

Measuring digitally delivered trade

IMF, OECD, UNCTAD and WTO



5TH INTERNATIONAL SEMINAR ON BIG DATA
FOR OFFICIAL STATISTICS – MAY 2024

Roadmap

- Definitions
- A few measurement challenges
- A two-step approach to compile digitally delivered trade
- Key recommendations and caveats

Handbook on Measuring Digital Trade

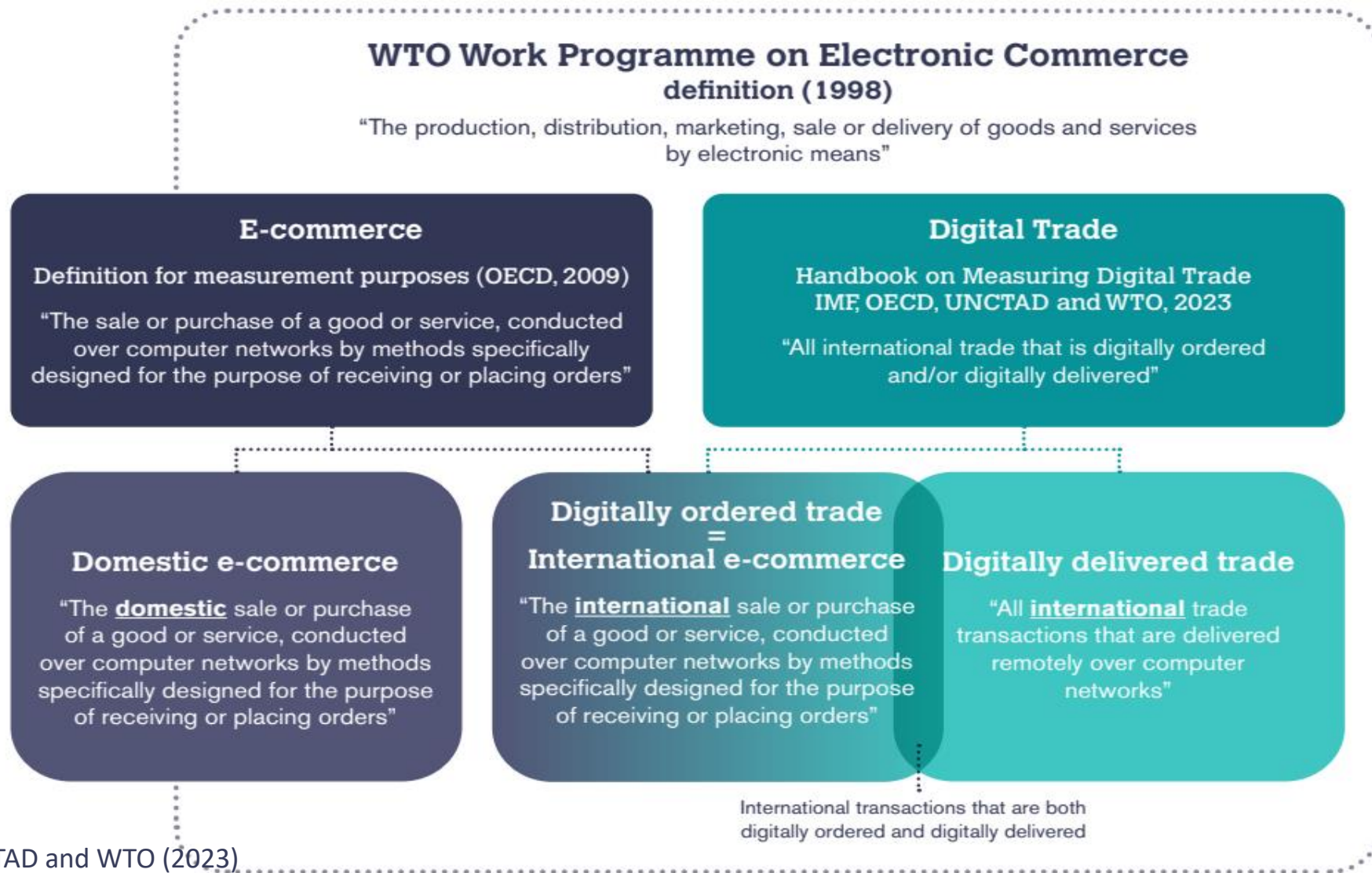
SECOND EDITION



Definitions



Key concepts



Source: IMF, OECD, UNCTAD and WTO (2023)

Digitally delivered trade

*"All international trade transactions that are **delivered remotely over computer networks**"*

- The concept of digital delivery is de facto equivalent to that of "ICT-enabled services", defined as in UNCTAD (2015) and **digitally delivered trade equivalent to Mode 1** (cross-border supply) for digitally deliverable services.
- Only **services** can be digitally delivered.
- All the institutional actors can take part in a digital transaction.

Mode 1 services

Not digitally delivered Digitally delivered

Mode 2 services

Digitally delivered Not digitally delivered

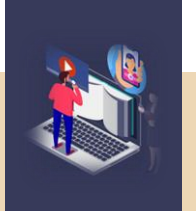


Digitally delivered trade is different from digitally ordered trade



Digital ordering

- All goods and services can be digitally ordered
- Instantaneous – all that matters is the situation at the moment the order is placed
- No human-to-human interaction
- Only through methods (i.e. software) specifically designed for the purpose of receiving or placing orders



Digital delivery

- Only **certain** services can be digitally delivered
- Can take place over a longer period
- Can involve significant interpersonal interactions (occurring over computer networks)
- Through a wide range of channels including some not specifically designed for delivering services remotely
 - ✓ Web sites
 - ✓ Apps
 - ✓ Online platforms
 - ✓ Video calls
 - ✓ Voice calls
 - ✓ Digital files
 - ✓ Email

Examples of digitally delivered transactions

“All international trade transactions that are delivered remotely over computer networks”

Services that are **inherently digital** in nature:

- ✓ Software downloads and online software
- ✓ Cloud computing services
- ✓ Streaming media
- ✓ Online gaming services (and similar)
- ✓ etc.

Services where **in-person interactions now take place online**

- ✓ Telehealth consultations
- ✓ Financial/legal advice
- ✓ E-learning
- ✓ Yoga lessons
- ✓ etc.

Services where **in-person interactions have been replaced with self-service through online interfaces**

- ✓ Online banking
- ✓ Share-dealing
- ✓ E-learning
- ✓ etc.

Services where **physical delivery of outputs has been replaced by delivery in the form of digital files**

- ✓ Architectural services (blueprints)
- ✓ R&D services (reports)
- ✓ Accounting services (financial reports)
- ✓ etc.

Measurement challenges



One key measurement issue: overlap ordering and delivering

Some digitally delivered services are also digitally ordered

Item			Total exports	Total imports
1	Total digital trade	2+3 minus 4		
2	Digitally ordered trade	2.1+2.2		
2.1	Goods			
2.1.a	<i>of which: via DIPs</i>			
2.2	Services			
2.2.a	<i>of which: via DIPs</i>			
3	Digitally delivered trade			
3.a	<i>of which: via DIPs</i>			
4	Digitally ordered <i>and</i> digitally delivered trade			
4.a	<i>of which: digital intermediation services</i>			
	Addendum items			
A.1	Digital trade in services	2.2+3 minus 4		

Sources for measuring digitally delivered trade

Figure 4.1: Institutional sector and conceptual coverage of digitally delivered trade sources

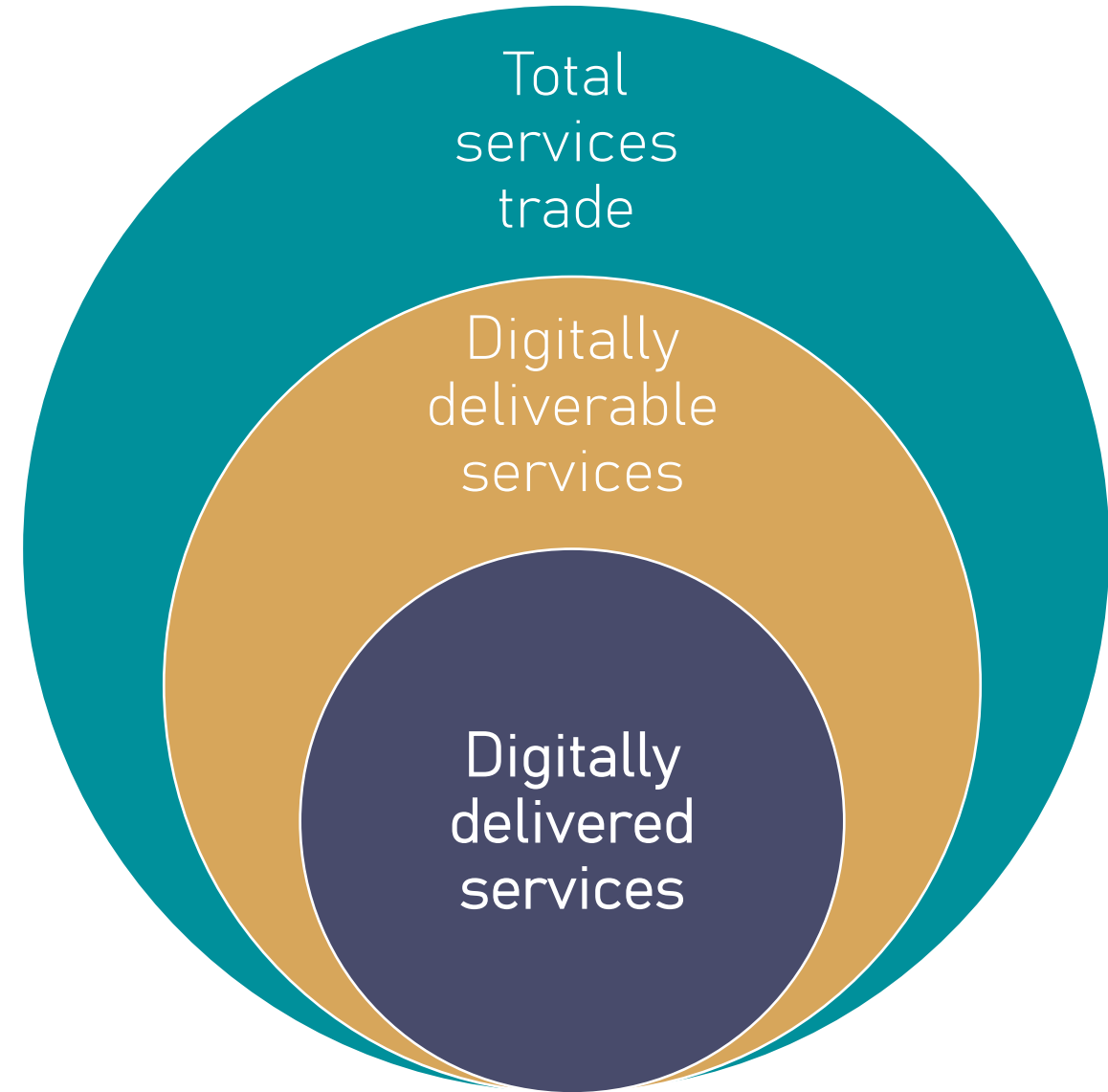
	Businesses				Households		All institutional sectors					
	ITS Surveys ¹		Business ICT surveys ^{1,2}		Household surveys ³		Travel surveys ⁴		International Transaction Reporting System (ITRS) ⁵		VAT data ⁶	
Section reference	4.4.2		4.4.2		4.5.3		Box 4.3		4.5.1		4.5.2	
Exports (X) / Imports (M)	X	M	X	M	X	M	X	M	X	M	X	M
Digitally delivered trade												
<i>of which: via DIPs</i>												
Digitally ordered and digitally delivered trade												
Digitally deliverable services												
Legend:	Partial coverage / conceptual alignment (see notes)											
	Comprehensive coverage / conceptual alignment (depending on survey design)											

A two-step approach to compile digitally delivered trade



Overview of the approach

- Key steps:
 - Identify digitally **deliverable** services
 - Carve out services actually digitally **delivered**



Step 1: List digitally deliverable services

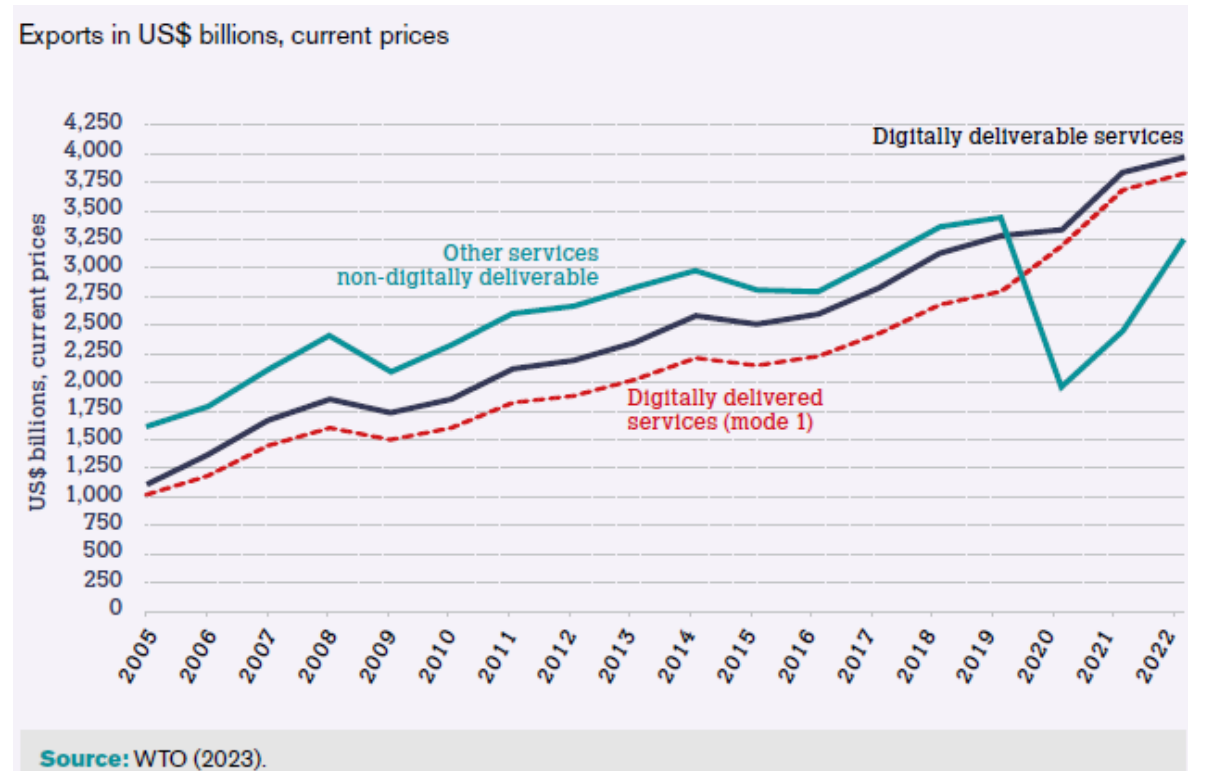
- Builds upon the list of “**potentially ICT-enabled services**” (TGServ)
- Compares the information from descriptions of Central Product Classification Version 2.1 and Extended Balance of Payments Services classification with the definition of ICT-enabled services.
- Keeps the scope of services considered relevant for digitally delivered trade as a **subset of those identified as relevant for Mode 1**.

	SDMX-BOP DSD ⁴ components	EBOPS 2010 components
Digitally deliverable services supplied cross-border (Mode 1)		
Insurance and pension services	SF	6
Financial services	SG	7
Charges for the use of intellectual property n.i.e.	SH	8
Telecommunications, computer and information services	SI	9
Research and development services	SJ1	10.1
Professional and management consulting services	SJ2	10.2
Architectural, engineering, scientific and other technical services	SJ31	10.3.1
Trade-related services	SJ34	10.3.4
Other business services n.i.e.	SJ35	10.3.5
Audio-visual and related services	SK1	11.1
Health services	SK21	11.2.1
Education services	SK22	11.2.2
Heritage and recreational services	SK23	11.2.3
Digitally deliverable services consumed abroad (Mode 2)	<i>Recorded <u>within</u> item SD (Travel)</i>	<i>Recorded <u>within</u> item 4 (Travel)</i>

Step 2: Derive share of digitally delivered trade

- Measure the **share of digitally deliverable services that is traded by Mode 1**
- **Using business surveys**
 - International Trade in Services (ITS) surveys
 - Use complementary sources to get full coverage
- **Using expert judgement**
 - Simplified allocation approach e.g. relying on the Eurostat-WTO model

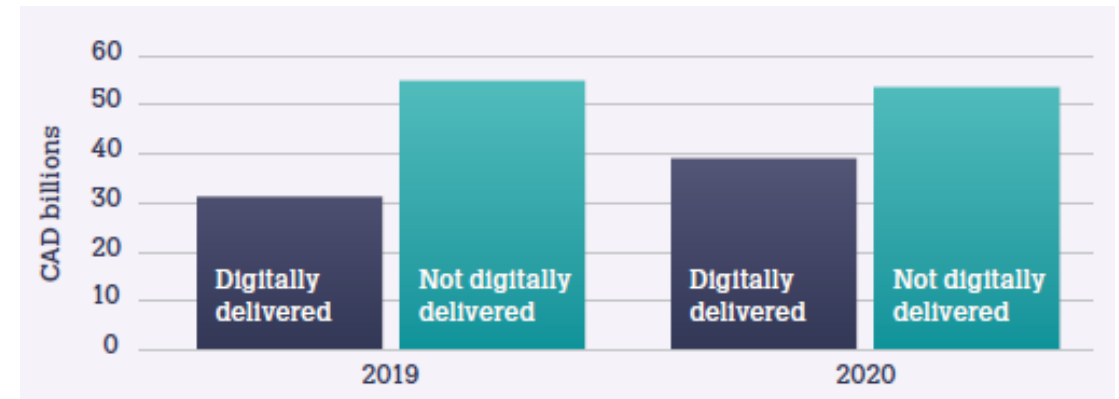
Global exports



International trade in services -- ITS

- ITS surveys **enhanced with supplemental questions** provide the best means for obtaining direct estimates of digitally delivered services trade.
- Questionnaires can target digital delivery and Mode 1 delivery at the same time.
- Examples of the United States and the United Kingdom and Canada
- The UNCTAD model questionnaire provides a useful starting point in designing questions to measure digitally delivered exports.

Digitally delivered services exports, Canada



Source: Statistics Canada

Complementary information

	Country examples	Advantages	Limits
ICT Survey	No example	More flexible than ITS survey, can measure the overlap ordering/delivering	No real-life example May be difficult to combine with ITS (without business register)
International Transactions Reporting System (ITRS)	Brazil	Read-made source Supplemental information can be included with a low burden on respondents	Most suited for transactions involving large firms Transaction recorded when payments are made Need stringent quality checks
VAT data from non-resident digital services providers	Argentina, Denmark, Hungary, Ireland	Read-made source Useful source of information on household imports of digitally delivered services	Partial coverage Digitally and physically delivered services not always separated
Household survey	Canada	Household trade not covered by ITS/ITRS	Households can fail to distinguish correctly international transactions from domestic

Key recommendations and caveats



Key recommendations and caveats

Defining
digitally
deliverable
services

Measure the share of
digitally deliverable
services that is traded
by Mode 1

- Use of ITS surveys
- Complementary information
- Expert judgement

Some items may
require
additional
sources (eg DIPs
or digitally
delivered
services
consumed
abroad)

Economy-wide
estimates
derived by
integrating
different
information
sources. This
needs to be
properly
communicated.

Thank you for your attention

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