Handbook on Measuring Digital Trade, developed by OECD, WTO and IMF and published in 2019.

In line with the guidelines set out in the Handbook, ESCWA signed an agreement with the Islamic Development Bank to conduct a pilot study on the measurement of digital trade in the context of national accounts.

The aim of the first part of the pilot study was to provide an overview of key international

methodological frameworks for measuring digital trade and the information currently available in that regard in major international databases.

In recent years, the international statistical community has devoted increasing attention to digital trade, and has striven to enhance the generation of high-quality data so that relevant stakeholders can effectively monitor its development.

The study outlined in this report adopted the conceptual framework set out in the Handbook, which defines digital trade as “all trade that is digitally ordered and/or digitally delivered”. The Handbook further defines digitally ordered trade, which is equivalent to the OECD definition of e-commerce, as “the international sale or purchase of a good or service conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders”. In turn, digitally delivered trade is defined as “international transactions that are delivered remotely in an electronic format, using computer networks specifically designed for the purpose”. At the present time, it is considered that only services can be digitally delivered.

On the basis of that conceptual and methodological framework, the study analysed the impact of the coronavirus disease (COVID-19) pandemic on digital trade.

Beyond the sharp decline in global trade volumes that have occurred during the pandemic, many stakeholders believe that

COVID-19 is likely to have profound repercussions on the ways in which trade takes place. In that respect, a shift from traditional trade mechanisms to digital trade appears to have taken place. That shift could persist beyond the pandemic and usher in a new era in global trade.

An accelerating transition towards a digital economy, in which ICT plays an increasing role in the production, consumption and exchange of goods and services, was apparent even prior to the onset of the pandemic. It should however be borne in mind that estimates of the size of the digital economy vary considerably due to a lack of standardized definitions of key concepts, and to challenges related to measurement.

In that context, the COVID-19 pandemic has had profound implications for the global economy and international trade. It has encouraged the growth of online shopping and services in domestic markets where movement controls and consumer anxiety have discouraged physical transactions. Globally, the pandemic has, moreover, caused a sharp deceleration in economic activity for which economies were largely unprepared.

The pandemic has, however, also ushered in a new era in the development of the digital economy. Digitalization has in many respects mitigated the economic damage caused by the pandemic and many of the changes observed in respect to shopping, working and social interactions seem to be here to stay.

In particular, the pandemic has led to an increase in e-commerce and much economic activity has moved online. It should however be underlined that domestic e-commerce and international digital trade have often developed in markedly different ways. Indeed, while the

proportion of trade and retail accounted for by e-commerce has increased significantly during the COVID-19 pandemic in domestic markets, the pandemic has tended to reduce the value and volume of international e-commerce, which has often been impeded by the same logistical disruptions that have affected more traditional forms of international trade.

In that respect, it is also important to distinguish between goods and services when discussing the impact of the COVID-19 pandemic on digital trade. Indeed, while broader international trade in goods, including the digital trade in those goods, has been adversely affected by logistical disruptions, the pandemic seems to have had a more positive impact on the trade in services, mostly as a result of the redistribution of trade among WTO General Agreement on Trade in Services (GATS) Modes of Supply. There is substantial evidence of a shift towards increased online trade under GATS Mode 1, namely the cross-border trade in services in which both the supplier and the customer remain in their home countries.

It should however be underlined that there are important limitations to the evidence base on which such analyses are developed, as few countries publish official statistics in that area and many countries that do so often fail to comply with international guidelines. In fact, only a limited number of international databases include statistics on digital trade. Eurostat, UNCTAD and OECD have, however, developed databases in that regard that can inform digital trade analysis.

Among those databases, the Eurostat database provides statistics on the widest range of products. Unfortunately, no statistics relating to ESCWA member States are included in that database. The UNCTAD database does,

however, include data relating to ESCWA member States on a specific area of digital trade, namely the international trade in digitally deliverable services.

As mentioned above, the development of digital trade statistics in most countries is still in its infancy, while the international methodological framework pertaining to that statistical area is, itself, relatively recent. The key pillar of that methodological framework, namely the OECD-WTO-IMF Handbook on Measuring Digital Trade, is closely related to the methodological frameworks underpinning the IMF Balance of Payments and International Investment Position Manual, sixth edition (BPM6), the 2008 System of National Accounts, International Merchandise Trade Statistics: Concepts and Definitions 2010 (IMTS 2010), and the Manual on Statistics of International Trade in Services (MSITS 2010).

The conceptual framework presented in the Handbook on Measuring Digital Trade was developed in accordance with updated statistical accounting standards, particularly the standards set out in the BPM6 and the System of National Accounts. There are, however, a number of minor differences among the relevant methodological frameworks, particularly with regard to certain accounting principles relating to digital intermediation platforms.

On the other hand, the Handbook strives to be fully consistent with the framework established in the System of National Accounts, including with regard to the treatment of data and databases and with regard to the breakdown of actors by institutional sector. Digital trade statistics based on the Handbook could hence directly inform the national accounts of Arab countries.

The Handbook also incorporates concepts addressed in MSITS 2010, published in 2011, and looks, in particular, at a number of traditional data sources highlighted in the Manual that could also be used to compile data on digital trade. The Handbook notes that international trade in services surveys provide perhaps the best existing survey vehicle for developing estimates of digitally-delivered trade in services.

BPM6, the 2008 System of National Accounts, IMTS 2010 and MSITS 2010 all include provisions on digital trade, even though they refer to digital trade using a range of terms, including electronic commerce and e-commerce. The System of National Accounts in particular, cautions that it is challenging to measure price indices based on unit value indices, while IMTS 2010 underscores that it is difficult to collect data on the digital trade in goods and expands further on that concept. Digital trade is, on the other hand, more extensively dealt with in MSITS 2010, which draws attention to the rapid development of the digital trade in services and the statistical treatment of specific transactions falling within its scope.

One of the main methodological challenges impeding the development of statistics on digital trade relates to the identification of optimal data sources. The Handbook on Measuring Digital Trade is, to a large extent, devoted to the analysis of potential data sources. In that respect, the Handbook makes a fundamental distinction between data sources that can be mined in order to measure digitally ordered trade and those that can be used to measure digitally delivered trade.

The Handbook identifies seven key data sources that can be used to measure digitally ordered

trade, namely enterprise surveys, household surveys, credit card data, data from other payment processing firms, data on de minimis trade, customs authority statistics and private data sources, and analyses the strengths and limitations of those sources.

The Handbook notes that business surveys, including the European Commission Community Survey on ICT Usage and E-commerce in Enterprises and the OECD Model Survey on ICT Usage by Businesses, have provided invaluable statistics on e-commerce in many developed economies over the last decade or so. In recent years, and in recognition of the importance of international trade, many business surveys have been expanded to include additional questions on trade. It should be noted, however, that those surveys sometimes provide more relevant data on exports than on imports.

In contrast, household-based surveys can be used to estimate digitally ordered imports and the complementarity between enterprise surveys and household surveys could facilitate the use of mirror statistics in that area.

In addition, the Handbook explains that enterprise-based surveys that include questions that separately identify sales by producers made via digital intermediary platforms can be used to estimate intermediation service fees for producers, provided that those surveys contain questions to differentiate between sales made using non-resident and resident platforms.

On the other hand, household surveys may prove particularly useful for those wishing to estimate expenditure on digitally delivered products. Household surveys can also be useful in efforts to estimate expenditure abroad and tourist expenditure in the compiling economy.

Specific questions could be added to either conventional household expenditure surveys or to international travel surveys to identify the share of expenditure on accommodation and travel services purchased abroad that was digitally ordered. Similarly, conventional household income surveys could be used to ask households if they provided (and the value of) short-term accommodation services via digital intermediation platforms.

A promising area being explored by many countries, especially with respect to business-to-consumer (B2C) international transactions, concerns the analysis of credit card data, which can be used to differentiate between two transaction modes, namely those in which the card was present and those in which the card was not, providing meaningful proxies for transactions that were not digitally ordered and those that were.

Measuring the digital trade in goods is closely related to measuring de minimis trade, as digital trade, and especially B2C digital trade, is almost always under de minimis thresholds. The Handbook notes that data from various sources, including the national postal service, customs authorities, credit card companies and estimation models can be used to generate estimates of de minimis trade and, by extension, of B2C digital trade in goods.

In its conclusion, the Handbook strongly encourages the use of enterprise surveys and the mainstreaming of additional questions pertaining to trade and digital ordering in structural business surveys.

As regards potential data sources that can be mined to measure digitally delivered trade, the Handbook identifies five key data sources, namely international trade in services surveys,

international transactions reporting system (ITRS) data, administrative tax data, household surveys and, for digital financial services, data from non-bank entities.

From the outset, the Handbook notes that international trade in services surveys provide perhaps the best survey vehicle for developing estimates of digitally delivered trade in services, although it is important to note that those surveys often fail to capture household-to-household transactions effectively, and particularly household-to-household transactions facilitated by digital intermediation platforms. The Handbook argues that international trade in services surveys can be enhanced through the inclusion of a supplemental question asking respondents to estimate the share of exported and imported services (by product) that were delivered digitally.

To facilitate the generation of exhaustive statistics on digitally delivered services, the Handbook recommends that additional questions should be included in international trade in services surveys with regard to exports of digital intermediation services, disaggregated by type of service being intermediated, and on imports of intermediation services provided by digital intermediation platforms.

Countries that rely heavily on ITRS in the collection of trade in services statistics can extrapolate data from that System to estimate the scale of digitally delivered services, at least for large enterprises that provide digitally delivered services.

Administrative data, including data on value added tax (VAT) can also be used to generate statistics on digitally delivered trade.

Household surveys can be used not only to measure the scale of digitally ordered trade in goods and services but also, to a certain extent, to measure digitally delivered trade in services, especially if those surveys include questions asking respondents to estimate the share of their expenditure spent on digitally delivered services by specific product, following, at a minimum, the Classification of Individual Consumption According to Purpose (COICOP) classification.

Finally, data provided by non-bank entities can be used to generate statistics on digital financial services. A major challenge in that regard is that non-bank operations are usually packaged as a single product, although they cover distinct telecommunications, financial services and technical intermediation services related to the deposit, withdrawal, transfer and foreign exchange conversions of money, to the transmission of text messages notifying senders and recipients of funds transferred and balances on their accounts, and to fees charged by agents facilitating the conversion of cash into virtual mobile money and vice-versa.

Numerous non-bank entity data sources can, potentially, be used to measure the scale of cross-border digital financial services. For example, dedicated surveys conducted by telecommunication companies that have developed and marketed mobile money applications can provide key information on the gross flows involved and on the fees paid to intermediaries involved, including resident mobile money agents, non-resident integration partners and non-resident telecom partners.

Resident integration technical partners are another potential source of information. A limited set of questions addressed to partners operating in that area could provide critical

information while causing little inconvenience to respondents.

Modelling could also be implemented on the basis of key data on exchange rate margins.

Finally, partner country data on credits received by counterparty telecom companies for roaming charges and the purchase of virtual money by non-residents, in addition to surveys of resident agents working for non-resident telecom companies providing international mobile money services, could be used when international mobile money transfers are executed using the roaming telephone facility.

The final and most important part of the study that forms the basis of this report was conducted with a view to assessing the status, trends and challenges associated with the development of international digital trade statistics in Arab countries. More specifically, the study aimed to facilitate understanding of the current state of play, challenges and potential projects associated with the generation and dissemination of statistics on digital trade in ESCWA member countries.

The analysis was conducted through the development of a questionnaire and the responses received in that regard from the statistical authorities in ESCWA member countries.

The questionnaire, entitled “UNESCWA stocktaking questionnaire on the availability of international digital trade statistics in its member countries”, attached in the Annex to the present report, addressed four main issues, namely:

Data production and dissemination.
Methodological references, concepts and definitions.

Data sources, compilation and estimations.
Priorities and projects.

The section entitled “Data production and dissemination” was drafted with a view to enhancing understanding of the data produced and disseminated in the respondent’s country, including the indicators used and how data was disaggregated. The section also contained questions regarding the available metadata.

The section entitled “Methodological references, concepts and definitions” was drafted in order to understand whether any international methodological reference was used in the production of statistics on digital trade in the country in question, whether the statistics on digital trade produced in that country were fully aligned with that international reference, and whether any adaptations to international concepts and methodologies were necessary in order to generate high-quality statistics on digital trade in that country.

The section entitled “Data sources, compilation and estimations” was drafted to enhance understanding of the main data sources used to compile indicators and the key challenges impeding the development and calculation of relevant indicators.

The final section, entitled “Priorities and projects” was drafted to deepen understanding of digital trade statistical development priorities and projects in the country in question, including in connection with expanding economic activity and institutional sector coverage and in terms of geographical breakdown.

The questionnaire was thus conceived in order to provide detailed information on the state of play with regard to digital trade statistics production

and dissemination, the methodologies adopted in the compilation of those statistics, the main data sources used and the compilation practices implemented in that process. The questionnaire also aimed to enhance understanding of the major challenges faced by countries in the area of digital trade statistics and their projects and priorities in that area.

The sections outlined above were preceded by an introduction in which all concepts used in the questionnaire were fully explained. The methodology followed in the development of the questionnaire was based on the Handbook on Measuring Digital Trade, including its definitions of digital trade, digitally ordered trade, digitally delivered trade, digital intermediation platforms and fee-based digital intermediation platforms.

Six ESCWA member countries, namely Iraq, Morocco, Palestine, Qatar, Saudi Arabia and Yemen, submitted responses to the questionnaire. However, only one of those six countries, namely Morocco, indicated that it currently produces official statistics on international digital trade. All the other countries indicated that they did not generate any official statistics on international digital trade. They therefore only completed the final section of the questionnaire, entitled "Priorities and projects".

As for countries' priorities and projects relating to the development and coverage of indicators (question 16), what is striking is that the six countries had markedly different priorities in that area. Nonetheless, a clear hierarchy among the indicators emerges in terms of the priority attributed by each country to their development.

As for the priorities and projects relating to the development of statistics on international digital

trade in terms of economic activity, institutional sector or geographical breakdown (question 17), the six countries again had markedly different priorities, with, for example, Iraq and Saudi Arabia attributing a low level of priority to the development of breakdowns and Yemen viewing the development of most of breakdowns as a matter of high priority.

Overall, the responding countries tended to rank most of the breakdowns as a matter of intermediate priority, although three countries, namely Palestine, Saudi Arabia and Yemen, viewed the generation of data disaggregated by type of digital trade as a matter of high priority. It should also be underlined that three responding countries, namely Morocco, Qatar and Saudi Arabia, are considering projects relating to the development of a wide range of international digital trade indicators and breakdowns.

In conclusion, although only six countries responded to the questionnaire, their responses highlighted a number of interesting facts, including that countries had markedly different priorities in terms of their efforts to develop international digital trade indicators and in terms of their efforts to develop projects to facilitate the generation of those statistics. Nonetheless, there is a clear hierarchy among the indicators and breakdowns in terms of the priority attributed by each country to their development.

Naturally, additional responses to the questionnaire would be welcome, as those would further enhance understanding of international digital trade statistics in Arab countries and facilitate efforts by policy makers to support the generation of those statistics across the Arab region.

Key messages

- *Digital trade is a priority area for most countries, but digital trade statistics are still in their infancy. The only recent statistical methodological framework in this area is the 2019 OECD-WTO-IMF Handbook on Measuring Digital Trade.*

- *International trade in goods, including digital trade in goods, has been adversely affected by logistical disruptions during the pandemic. However, international trade in services has increased, mostly as a result of the redistribution of trade among GATS Modes of Supply.*

- *One of the main methodological challenges impeding the development of statistics on digital trade is the identification of optimal data sources. The Handbook on Measuring Digital Trade provides an analysis of potential data sources and makes a fundamental distinction between data sources that can be mined to measure digitally ordered trade and those that can be used to measure digitally delivered trade.*

- *Arab States have different priorities in terms of their efforts to develop international digital trade indicators and breakdowns. Priority areas include the value of exports and imports digitally ordered and/or delivered (total international digital trade) with a distinction between goods and services; the value of exports and imports that were digitally ordered via a fee-based digital intermediation platform with a distinction between goods and services; and the breakdown by type of digital trade.*

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Introduction

As highlighted above, the present report provides an overview of a study conducted on the basis of the recommendations of the High-level Seminar on the Future of Economic Statistics for the Arab Region, organized by Cluster 4 on Statistics, Information Society and Technology at ESCWA in January 2020 in cooperation the United Nations Statistics Division and the Islamic Development Bank. The Seminar was held in Riyadh and hosted by the General Authority for Statistics of Saudi Arabia.

Cluster 4 is a multi-stakeholder regional platform for deliberation, consensus building, peer learning, and policy solutions to strengthen the institutional framework for official statistics in the Arab region, enhance the production and use of harmonized, timely and reliable statistics for evidence-based policymaking, facilitate the measurement of national and regional progress towards the implementation of the 2030 Agenda for Sustainable Development and advance the emergence of the information society in the Arab region while promoting the integration of technology and innovation for inclusive and sustainable development.

The High-level Seminar identified a number of regional priorities in the area of economic statistics, including the importance of digitalization in e-commerce and global value chains. The Seminar also underscored the role played by multinational enterprises and the

importance of national and regional input-output tables, trade data sharing and trade asymmetry, all of which should be addressed by economic statistics systems.

The Seminar concluded that the conceptual framework for economic statistics systems should be updated in order to incorporate new measures of economic activity while also taking into account technological progress, demographic, environmental and social change, urbanization, globalization and digitalization dynamics. Statistics systems should provide for the elaboration of broader measures on equitable and sustainable economic performance. To achieve that objective, efforts must be made to develop a collaborative regional economic statistics system that supports evidence-based policymaking and promotes implementation of the 2030 Agenda for Sustainable Development.

In that context, and in line with the principles set out in the Handbook on Measuring Digital Trade, ESCWA signed an agreement with the Islamic Development Bank to conduct a pilot study on a priority area identified during the Seminar, namely the measurement of digital trade in the context of national accounts. That study incorporated elements of the methodological framework that are relevant to Arab countries.

1. Overview of key international methodological references and information available in international databases

In this section we provide an overview of key international methodological references relating to the measurement of digital trade and briefly analyse the information currently available in international databases in that regard.

In recent years, the international statistical community has devoted increasing attention to digital trade, and has striven to enhance the generation of internationally-harmonized high-quality data so that relevant stakeholders can effectively monitor its development. The interest of the international community reflects the increasing attention being given to the information society, the digital economy, e-commerce, ICT trade and ICT-enabled trade.

Before moving forward in this discussion, it is important to provide a definition of digital trade. As mentioned previously, the study outlined in this report adopted the conceptual framework set out in the OECD-IMF-WTO Handbook on Measuring Digital Trade, which defines digital trade as “all trade that is digitally ordered and/or digitally delivered”. The Handbook further defines digitally ordered trade, sometimes known as e-commerce as “the international sale or purchase of a good or service conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders”. In turn, digitally delivered trade is defined as “international

transactions that are delivered remotely in an electronic format, using computer networks specifically designed for the purpose”.

At the present time, it is broadly accepted that only services can be digitally delivered, although there is now debate among stakeholders and policymakers as to whether trade based on 3D printing should be classified as the digital delivery of goods.

For both digitally ordered and digitally delivered trade, the transactions covered correspond to orders/deliveries made over the computer networks, including through the use of mobile devices, organizational extranets or via electronic data interchange (EDI), while all transactions on goods or services not ordered or provided over computer networks, including transactions on goods or services ordered or provided via phone, fax or manually typed email are excluded.

Other important definitions that should be borne in mind in any discussion on the measurement of digital trade are provided below.

E-commerce: an e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders (OECD, 2011). E-commerce hence incorporates both domestic and international

transactions while digital trade, which lies at the core of the study outlined in this report, consists of international transactions only.

Digital intermediation platforms: these include two distinct categories of platform, namely (a) platforms that generate revenues through intermediation fees, regardless of whether or not those fees are paid explicitly (fee-based digital intermediation platforms) and (b) platforms that generate revenues through advertising and/or data streams (free digital intermediation platforms).

Fee-based digital intermediation platforms are 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 rendering the services that are being sold (intermediated).

Fee-based digitally intermediated platform services are defined as online fee-based intermediation services enabling transactions between multiple buyers and multiple sellers, without the intermediation platform taking economic ownership of the goods or rendering services that are being sold (intermediated).

Free digital intermediation platforms are platforms providing digital services to multiple end users that are financed through advertising and/or data revenues paid by units seeking to sell goods and services to end users rather than charging those users explicit fees for the digital services that they receive. Free digital intermediation platforms are therefore a subset of what are known as data- and advertising-driven digital platforms.

The present report now provides an overview of a number of key international methodological references that are relevant to the measurement

of digital trade, and the data that can be accessed on that issue in international databases. That overview is provided within the context of the following specific issues:

- (a) Digital trade during the pandemic;
- (b) Advances in the measurement of digital trade;
- (c) Alignment of the Handbook on Measuring Digital Trade with the Balance of Payments and International Investment Position Manual, sixth edition and other key reference manuals;
- (d) Balance of payments and economic statistics.
- (e) Traditional and alternative data sources.

A. Digital trade during the pandemic

Globally, the COVID-19 pandemic has had a far-reaching, deep and devastating economic impact, including on international trade. Furthermore, although the pandemic has resulted in a sharp contraction in global trade volumes, it is also likely to have a profound medium- to long-term impact on the ways in which trade takes place.

In contrast to what has occurred in domestic e-commerce, the adoption of new trade modalities has yet to have a significant impact on digital global trade volumes. Nonetheless, a shift from traditional trade mechanisms to digital trade appears to have taken place. That shift could persist beyond the pandemic and usher in a new era in global trade.

To gain a deeper understanding of the impact of the pandemic on digital trade, it is important to consider the overall impact of the pandemic on e-commerce at the global level. The following is a short review of recent literature on that issue.

1. Pre-pandemic developments in the digital economy

The last decade has seen an accelerating transition towards a digital economy in which ICT plays an increasing role in the production, consumption and exchange of the majority of goods and services (UNCTAD, 2021). It should however be borne in mind that estimates of the size of the digital economy vary considerably, ranging from some 4.5 to 15.5 per cent of world gross domestic product (GDP) because of differences in the definition of key terms and measurement challenges.

By any standard, the increasing significance and rapid growth of e-commerce in global economic activity are clear, regardless of definitional variations among different analysts (UNCTAD, 2021). According to Lipsman (2019), whose analysis is based on a study conducted by eMarketer, a subscription-based market research company, the share of global retail trade accounted for by e-commerce increased from 10.4 per cent in 2017 to 14.1 per cent in 2019.

UNCTAD (2021b) estimates, on the other hand, that the global value of e-commerce sales (including both domestic and international business-to-business (B2B) and business-to-consumer (B2C) transactions) reached almost \$26.7 trillion in 2019, accounting for 30 per cent of GDP and representing growth of 4 per cent over 2018. The value of global B2B e-commerce was estimated at \$21.8 trillion, representing 82 per cent of all e-commerce. The value of B2C e-commerce was estimated at \$4.9 trillion in 2019, an increase of 11 per cent over 2018.

Almost 1.5 billion people shopped online in 2019 (UNCTAD, 2021b). This is 7 per cent higher than in 2018. While the majority of online shoppers buy, primarily, from domestic suppliers, some 360 million online shoppers made cross-border purchases in 2019 – around one in four online shoppers. It has, moreover, been estimated that the share of cross-border online shoppers to all online shoppers rose from 20 per cent in 2017 to 25 per cent in 2019.¹ More specifically, UNCTAD (2021b) estimates that international B2C e-commerce sales amounted to some \$440 billion in 2019, an increase of 9 per cent over 2018, and accounting for approximately 9 per cent of total B2C e-commerce.

Against that background, the share of total service exports accounted for by digitally delivered services rose from 45 per cent to 52 per cent between 2005 and 2019 (UNCTAD, 2021).

2. COVID-19 and the global economy

The pandemic has resulted in the worst economic contraction since the Great Depression, creating an unprecedented crisis for world trade and investment. Lockdown measures, travel restrictions and social distancing abruptly halted many habitual economic and social activities, and a large proportion of the world's population has had to rely to an increasing degree on digital technologies, innovations and solutions in a range of areas, from health care and education to work, commerce and trade (Commonwealth, 2021).

In that context, the year 2020 was the first in recent times in which global GDP contracted

¹ Cross-border shoppers are shoppers who purchase from websites located outside their own country. Following the transaction, the goods are delivered to the overseas location where the purchaser is located.

in real terms, an outcome was almost certainly repeated in 2021. Indeed, according to WTO, the COVID-19 pandemic caused a contraction in merchandise trade of 8 per cent and a decline in trade in commercial services of 21 per cent year-on-year in 2020 (WTO, 2021b).

More specifically, restrictions on movement and other interventions to protect public health have reduced economic activity in most sectors and most countries, affecting production, distribution and consumption (UNCTAD, 2021). The global economy was predicted in October 2020 to shrink by at least 4 per cent over the year, rather than growing by 4 per cent or more as previously anticipated (IMF, 2020) while, according to the Netherlands Bureau for Economic Policy Analysis, global trade in goods fell by almost 18 per cent in May 2020 compared with the same month in 2019.

The COVID-19 pandemic has altered trade patterns substantially, at least in the short term (UNCTAD, 2021). It has reduced the volume and shifted the balance of international trade, disrupting traditional supply chains and putting additional pressure on transport, logistics and border controls. It has encouraged the growth of online shopping and services in domestic markets where movement controls and consumer anxiety have discouraged physical transactions. Globally, the pandemic has thus caused a sharp deceleration in economic activity for which economies were largely unprepared.

3. Covid-19 and the digital economy

At the outset, it is important to underscore that digitalization is largely invisible in statistics on trade and GDP (UNCTAD, 2021).

That said, the COVID-19 pandemic has illustrated the value of ICT in enabling economic activity to continue despite the dramatic curtailment of movement of goods and people that has taken place (UNCTAD, 2021). Office workers worldwide have been required or encouraged to work from home, or have preferred to do so, using the Internet and messaging and videoconferencing platforms to do work that was previously performed in office, while international business travel has been largely displaced by videoconferencing on digital platforms. Digitalization has thereby mitigated much of the economic damage caused by the pandemic, an experience that may lead to lasting changes in work patterns with a continued reliance on digital technologies for those who work in offices when the crisis recedes.²

For example, the application of digital solutions to sustain business activity and consumption emerged as a natural response to cope with social distancing and restrictive measures in Latin America and the Caribbean (Economic Commission for Latin America and the Caribbean (ECLAC), Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021). This has accelerated an existing trend in the region. In particular, e-commerce has thrived, allowing

² In addition to an increased use of digital platforms, the development and use of digital government services has accelerated in order to ensure business continuity in the public sector.

those businesses that opened or strengthened digital sales channels as the pandemic unfolded to keep afloat and remain solvent during the crisis.

4. COVID-19 and e-commerce

The COVID-19 pandemic has had a multifaceted impact on the development of e-commerce, both in terms of volumes and in terms of structure. Again, it is important to remember that e-commerce refers to both domestic and international transactions while digital trade, which will be the subject of the next section, specifically refers to international transactions.

It should be underlined that there are significant limitations to the evidence base on which such analyses can be developed (UNCTAD, 2021). Indeed, few countries publish official statistics in that area and many countries that do so often fail to comply with relevant international guidelines.

Indeed, while there has been a substantial reduction in overall economic activity during the pandemic, there has been significant growth in e-commerce, particularly in domestic markets where movement restrictions and consumer anxiety with regard to social interaction have encouraged online shopping (UNCTAD, 2021).

As it will be seen in the next section, the pandemic has reduced the value and volume of international e-commerce but has accelerated the adoption of e-commerce in domestic retail (UNCTAD, 2021). Most e-businesses surveyed by UNCTAD reported disruptions to supply chains due to lockdowns, movement restrictions, business closures and closed

borders, reinforcing pre-existing bottlenecks. It is estimated, for example, that some 65 per cent of airports in the Arab region were fully closed early in the pandemic, along with a significant proportion of land border crossings. ESCWA anticipated a 22 per cent fall in road freight transport in the region in 2020 compared with 2019 (United Nations, ESCWA, 2020).

A few additional figures can help illustrate those trends. For example, eMarketer, a subscription-based market research company, forecast prior to the COVID-19 pandemic that global retail would expand by 4.4 per cent to reach \$26,460 trillion in 2020, with e-commerce growing by 18.4 per cent to \$4,105, equivalent to 15.5 per cent of total retail by value. In the light of the pandemic, eMarketer has reduced those estimates by 10 and 2 per cent respectively, with e-commerce thereby accounting for a higher share in total retail than previously expected.

In fact, online retail sales increased at above average rates in 2020 (UNCTAD, 2021b).³ Online retail sales as a share of total retail sales jumped by 3 percentage points in 2020 (from 16 to 19 per cent) compared to a 2 percentage point rise between 2018 and 2019. Notably, quarantine restrictions imposed in many countries in order to contain the COVID-19 pandemic increased the online ordering of physical goods. Overall, retail sales declined by 1 per cent in 2020 while online retail grew by 22 per cent.

While overall global trends are clear, it is important to underline that different retail patterns have emerged as a result of the pandemic in different parts of the world, including within the Arab region.

3 As stated previously, this mostly reflects increases in domestic online transactions whereas international online transactions, as will be detailed in the next section of the present report, have, to a large extent, been negatively affected by the COVID-19 pandemic.

UNCTAD (2021), for example, notes that countries within the Arab region have had very different experiences, with a significant difference apparent between Gulf Cooperation Council (GCC) member States and middle-income developing Arab countries around the Mediterranean. Higher levels of e-commerce were already evident prior to the pandemic in GCC countries and in certain larger non-GCC Arab markets such as Egypt, (although even in the strongest of those markets e-commerce accounted for less than 5 per cent of total retail sales). As elsewhere, domestic e-commerce has accelerated during the pandemic, but ESCWA reports that there are still many challenges to growth.

North African food-tech businesses reported to the Economic Commission for Africa (ECA) that the growth of some 20 per cent that they have seen in transaction volumes during the pandemic has resulted partly from the redirection of potential customers towards their websites in response to movement restrictions and associated guidelines (UNCTAD, 2021).

It is also important to emphasize that the pandemic has had an impact not only in terms of e-commerce volumes but also in terms of content.

For example, demand for medical supplies, and particularly for personal protective equipment has surged, while demand for digital equipment to facilitate online work and entertainment has also increased (UNCTAD, 2021). The shift from office to home working and the closure of public entertainment venues have led to substantial increases in demand for videoconferencing and digital entertainment services.

The impact of the pandemic and related restrictions on the sale of online services has varied according to the extent to which those

services are associated with entertainment or with tourism and other activities that require a degree of mobility, particularly in the light of stay-at-home policies and school closures (ECLAC, Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021). Online education, video and audio streaming, as well as online banking have increased in importance while expenditure on travel, tourism and hospitality services has fallen. Delivery services are perhaps those services that have experienced the highest growth during the COVID-19 pandemic as they have enabled consumers to continue to shop and businesses to remain active.

Finally, it should be underscored that the rise in e-commerce activity has mostly occurred within countries, with an increase in the frequency of purchases and the range of goods and services bought online (ECLAC, Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021). Domestic e-commerce seems to have expanded in particular among lower-income segments of the population. Cross-border e-commerce, on the other hand, appears to have been adversely affected by disruptions in international transport and logistics networks and by updated border clearance procedures, particularly in the early stages of the pandemic.

5. COVID-19 and digital trade

Against that background, the ongoing disruptions to international trade have enhanced understanding of the importance of international e-commerce, including digital trade facilitation, in sustaining economic activity, and have helped to underscore the need for accelerated efforts to promote digitalization throughout supply chains (UNCTAD, 2021).

In that regard, it is important to distinguish between goods and services in discussions of the impact of COVID-19 on digital trade.

International goods e-commerce has been adversely affected by restrictions on cross-border transit imposed by governments to impede virus transmission and by reductions in transport capacity as a result of restrictions on movement and reduced demand for passenger flights (UNCTAD, 2021). Those factors have affected all trade that depends on international transit and delivery, including consignments ordered through B2B and B2C e-commerce platforms.

Border closures, which have been implemented by almost all countries at some point during the pandemic, have severely restricted shipping and other forms of transportation, causing significant disruptions to supply chains in both traditional trade and e-commerce (UNCTAD, 2021). Disruptions to transport and logistics services have hampered cross-border e-commerce activity (Commonwealth, 2021) and both supply and demand have been adversely affected. Furthermore, lockdowns, restrictions on movement, work from home arrangements for border agency personnel and closed borders have had a devastating impact on merchandise flows and supply chains, including in the Latin America and Caribbean region (ECLAC, Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021).

In that region, the major factor affecting cross-border merchandise e-commerce during the pandemic has been the disruption in air and maritime transport. Most cross-border flows of merchandise originating in e-commerce transactions are transported using passenger aircraft. As passenger numbers fell, cargo capacity decreased sharply and led to a sharp

contraction in cross-border e-commerce flows and longer delivery times.

Cross-border e-commerce has thus been adversely affected by disruptions to international transport and logistics networks and by more stringent border clearance procedures, particularly in the early stages of the pandemic. (ECLAC, Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021).

Disruptions to global supply chains brought about by restrictions on cross-border air, maritime, and road transport adversely affected international merchandise e-commerce, including those transactions made over B2B and B2C e-commerce platforms. For example, survey data from Russia indicates that, by May 2020, 26 per cent of consumers who previously shopped on international websites reduced the frequency of their purchases, and 32 per cent completely stopped making purchases on those websites. Customs data from Brazil and Uruguay also show a sharp contraction in international parcel shipments during the first part of 2020. Passenger flights, which usually transport small parcels ordered online, fell sharply, although some passenger aircraft were redeployed to carry freight, including, in particular, critical medical and healthcare items such as ventilators and personal protective equipment.

As the pandemic evolved, however, uncertainty diminished, countries' border agencies started to address critical logistical challenges and businesses adjusted to the new economic landscape. As a result, cross-border e-commerce volumes and value recovered slightly in the third quarter of 2020, as indicated by data compiled by United Parcel Service, a multinational shipping and receiving and supply chain management company and by PayPal,

a multinational financial technology company operating an online payments system.

Some observers believe that the lockdowns and restrictions on physical movement that were introduced to combat COVID-19 have resulted in a rapid adoption of e-commerce, both within countries and internationally, in order to keep goods and services flowing (Commonwealth, 2021). For those observers, the digital economy and digital trade have played a central role in mitigating some of the economic losses stemming from the pandemic, and underscore that new opportunities in e-commerce and digital trade arising from the rapid adoption of digital technologies are likely to play a key role in stimulating post-COVID-19 economic recovery.

UNCTAD has underscored that many e-commerce businesses have exploited opportunities arising from the disruption of traditional trading modalities, while McKinsey & Company, a management consulting firm has also reported that cross-border e-commerce volumes picked up from the second quarter of 2020, as economies adjusted to pandemic realities and acute logistical challenges were addressed.

In fact, certain digital products and digital and digitally enabled services have benefited from number of positive shocks associated with COVID-19 (Commonwealth, 2021), and a number of researchers believe that COVID-19 could even lead to significant growth in exports and e-commerce sales. Indeed, emerging evidence suggests that digital trade and the use of digital technologies have helped offset

COVID-19-related economic losses incurred in traditional sectors.

As mentioned above, a distinction should be made between goods and services when discussing the impact of COVID-19 on digital trade. As far as international trade in services is concerned, COVID-19 seems indeed to have had a more positive impact right from the start of the pandemic, mostly through a redistribution of trade among modes of supply.

The pandemic has indeed affected how services are traded, with some suppliers increasingly using digital means to deliver across borders (Commonwealth, 2021). There is substantial evidence of a shift towards increased online trade under GATS Mode 1, namely the cross-border trade in services in which both the supplier and the customer remain in their home countries, including the cross-border trade in digitally deliverable services through online interactions. It seems highly likely that trade has been reduced for GATS Modes 2 and 4 but it is possible that it had also been reduced for GATS Mode 3 (Shepherd and Shingal, 2021).⁴ However, the case of Mode 1 is unique. This involves trade in services taking place through online means, subject to having access to the necessary infrastructure and services. As such, in some sectors, there is a countervailing force in the direction of increased trade in services in Mode 1 specifically, as substitution across modes takes place in response to the pandemic.

For example, at the start of the pandemic, Australia and Canada adopted extensive travel restrictions, with obvious implications for

4 Modes 2, 3 and 4 refer, respectively, to consumption abroad, commercial presence and presence of natural persons. All these modes of supply have been defined in the context of the General Agreement on Trade and Services and their precise definitions can be found in MSITS 2010.

foreign students seeking entry for study purposes. Given the difficulty of safely ensuring in-person interactions, both countries transitioned to online learning for students inside the country, and via GATS Mode 1 trade for those outside. There is however no concrete indication yet that such a shift is taking place in more than a temporary way in response to pandemic-related travel restrictions.

At the same time, demand for digitally deliverable creative content such as streaming media and digital books, music and games increased as a result of the imposition of lockdowns and restrictions on a range of activities (WTO, 2021).

6. Policy responses

Most policy responses to the COVID-19 pandemic crisis in relation to e-commerce and digital trade have focused on the provision of support to domestic e-commerce.

In Latin America and Caribbean, for example, most initiatives supporting firms' engagement in digital trade have focused on the home market. Only a few strategies have been developed to support targeted digital exporters (Economic Commission for Latin America and the Caribbean (ECLAC, Konrad Adenauer Stiftung e.V and Inter-American Development Bank, 2021). Many countries have, however, taken measures to facilitate cross-border trade, delivery and logistics operations. Measures to ensure a safe environment for cross-border and postal operations have included safety and hygiene protocols for specific sectors. Many countries have categorized postal, courier and

other logistic and transport services as essential activities and issued specific protocols so that businesses providing those services can continue their operations, effectively benefiting e-commerce operations.

To ease pressures stemming from the reduced numbers of border officials, requirements for health-related items, including personal protective equipment, ventilators and other critical supplies have been waived. Simplification of customs procedures, such as prioritized and expedited clearance or special modalities for relief consignments, have also been implemented. Beyond those steps, however, few countries in the Latin America and Caribbean region have stepped up efforts to address structural challenges in trade facilitation and logistics, except for the digitalization of customs processes.

UNCTAD (2021) reports that, in Kuwait, the Government asked telecommunications operators to provide free Internet services for a period each day for a month during the pandemic, while in Oman measures were adopted to avoid loss of service to customers and businesses facing cash flow problems. In Lebanon, OGERO, the main fixed voice and broadband Internet and data services provider, added extra capacity at no cost to users and urged users to use their Internet connections more responsibly. Finally, in Qatar, the regulatory authorities worked with operators to double Internet speeds for residential customers and the volume of data made available to mobile customers at no additional cost⁵.

⁵ Those measures may, however, have negatively affected the quality of Internet services provided in certain countries, as no specific steps were taken at the same time to upgrade countries' existing Internet infrastructure.

B. Advances in the measurement of digital trade

As mentioned previously, the production of statistics on digital trade is still in an early stage of development in most countries. Furthermore, the data that are produced are not always generated in line with relevant international standards.

As a consequence, there are few international statistical databases containing specific data on digital trade. The few international databases that can be accessed with a view to analyzing

digital trade developments include the databases compiled by Eurostat, UNCTAD and OECD. Those databases are discussed below.

1. The Eurostat database

The Eurostat database, available at <https://ec.europa.eu/eurostat>, includes data on digital trade under the path Database by themes /Science, technology, digital society/Digital economy and society/ICT usage in enterprises/ Value of e-commerce sales. This folder includes the following datasets:

Time	2011-2020
Geopolitical entity (reporting)	40 reporting entities, including the 27 member States of the European Union.
Information society indicators	<p>Most relevant indicators for the analysis of digital trade include:</p> <ul style="list-style-type: none"> • Enterprise turnover from e-commerce sales to other European Union countries. • Enterprise turnover from e-commerce sales to non-European Union countries.
Other indicators of major interest	<ul style="list-style-type: none"> • Enterprise turnover from e-commerce sales to own country. • Enterprise total turnover from e-commerce sales. • Enterprise turnover from web sales via own websites or online applications. • Enterprise turnover from web sales via e-commerce marketplaces. • Enterprise turnover from web sales. • Enterprise turnover from EDI-type sales. • Enterprise turnover from web sales (B2C). • Enterprise turnover from web sales (B2B and business-to-government (B2G)). <p>In total, 13 indicators are available, all of which are of interest in the analysis of digital trade within the European Union or between the Union and the rest of the world.</p>

Time	2011-2020
Units of measure	<ul style="list-style-type: none"> • Percentage of turnover. • Percentage of turnover from e-commerce. • Percentage of web sales.
Enterprise size and status under the European Union Classification of Economic Activities (NACE Rev. 2 classification)	A total of 54 possible queries regarding a wide range of size-classes and NACE Rev.2 items.
Time frequency	Annual

In addition, the Eurostat database includes other data that can facilitate analysis of digital trade under the path Database by themes/Science, technology, digital society/Digital economy and society/ICT usage in enterprises. That database component includes the following folders of particular relevance:

E-commerce sales. This folder includes the following datasets:

Time	2011-2020
Geopolitical entity (reporting)	41 reporting entities, including the 27 member States of the European Union.
Indicators	<ul style="list-style-type: none"> • Enterprises with e-commerce sales to other European Union countries. • Enterprises with e-commerce sales to non-European Union countries. • Enterprises with web sales to foreign countries (European Union and/or non-European Union countries).
Units of measure	<ul style="list-style-type: none"> • Percentage of enterprises. • Percentage of enterprises with web sales. • Percentage of enterprises receiving e-commerce orders in the last calendar year.
Enterprise size and NACE Rev. 2 classification	A total of 54 possible queries regarding a wide range of size-classes and NACE Rev.2 items.
Time frequency	Annual

E-commerce purchases. This folder includes the following datasets:

Time	2009-2018
Geopolitical entity (reporting)	41 reporting entities, including the 27 member States of the European Union
Indicators	<ul style="list-style-type: none"> Enterprises purchasing online; (at least 1% of total purchases). Enterprises purchasing online (at least 1% of orders) Enterprises purchasing online from suppliers located in the same country. Enterprises purchasing online from suppliers located in other European Union countries. Enterprises purchasing online from suppliers located in non-European Union countries. Enterprises purchasing online from suppliers located abroad (European Union and/or non-European Union countries).
Units of measure	<ul style="list-style-type: none"> Percentage of enterprises. Percentage of enterprises sending e-commerce orders in the last calendar year.
Enterprise size and NACE Rev. 2 classification	A total of 54 possible queries regarding a wide range of size-classes and NACE Rev.2 items.
Time frequency	Annual

Other important datasets can be found under the path Database by themes/Science, technology, digital society/Digital economy and society/ICT usage in households and by individuals/E-commerce. That database component includes the following folders of particular relevance:

Internet purchases origin of sellers. This folder includes the following datasets:

Time	2020
Geopolitical entity (reporting)	A total of 37 reporting entities, including the 27 member States of the European Union.
Indicators	<ul style="list-style-type: none"> Online purchases from national sellers. Online purchases from sellers from other European Union countries. Online purchases from non-European Union sellers. Online purchases from sellers from unidentified countries.

Time	2020
	<ul style="list-style-type: none"> Online purchases from sellers. from suppliers located abroad (European Union and/or non-European Union countries).
Individual type	All individuals and 74 categories according to age, level of education, professional status, gender, origin, nationality, characteristics of the household, place of residence (cities vs. rural areas) and ICT access.
Units of measure	<ul style="list-style-type: none"> Percentage of individuals. Percentage of individuals who have used the Internet within the last year. Percentage of individuals who have used the Internet in the last three months.
Time frequency	Annual

Other important data on e-commerce can be found under the same database component. These are briefly described below:

Internet purchases by individuals. This folder includes the following datasets:

Time	2020
Geopolitical entity (reporting)	A total of 37 reporting entities, including the 27 member States of the European Union.
Indicators	A total of 11 indicators are available on the last online purchase and the frequency of online purchases.
Individual type	All individuals and 74 categories according to age, level of education, professional status, gender, origin, nationality, characteristics of the household, place of residence (cities vs. rural areas) and ICT access.
Units of measure	<ul style="list-style-type: none"> Percentage of individuals. Percentage of individuals who have used the Internet in the last year. Percentage of individuals who have used the Internet in the last three months. Percentage of individuals who have purchased online in the last three months.
Time frequency	Annual

Another folder on internet purchases by individuals, which covers the period 2010-2019, is also available. That folder features other indicators but with almost the same characteristics for other parameters:

Time	2010-2019
Geopolitical entity (reporting)	A total of 44 reporting entities, including the 27 member States of the European Union.
Indicators	A total of 57 indicators are available on the last online purchase and the frequency of online purchases, including a disaggregation by type of goods or services purchased and the mode of online purchase (downloaded or accessed from websites or online applications), and the nationality of sellers (nationals, those in other European Union countries, those in non-European Union countries).
Individual type	All individuals and 98 categories according to age, level of education, professional status, gender, origin, nationality, characteristics of the household, place of residence (cities vs. rural areas) and ICT access.
Units of measure	<ul style="list-style-type: none"> • Percentage of individuals. • Percentage of individuals who have used the Internet in the last year. • Percentage of individuals who have used the Internet in the last three months. • Percentage of individuals who have purchased online in the last three months. • Percentage of individuals who have ordered goods or services for private use in the last year. • Percentage of individuals who have purchased online in the last three months. • Percentage of individuals who have purchased online from sellers from other countries.
Time frequency	Annual

Internet purchases – goods or services. This folder features the following datasets:

Time	2020
Geopolitical entity (reporting)	A total of 37 reporting entities, including the 27 member States of the European Union.
Indicators	A total of 39 indicators on online purchases from private persons, with a breakdown according to the type of goods or services purchased, including different types of digital goods, further distinguishing among purchases from other private persons, streaming services, and other online applications.

Time	2020
Individual type	All individuals and 74 categories according to age, level of education, professional status, gender, origin, nationality, characteristics of the household, place of residence (cities vs. rural areas) and ICT access.
Units of measure	<ul style="list-style-type: none"> • Percentage of individuals. • Percentage of individuals who have used the Internet in the last year. • Percentage of individuals who have used the Internet in the last three months.
Time frequency	Annual

As mentioned above, other international databases include statistics that are of interest in the analysis of developments in the digital economy, even though they may not relate directly to digital trade. A brief overview of those databases is provided below:

2. The United Nations Conference on Trade and Development database

The UNCTAD database, available at unctadstat.unctad.org, provides data on indicators that are key to understanding the nature of digital trade at the global level, even though they do not measure the scale or value of digital trade directly.

Under the “Digital economy” component of the database, several folders of interest in the analysis of digital trade can be found. A brief overview of those folders is provided below.

Core indicators on ICT use in business by location type. This folder includes the following datasets:

Time	2003-2016
Economy	Covers 14 countries from various parts of the world, including Egypt, Lebanon and the United Arab Emirates.
Indicators	A total of 25 indicators, including the following: <ul style="list-style-type: none"> • Proportion of businesses using the Internet for delivering products online. • Proportion of businesses receiving orders over the Internet. • Proportion of businesses placing orders over the Internet.
Location type	Urban and rural.
Unit of measure	Percentage
Time frequency	Annual

Core indicators on ICT use in business by enterprise size-class. This folder includes the following datasets:

Time	2003-2016
Economy	Covers 83 countries from various parts of the world.
Indicators	<p>A total of 25 indicators, including the following:</p> <ul style="list-style-type: none"> • Proportion of businesses using the Internet for delivering products online. • Proportion of businesses receiving orders over the Internet. • Proportion of businesses placing orders over the Internet.
Enterprise size-classes	<ul style="list-style-type: none"> • More than 10 employees (total). • Small (10-49 employees). • Medium (50-249 employees). • Large (more than 250 employees).
Unit of measure	Percentage
Time frequency	Annual

The same core indicators with similar parameters are also made available in the following folders:

Core indicators on ICT use in business by industrial classification of economic activity, 2003-2015: 29 economic activities are distinguished based on the ISIC Rev. 3.1 classification.

Core indicators on ICT use in business by industrial classification of economic activity, 2003-2016: 35 economic activities are distinguished based on the ISIC Rev. 4 classification.

International trade in digitally-deliverable services, value, shares and growth, annual.
This folder contains the following datasets:

Time	2005-2020
Economy	Covers 414 countries and geographical, development, economic and political groupings from all parts of the world, including all ESCWA member States, the Arab Mashreq countries, the Arab Maghreb countries and the Arab Least developed countries.
Flow	Exports and imports.
Units of measure	<ul style="list-style-type: none"> • United States dollars at current prices. • Growth rate. • Percentage of world total. • Percentage of total trade in services.
Time frequency	Annual

3. Organisation for Economic Co-operation and Development database

The OECD database, available at stats.oecd.org, does not include statistics on the value of digital trade but does include two key datasets, namely ICT access and usage by businesses, and ICT access and usage by households and individuals, that can enhance understanding of the development of e-commerce in various economies.

ICT access and usage by businesses

The ICT Access and Usage by Businesses dataset includes data under 51 indicators assessed on the basis of the OECD Model Survey on ICT Usage by Businesses, 2nd revision.

The selected indicators originate from two sources:

- (a) An OECD data collection exercise conducted in the following countries: Australia, Brazil, Canada, Colombia, Japan, Mexico, New Zealand, the Republic of Korea, Switzerland and the United States of America. The data collection methodology followed by each country is made available in its associated metadata file;
- (b) Eurostat statistics on businesses in OECD countries that are part of the European statistical system. For those countries, indicators shown in the database refer to the original indicator as published by Eurostat.

For all countries, the breakdowns used correspond to those used by Eurostat, unless otherwise stated in the metadata.

More specifically, the ICT access and usage by businesses dataset covers the following:

Time	2005-2020
Economy	A total of 38 countries and groupings, including the European Union member States of OECD.
Indicators	<p>A total of 51 indicators, including:</p> <ul style="list-style-type: none"> • Businesses with a website allowing for online ordering or reservation or booking (%). • Businesses using EDI (%). • Businesses receiving orders over computer networks (%). • Businesses receiving orders via EDI-type messages (%). • Businesses receiving orders through the Internet (%). • Orders received over computer networks (%). • Orders received via EDI-type messages (%). • Orders received through the Internet (%). • Orders placed through the Internet by households/individuals (%).

Time	2005-2020
	<ul style="list-style-type: none"> • Orders placed through the Internet by other enterprises and government authorities (%). • Businesses placing orders (i.e., making purchases) via computer networks (%). • Orders placed via computer networks (%).
Enterprises size-classes and industries	Businesses according to size (large, medium, small and total) and industry (a total of 11 industries are identified).
Unit of measure	Percentage
Time frequency	Annual

ICT access and usage by individuals

The ICT access and usage by households and individuals dataset includes data under 92 indicators assessed on the basis of the OECD Model Survey on ICT Access and Usage by Households and Individuals, 2nd revision.

The selected indicators originate from two sources:

- An OECD data collection exercise conducted in the following countries: Australia, Brazil, Canada, Costa Rica, Chile, Colombia, Israel, Japan, Mexico, New Zealand, Republic of Korea, Switzerland and the United States of America. The data collection methodology followed by each country is made available in its associated metadata file;
- Eurostat statistics on households and individuals in OECD countries that are part of the European statistical system. For those countries, indicators shown in the database refer to the original indicator as published by Eurostat.

For all countries, the breakdowns used correspond to those used by Eurostat, unless otherwise stated in the metadata.

More specifically, the ICT access and usage by households and individuals dataset covers the following:

Time	2005-2020
Economy	A total of 41 countries and groupings, including the European Union member States of OECD.
Indicators	A total of 102 indicators, including: <ul style="list-style-type: none"> • Individuals using the Internet to sell goods or services (%). • Individuals who have purchased online (total and in connection with 25 specific goods and services) (%).
Individual types	All individuals and 61 categories according to age, educational attainment, gender, household income quartile and employment status.
Unit of measure	Percentage
Time frequency	Annual

C. Alignment of the Handbook on Measuring Digital Trade with the Balance of Payments and International Investment Position Manual, sixth edition and other key reference manuals

As mentioned previously, the OECD-WTO-IMF Handbook on Measuring Digital Trade is currently the foremost methodological reference manual in the area of digital trade statistics.

The following section considers the alignment of the conceptual framework underpinning the Handbook with the frameworks underpinning the Balance of Payments and International Investment Position Manual, sixth edition, the 2008 System of National Accounts, IMTS 2010 and MSITS 2010.

1. Alignment of the handbook on measuring digital trade with the balance of payments and international investment position manual

The Handbook first underlines that the conceptual framework it presents was developed in accordance with current statistical accounting standards, in particular the Balance of Payments Manual and International Investment Position Manual, sixth edition and the 2008 System of National Accounts (United Nations, IMF, OECD, European Commission and World Bank, 2009). There are, however, a number of slight differences among those methodological frameworks, as explained below.

More specifically, in the section entitled “Accounting principles” (2.3.), the Handbook states that, in all cases, the accounting principles for digital trade follow those of BPM6. For transactions that pass through digital

intermediation platforms, however, additional guidance is provided concerning the recording of flows and, in particular, whether accounts should record financial flows (referred to, for convenience, as “gross”) or the actual underlying flows related to the intermediation services in question. In that connection, the drafters of the Handbook took the view that the economic substance of the transaction is best followed by recording “net” flows.

It’s important to note that this treatment differs from the recommendations given in BPM6 and MSITS 2010 with regard to subcontracting, namely that flows should be recorded on a gross basis on the grounds that the arranger (of the subcontracted service) buys and sells the services in question.

The argument for the net approach used for services provided by means of digital intermediation platforms is that subcontracted services involve a higher degree of engagement in terms of intermediation than is provided by digital intermediation platforms, which are typically completely automated. Specifically, the principal firm arranging the subcontracting is engaged in a “merchandising in services” activity that results in it owning the subcontracted services before they are sold on to the end consumer. Digital intermediation services (DIPs), on the other hand, never take “ownership” of the goods or services that they intermediate.

The Handbook further specifies in section 5.2., entitled “Accounting principles for DIPs”, that there are two key accounting issues that concern the recording of transactions intermediated by digital intermediation platforms. The first concerns the value of flows that should be recorded when a digital intermediation platform located abroad intermediates between two resident parties.

In that regard, the Handbook notes that, for digital intermediation platforms facilitating exchanges in services, the same rules as those already mentioned should apply. Once again, the Handbook explains that this treatment differs from the recommendations given in BPM6 and MSITS 2010 for subcontracting, namely that flows should be recorded on a gross basis, on the grounds that the arranger (of the subcontracted service) buys and sells the services. A similar argument could be made for digital intermediation platforms, but the argument made in the Handbook is that subcontracted services involve a higher degree of engagement on the part of the intermediary than (typically completely automated) digital intermediation platforms.

The Handbook also underlines that around half of OECD countries, as well as several non-OECD countries, produce estimates of de minimis trade for balance of payments purposes, using various sources, including the national postal service, administrative reports from the customs authorities, credit card data or estimation models. This could obviously be of interest to stakeholders endeavouring to measure digital trade as most B2C digital trade is assumed to be delivered in small packets that fall under de minimis values.

Further issues that should be considered include the treatment of digital financial services provided by non-bank entities, and the treatment of cloud computing services.

As regards the digital financial services provided by non-bank entities (section 4.6. in the

Handbook), the Handbook notes that whether residents or non-residents use the same roaming network or different ones, funds are credited and debited to and from the respective mobile money accounts of the beneficiary and sender in the two countries where they are each resident, or through the accounts of designated agents in the two countries (if the beneficiary and/or sender do not have a registered mobile money account).

An important challenge for compilers is that these operations are usually packaged as a single product, although they cover distinct telecommunications, financial services, and (technical) intermediation services related to the deposit, withdrawal, transfer and foreign exchange conversions of money, to the transmission of short messages notifying senders and recipients of funds transferred and balances on their accounts, and to fees for the agents that facilitate the exchange of cash for virtual (mobile) money and vice-versa.

In the case where a third party (integration technical partner) is involved, there are, in addition, revenue-sharing agreements among the integration technical partner, the mobile money agents handling the transactions, and the telecommunications companies that provide the mobile money services.

Table 1, below, which appears in the Handbook as table 4.6, provides an overview of mobile money transactions and their treatment in the balance of payments.

Table 1. Examples of mobile money transactions and their treatment in the balance of payments

Description of Mobile Money (MM) Transactions	Balance of payments transaction	
	Credit	Debit
Residents acquiring MM from a non-resident telecom company		Charges for the acquisition of MM.
Non-residents acquiring MM from a resident telecom company	Charges for the acquisition of MM.	
Residents sending MM to non-residents via a resident telecom company, which may alternatively be using a non-resident integration technical partner		Charges associated with MM transfer levied by the resident telecom company and shared with: <ul style="list-style-type: none"> • non-resident MM company. • non-resident integration technical partner.
Residents sending MM to non-residents via a resident telecom company, which may alternatively be using a resident integration technical partner		Charges associated with MM transfer levied by the resident telecom company and shared with the non-resident telecom company.
Residents sending MM to non-residents via a non-resident telecom company		Full charges associated with MM transfer.
Residents receiving MM from non-residents via a resident telecom company; alternatively, a non-resident integration technical partner is used	Revenues associated with MM transfers levied by the non-resident telecom company and shared with the resident telecom company.	
Residents receiving MM from non-residents via a resident telecom company; alternatively, a resident integration technical partner is used	Revenues associated with MM transfers levied by the non-resident telecom company and shared with the resident telecom company and resident integration technical partner.	
Residents using the MM received from non-residents (draw down; bill payment, etc.)		Charges for MM withdrawal/use
Non-residents using the MM received from non-residents (draw down; bill payment, etc.)	Charges for MM withdrawal/use	

Source: Handbook on Measuring Digital Trade, Version 1. OECD, WTO and IMF, 2020.

Table 1 illustrates the potential transactions for an economy whose residents receive or send money abroad via mobile services, and their implications for recordings in the balance of payments.

In Annex C, entitled “Extract from OECD “Measuring the Digital Transformation”: Measuring Cloud Computing Services”, the Handbook notes that statistical frameworks such as the System of National Accounts and the Balance of Payments and International Investment Position Manual are founded on the principle that production is inextricably linked to a specific location. However, the nature of cloud services is that they can be used from anywhere with a reliable Internet connection and could be “produced” by one or a combination of the provider’s data centres anywhere in the world. This means it is likely to prove very challenging, if not practically impossible, to identify the location of production of any given unit of cloud services. This clearly represents a major challenge to the conceptualization of global trade, and even of global economic activity, in the context of the major methodological references in use today, namely BPM6 and the 2008 System of National Accounts.

2. Alignment of the handbook on measuring digital trade with the 2008 system of national accounts

In its discussion of the conceptual framework for digital trade, the Handbook states that the nature of the transaction – digitally ordered and/or digitally delivered – is the overarching defining characteristic of digital trade. However, for trade policy purposes, any conceptual framework also needs to have a product dimension. Equally, because of there is often considerable interest in understanding who is

engaged in digital trade, information on the actors involved is also needed.

With regard to information and data exchanges outside the System of National Accounts goods and services account, the Handbook emphasizes that the 1993 System of National Accounts introduced the notion of databases. The 2008 System of National Accounts provided further clarifications that specified that databases should reflect only the value of the underlying database management systems and the costs associated with the digitization of data. That recommendation reflected the view that the underlying value (information content) associated with the data itself was de facto a non-produced asset (Ahmad and Van de Ven, 2018). Outright purchases of databases, which include a significant value of the underlying data, are recorded in the accounts as goodwill.

The Handbook also underlines, however, that recent years have seen an explosion in the generation of data, and the use of those data, in, for example, advertising-based business models. But because data are typically acquired for free, a significant proportion of those data (with the exception of those exchanges of data that are supported by an explicit payment, generally bundled in a different product) are de facto invisible in official statistics.

These acquisitions of free data can support significant monetary transactions that may cross borders, for example through advertising revenues or significant improvements in production efficiencies, or in supply chain management tracking goods. Social networking sites such as Facebook, or search engines such as Google, offer “free” services to users in exchange for data that can be used by these firms to generate targeted advertising, and

hence revenues, (Nakamura, Samuels and Soloveichik, 2016). There is no monetary transaction between Facebook or Google and consumers from whom they collect data, but while international advertising services would be captured in trade statistics, the data flows upon which they depend are not, and neither are the values of the free services, including, for example, search engine facilities, social networking, software and cloud services, that are received by the end-consumer (providers of the data). Understanding the nature, scale (and potential value) of those data is of considerable policy interest, both for trade policy, where information on the volume of data would be useful, as well as more generally, notably in considerations of well-being and consumer-surpluses.

An additional important flow of data that is often also, typically, missing from the accounts is represented by data exchanged within a firm, where strong arguments could be made that the associated value of those data should be recorded in the system, and treated in the same way as paid data. The challenges here are similar (indeed fundamentally the same) as those relating to unrecorded intra-firm transfers and transfer pricing more generally, which digitalization has exacerbated. Further guidance in that area, including in the related area of economic versus legal ownership for intellectual property products, will be developed in future versions of the Handbook. For now therefore, readers should interpret the reference to non-monetary data and information flows as not including intra-firm transfers.

It is important to stress at this point that paid transactions for data and indeed, more generally, for any product mentioned above, including software and cloud services are of course already included in measures of

international trade, and so, where appropriate, those transactions should also be included in the relevant component of digital trade. For now, the reporting template includes the non-monetary component of information and data as a separate addendum, but it may be useful in future versions of the Handbook, and as estimation methods develop, to include a “total” value (which groups paid and non-monetary transactions together) as a separate addendum, not least if the market for “data” develops and if operators currently providing data-related services, such as social networking services, move to paid models.

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. The debate around measurement of those “assets” generally revolves around the potential implications for measures of material well-being and productivity but there are also concerns around competition policies, if the freely available software is designed to gain market share with a view to introducing subsequent “priced” models.

Research is ongoing within the statistics community to estimate the values of these flows more accurately and indeed to consider whether they should be included within the production boundary for GDP and, by extension, trade.

Imputations for data and open-source software have been recommended in the supply-use tables for the digital economy, currently under development by the OECD Advisory Group on Measuring GDP in a Digitalized Economy. At the same time, significant advances on the broader measurement front, including on data, and on open-source software, have been made part of the OECD Going Digital Initiative and,

in particular, the measurement strand of that effort.

Although measurement efforts are evolving rapidly, they remain very much in their infancy and, so, the Handbook notes, it is premature to provide guidance on those items. However, it is expected that guidance in that regard (including a more detailed typology of specific types and transactions in data, at least along the lines described above) will be available in the near future; at which time, the Handbook (and in particular the reporting template) will be updated.

With regard to the various actors involved in international digital trade, the Handbook underscores that technological change has provided individual consumers (households) with increased possibilities to purchase goods and services from foreign suppliers, while also increasing their interaction as “producers” when supplying services, including, for example, accommodation services via digital intermediation platforms. Similarly, the possibility to sell online has lowered, and has the potential to lower further, barriers to export, allowing especially smaller firms to market their products abroad. Those aspects of digital transformation increase the need for trade statistics by type of user and producer, but they also complicate the way that trade is measured in practice. For example, when households interact with each other via foreign digital intermediation platforms, conventional business surveys may be unable to capture the foreign dimension, increasing the relevance of household surveys.

The conceptual framework recognizes those developments through its breakdown of actors by System of National Account institutional sectors: households, corporations (including

both financial and non-financial), governments and non-profit institutions serving households.

Annex 2.B. in the Handbook, entitled “Background to data in the 2008 System of National Accounts”, states that it is important to note that the decision not to treat data as produced in the 1993 and 2008 System of National Accounts does not mean that that data has no value: it clearly does.

Future benefits can very clearly be derived from data, either through the sale of a database (including the value of the data), or in creating additional value added in support of the production of other goods and services, such as advertising.

In the former case, the 2008 System of National Accounts captures the value of data as goodwill when a market transaction occurs (which de facto means that data are treated as a non-produced asset), while in the latter, although data remains in and of itself invisible, its contribution to production is accurately reflected.

Although the contribution of data to production is always captured, data itself are only valued when market transactions occur (recorded as a transaction in non-produced assets). In that sense, data in the System of National Accounts, as, de facto, a non-produced asset (even though it is not explicitly described as such), is similar, at least in an accounting sense, but still different from, other non-produced assets, such as land.

Like data, land is also used in production, and as a non-produced asset it cannot be readily identified as a separate factor of production. However, unlike land, data are increasingly crossing borders, and, in most cases, these exchanges occur without any observable market transaction taking place.

The decision to only recognize data in the accounts when a monetary transaction occurs reflects the fact that the underlying value of data reflects its information or knowledge content. Valuing all data as a produced asset therefore, whether purchased or otherwise, would by inference also require that all knowledge, including human capital, be treated as a produced asset. That is not to say that, conceptually, this shouldn't be done; there has been a long discussion over the years on human capital and indeed on other knowledge-based assets, and whether these should be recognized in some form in the accounts.

But to do so would require approaches to be developed that were internationally comparable, feasible and meaningful. Certainly, with respect to human capital, recording the activity as production could run the risk that it would swamp GDP, and indeed measures of trade, rendering them unusable for macroeconomic policy making. It was the realization that the value of data was intrinsically related to the underlying knowledge it embodied that led to it being recorded as *de facto* non-produced (i.e., goodwill) when a market transaction occurred. To do otherwise would open the door to the inclusion of all kinds of information or knowledge.

Annex 4.D. of the Handbook, entitled "Cryptoassets and Cryptocurrencies", also helps illustrate how the conceptual frameworks of the Handbook and those of the 2008 System of National Accounts and BPM6 relate to the treatment of these assets and currencies.

The Annex underscores that the introduction of bitcoin in 2009 and its open-source protocol has precipitated a significant proliferation in cryptocurrencies as well as other types of cryptoassets. However, guidance on how to record those cryptoassets was not included in the current versions of the System of National Accounts and BPM6.

In response, the IMF and OECD developed papers that were discussed at the meetings of the Advisory Expert Group on National Accounts in 2018 and 2019, which led to the interim guidance included in Annex 4.D. As discussions evolve, Annex 4.D will be updated and upon a definitive decision being taken, guidance on cryptoassets and cryptocurrencies will be incorporated into the main body of the Handbook.

The Handbook adds that cryptocurrency assets are a relatively recent phenomenon, developed mainly to serve as alternatives to traditional financial instruments. Their main characteristics are that they are exchanged via peer-to-peer architecture, which enables two parties to directly transact, without the need for trusted intermediaries, and that they rely on technologies, including blockchain and decentralized ledgers, which store and transmit data in an encrypted form.⁶

It should also be added that there are different types of cryptoassets, including cryptoassets acting as a general means of payment, payment tokens and security cryptoassets. In that regard, it should be noted that OECD has proposed a

6 It should be added in that regard that the development of so-called smart contracts based on the storage, not only of the transaction codes, but also of general-purpose programme codes, allowing for the predefinition of a set of operations to be executed under certain conditions and thus enabling the automation of contractual exchanges, might have substantial implications for the development of e-commerce (see Treiblmaier and Sillaber, 2021).

means by which those various types of cryptoassets can be categorized.⁷

As for the implications for measuring digital trade, the Handbook specifies that, because most cryptoassets are treated as financial assets, transactions in the assets themselves usually have no impact on measures of digital trade. Indeed, only those assets that arise from a process of production can be in scope. The current emerging guidance (where the debate continues) restricts this to two types of cryptoasset: payment tokens without a corresponding liability and cryptoassets acting as a store of value without a corresponding liability (by definition, all cryptoassets with a corresponding liability are included as financial assets).

Given the ongoing debate around the issue, the current guidance of the Handbook is that countries should not include transactions in produced cryptoassets within their measures of digital trade. Those countries that are able to estimate them should, instead, include them as a separate addendum item, and should not incorporate those estimates in the Handbook template.

Annex B of the Handbook, entitled “Recommendations from the OECD Informal Reflection Group on the Impact of Globalization on the Measurement of GDP”, underlines the need to ensure that any guidelines and recommendations can be implemented in a way that does not generate global accounting inconsistencies through asymmetric treatment by different national statistical offices or other inconsistencies in the well-established implementation of the System of National Accounts framework.

Its Recommendation B.4 in particular is to develop a common understanding for the most

pertinent additional breakdowns that should be provided in national accounts. This would, in particular, include but not necessarily be limited to a breakdown of gross operating surplus into the value of capital services by type of asset. This is well established in the economics literature and conceptually recognized in the 2008 System of National Accounts, but only partially put in place in countries. Growth accounting with a well-developed set of capital service measures will, for instance, allow measuring the share of GDP growth that is due to intellectual property assets, which will be even more powerful if coupled with breakdowns by the category of firms.

3. Alignment of the Handbook on Measuring Digital Trade with the Manual on Statistics of International Trade in Services

The Manual on Statistics of International Trade in Services (MSITS 2010) is obviously a major methodological reference when discussing statistics on the international trade in services and, hence, statistics on the digital trade in services. The Handbook therefore explores the link between both conceptual frameworks. In particular, it explores a number of traditional data sources used to generate statistics of international trade in services that could also be used in the collection of data on digital trade.

In that respect, the Handbook notes that international trade in services surveys provide perhaps the best existing survey vehicle for developing estimates of digitally delivered trade in services.

Looking more specifically at the measurement of digitally delivered transactions using international trade in services surveys in the

7 For further details, see: https://unstats.un.org/unsd/nationalaccount/aeg/2018/M12_3e_Cryptocurrencies_OECD.pdf.

United States of America, the Handbook underscores that a number of countries are exploring the possibility of developing estimates of digitally delivered trade by capitalizing on efforts to develop trade statistics by modes of supply.

Table 2, below, which appears in the Handbook as table 4.3, contrasts the share of certain services delivered under Mode 1, as revealed by the results of the United States Bureau of Economic Analysis International Trade in Services Statistics Survey, with the corresponding shares derived via the simplified allocation method outlined in chapter V of MSITS 2010 and the associated MSITS 2010 Compilers Manual, (which involves allocating the services to modes based on assumptions of how services are most likely supplied).

In Box 4.4., entitled “Digitally delivered transactions using ITS surveys in the United Kingdom”, the Handbook underscores that,

compared with the approach adopted in international trade in services surveys by the United States Bureau of Economic Analysis, the approach adopted by the United Kingdom Office for National Statistics provided for the integration of data generated through the application of the proportional allocation method developed by Eurostat. In addition, the Office for National Statistics questionnaire did not restrict responses for Mode 1 trade to those products that could be remotely delivered, as described in Annex 4.A of the Handbook.

Of particular interest in that respect is the fact that, in this case, respondents identified Mode 1 delivery in a number of products that are not recognized as Mode 1 in MSITS 2010 and, in addition, are not typically considered as being remotely delivered (and not considered in the UNCTAD or Eurostat templates). This suggests care is needed in designing the surveys and questions for respondents so that they align with the recommendations set out in MSITS 2010.

Table 2. Share of certain services delivered under Mode 1, as revealed by (a) the simplified approach adopted by the United States Bureau of Economic Analysis and (b) the international trade in services survey (Percentage)

Service	Exports		Imports	
	Simplified approach	Survey based	Simplified approach	Survey based
Accounting	75	51	75	66
Advertising, market research, public opinion	75	78	75	70
Computer	50	80	50	56
Architectural and engineering	50	61	50	53
Educational	75	37	75	32
Legal	75	80	75	91
Management consulting	67	77	67	68

Source: United States Bureau of Economic Analysis. For further details, see Mann and Cheung, 2019.

As regards the coverage of services categories in scope for digitally delivered services, the Handbook notes that the work of the United Kingdom Office for National Statistics, which resulted in a range of Mode 1 delivery of services beyond those products covered in the UNCTAD list of potentially digitally delivered services, points to the need for care to be taken when constructing surveys around Mode 1 and concepts of “remote delivery” and their interchangeability with “digital delivery”. The Office for National Statistics survey resulted in Mode 1 shares being allocated to manufacturing, maintenance and repair, and construction services, which are outside the range of products included within the scope of Mode 1 supply in MSITS 2010.

As for the use and limitations of other data sources, the Handbook specifies that the ITRS is a system of collecting data of individual international settlements and/or transactions as reported by banks, enterprises and/or households. It is important to note that ITRS does have drawbacks when measuring international trade in services, as described in MSITS 2010 and the associated MSITS 2010 Compilers Manual. These include: greater potential for misclassifications, as banks classify transactions on behalf of reporters; the fact that transactions are recorded when payments are made and not necessarily at the time of output and consumption; and the fact that the counterpart country responsible for payment may not correspond to the partner country from or to which the service is delivered. However, these can at least partially be mitigated, including via stringent quality checks and by ensuring that the reporters in financial institutions are well trained. In addition, supplemental information may be included without increasing the burden on respondents. Furthermore, when reporting thresholds are

absent or low, as is often the case, data coverage may be higher in ITRS than in international trade in services statistics.

We shall now consider how digital trade, also known as electronic commerce or e-commerce, is addressed in BPM6, the 2008 System of National Accounts, IMTS 2010 and MSITS 2010.

D. Digital trade (e-commerce) in BPM6, the 2008 System of National Accounts, International Merchandise Trade Statistics: Concepts and Definitions 2010, and the Manual on Statistics of International Trade in Services

1. Digital trade (e-commerce) in BPM6

BPM6 defines e-commerce as a method of ordering or delivering products at least partly by electronic means, such as through the Internet or other computer-mediated networks.

In general, charges for electronically delivered products are usually included in services, whereas products supplied across borders are usually classified as goods. Shipping charges associated with e-commerce are allocated in line with the free on-board valuation principle. Financial services associated with e-commerce are included in financial services.

2. Digital trade (e-commerce) in the 2008 System of National Accounts

The 2008 System of National Accounts also says relatively little about digital trade which, again, is labelled as e-commerce. However, paragraph 15.164 in Chapter 15, entitled “Price and volume measures”, states, *inter alia*, that the case for unit value indices derived from merchandise trade figures is based on the relatively low cost

of such data. Their use as deflators requires some caution as they have been shown to be subject to bias when compared with price indices. The bias in unit value indices is mainly due to changes in the mix of the heterogeneous items recorded in customs documents, but also to the often poor quality of recorded data on quantities. The former is particularly important in modern product markets given the increasing differentiation of products. Unit value indices may suffer further due to an increasing lack of comprehensiveness of the source data with increasing proportions of trade being in services and by e-commerce and hence not covered by merchandise trade data.

3. Digital trade (electronic commerce) in International Merchandise Trade Statistics: Concepts and Definitions 2010

IMTS 2010 addresses the issue of digital trade which, in this case, is labelled as electronic commerce, in two ways: firstly, in paragraph 1.34, IMTS 2010 addresses the issue of goods in electronic commerce, the term “goods in electronic commerce” referring here to goods that physically move across country borders as the result of transactions executed entirely, or to a significant extent, by electronic means, including, for example, goods ordered and paid for via the Internet. Such goods are in the scope of IMTS 2010 for both exports and imports. It is recognized, however, that data collection under this item may be challenging, including, for example, when goods are shipped by parcel or letter post or by courier service. Countries are encouraged, however, to develop over time the necessary data-collection and/or estimation procedures.

Secondly, in paragraph 1.55, IMTS 2010 addresses the issue of the content delivered electronically, specifying that the electronic

delivery (downloading, e-mailing, streaming, etc.) from one country to another of any content, including online books, newspapers and periodicals, directories and mailing lists, musical audio downloads, streamed audio content, films and other video downloads, streamed video content, system software downloads, application software downloads and online games, is explicitly excluded from the scope of international merchandise trade statistics.

4. Digital trade in the Manual on Statistics of International Trade in Services

Digital trade is, as is to be expected, more extensively dealt with in the Manual on Statistics of International Trade in Services (MSITS 2010). In its consideration of the statistical framework for international trade in services and, more specifically the impact of globalization and multilateral services trade negotiations on that statistical framework, MSITS 2010, in paragraph 2.4., notes that rapid technological advances in the past few decades in transport, computing and telecommunications, including the development of the Internet and electronic commerce, have resulted in enterprises availing themselves of resources for production at more distant locations and have enabled them to serve ever wider markets. That trend towards globalization, reinforced by liberalization policies and the removal of regulatory obstacles to economic activities, has fuelled the steady growth of multinational enterprises, international investment and the trade in goods and services. Better communications and transport have also facilitated the movement of people for the purposes of tourism, migration, employment and trade.

In paragraph 3.63., the Manual provides that electronic commerce, or e-commerce as it is more widely known, is a method of ordering

and/or delivering products by electronic means, for example, through the Internet or other computer-mediated networks. In principle, charges for electronically delivered products are included in services, while goods ordered by electronic means and supplied across borders are generally classified as goods (with the exception of products obtained with a non-perpetual licence to use rather than through change of economic ownership (such as many software products), which are included in services). Shipping charges associated with e-commerce are allocated in line with the principles outlined in paragraphs 3.97 to 3.103 of the Manual. MSITS 2010 also underscores that financial services associated with e-commerce are to be included in financial services.

E. Data sources: traditional and alternative sources

The Handbook on Measuring Digital Trade contains an in-depth analysis of potential data sources for measuring digital trade. In that respect, the Handbook makes a fundamental distinction between data sources that can be harnessed for measuring digitally ordered trade and those that can be used for measuring digitally delivered trade.

1. Data sources for measuring digitally ordered trade

The Handbook identifies seven key data sources that can be used to measure digitally ordered trade, namely enterprise surveys, household surveys, credit card data, data from other payment processing firms, data on de minimis trade, customs statistics and private data sources. Those sources are discussed below:

(a) Enterprise surveys

The Handbook notes that business surveys, including the European Commission Community Survey on ICT Usage and E-commerce in Enterprises, the OECD Model Survey on ICT Usage by Businesses, and the Canadian Survey of Digital Technology and Internet Use, have provided invaluable statistics on e-commerce in many developed economies over the last decade or so. In recent years, and in recognition of the importance of international trade, many business surveys have been expanded to include additional questions on trade. Since 2017, for example, the European Commission Community Survey on ICT Usage and E-commerce in Enterprises has included questions (albeit optional) on the geographical breakdown of turnover derived from orders received via a website or apps only).

Unfortunately, while those expansions can help to deepen understanding of the overall share of digitally ordered exports, they do not provide additional information on purchases by firms using digital ordering; for now at least, enterprise surveys do not therefore provide information on digitally ordered imports.

The Handbook underlines that enterprise-based estimates can be elaborated for various segments of digital trade, and in particular for exports of digitally ordered goods and digitally ordered services.

In that connection, Handbook Recommendation 3.1 states that existing or new e-commerce/ICT-use surveys or equivalents should ask respondents to break down sales of products that were digitally ordered and exported between goods and services. Ideally, this information could also be provided by detailed product, but an acceptable alternative is to have

breakdowns by the following four product categories: digitally ordered ICT goods; other digitally ordered goods; digitally ordered services in products that are (or alternatively in the absence of data, potentially can be) digitally delivered, and; other digitally ordered services.

Recommendation 3.2 states that, for digital intermediary platforms (not taking ownership of the products they intermediate), estimates of turnover (sales) that are digitally ordered should reflect only revenues related to the intermediation services they provide and not include the value of the products intermediated. [...] When not explicitly charged, intermediation services should be recorded as being paid by the producer of the product being intermediated (and not the consumer).

While information on business purchases of goods and services is currently lacking in most surveys that capture digital ordering, many, including the European Commission Community Survey on ICT Usage and E-commerce in Enterprises, do include a breakdown of whether the products provided by the firms were sold to consumers (households) or to other business (including governmental stakeholders), although those statistics are not disaggregated by the residency status of the consumer.

Household surveys can, however, provide a means to derive estimates of digitally ordered imports. As such, separately identifying digitally ordered exports between those sold to businesses and those sold to households in enterprise-based surveys could provide the basis for mirror statistics to complement (and validate) a partner country's own estimates of imports by households (calculated on the basis of data obtained in household surveys).

In that context, Recommendation 3.3 states that to provide scope for information on imports of digitally ordered services by businesses, countries should develop export data by partner country that can form the basis of import statistics for other countries. Recommendation 3.4 states that because of the scope to develop separate estimates of imports by households using dedicated household surveys, questions on digitally ordered exports (broken down by importing partner country and region) should differentiate between type of consumer (household and business/government). In the short term, countries should derive splits of export data between households and businesses using information available for the whole economy.

As for enterprise-based estimates of imports of digitally-ordered goods and digitally-ordered services, the Handbook notes that very limited information is collected from within current enterprise-based surveys on purchases (imports) via digital ordering. One obvious recommendation in that sense would be to include questions on imports similar to those used for exports.

It is important to recognize that such an approach (including information on the value of imports that are digitally ordered) will add to response burdens and, moreover, given the challenges, it is not clear at this stage that the addition of such questions will be able to generate meaningful results. A key challenge in that respect reflects the fact that enterprises (like households) may not always know whether the purchase was made via a domestic or a foreign intermediary.

In that connection, Recommendation 3.5 states that enterprise-based surveys should include questions on the share of purchases made by

digital ordering, with a separate estimate for transactions via EDI.

One area where it may be currently feasible to gain additional insights on imports of digital trade, concerns imports of intermediation services provided by digital intermediation platforms. Because the Handbook recommends that any implied intermediation fees are paid directly by the producer (and not the final consumer), a measure of the value of these intermediation services can be derived from estimates of sales intermediated by digital intermediation platforms. The European Commission Community Survey on ICT Usage and E-commerce in Enterprises already includes a question in that regard that could be used as the basis to estimate the value of those imports by applying an average intermediation fee to the overall turnover intermediated via those channels.

In that context, Recommendation 3.6 states that questions in enterprise-based surveys that separately identify sales of producers via digital intermediary platforms can be used to estimate the value of the underlying intermediation service fee that was imported by the producer, if the questions also differentiate between sales via non-resident and resident digital intermediation platforms.

Most of the current attempts to estimate digitally ordered transactions reflect complements (often ad-hoc) to traditional e-commerce surveys. Given the emphasis placed on enhancing understanding of the digital economy in general, and of digital trade in particular, statistics offices should explore whether additional questions could be mainstreamed in their conventional business surveys used to derive structural business statistics, particularly as most e-commerce surveys typically target only larger firms (for

example, the European Commission Community Survey is voluntary only for firms with fewer than 10 employees).

In that regard, Recommendation 3.7 states that efforts should be made to explore the feasibility of including questions in standard business surveys that ask firms to provide the following information relating to digital ordering: share of total sales via own-website; share of total sales via the Internet or apps (other than own-website); share of total sales via EDI; share of total exports via own-website; share of total exports via the internet or apps (other than own-website); share of total exports via EDI; share of total purchases via the Internet or apps; share of total purchases via EDI; and share of total imports via EDI.

(b) Households surveys

The Handbook notes in that respect that one approach increasingly used to gain insights on digitally ordered transactions is through household surveys. However, those efforts remain very much in their infancy, providing very little information on the size of digital trade. The Canadian Survey of Digital Technology and Internet Use, for example, collects information on the share of overall expenditure that was digitally ordered but does not collect an estimate of how much of that expenditure was on imports. The 2018 European Commission Community Survey on ICT Usage in Households and by Individuals, on the other hand, does provide an estimate of the percentage of households that digitally ordered goods and/or services from abroad, but it does not provide the value of that trade.

Although evidence suggests that it is possible to gather meaningful information on the share of

overall household expenditure accounted for by digital ordering, the Canadian Survey of Digital Technology and Internet Use has revealed that most households are unable to determine whether or not a transaction is international.

That being said, one area where household surveys may prove useful concerns expenditure on digitally delivered products. Another potential area where household surveys could be exploited concerns expenditure abroad and tourist expenditure in the compiling economy. Specific questions could be added to either conventional household expenditure surveys or international travel surveys to identify the share of expenditure on accommodation and (separately) travel services purchased abroad that were digitally ordered, which may help to identify and quantify potential underestimates in those areas. Similarly, conventional household income surveys could be used to ask households if they provided (and the value of) short-term accommodation services via digital intermediation platforms.

In that context, Recommendation 3.8 states that household and/or international travel surveys should include questions asking respondents to identify the shares of residents' expenditure on accommodation and (separately) other travel services related to their foreign travel that were digitally ordered.

Conventional household income surveys could also ask households questions on the short-term accommodation services they supplied that were ordered through digital intermediation platforms.

(c) Credit card data

According to the Handbook, a promising area being explored by many countries, especially with respect to B2C international transactions, concerns the use of credit card data. Typically, those approaches are able to differentiate between two main modes of transaction, namely those in which the card was present and those in which the card was not present, providing meaningful proxies for transactions that were not digitally ordered and those that were.

In that connection, and notwithstanding the challenges involved, credit card data does appear to provide scope for meaningful estimates of household imports of digitally ordered trade, including for breakdowns of certain categories of expenditure, such as accommodation services and travel.

Recommendation 3.9 states that credit card data provides considerable potential in efforts to estimate the total value of digitally ordered expenditure by households. While there are many challenges involved in identifying the part that is international trade and the type of product covered by credit card transactions, countries are encouraged to explore their potential, not least as they can be a cost-effective way of gathering data.

(d) Data from other payment processing firms

Recommendation 3.10 states that information from other specialized payment companies provides considerable scope for estimating the total value of digitally ordered expenditure by households.

(e) Data on de minimis trade

The Handbook notes that one area where there has been considerable concern that digitalization may have led to mismeasurement, that is to say underestimation, relates to the estimation of de minimis trade, namely transactions below the minimum value (weight or size) on which duties are collected, which are therefore outside the scope of conventional merchandise trade statistics.

A recent study has shown that around half of OECD countries, as well as several non-OECD countries, produce estimates of de minimis trade for balance of payments purposes using various sources, including the national postal service, administrative reports from customs authorities, credit card information or estimation models. In most cases, de minimis trade amounts to between 1 and 3 per cent of total trade but can reach as high as 15 per cent, as was the case in Q1 of 2017 in Azerbaijan.

A key takeaway from national experiences is that estimates based on information from postal delivery providers can provide relatively robust estimates of overall de minimis trade but only (as evidenced by the experience of the Russian Federation) if the estimation process covers at least the majority of postal and courier service providers, covering all transport modes.

In that context, Recommendation 3.11 states that countries should give greater attention to estimating de minimis transactions using a variety of sources. Information provided by postal and courier agencies can provide meaningful estimates as long as coverage of providers is high and all modes of transport are representatively covered. Those efforts should be coupled with information from credit card companies (and other actors providing payment

services) on transactions below de minimis thresholds (where these are valued in monetary terms) to gain insights into digitally ordered de minimis trade in goods, but care (adjustments) is (are) needed to avoid incorrectly categorizing all transactions that pass through digital intermediation platforms located abroad as digital trade.

(f) Customs statistics

The Handbook notes that more systematic efforts that may deliver significant results on digitally ordered goods in the short to medium term, including on de minimis trade, are in development. A key pillar of those efforts reflects work led by the World Customs Organization, in collaboration with large e-commerce enterprises, to better identify and monitor digitally ordered trade in customs records via improved electronic identification of origin/destination and content of packages, for example via the S10 bar code for postal items, or special (simplified) declaration forms for e-commerce.

Taking the case of China as an example, the Handbook explains that with regard to B2C cross-border e-commerce transactions, China Customs has established the Cross-Border E-commerce Information System. Specific customs regime codes, namely codes 9610, 1210 and 1239, facilitate the identification of goods that are cleared through the System. For B2C goods that are cleared as mail parcels and courier deliveries rather than through the System, China Customs and the national postal authorities have conducted a pilot survey using sampling methods to determine the proportion of e-commerce postal parcels with a view to estimating the scale of cross-border e-commerce merchandise trade taking place by means of the postal system.

(g) Data linking and private data sources

The Handbook suggests that another avenue to explore in developing statistics on international digitally ordered transactions involves microdata linking, for example by integrating merchandise trade statistics with e-commerce enterprise surveys, albeit while making stylized assumptions relating to foreign/domestic e-commerce splits, or proportionality assumptions when applying the share of foreign sales that occurs via e-commerce equally to all products and trading partners. Further refinements could also be made in tandem with Classification by Broad Economic Categories to provide estimates of the share of international sales that can be classified as B2B and as B2C.

Taking the case of the Netherlands as an example, the Handbook explains that, to measure expenditure by Dutch consumers at non-Dutch webshops located in the European Union, Statistics Netherlands (CBS) used the Dutch VAT returns filed by foreign European Union companies, which are mandatory across Europe for all traders exporting more than a certain threshold (EUR 35,000 or EUR 100,000 per year, depending on the member State) to another member State. To identify webshops among those VAT returns, the information was first combined with data from the Orbis database developed by Bureau Van Dijk, a Moody's Analytics company, to select those enterprises engaged in retail as their primary or secondary activity (and therefore trading in goods only). Subsequently, that overview of companies was paired with Internet data collected through web scraping to identify the websites of the shops through which products can be ordered online. Through manual checks, a rough estimate was made of the measurement errors in the algorithm, which was approximately 5 per cent of turnover. With the help of manual check results,

the next version of the algorithms can be 'trained' using machine learning in order to further reduce measurement errors.

In a conclusion, the Handbook states that the use of enterprise surveys, and indeed the mainstreaming of additional questions pertaining to trade and digital ordering in general structural business surveys are strongly encouraged.

2. Data sources for measuring digitally delivered trade

The Handbook identifies five key data sources that can be mined to measure digitally delivered trade, namely international trade in services surveys, international transactions reporting system (ITRS) data, administrative tax data, household surveys and, for digital financial services, data from non-bank entities. Those sources are discussed below.

(a) International trade in services surveys

The Handbook notes that international trade in services surveys provide perhaps the best survey vehicle for developing estimates of digitally delivered trade in services, although it is important to note that those surveys often fail to capture household-to-household transactions effectively, and particularly household-to-household transactions facilitated by digital intermediation platforms. The Handbook argues that international trade in services surveys can be enhanced through the inclusion of a supplemental question asking respondents to estimate the share of exported and imported services (by product) that were delivered digitally.

The Handbook also notes that close scrutiny is required to determine which services can be digitally delivered and which cannot. Taking the

UNCTAD list of potentially ICT-enabled services as a starting point, the Handbook notes that some of those services, particularly insurance and other financial services, should not be categorized as digitally delivered given the nature of the underlying service itself.

However, as there is significant policy interest in including the total value of those services (and not just the “pure” component that is digitally delivered) within a concept of digitally delivered, not least with respect to tax and trade policies, the Handbook includes them as being in scope for digitally delivered trade, suggesting that the full value of the digitally delivered service should be reflected.

Those services are (at least in theory) categorized under the Extended Balance of Payments Services Classification (EBOPS) as trade related services (10.3.4) and also partly under transport and financial services; the first two of which are excluded from the scope of ICT-enabled services. Other services excluded from the UNCTAD list of potentially ICT-enabled services include travel services delivered via GATS Mode 2, including telecommunications services received abroad and explicit intermediation fees paid by residents abroad. Those are included in the scope of international digitally delivered services.

In that context, Recommendation 4.2 states that the broad range of products included in digitally delivered trade follows that used in deriving potentially ICT-enabled services, with two exceptions. Digitally delivered trade should include estimates for intermediation services provided by digital intermediation platforms and also any digitally delivered trade that is included in the EBOPS category on “travel” (Mode 2 transactions).

The Recommendation further states that, ideally, exports and imports of digitally intermediated platform services should be shown as separate addenda items in current international trade in services (by EBOPS) statistics, as well as within specific product categories, depending on the nature of what is being intermediated, including “transport” (EBOPS 3), “financial services” (EBOPS 7), and trade-related services.

The Handbook also notes that, in the context of national accounts, the current guidance is for digital intermediation platforms intermediating goods to be classified as a subsector of the distribution sector and for digital intermediation platforms intermediating services to be classified under the industry whose services they intermediate.

Recommendation 4.4 states that, to assist in the development of exhaustive statistics for digitally delivered services, additional questions are needed in international trade in services surveys on:

- (a) Exports of digitally intermediated platform services, broken down by type of service being intermediated;
- (b) Imports of intermediation services provided by digital intermediation platforms, whereby respondents should be asked to provide an estimate of the commission they pay (which should be determined as the difference between the price paid by the final consumer and the basic price charged by the producer (respondent), after accounting for taxes and subsidies on products).

The experience of the United Kingdom and the United States of America in using international trade in services surveys disaggregated by

modes of supply to estimate the value of digitally delivered services is instructive. The Handbook suggests that three important lessons can, potentially, be learned from the efforts of those two countries in that regard, namely that:

- Respondents often have great difficulty in estimating actual estimates of trade by mode of supply.
- Crude approaches that ask respondents to identify their main mode of supply should be avoided.
- Some services that are not included in the UNCTAD list of potentially ICT-enabled services are digitally deliverable.

The Handbook recommends that the range of products that should be considered as being in scope for digitally delivered should remain consistent with those identified in the list of potentially ICT-delivered services set out in Annex 4.A of the Handbook (including with estimates for digitally intermediated platform services) and in Recommendation 4.2. However, it also recommends further work in areas, such as maintenance and repair, where there is growing scope for many services to be delivered digitally.

Indeed, Recommendation 4.5 explicitly states that further investigations are needed to determine the range of digitally delivered services identified in Recommendation 4.2, in particular concerning maintenance and repair services.

Furthermore, Recommendation 4.6 identifies a list of questions that should be included in international trade in services surveys in order to measure digitally delivered services. These surveys should include questions:

- On the share of services trade (for each product that can be delivered digitally) that is actually remotely (or digitally) delivered.
- To identify exports (of intermediation services) by digital intermediation platforms (commissions/fees) by type of product (good or service) being intermediated.
- To identify imports of digitally intermediated platform services by type of product being intermediated (recognizing that implicit fees should only be accrued to the producer of the good/service being intermediated). A simplifying assumption could be that all intermediation commissions/fees paid (implicitly or otherwise) to non-resident digital intermediation platforms are in respect of the main activity of the responding firm.

Recommendation 4.7 provides that most products included in the lists of potentially digitally delivered services set out in Table 4.1 and Annex 4.A of the Handbook are delivered internationally under GATS Mode 1. Unless there is evidence to the contrary, it can be assumed that all Mode 1 supply of products included in that list are also digitally delivered. Using this assumption, supplementary questions in international trade in services surveys can instead focus on measuring trade by mode of supply, asking firms for estimates of remotely delivered services. Supplementary questions can be limited to providing estimates within certain percentage ranges, as developed by the United Kingdom Office for National Statistics and the United States Bureau of Economic Analysis.

Furthermore, Recommendation 4.8 states that, considering the impact on respondent burdens, countries should consider the possibility of also

requesting breakdowns of digitally delivered services by whether they were ordered via a digital intermediation platform, other digitally ordered, or not digitally ordered. However, this should not be viewed as a top priority. It may be possible to develop estimates via ad-hoc surveys.

The Handbook also notes that, although estimates of potentially digitally delivered services can serve as a reasonable (upper bound) proxy for actual digitally delivered services, the broad commonality across many existing initiatives, including in the simplified approach adopted by Eurostat to determine modes of supply, shows that, in the absence of actual data, estimates of actual digitally delivered services can be derived by applying expert judgement shares – including based on other (similar) countries' experiences (by specific product) – to national estimates of trade in services.

(b) International Transactions Reporting System data

As for the use of International Transactions Reporting System (ITRS) data in the compilation of statistics on digitally delivered trade, the Handbook suggests that countries that rely heavily on ITRS in the collection of trade in services statistics can extrapolate data from that System to estimate the scale of digitally delivered services, at least for large enterprises, including Facebook and Google, that focus on the provision of digitally delivered services.

(c) Administrative tax data

The Handbook considers the use of two kinds of administrative data, namely VAT data and, for countries that collect it, Mini One Stop Shop data.

As far as VAT data are concerned, the Handbook observes that many countries are beginning to introduce new tax measures that allow them to collect VAT on services that are digitally delivered into their country by foreign actors: this can provide a new source of data that can be used to estimate the scale of digitally delivered trade. This is the case in Argentina, where information on digitally delivered services has recently been developed by capitalizing on new legislation that obliges non-resident providers of digital service products to declare their revenues on services provided, on which 21 per cent VAT is applied. Resident financial intermediaries that act as agents for non-resident service product providers are also asked to provide similar information.

With regard to Mini One Stop Shop data, the Handbook explains that European Union legislation on VAT has recently been updated in connection with telecommunications, broadcasting and electronically delivered services. Those changes aim to ensure that local VAT rates are applied to all services delivered and that VAT revenue goes to the country of the consumer. To implement that legislation, a Mini One Stop Shop scheme has been developed; via a dedicated portal, taxable persons (predominantly business enterprises) can report sales of the aforementioned services to non-taxable persons (predominantly consumers) in European Union member States in which they do not have an establishment in order to account for the VAT due on those supplies. The data and VAT are then distributed to the relevant tax authorities.

Because of its focus on digitized services, data derived from the Mini One Stop Shop scheme is already been leveraged with a view to

measuring the scope and scale of digital trade transactions, including in Hungary and Denmark. The experience of those two countries in that regard highlights a number of statistical challenges, however, including the fact that the services delivered can only be categorized as telecommunications, broadcasting or electronically delivered services, with no other categories or subcategories possible.

(d) Household surveys

Household surveys can be used not only to measure digitally ordered trade in goods and services, but also, to some extent, to measure digitally delivered trade in services.

The Handbook notes that some expenditure by households, and particularly their expenditure on digitally delivered services, may not be accurately captured in current trade statistics. Although the use of supply-use tables in most countries will cast light on whether this is occurring in the raw data, allowing corrective adjustments to be made in definitive trade statistics and national accounts (by comparing supply and demand estimates of specific products), explicit questions in household surveys asking consumers to identify the share of expenditure made on products that were digitally delivered can help strengthen that balancing process.

Recommendation 4.8 provides that Household surveys should include questions asking respondents to identify the share of expenditure on digitally delivered services by specific product, following, at a minimum, the Classification of Individual Consumption According to Purpose (COICOP), but preferably the Central Product Classification.

(e) Data from non-bank entities

The Handbook notes that an important challenge for compilers is that digital financial service operations are usually packaged as a single product, although they cover distinct telecommunications, financial services, and (technical) intermediation services related to the deposit, withdrawal, transfer and foreign exchange conversions of money, to the transmission of short messages notifying senders and recipients of funds transferred and balances on their accounts, as well as to fees for the agents that facilitate the exchange of cash for virtual (mobile) money and vice-versa.

In the case where a third party (integration technical partner) is involved, there are, in addition, revenue-sharing agreements between the integration technical partner, the mobile money agents handling the transactions, and the telecommunications companies that provide the mobile money services.

In that context, a number of potential data sources for measuring cross-border digital financial services provided by non-bank entities can be identified. These include surveys of telecommunication companies that have developed and marketed mobile money. These can be a key source of information, both for the gross flows involved, as well as for data on fees paid to the various intermediaries involved, including resident mobile money agents, non-resident integration partners, and the non-resident telecom partner. Data on the revenue received from non-resident telecom companies arising from inward mobile money transfers from non-residents to residents can also be collected from those companies.

Another direct source of information are resident integration technical partners. In that regard, the Handbook notes that, given the limited set of questions, as well as the small number of telecommunications companies that are typically active in each (developing) country that offer such services, response burdens (at least in the context of the overall population of firms) do not seem onerous.

Instead of requesting telecommunications companies to report detailed figures, an alternative approach is to develop estimates derived from the total inflows and outflows of international mobile money transfers, by country and telecom partner, as reported by telecoms companies involved in cross-border mobile money transfers to telecommunications regulators (administrative source data).

For exchange rate margins on the transactions received by the integration partner, estimates could be obtained using the information provided on the daily exchange rates used for the conversion of mobile money transfers to different destinations together with information on the official mid-rate for the respective days and the amounts involved.

The margin payable would be the difference between the amount received in the domestic

currency from the resident sender by the telecom company for outward transfer converted into the destination country's currency using the official mid-rate and the amount received according to the actual rate used by the telecom company.

Another option that could be explored is the use of ITRS data, provided that the System is adequately developed so as to facilitate the collection of that information.

For cases in which international mobile money transfers are carried out directly using the roaming telephone facility, in a similar manner to domestic transfers, potential source data are: (i) partner country data on credits received by the counterparty telecom company for roaming charges and the purchase of virtual money by non-residents; or, in their absence (ii) a survey among resident agents of non-resident telecom companies that provide international mobile money services, which could be used to collect information on the transaction charges paid by residents for the acquisition of virtual money on a non-residents telecom company's mobile money platform, and the commission received by the resident agent from the non-resident telecom company.

2. Assessment of status, trends and challenges associated with international digital trade statistics in the Arab countries

This analysis is based on the development of a specific questionnaire designed for the Arab countries' statistical authorities and on their responses to that questionnaire. Section 4 provides an overview of the design of the questionnaire and the methodology followed in its development before presenting an analysis of the responses received and a summary of the main observations made.

It should be underscored that, as mentioned previously, the UNCTAD database contains data on all ESCWA member countries pertaining to the value, market share and growth of international trade in digitally deliverable services. More specifically, those data include:

- The value of international trade in digitally deliverable services in million United States dollars at current prices.
- The annual growth rate in the international trade in digitally deliverable services.
- The percentage of total international trade in digitally deliverable services accounted for by each ESCWA member country.
- The percentage of total trade in services accounted for by the international trade in digitally deliverable services for each country.

Those data are compiled on an annual basis and have been made available for all years from 2006 to 2020. That period coverage is not exhaustive for certain ESCWA member countries, however.

According to those data, international trade in digitally deliverable services in the Arab region as a whole amounted to more than \$43 billion at current prices in 2020, that is 4.1 per cent more than in 2019, when that trade declined slightly (-1.1 per cent). The trade in digitally deliverable services has almost doubled (increasing by 91.9 per cent) in current prices over the last decade.

The Arab region as a whole accounted for 1.36 per cent of total international trade in digitally deliverable services in 2020, up from 1.28 per cent in 2019 and 1.2 per cent in 2010. Finally, international trade in digitally deliverable services accounted for 27.6 per cent of the total trade in services of ESCWA countries in 2020, sharply up from 17.4 per cent in 2019 and 18.8 per cent in 2010. That share appears, however, to have evolved in a non-linear manner between 2010 and 2020.

It should be stressed, however, that the international trade in digitally deliverable services accounts for only a small fraction of total digital trade.

A. Questionnaire design

The questionnaire, which was entitled “UNESCWA Stocktaking Questionnaire on the Availability of International Digital Trade Statistics in its Member Countries” and is attached in the Annex of the present report, comprised the following five sections:

- (a) Identification of the respondent;
- (b) Data production and dissemination;
- (c) Methodological references, concepts and definitions;
- (d) Data sources, compilation and estimations;
- (e) Priorities and projects.

The five sections were preceded by an introduction, which set out the definitions of the key concepts used in the questionnaire and explained that the questionnaire was being conducted with a view to enhancing understanding of current initiatives to compile statistics on international digital trade in ESCWA member countries, as well as the stakes, challenges and projects in that area.

The first section, entitled “Identification of the respondent”, comprised a single table asking for the name and address of the responding institution, the unit in charge of statistics on international digital trade within that institution, the name and duties of the respondent and their contact details.

The second section, entitled “Data production and dissemination” included 11 questions and was drafted with a view to enhancing

understanding of the data produced and disseminated in the respondent’s country.

The first three questions were very general in nature and were included in order to learn whether any official statistics on international digital trade were produced in the country in question, which institution was responsible for the production of those statistics and whether or not those statistics were disseminated.

The six following questions were included in order to learn more about the type of statistics produced on digital trade in the country, including the indicators used, their geographical breakdown, breakdown by institutional sector and industry, breakdown by type of goods and services and breakdown by type of digital tool.

The following question (question 9) was included to learn if a breakdown by type of good or service intermediated was available with respect to digital intermediation service exports and imports, while the last question in the section (question 10) was included in order to learn whether metadata were produced and disseminated in connection with statistics on international digital trade.

The third section, entitled “Methodological references, concepts and definitions”, included three questions that were drafted in order to understand whether an international methodological reference was used in the production of statistics on international digital trade in the country in question, whether the statistics generated on international digital trade were fully aligned with that international reference, and whether any adaptations to international concepts and methodologies were necessary in order to generate high-quality statistics on international digital trade in the country in question.

The fourth section, entitled “Data sources, compilation and estimations”, included two questions and was drafted to enhance understanding of the main data sources used to compile indicators and the key challenges impeding the development and calculation of relevant indicators.

The fifth and final section of the questionnaire, entitled “Priorities and projects” and which also included two questions, was drafted to deepen understanding of digital trade statistical development priorities and projects in the country in question, including in connection with expanding economic activity and institutional sector coverage and in terms of geographical breakdown.

The 18 questions included in the questionnaire therefore facilitated efforts to obtain detailed information on digital trade statistics production and dissemination, the methodology followed in the compilation of those statistics, the main data sources and the compilation practices implemented in that process. The questionnaire also helped highlight key challenges faced by ESCWA countries and their projects and priorities in that area.

B. Methodology

The methodology followed in the development of the questionnaire was based on the Handbook on Measuring Digital Trade, including its definitions of key concepts, including digital trade, digitally ordered trade, digitally delivered trade, e-commerce, digital intermediation platforms, including fee-based and free digital intermediation platforms, and fee-based digitally intermediated platform services.

The indicators identified and analysed in the questionnaire are also discussed in the Handbook on Measuring Digital Trade. However, for the sake of simplicity and conciseness, not all indicators set out in the Handbook were examined in the questionnaire. The six indicators identified and analysed in the questionnaire were:

- Value of exports and imports that were digitally ordered and/or delivered (Total international digital trade).
- Value of exports and imports of goods that were digitally ordered.
- Value of exports and imports of services that were digitally ordered and/or delivered.
- Value of exports and imports that were digitally ordered via a fee-based digital intermediation platform (total).
- Value of exports and imports of goods that were digitally ordered via a fee-based digital intermediation platform.
- Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform.

Only the first three of those indicators were subject to further analysis in terms of geographical breakdown, breakdown by institutional sector, data sources, and difficulties faced in indicator production or development.

On the other hand, a longer list of indicators was considered when analysing the projects and priorities of each country. To the six indicators previously mentioned, the following seven were added:

- Value of exports and imports of services that were digitally ordered.
- Value of exports and imports of services that were digitally delivered.

- Value of exports and imports of services that were digitally ordered but not digitally delivered.
- Value of exports and imports of services that were digitally delivered but not digitally ordered.
- Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform but not digitally delivered.
- Value of exports and imports of digital intermediation services.
- Values of exports and imports of non-monetary transactions in information/data (imputed).

C. Analysis

Six Arab countries, namely Iraq, Morocco,⁸ Palestine, Qatar, Saudi Arabia and Yemen, submitted responses the questionnaire. However, only one of those six countries, namely Morocco, indicated that it currently produces official statistics on international digital trade. No further details were provided in that regard. All the other countries indicated that they did not generate any official statistics on international digital trade. They therefore only completed the final section of the questionnaire, entitled “Priorities and projects”.

As for countries’ priorities and projects relating to the development and coverage of indicators (question 16), what is striking is that the six countries had markedly different priorities in that area. Nonetheless, a clear hierarchy among

the indicators emerged in terms of the priority attributed by each country to their development.

As shown in table 3, below, a majority of the responding countries assigned high priority to the development of a number of key indicators, namely the value of exports and imports that were digitally ordered and/or delivered (total international digital trade), with a distinction made between goods and services, and the value of exports and imports that were digitally ordered via a fee-based digital intermediation platform with, again, a distinction made between goods and services.

The majority of the responding countries assigned an intermediate priority rating to certain other indicators. Those indicators mostly related to the value of exports and imports of services that were digitally ordered and/or delivered, including the distinction between all the different possible configurations, but also to the value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform and to the value of exports and imports of digital intermediation services.

All other indicators received a mix of low priority and intermediate priority ratings. At least one country attributed a high priority rating to each of those indicators, however, with the notable exception of value of exports and imports of non-monetary transactions in information/data (imputed), to which most responding countries attributed a low priority rating.

8 Two replies were received from Morocco, one from the Bank Al Maghrib and the other from the Office des Changes.

Table 3. Synthesis of replies to Question 16: Please give an account of the priorities and projects relating to the development of statistics on international digital trade in your country in terms of coverage and indicators by ticking the appropriate cells

Indicator	Low priority	Intermediate priority	High priority	Project under consideration	Project under way
Value of exports and imports that were digitally ordered and/or delivered (total international digital trade)	IQ	MO QA	PS SA YE	MO QA SA	
Value of exports and imports of goods that were digitally ordered	IQ	MO QA	PS SA YE	MO QA SA	
Value of exports and imports of services that were digitally ordered and/or delivered		MO PS QA	IQ SA YE	MO QA SA	
Value of exports and imports of services that were digitally ordered	IQ	MO QA YE	PS SA	MO QA SA	
Value of exports and imports of services that were digitally delivered		MO PS QA SA YE	IQ	MO QA SA	
Value of exports and imports of services that were digitally ordered but not digitally delivered	IQ YE	MO QA SA	PS	MO QA SA	
Value of exports and imports of services that were digitally delivered but not digitally ordered		MO PS QA SA YE	IQ	MO QA SA	
Value of exports and imports that were digitally ordered via a fee-based digital intermediation platform (total)	MO IQ	QA	PS SA YE	QA SA	

Indicator	Low priority	Intermediate priority	High priority	Project under consideration	Project under way
Value of exports and imports of goods that were digitally ordered via a fee-based digital intermediation platform	MO IQ	QA	PS SA YE	QA SA	
Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform	MO IQ	PS QA YE	SA	QA SA	
Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform but not digitally delivered	MO IQ	PS QA	SA YE	QA SA	
Value of exports and imports of digital intermediation services	IQ	MO PS QA YE	SA	MO QA SA	
Values of exports and imports of non-monetary transactions in information/data (imputed)	IQ MO SA YE	PS QA		QA SA	

Key: IQ = Iraq; MO = Morocco; PS = Palestine; QA = Qatar; SA = Saudi Arabia; YE = Yemen.

It should also be underscored that three countries, namely Morocco, Qatar and Saudi Arabia, were already considering projects in relation to the development of a significant number of indicators, including:

- Value of exports and imports that were digitally ordered and/or delivered (total international digital trade).
- Value of exports and imports of goods that were digitally ordered.
- Value of exports and imports of services that were digitally ordered and/or delivered.
- Value of exports and imports of services that were digitally ordered.
- Value of exports and imports of services that were digitally delivered.
- Value of exports and imports of services that were digitally ordered but not digitally delivered.
- Value of exports and imports of services that were digitally delivered but not digitally ordered.
- Value of exports and imports of digital intermediation services.

Qatar and Saudi Arabia, but not Morocco, also had projects under consideration in relation to the development of the following indicators:

- Value of exports and imports that were digitally ordered via a fee-based digital intermediation platform (total).
- Value of exports and imports of goods that were digitally ordered via a fee-based digital intermediation platform.
- Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform.
- Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform but not digitally delivered.
- Values of exports and imports of non-monetary transactions in information/data (imputed).

Palestine, Saudi Arabia and Yemen were the three countries attributing the highest number of “high priority” ratings to the development of international digital trade indicators, while Iraq and Morocco were the two countries attributing the highest number of “low priority” ratings, even though Morocco, like Qatar and Saudi

Arabia, declared that it had a number of projects under consideration for the development of many of those indicators.⁹

Yemen added that monitoring imports of digitally ordered and delivered goods by means of smuggling or by an unofficially approved means of transport was an especially high priority.

As for the priorities and projects relating to the development of statistics on international digital trade in terms of economic activity, institutional sector or geographical breakdown (question 17), table 4 illustrates that the six countries again had markedly different priorities, with, for example, Iraq and Saudi Arabia attributing a low level of priority to the development of breakdowns and Yemen viewing the development of most of breakdowns as a matter of high priority.

Overall, the responding countries tended to rank most of the breakdowns as a matter of intermediate priority, although three countries, namely Palestine, Saudi Arabia and Yemen, viewed the generation of data disaggregated by type of digital trade as a matter of high priority.

9 That apparent paradox may stem from the fact that most answers from Morocco were submitted by the Office des Changes, which is responsible, primarily, for compiling international merchandise trade statistics. Indeed, most of the “low priority” ratings were attributed to digital trade in services.

Table 4. Synthesis of replies to Question 17: Please give an account of the priorities and projects relating to the development of statistics on international digital trade in your country in terms of economic activity, institutional sector or geographical breakdown by ticking the appropriate cells

Type of breakdown	Low priority	Intermediate priority	High priority	Project under consideration	Project under way
Type of digital trade (i.e. digitally ordered, digitally delivered, digitally ordered via a DIP etc.)	IQ	MO QA	PS SA YE	MO QA SA	
Classification of goods and services that are digitally traded	IQ	MO PS QA	SA YE	MO QA SA	
Institutional sector of the resident party to the digital transaction	IQ MO PS	QA SA	YE	QA SA	
For businesses, main economic activity of the resident party to the digital transaction	IQ MO	QA SA	PS YE	QA SA	
Geographical breakdown of exports of goods that were digitally ordered	IQ SA	MO PS QA YE		MO QA SA	
Geographical breakdown of imports of goods that were digitally ordered	IQ SA	MO PS QA	YE	MO QA SA	
Geographical breakdown of exports of services that were digitally ordered	IQ SA	MO PS QA YE		MO QA SA	
Geographical breakdown of imports of services that were digitally ordered	IQ SA	MO PS QA	YE	MO QA SA	
Geographical breakdown of exports of services that were digitally delivered	IQ SA	MO PS QA YE		MO QA SA	
Geographical breakdown of imports of services that were digitally delivered	IQ SA	MO PS QA	YE	MO QA SA	

Type of breakdown	Low priority	Intermediate priority	High priority	Project under consideration	Project under way
Geographical breakdown of exports that were digitally ordered via a DIP	IQ MO SA	QA YE	PS	QA SA	
Geographical breakdown of imports that were digitally ordered via a DIP	IQ MO SA	QA	PS YE	QA SA	

Key: IQ = Iraq; MO = Morocco; PS = Palestine; QA = Qatar; SA = Saudi Arabia; YE = Yemen.

Yemen added that the classification of business sectors active in that field and their geographical breakdown was also of high priority.

Three countries, namely Morocco, Qatar and Saudi Arabia, already had projects under consideration in relation to the development of a large number of breakdowns, namely:

- Type of digital trade (i.e., digitally ordered, digitally delivered, digitally ordered via a DIP etc.).
- Classification of goods and services that are digitally traded.
- Geographical breakdown of exports of goods that were digitally ordered.
- Geographical breakdown of imports of goods that were digitally ordered.
- Geographical breakdown of exports of services that were digitally ordered.

- Geographical breakdown of imports of services that were digitally ordered.
- Geographical breakdown of exports of services that were digitally delivered.
- Geographical breakdown of imports of services that were digitally delivered.

Qatar and Saudi Arabia, but not Morocco, also had projects under consideration in relation to the development of the following dimensions of disaggregation:

- Institutional sector of the resident party to the digital transaction.
- For businesses, main economic activity of the resident party to the digital transaction.
- Geographical breakdown of exports that were digitally ordered via a DIP.
- Geographical breakdown of imports that were digitally ordered via a DIP.

3. Summary

An assessment of the status, trends and challenges associated with the development of international digital trade statistics in Arab countries was the primary aim of the study reviewed in the present report. More specifically, the study was conducted with a view to enhancing understanding of current initiatives to generate and disseminate statistics on international digital trade in ESCWA member countries, as well as the stakes, challenges and projects in that area.

The analysis was conducted through the development of a questionnaire and the responses received in that regard from the statistical authorities in ESCWA member countries.

The questionnaire, entitled “UNESCWA stocktaking questionnaire on the availability of international digital trade statistics in its member countries”, attached in the Annex to the present report, addressed four main issues, namely:

- (a) Data production and dissemination;
- (b) Methodological references, concepts and definitions;
- (c) Data sources, compilation and estimations;
- (d) Priorities and projects.

The section entitled “Data production and dissemination” was drafted with a view to enhancing understanding of the data produced and disseminated in the respondent’s country, including the indicators used and how data was disaggregated. The section also contained questions regarding the available metadata.

The section entitled “Methodological references, concepts and definitions” was drafted in order to understand whether any international methodological reference was used in the production of statistics on international digital trade in the country in question, whether the statistics on digital trade produced in that country were fully aligned with that international reference, and whether any adaptations to international concepts and methodologies were necessary in order to generate high-quality statistics on digital trade in that country.

The section entitled “Data sources, compilation and estimations” was drafted to enhance understanding of the main data sources used to compile indicators and the key challenges impeding the development and calculation of relevant indicators.

The final section, entitled “Priorities and projects” was drafted to deepen understanding of digital trade statistical development priorities and projects in the country in question, including in connection with expanding economic activity and institutional sector coverage and in terms of geographical breakdown.

The questionnaire was thus conceived in order to provide detailed information on the state of play with regard to digital trade statistics production and dissemination, the methodologies adopted in the compilation of those statistics, the main data sources and the compilation practices implemented in that process. The questionnaire

also aimed to enhance understanding of the major challenges faced by countries with regard to digital trade statistics and their projects and priorities in that area.

The sections outlined above were preceded by an introduction in which all concepts used in the questionnaire were fully explained. The methodology followed in the development of the questionnaire was based on the Handbook on Measuring Digital Trade, including its definitions of digital trade, digitally ordered trade, digitally delivered trade, digital intermediation platforms and fee-based digital intermediation platforms.

Six ESCWA member countries, namely Iraq, Morocco, Palestine, Qatar, Saudi Arabia and Yemen, submitted responses to the questionnaire. However, only one of those six countries, namely Morocco, indicated that it currently produces official statistics on international digital trade. All the other countries indicated that they did not generate any official statistics on international digital trade. They therefore only completed the final section of the questionnaire, entitled "Priorities and projects".

As for countries' priorities and projects relating to the development and coverage of indicators (question 16), what is striking is that the six countries had markedly different priorities in that area. Nonetheless, a clear hierarchy among the indicators emerges in terms of the priority attributed by each country to their development.

A majority of the responding countries assigned high priority to the development of a number of key indicators, namely the value of exports and imports that were digitally ordered and/or delivered (total international digital trade), with a distinction made between goods and services, and the value of exports and imports that were

digitally ordered via a fee-based digital intermediation platform with, again, a distinction made between goods and services.

As for the priorities and projects relating to the development of statistics on international digital trade in terms of economic activity, institutional sector or geographical breakdown (question 17), the six countries again had markedly different priorities, with, for example, Iraq and Saudi Arabia attributing a low level of priority to the development of breakdowns and Yemen viewing the development of most of breakdowns as a matter of high priority.

Overall, the responding countries tended to rank most of the breakdowns as a matter of intermediate priority, although three countries, namely Palestine, Saudi Arabia and Yemen, viewed the generation of data disaggregated by type of digital trade as a matter of high priority. Three responding countries, namely Morocco, Qatar and Saudi Arabia, were considering projects relating to the development of a wide range of international digital trade indicators and breakdowns.

In conclusion, although only six countries responded to the questionnaire, their responses highlighted a number of interesting facts, including that countries had markedly different priorities in terms of their efforts to develop international digital trade indicators and in terms of their efforts to develop projects to facilitate the generation of those statistics. Nonetheless, a clear hierarchy appears both in terms of indicators and in terms of breakdowns, facilitating the identification of priority indicators, namely the value of exports and imports that were digitally ordered and/or delivered (total international digital trade) with a distinction between goods and services, the value of exports and imports that were digitally

ordered via a fee-based digital intermediation platform with, again, a distinction made between goods and services, and one breakdown, namely by type of digital trade, as of high priority at the regional level.

Naturally, additional responses to the questionnaire would be welcome, as could be used to fine tune that diagnostic tool, and facilitate efforts by policy makers to support the generation of those statistics across the Arab region.

Annex

UNESCWA stocktaking questionnaire on the availability of international digital trade statistics in its member countries

Introduction

This questionnaire aims at understanding the situation, stakes, challenges and projects attached to the production and dissemination of statistics on international digital trade in the UNESCWA member countries.

The definitions adopted in this questionnaire are those of the OECD-WTO-IMF “Handbook on Measuring Digital Trade” except when otherwise specified.

In particular, the following definitions apply throughout this questionnaire:

Digital trade: all trade that is digitally ordered and/or digitally delivered.

Digitally ordered trade: international sale or purchase of a good or service conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders. This can also be labelled as cross-border e-commerce.

Digitally delivered trade: international transactions that are delivered remotely in an electronic format, using computer networks specifically designed for the purpose. It is so far considered that only services can be digitally delivered.

For both digitally ordered and digitally delivered trade, transactions covered correspond to orders/deliveries made over computer networks (the web/Internet, including via mobile devices, extranet or via electronic data interchange (EDI)) while all transactions on goods or services not ordered or provided over computer networks, including in particular transactions on goods or services ordered or provided via phone, fax or manually typed email, are excluded.

E-commerce: sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders (OECD Guide to Measuring the Information Society, Paris, 2011).

Digital intermediation platforms (DIPs) are made of two distinct categories of platforms, i.e. platforms that generate revenues through, (i) intermediation fees (whether paid explicitly or not), or

“fee-based digital intermediation platforms”, and (ii) advertising and/or data streams, or “free digital intermediation platforms”. These two categories of DIPs are further defined below.

Fee-based digital intermediation platforms (DIPs): 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 rendering the services that are being sold (intermediated).

Fee-based digitally intermediated platform services are defined as online fee-based intermediation services enabling transactions between multiple buyers and multiple sellers, without the intermediation platform taking economic ownership of the goods or rendering services that are being sold (intermediated).

Free digital intermediation platforms: platforms providing digital services to multiple end-users that are financed through advertising and/or data revenues paid by units seeking to sell goods and services to end-users rather than charging end-users explicit fees for the digital services that they receive. This category is a subset of the “data- and advertising-driven digital platforms (DADDP)”.

You are kindly required to send back this questionnaire to Dr. Thierry Coulet (thierry.coulet@euriane.fr) with a copy to Ms. Wafa Aboul Hosn (aboulhosn@un.org) within two weeks after dissemination of this form.

I. Identification of the respondent

Name and address of the responding institution	
Unit in charge of statistics on international digital trade within the institution	
Name and duties of the respondent	
Contact details	

II. Data production and dissemination

1. Are any official statistics produced on international digital trade in your country? (if not, jump to section V)	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
2. If yes, are these statistics produced by your institution?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

If no, please indicate the name of the institution in charge of producing these statistics:	
-	
3. Are these statistics disseminated?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If yes, please indicate the dissemination support(s) used:	
<input type="checkbox"/>	Website (if so, please indicate the website page address on which these statistics are disseminated):
<input type="checkbox"/>	Online publication (if so, please indicate the website page address on which this publication is available):
<input type="checkbox"/>	Paper publication (if so, please specify the title and frequency of the publication):
<input type="checkbox"/>	Other (if so, please specify):

4. What statistical indicators on international digital trade are produced in your country?

#	Indicator	Please indicate if data series are available (Yes/No) If partially available, please indicate data gaps	Available since? (1)
1	Value of exports and imports that were digitally ordered and/or delivered (total international digital trade)		
2	Value of exports and imports of goods that were digitally ordered	If yes, please indicate at what level of the classification in use (to be specified) the data is available	
3	Value of exports and imports of services that were digitally ordered and/or delivered	If yes, please indicate at what level of the classification in use (to be specified) the data is available	
3b	If answer to 3 is yes, do you have separate figures for values of exports and of imports of services that were digitally ordered or digitally delivered		
4	Value of exports and imports that were digitally ordered via a fee-based digital intermediation platform (total)		

#	Indicator	Please indicate if data series are available (Yes/No) If partially available, please indicate data gaps	Available since? (1)
5	Value of exports and imports of goods that were digitally ordered via a fee-based digital intermediation platform	If yes, please indicate at what level of the classification in use (to be specified) the data is available	
6	Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform	If yes, please indicate at what level of the classification in use (to be specified) the data is available	

Please indicate since when (year) the data series is available without break.

In case more statistical characteristics would be available, please provide a complete description in a separate sheet, mentioning "Answer to Question 4".

5. Is a geographical breakdown of these transactions available?

#	Indicator	Please indicate if a geographical breakdown of exports and imports is available (Yes/No)	Available since? (1)
1	Value of exports and imports that were digitally ordered and/or delivered (total international digital trade)	If yes, please indicate at what level is this geographical breakdown available	
2	Value of exports and imports of goods that were digitally ordered	If yes, please indicate at what level is this geographical breakdown available	
3	Value of exports and imports of services that were digitally ordered and/or delivered	If yes, please indicate at what level is this geographical breakdown available	
3b	If answer to 3 is yes, do you have separate figures for the geographical breakdown of exports and of imports of services that were digitally ordered or digitally delivered?		

Please indicate since when (year) the data series is available without break.

6a. Is a breakdown of these transactions by institutional sector available?

#	Indicator	Please indicate if a breakdown of exports and imports by institutional sector is available (Yes/No)	Available since? (1)
1	Value of exports and imports that were digitally ordered and/or delivered (total international digital trade)	If yes, please indicate for which institutional sectors is this indicator available	
2	Value of exports and imports of goods that were digitally ordered	If yes, please indicate for which institutional sectors is this indicator available	
3	Value of exports and imports of services that were digitally ordered and/or delivered	If yes, please indicate for which institutional sectors is this indicator available	
3b	If answer to 3 is yes, do you have separate figures for the institutional sector breakdown of exports and of imports of services that were digitally ordered or digitally delivered?		

Please indicate since when (year) the data series is available without break.

6b. In case statistics on the non-financial and/or financial corporations sectors would be available, please indicate if a breakdown by industry is available for any of the indicators produced.

Yes

☐

No

☐

If yes, please indicate at what level of the classification in use (to be specified) are these indicators available:

-

7. Is a breakdown of digital trade transactions by type of good/service available for any of the indicators produced?

Yes

☐

No

☐

If yes, please indicate at what level of the classification in use (to be specified) are these indicators available:

8. Is a breakdown of digital trade transactions by type of digital tool used (e.g. own website, apps, DIP, EDI etc.) available for any of the indicators produced?	
-	
9. For digital intermediation services exports and imports, is a breakdown by type of good or service intermediated available?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If yes, please specify the classification(s) used and the level at which information is available:	
-	
10. Are any metadata on international digital trade statistics produced and disseminated?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If yes, please provide a link to these metadata or a copy of the document in which they are described:	
-	

III. Methodological references, concepts and definitions

11. Is any international methodological reference (e.g. the OECD-WTO-IMF Handbook on Digital Trade Statistics) used in the production of statistics on international digital trade in your country?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If yes, please specify the methodological reference in use (publication or website reference):	
-	
12. In case such an international methodological reference is used, are the statistics on international digital trade produced in your country fully aligned with this international reference?	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

14. Please give an account of the main data sources used to compile the indicators produced in your country by ticking the appropriate cells. When details are required, they can be added in the table itself or, if more space is required, on a separate sheet mentioning "Complements to question 14".

[illegible]

Indicator (1)	Specific surveys directed to DIPs (2)	Other specific surveys (2)	Questions included in the frame of general surveys (3)	Bank information on settlements	Customs data	Other administrative data sources (4)	Big data (5)	Modeling and estimation methods (6)	Other data sources (5)
delivered (total international digital trade)									
Value of exports and imports of goods that were digitally ordered									
Value of exports and imports of services that were digitally ordered and/or delivered									

- (1) Several columns might be ticked on a same line.
- (2) Please transmit a copy of the survey questionnaire.
- (3) Please specify the nature of the survey and transmit a copy of the module or questions relating to international digital trade.
- (4) Please specify.
- (5) Please specify.
- (6) Please specify the key principles of this modelling and the key input data used.

[illegible]

(7) Several columns might be ticked on a same line.

(8) Please specify.

V. Priorities and projects

16. Please give an account of the priorities and projects relating to the development of statistics on international digital trade in your country in terms of coverage and indicators by ticking the appropriate cells. When details are required, they can be added in the table itself or, if more space is required, on a separate sheet mentioning “Complements to question 16”.

Indicator (1)	Low priority	Intermediate priority	High priority	Project under consideration (2)	Project under way (2)
Value of exports and imports that were digitally ordered and/or delivered (total international digital trade)					
Value of exports and imports of goods that were digitally ordered					
Value of exports and imports of services that were digitally ordered and/or delivered					
Value of exports and imports of services that were digitally ordered					
Value of exports and imports of services that were digitally delivered					
Value of exports and imports of services that were digitally ordered but not digitally delivered					
Value of exports and imports of services that were digitally delivered but not digitally ordered					

Indicator (1)	Low priority	Intermediate priority	High priority	Project under consideration (2)	Project under way (2)
Value of exports and imports that were digitally ordered via a fee-based digital intermediation platform (total)					
Value of exports and imports of goods that were digitally ordered via a fee-based digital intermediation platform					
Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform					
Value of exports and imports of services that were digitally ordered via a fee-based digital intermediation platform but not digitally delivered					
Value of exports and imports of digital intermediation services					
Values of exports and imports of non-monetary transactions in information/data (imputed)					

(1) As many additional lines as required can be added.

(2) Please specify.

17. Please give an account of the priorities and projects relating to the development of statistics on international digital trade in your country in terms of economic activity, institutional sector or geographical breakdown by ticking the appropriate cells. When details are required, they can be added in the table itself or, if more space is required, on a separate sheet mentioning “Complements to question 17”.

Type of breakdown (1)	Low priority	Intermediate priority	High priority	Project under consideration (2)	Project under way (2)
Type of digital trade (i.e. digitally ordered, digitally delivered, digitally ordered via a DIP etc.)					
Classification of goods and services that are digitally traded					
Institutional sector of the resident party to the digital transaction					
For businesses, main economic activity of the resident party to the digital transaction					
Geographical breakdown of exports of goods that were digitally ordered					
Geographical breakdown of imports of goods that were digitally ordered					
Geographical breakdown of exports of services that were digitally ordered					
Geographical breakdown of imports of services that were digitally ordered					
Geographical breakdown of exports of services that were digitally delivered					
Geographical breakdown of imports of services that were digitally delivered					

Type of breakdown (1)	Low priority	Intermediate priority	High priority	Project under consideration (2)	Project under way (2)
Geographical breakdown of exports that were digitally ordered via a DIP					
Geographical breakdown of imports that were digitally ordered via a DIP					

(1) As many additional lines as required can be added.

(2) Please specify.

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As digital trade has become a priority area for most countries, ESCWA presents the current study to provide an overview of the main statistical framework for measuring digital trade, “The Handbook on Measuring Digital Trade”, developed by OECD, WTO and IMF in 2019, which is consistent with economic statistical standards. The study summarizes the data sources available to measure digitally ordered trade, digitally delivered trade, the currently available data and the impact of the COVID-19 pandemic in the Arab countries. While the pandemic adversely affected international trade in goods in the Arab countries, including the digital trade in goods, due to logistical disruptions, closure of 65 per cent of air and land border crossings and a 22 per cent fall in road freight transport in 2020 compared with 2019, it had a more positive impact on the international trade in services, with trade redistributed among modes of supply. The final part of the study provides detailed information, based on a questionnaire developed by ESCWA for this purpose, on the production and dissemination of digital trade statistics in the Arab countries, to enhance understanding of the major challenges faced by countries, as well as their projects and priorities in the development of international digital trade statistics.

The analysis showed that only one Arab country currently produces official statistics on international digital trade. Countries had different priorities in terms of their efforts to develop international digital trade indicators and breakdowns, and in terms of their efforts to develop projects to facilitate the generation of those statistics. Priority areas include the value of exports and imports digitally ordered and/or delivered (total international digital trade) with a distinction between goods and services, the value of exports and imports digitally ordered via a fee-based digital intermediation platform with a distinction between goods and services and the breakdown by type of digital trade.

