



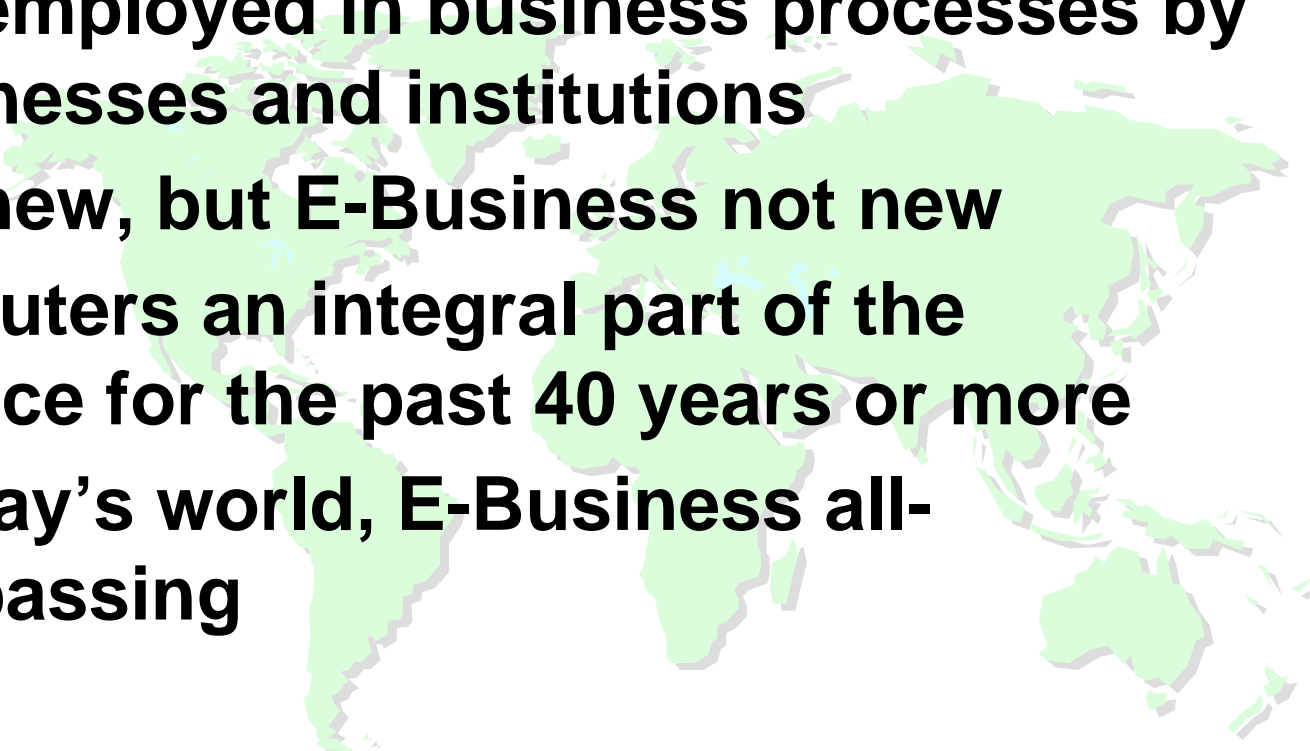
WORKSHOP ON MEASURING E-COMMERCE AS PART OF IMTS

**UN Economic and Social
Commission for Western Asia**


Concepts related to E-Commerce



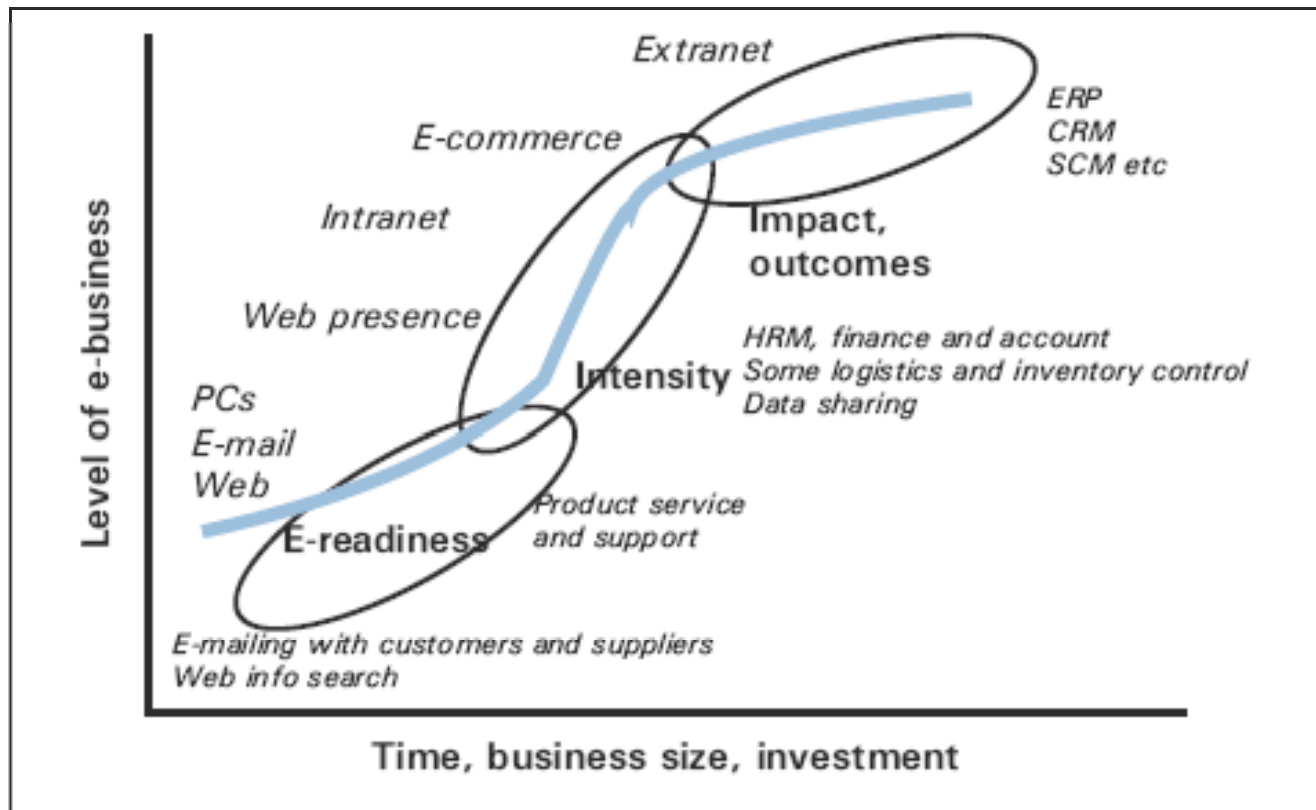
E-business

- **ICTs employed in business processes by all businesses and institutions**
 - **term new, but E-Business not new**
 - **Computers an integral part of the workplace for the past 40 years or more**
 - **In today's world, E-Business all-encompassing**
- 

E-business (continued)

- **Customer acquisition and retention**
 - **E-commerce**
 - **Order fulfillment and order tracking**
 - **Logistics and inventory control**
 - **Finance, budget and account management**
 - **Human resource management**
 - **Product service and support**
 - **Research and development**
 - **Knowledge management**
- 

E-business (continued)




Source: adapted from E-Commerce and Development Report (UNCTAD, 2004) and Industry Canada (1999).

E-business (continued)

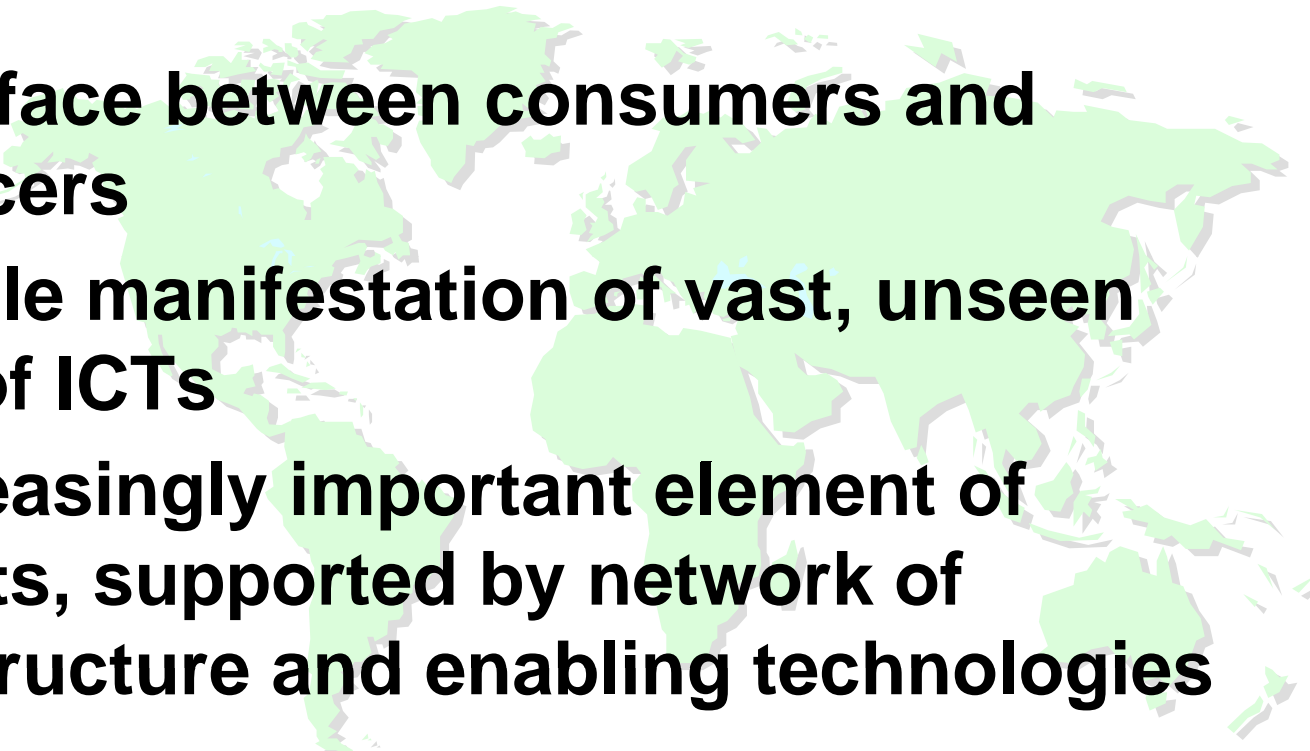
The Internet permeates all economic and social domains (OECD):

- **business**
- **government**
- **health care**
- **education**
- **environmentally-friendly technologies**

What is E-Commerce?

- 
- **interface between supply and demand**
 - **increasingly important market element**
 - **supported by global network of infrastructure and enabling technologies**
 - **transcends national boundaries**

E-commerce

- **interface between consumers and producers**
 - **visible manifestation of vast, unseen body of ICTs**
 - **increasingly important element of markets, supported by network of infrastructure and enabling technologies**
- 

E-commerce (continued)

- **applies to virtually all sectors of the economy**
- **conventionally, manufacturer sells to a wholesaler, who sells to a retailer, who makes the final sale to a consumer**
- **today, any or all of these transactions could take the form of E-Commerce**

E-Auctions

Goods are advertised on-line for sale to the highest bidder

may be listed subject to a reserve price – the lowest price acceptable to the seller

may also be offered for prior sale at a specified price

facilitate selling and buying by individuals

may also be used by smaller merchants

as retail outlets by linking the merchants' and the auction's websites.

E-Auctions (continued)

- **frequently involve PayPal (virtual bank)**
- **PayPal records receipts and payments, but not underlying nature of transactions**
- **PayPal not an appropriate source for measurement of E-Commerce**
- **E-Auctions involve direct contacts between buyers and sellers**
- **in contrast, stock markets involve trades made through intermediaries (brokers)**
- **E-Auctions are a significant form of E-Commerce**

Definitions of E-Commerce

Some issues:

- are all electronic media, including telephone communication, to be included?
- is the comparison and selection of products on-line that results in an in-store sale to be included as E-Commerce?
- is electronic payment an essential aspect of e-commerce?
- is an electronic communication a sufficient basis for a valid, legally binding, contract?

Definitions of E-Commerce (continued)

Elements of E-Commerce:

- products offered and orders received on-line
- secure means of electronic payment to guarantee payment for goods shipped
- extensive array of technologies critical to the conduct of E-Commerce
- Internet a central element
- telecommunications infrastructure and software are essential underpinnings of an interactive electronic highway

Definitions of E-Commerce (continued)

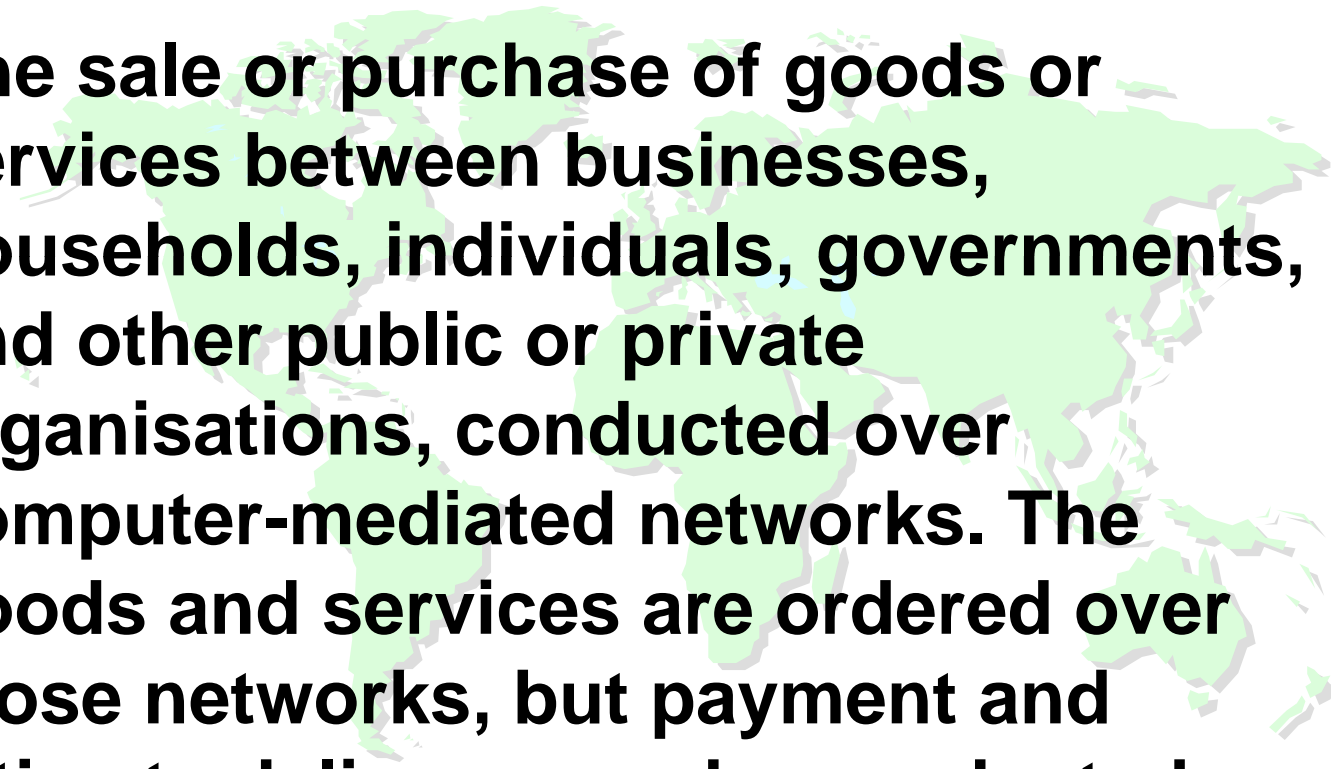
According to OECD Working Party on Indicators for the Information Society (WPIIS):

- **key characteristic of E-Commerce is the method by which an order is placed or received, not the mode of payment or channel of delivery**
- **two definitions of E-Commerce – one broad, one narrow**

Definitions of E-Commerce (continued)

BROAD definition of Electronic transaction:

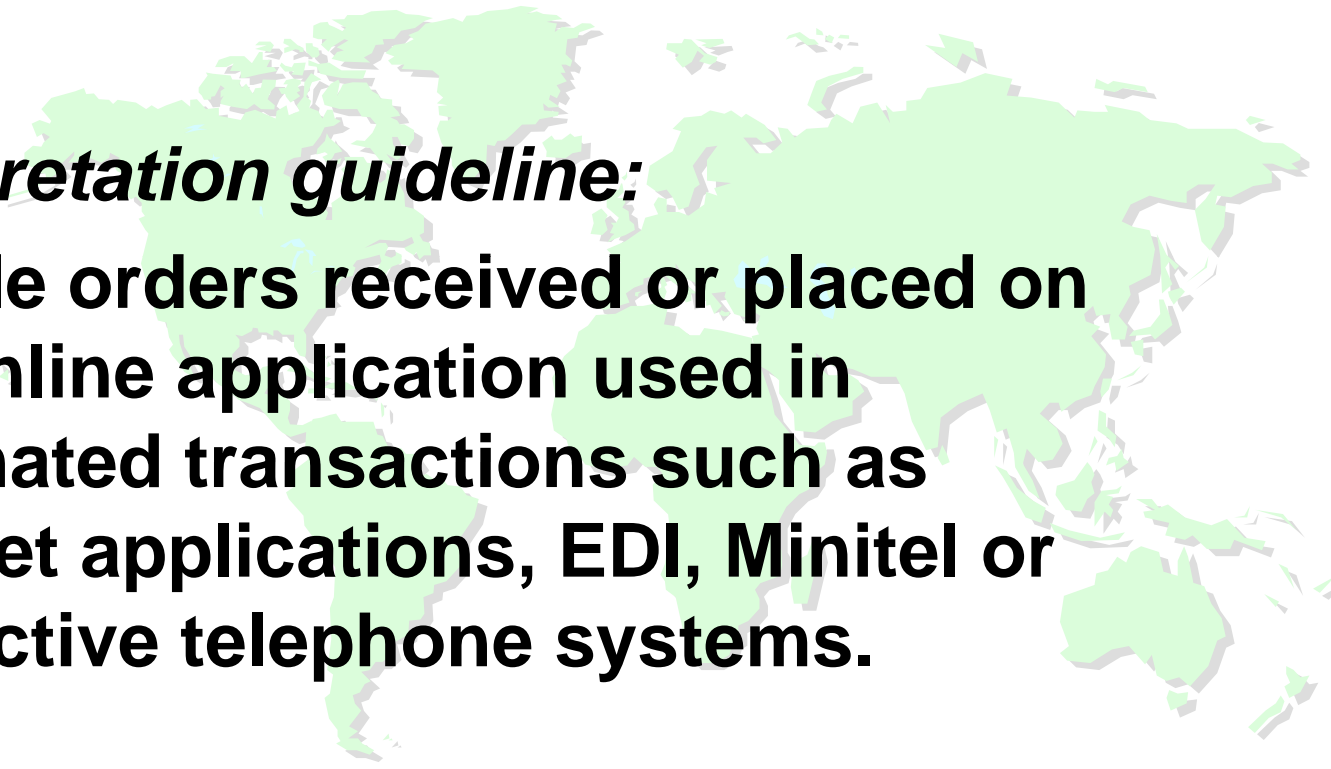
The sale or purchase of goods or services between businesses, households, individuals, governments, and other public or private organisations, conducted over computer-mediated networks. The goods and services are ordered over those networks, but payment and ultimate delivery may be conducted on- or off-line.



Definitions of E-Commerce (continued)

Interpretation guideline:

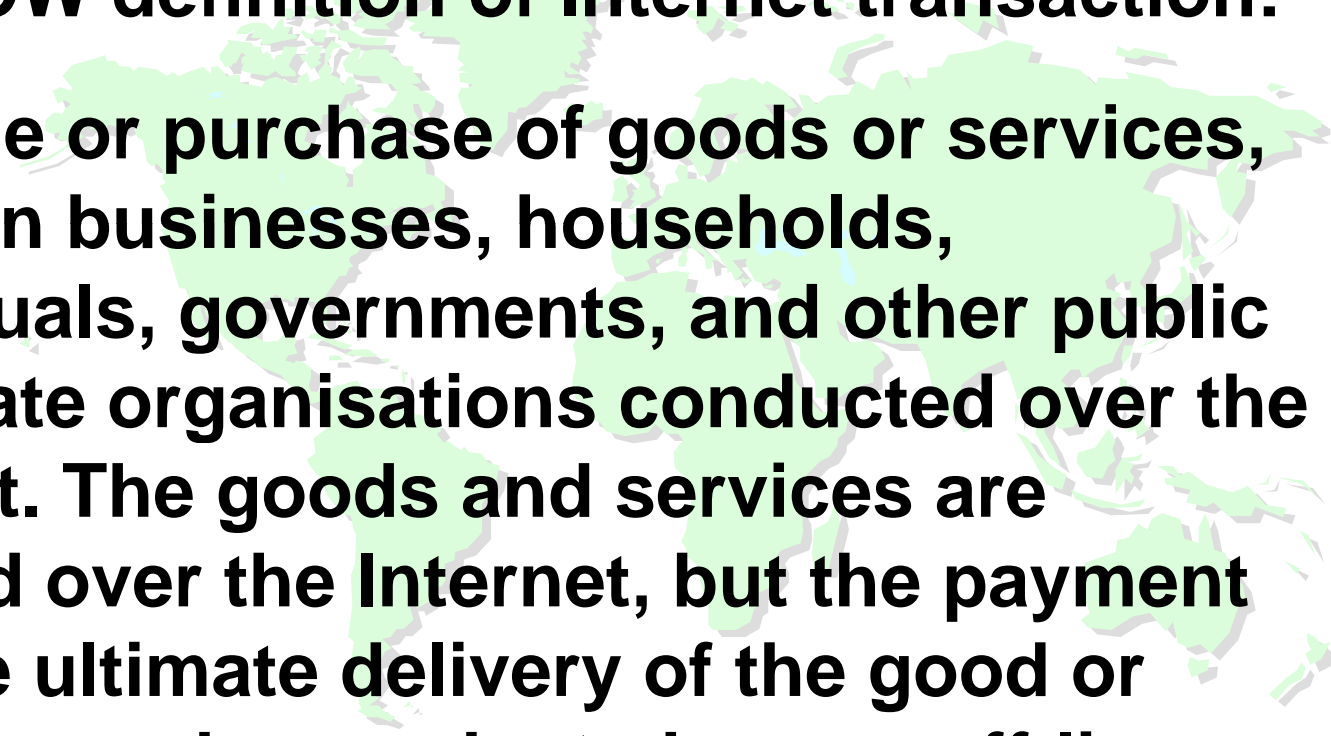
Include orders received or placed on any online application used in automated transactions such as Internet applications, EDI, Minitel or interactive telephone systems.



Definitions of E-Commerce (continued)

NARROW definition of Internet transaction:

The sale or purchase of goods or services, between businesses, households, individuals, governments, and other public or private organisations conducted over the Internet. The goods and services are ordered over the Internet, but the payment and the ultimate delivery of the good or service may be conducted on- or off-line.



Definitions of E-Commerce (continued)

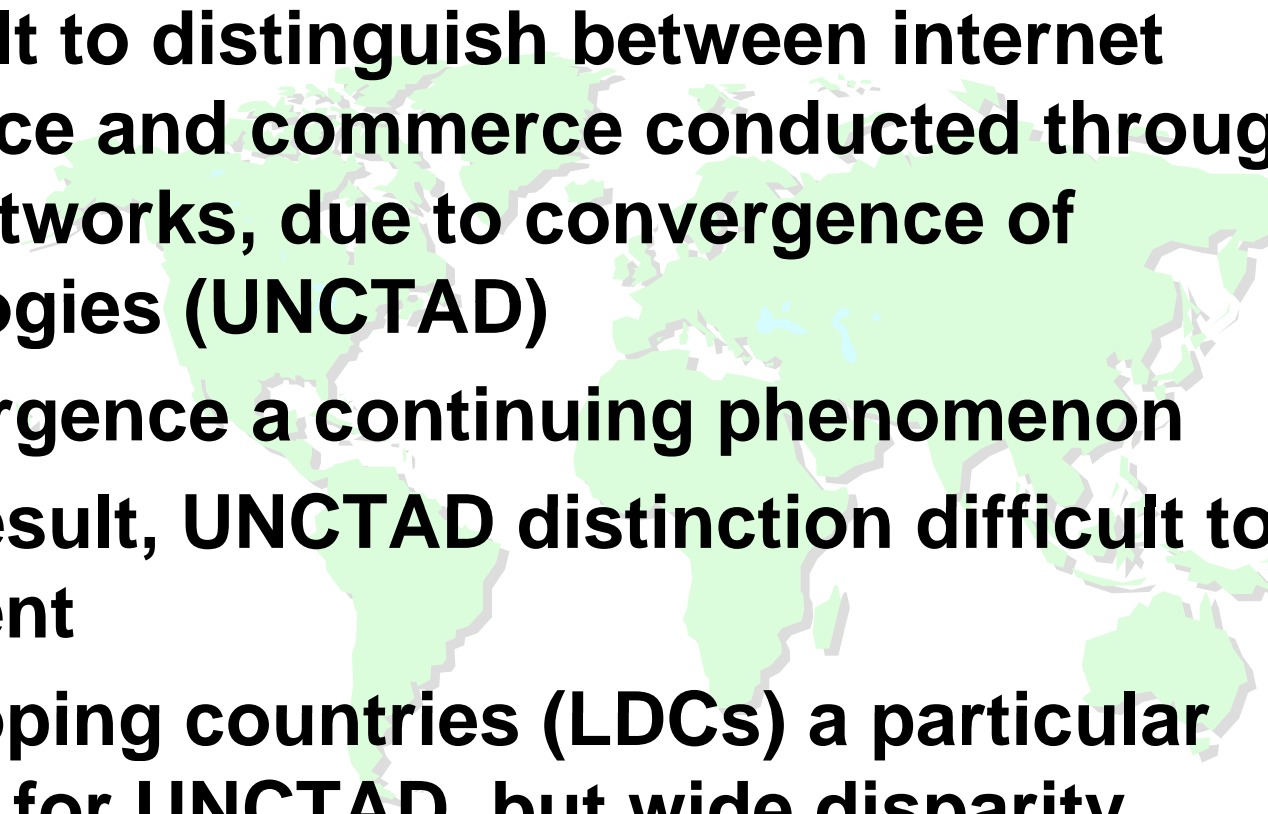
Interpretation guideline:

Include orders received or placed on any Internet application used in automated transactions such as Web pages, Extranets and other applications that run over the Internet, such as EDI over the Internet, Minitel over the Internet, or over any other Web enabled application regardless of how the Web is accessed (e.g. through a mobile or a TV set, etc.) Exclude orders received or placed by telephone, facsimile, or conventional e-mail.

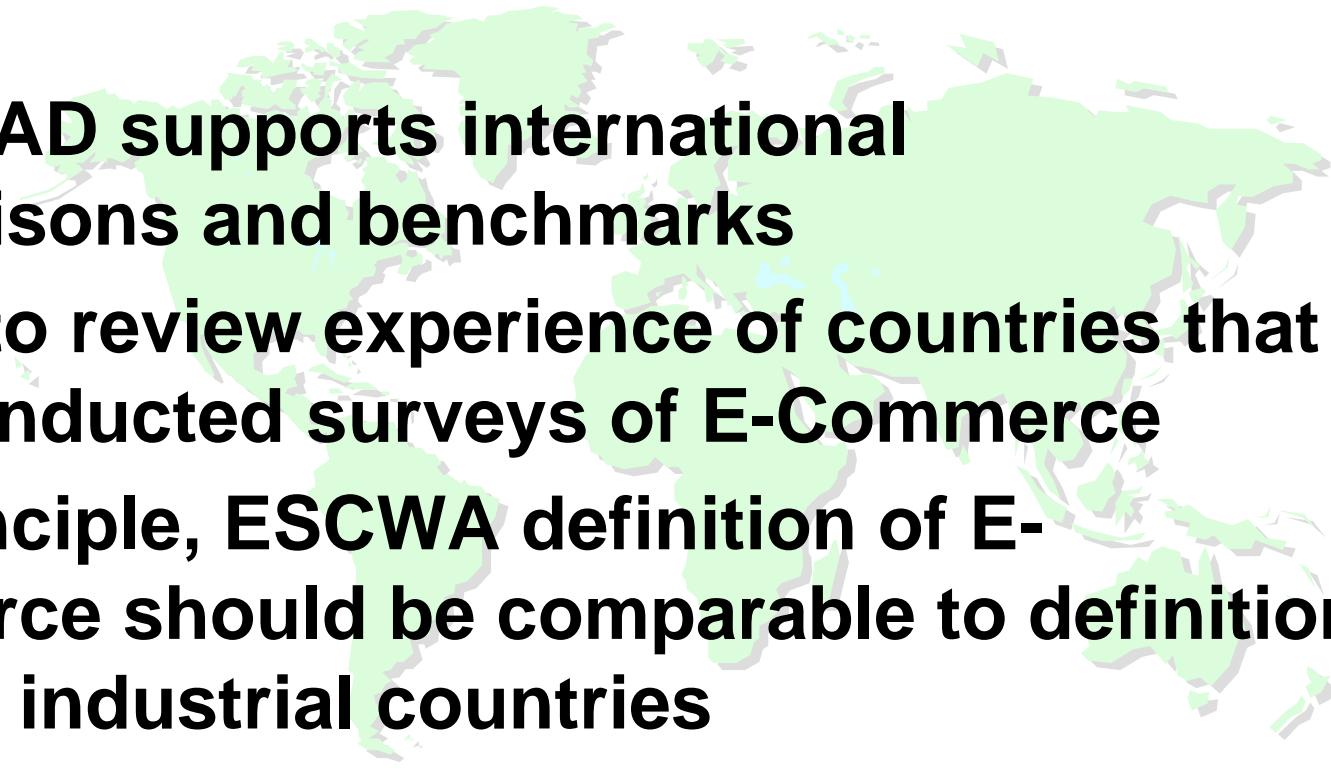
Definitions of E-Commerce (continued)

- broad definition describes *electronic transactions*
- narrow definition relates to *Internet transactions*
- Internet transactions exclude e-mail transactions
- According to UNCTAD's *Manual for the Production of Statistics on the Information Economy*, E-Commerce should be restricted to Internet transactions, including e-mail transactions

Definitions of E-Commerce (continued)

- **difficult to distinguish between internet commerce and commerce conducted through other networks, due to convergence of technologies (UNCTAD)**
 - **convergence a continuing phenomenon**
 - **as a result, UNCTAD distinction difficult to implement**
 - **developing countries (LDCs) a particular concern for UNCTAD, but wide disparity between LDCs**
- 

Definitions of E-Commerce (continued)

- **UNCTAD supports international comparisons and benchmarks**
 - **need to review experience of countries that have conducted surveys of E-Commerce**
 - **in principle, ESCWA definition of E-Commerce should be comparable to definition used by industrial countries**
- 

Definitions of E-Commerce (continued)

Eurostat: transactions over Internet and other computer-mediated networks

OECD: transactions over Internet, including Web sites, specialised Internet marketplaces, extranets, EDI over the Internet, Internet-enabled mobile phones, excluding e-mail

U.S.A.: order placed or price and terms negotiated over an Internet, extranet, EDI network, electronic mail, or other on-line system


Canada: orders placed over the Internet, telephone, facsimile or other technology, including E-mail, website, EDI over the Internet, Extranets on the Internet, and other methods of receiving orders over the Internet

Why is E-Commerce important?

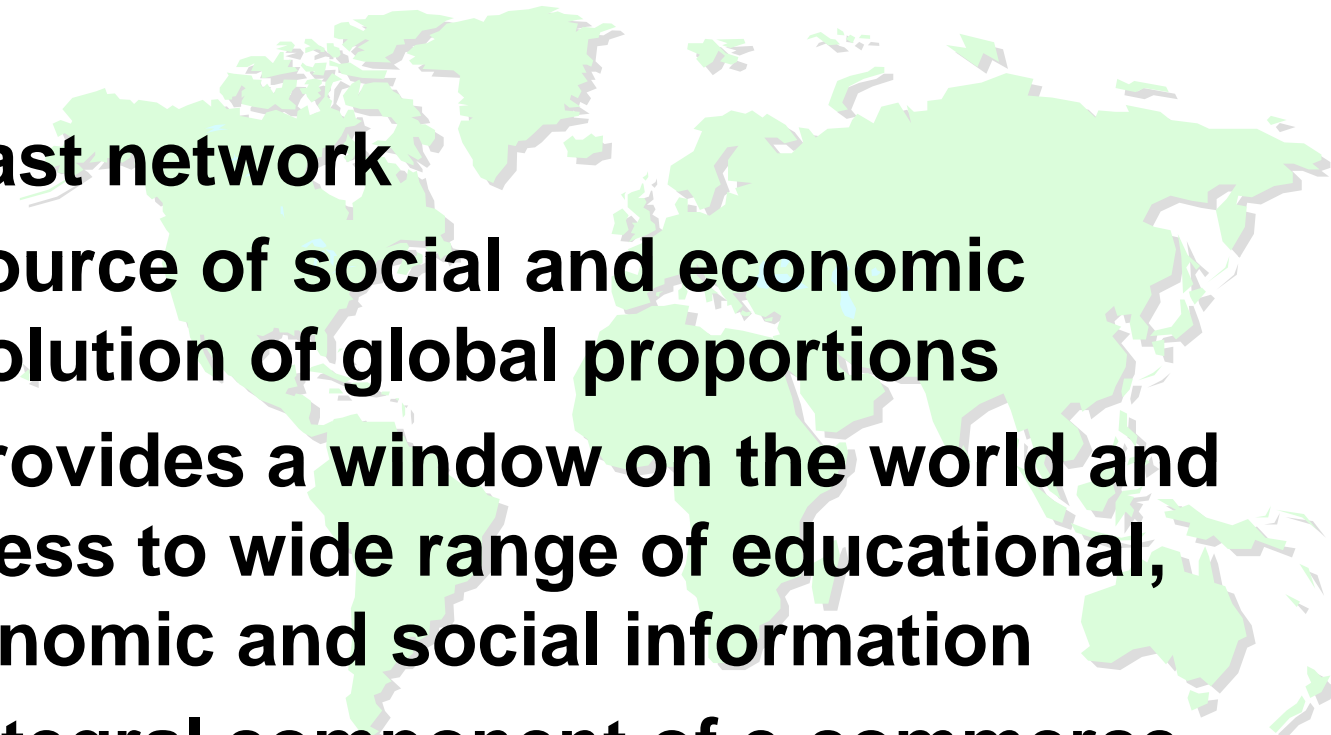
- **integral part of ICT**
- **engine of economic growth**
- **improves productivity**
- **lowers costs**
- **increases efficiency**



Effects of E-Commerce

- **transforms supply and demand chains**
 - **exploits ICTs**
 - **improves service delivery**
 - **facilitates interaction with public**
 - **modifies consumption and spending patterns**
 - **affects almost every economic variable of interest**
- 

Impact of the Internet

- 
- **vast network**
 - **source of social and economic revolution of global proportions**
 - **provides a window on the world and access to wide range of educational, economic and social information**
 - **integral component of e-commerce**

Impact of the Internet

- **makes economic activity more efficient**
- **extends social interaction**
- **generates large productivity gains**
- **Examples:**
 - **food giant Nestlé receives all orders from supermarkets over the Internet**
 - **by using on-line networks to optimise delivery routes, shipping company UPS saved 12 million litres of fuel in 2006 from nearly 100,000 trucks**

Impact of ICT

- 
- **governments support ICT to promote economic development**
 - **priority placed on use of ICT to improve a country's competitive position in the international marketplace**
 - **need for better understanding of impact of ICT on the economy**
 - **need for ICT and E-Commerce indicators**


Benefits and Costs of E-Commerce

Benefits

- transcends national boundaries
- lets companies sell products worldwide without an international sales organization
- lets companies restructure marketing arrangements to lower costs, improve efficiency, increase productivity
- cost-effective way for companies with web sites to create value added

Benefits and Costs of E-Commerce (cont.)

Benefits

- expands supply of range of products and prices of same product in different markets
 - makes markets more efficient by:
 - increasing knowledge about prices of comparable products
 - increasing price competitiveness for a range of commodities
 - exerting downward pressure on prices
- 

Benefits and Costs of E-Commerce (cont.)

According to UNCTAD, E-Commerce:

- **brings together large numbers of producers and buyers**
- **reveals market prices and other data to all parties**
- **increased price transparency reduces price differences prevailing in the marketplace**
- **allows buyers to compare prices and make more informed purchasing decisions**
- ***In contrast*, accessing information offline is costly, while intermediaries can distort information on prices and other trade data**

Benefits and Costs of E-Commerce (cont.)

E-Commerce benefits:

- **sellers**
- **buyers**

For traders, E-Commerce can:


- **broaden their market**

OR

- **pose unwelcome competition from the direct contacts it facilitates between buyers and sellers**

Benefits and Costs of E-Commerce (cont.)

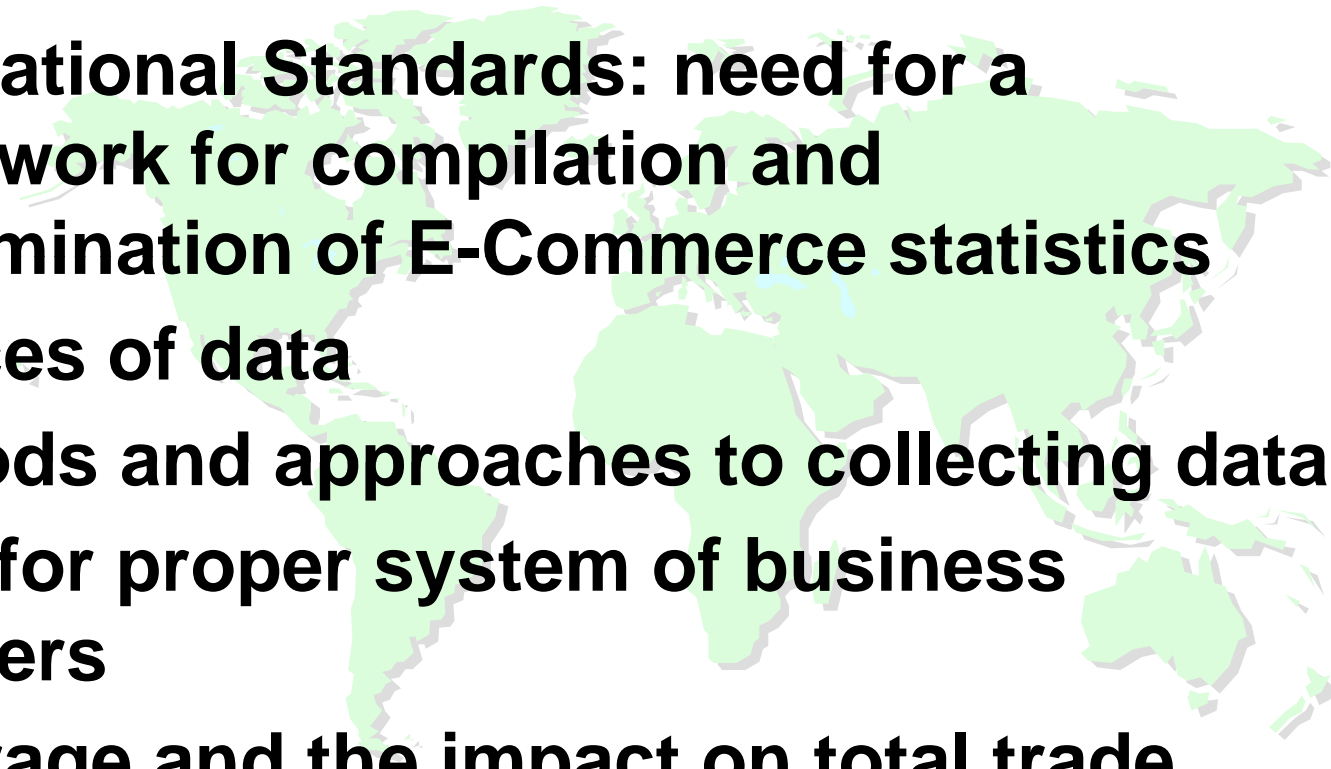
Costs

- **increased choice for consumers could be at the expense of local businesses**
 - **increased competition and downward pressure on prices can reduce profit margins for local businesses engaged in production and distribution**
 - **could lead to increased imports as substitute for sales by local firms**
- 

International standards: Data Development

- **concerted effort by NSOs to develop internationally comparable data on the production and use of ICTs**
- **range of indicators proposed, including data on extent and growth of E-Commerce**
- **ESCWA, UNCTAD and UNDP developing data on E-Commerce relating to IMTS**

International standards: Framework for Compilation and Dissemination

- 
- i. International Standards: need for a framework for compilation and dissemination of E-Commerce statistics**
 - ii. Sources of data**
 - iii. Methods and approaches to collecting data**
 - iv. Need for proper system of business registers**
 - v. Coverage and the impact on total trade**

International Standards: framework for E-Commerce statistics

- **number of different frameworks proposed**
- **for this project, the starting point is UNCTAD's list of core ICT indicators**
- **UNCTAD list divided into elements covering:**
 - **ICT infrastructure and access**
 - **access to, and use of, ICT by households and individuals**
 - **use of ICT by businesses**
 - **ICT sector and trade in ICT goods.**

International standards: Good practices

- international discussions to develop data framework encompassing different aspects of production and use of ICTs
- measuring economic phenomena not easy
- *Satellite Accounts* provide framework for measuring non-standard phenomena (SNA)
- Satellite accounts apply concepts of supply and demand to economic activities affecting a range of industries e.g. tourism

International standards: Good practices

ICT database proposed by OECD:

- ***ICT products***
 - ***ICT infrastructure***
 - ***ICT supply***
 - ***ICT demand by businesses***
 - ***ICT demand by households and individuals***
 - ***ICT Content***
 - ***Cross-cutting topics in information society measurement (e.g. E-Commerce)***
- 

International standards: Good practices

UNCTAD *List of Core ICT Indicators*

- **ICT infrastructure and access**
- **access to, and use of, ICT by households and individuals**
- **use of ICT by businesses**
- **ICT sector and trade in ICT goods**

International Standards: framework for E-Commerce statistics

Core indicators on use of ICT by businesses

Basic core

B1 Proportion of businesses using computers

B2 Proportion of employees using computers

B3 Proportion of businesses using the Internet

B4 Proportion of employees using the Internet

B5 Proportion of businesses with a Web presence

B6 Proportion of businesses with an intranet

B7 Proportion of businesses receiving orders over the Internet

B8 Proportion of businesses placing orders over the Internet

Core indicators on ICT sector and trade in ICT goods

Basic core

ICT1 Proportion of total business sector workforce in ICT sector

ICT2 Value added in ICT sector (as % of total business value added)

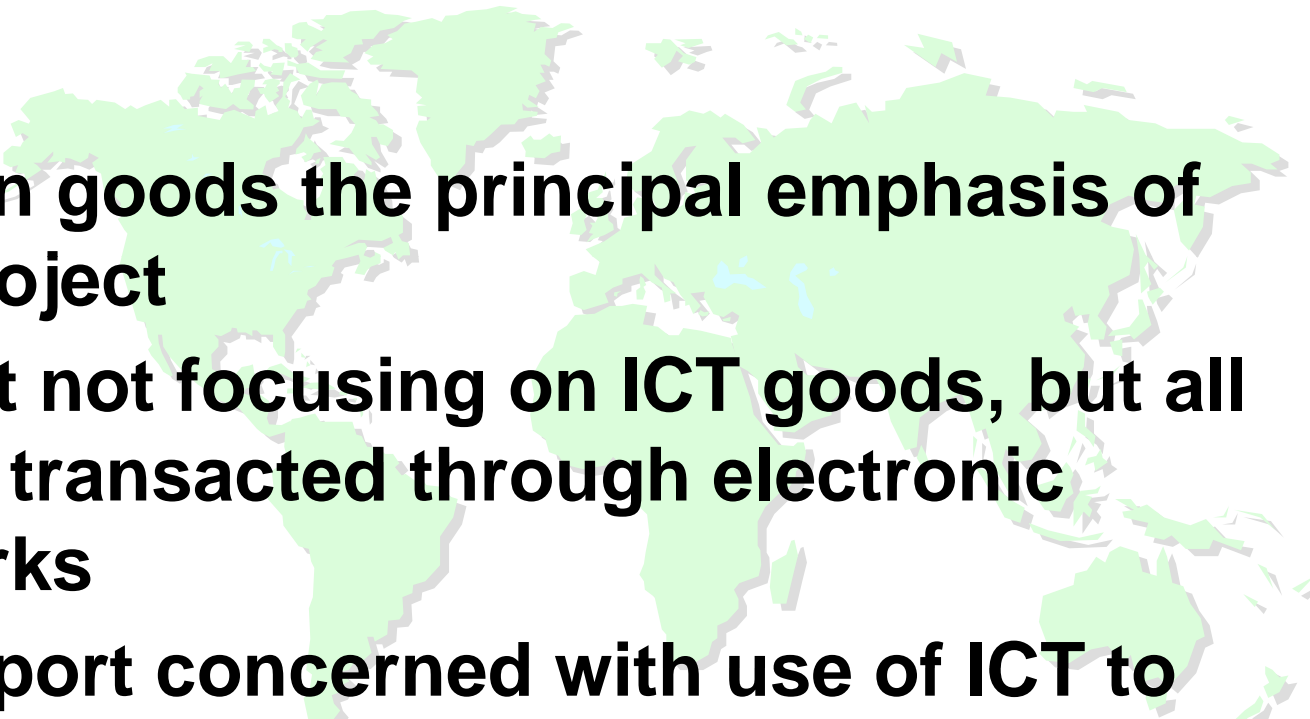
ICT3 ICT goods imports as a percentage of total imports

ICT4 ICT goods exports as a percentage of total exports

International Standards: framework for E-Commerce statistics

- **UNCTAD list goes far beyond exports and imports of goods ordered on-line**
- **the list is not prescriptive (i.e. mandatory), but provides a framework encompassing a wide range of indicators**
- **some indicators readily available from existing data, or from service providers**
- **other indicators – including E-Commerce – likely to involve new statistical collections**

International Standards: framework for E-Commerce statistics

- 
- **trade in goods the principal emphasis of this project**
 - **Project not focusing on ICT goods, but all goods transacted through electronic networks**
 - **this report concerned with use of ICT to order goods through electronic networks**

International standards: Project Objectives

- **enable member countries to compile data on e-commerce related to IMTS to facilitate export and import of goods, particularly goods of significance to the region**
 - **assist trade compilers to collect data on use of the internet and related systems for export and import of goods**
- 

International standards: Project Objectives

- **enhance ESCWA MCs' capacity to collect, process, analyse and disseminate IMTS to strengthen the formulation, monitoring and evaluation of national plans and policies and international and regional trade negotiations**
- **discuss e-markets and on-line auctions, and their benefits and costs, for exports and imports**

International standards: Project Objectives

- **provide recommendations for the definition, production and interpretation of data on e-commerce affecting IMTS by:**
 - **national statistical offices**
 - **customs authorities**
 - **other national institutions involved in trade data compilation (e.g. petroleum companies)**
 - **senior managers and decision-makers involved in trade plans, policies and strategies**
 - **ministries and/or departments which deal with WTO negotiations**
 - **research centres and academic institutions**

International standards

- **OECD and Eurostat questionnaires measure the use of ICTs, involving development of (new) ICT-specific surveys**
- **in contrast, the United States has adapted existing economy-wide surveys**

International standards

- **To facilitate response and minimize reporting burden, many questions in ICT surveys ask for a “Yes” or “No” answer**
- **some monetary values (or equivalent) requested relating to e-commerce**
- **not possible to determine value of E-Commerce from UNCTAD questionnaire**

International standards: UNCTAD

Module B: How your business uses the Internet in its operations

B1. Did your business use the Internet during <reference period>?

B2. Where did your business use the Internet during <reference period>?

B3. What percentage of persons employed in your business routinely used the Internet at work during <reference period>? (Answer in %)

B4. How did your business connect to the Internet during <reference period>?

Multiple responses allowed

B5. Did your business have a web presence as at <reference date>?

B6. Did your business receive orders for goods or services (that is, make sales) via the Internet during <reference period>?*

B7. Did your business place orders for goods or services (that is, make purchases) via the Internet during <reference period>?*

B8. For which of the following activities did your business use the Internet during <reference period>?

Module D: Other information about your business

D1. Main activity of your business (please describe)

D2. Number of persons employed at <reference date>

D3. Book value of fixed assets at <reference date>

D4. Total turnover (in value terms, excluding VAT) at <reference date>

International standards: OECD

What proportion of your business' total turnover during <period> (excluding value added taxes) did those Internet orders (sales) represent?%

Please provide percentage breakdowns of the value of those Internet orders (sales), by types of products your business sold:

Physical products (ordered on line and delivered off line).....%

Digitised products (downloaded or accessed on line).....%

Services which are ordered on line but delivered off line.....%

Total....100%

How orders were received

Via an on-line web site....%

Through another Web site (e.g. specialised Internet marketplace or an agent's site).....%

Via EDI over the Internet.....%

Via other internet technologies (please specify).....%

Total.....100%

International standards: OECD

Types of customers your business sold to

Other businesses...% (incl. related businesses)

Individual consumers..... %

Government and other non-business
organizations..... %

Total.....100%

***Please provide percentage breakdowns of the
value of those Internet orders (sales), by the
location of customers your business sold to:***

Customers within your country.... %

Customers outside your country.. %

Total.....100%

International standards: OECD

- **OECD questionnaire asks for % of total sales ordered on-line**
- **allow values to be calculated for on-line sales (e-commerce)**
- **other questions ask about the nature of the electronic network involved**

BUT

- **no questions about nature of goods sold**
- **little information on destination of goods sold**

International standards: Eurostat

Orders placed via the Internet:

- **Did your enterprise order products/services via the Internet, during 2006 (excluding manually typed e-mails)? (Filter question) Yes / No**
- **Please indicate for 2006 the percentage of the Internet orders in relation to the total purchases (in monetary terms, excluding VAT)**
 - **Less than 1%**
 - **1% or more and less than 5%**
 - **5% or more and less than 10%**
 - **10% or more and less than 25%**
 - **25% or more**

International standards: Eurostat

Alternative Question:

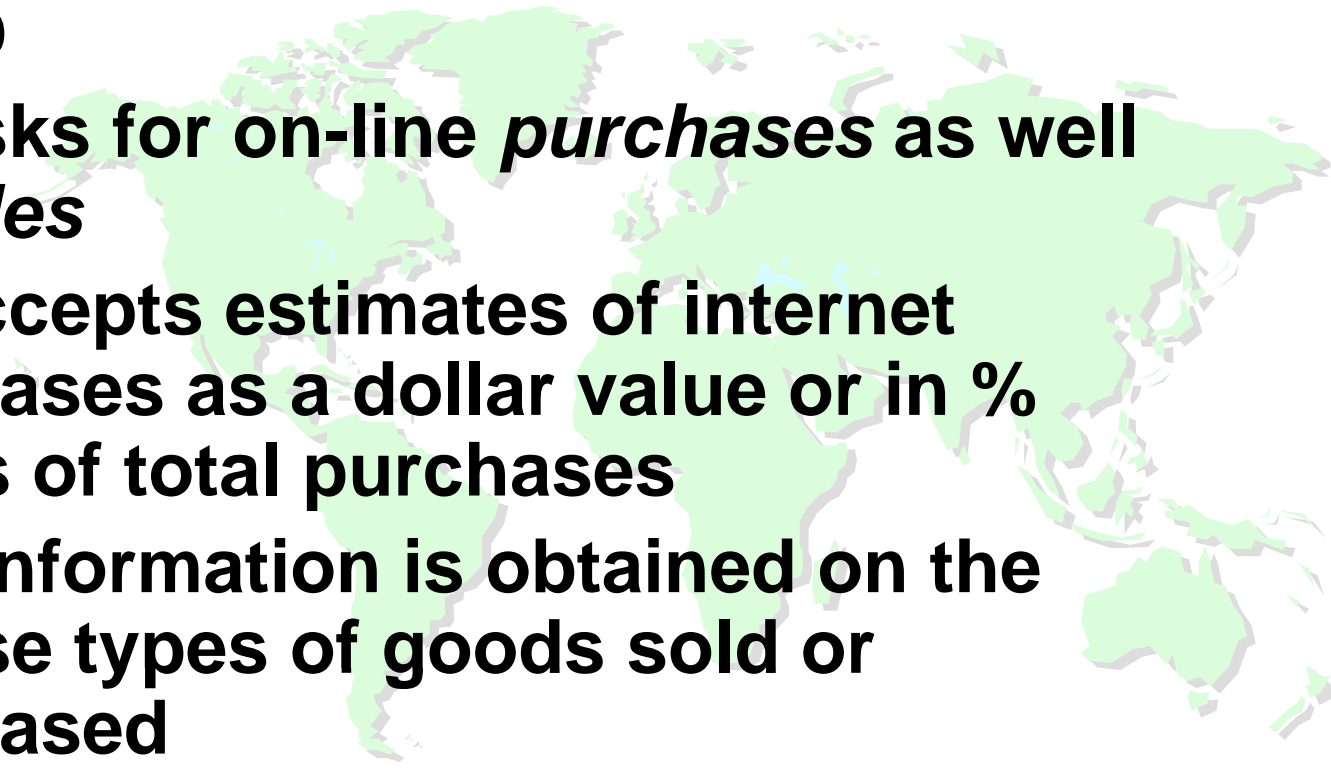
Please state the value of purchases resulting from orders placed via the Internet (in monetary terms, excluding VAT), in 2006

- **If you can't provide this value, please estimate the % of total purchases resulting from orders placed via the Internet in 2006.**

Orders received via the Internet (Sales):

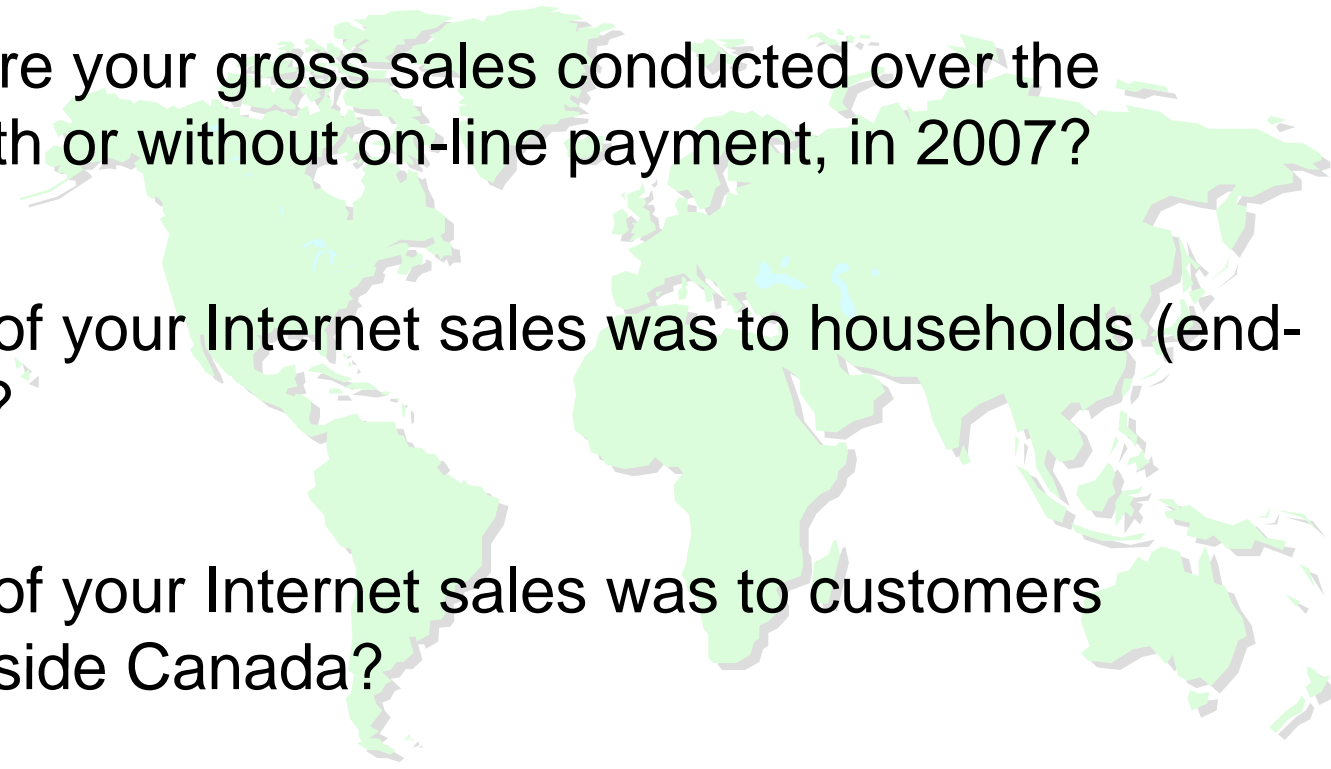
- **Did your enterprise receive orders via the internet, during 2006 (excluding manually typed e-mails)? (Filter question) Yes / No**
- **Please state the value of the turnover resulting from orders received via the Internet (in monetary terms, excluding VAT), in 2006**
- **If you can't provide this value, please estimate % of total turnover resulting from orders received via the Internet in 2006**

International standards: Eurostat

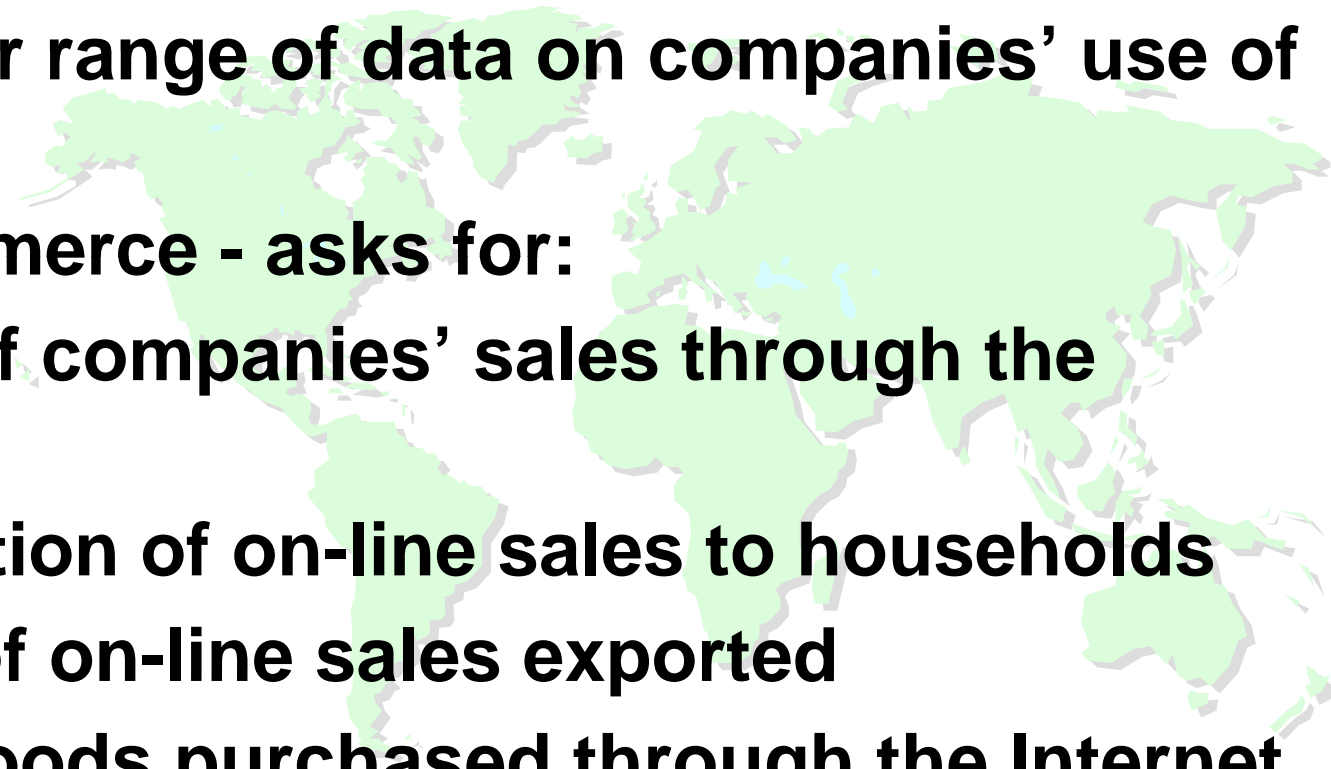
- **Eurostat survey differs slightly from OECD**
 - **it asks for on-line *purchases* as well as *sales***
 - **it accepts estimates of internet purchases as a dollar value or in % bands of total purchases**
 - **no information is obtained on the precise types of goods sold or purchased**
 - **no information obtained on the countries of origin and destination**
- 

International standards: Canada

Section B. Internet Use

- 
4. What were your gross sales conducted over the Internet, with or without on-line payment, in 2007?
 5. What % of your Internet sales was to households (end-consumer)?
 6. What % of your Internet sales was to customers located outside Canada?
 7. Does your organization use the Internet to purchase goods or services with or without on-line payment?

International standards: Canada

- asks for range of data on companies' use of ICTs
 - E-Commerce - asks for:
 - value of companies' sales through the Internet
 - Proportion of on-line sales to households
 - Value of on-line sales exported
 - were goods purchased through the Internet, (but no question on the amount)
- 

International standards: United States

E-SHIPMENTS

- A. Did this plant use any electronic network to control or coordinate the flow of any of the shipments of goods reported in Question 5, line A (i.e. Total value of products shipped)? Or were the orders for any of the shipments reported in Question 5, line A received over an electronic network? Electronic networks include: Electronic Data Interchange (EDI), Extranet, E-mail, Other online systems, Internet. If Yes - Go to line B If No - Go to Question 77**
- B. % of total reported in Question 5, line A that were ordered, or whose movement was controlled or coordinated over electronic networks (Report whole percents. Estimates are acceptable.) 2006...% 2005...%**

International standards: Computer-mediated networks

Internet: Internet Protocol-based networks (www, Extranet over the Internet, EDI over the Internet, Internet-enabled mobile phones)

Electronic Data Interchange (EDI): computer-to-computer exchange of business data in standard formats that requires no human intervention or re-keying. Emulates conventionally printed documents

Intranet: internal company communications network using Internet protocol. Typically set up behind a firewall

Extranet: extension of Intranet that allows external users to access parts of an organization's Intranet.

Computer-mediated networks other than the Internet: Minitel, interactive telephone systems, networks employed for communication between computers but not publicly accessible, e.g. proprietary networks made up of leased lines, local and interactive telephone systems

International standards: United States

- **U.S. surveys provide broad estimates of e-commerce**
 - **but no information is collected on types of goods sold, exports, or country of destination**
 - **despite the absence of commodity detail, detailed industry data is obtained**
 - **detailed industry information generated by establishment surveys**
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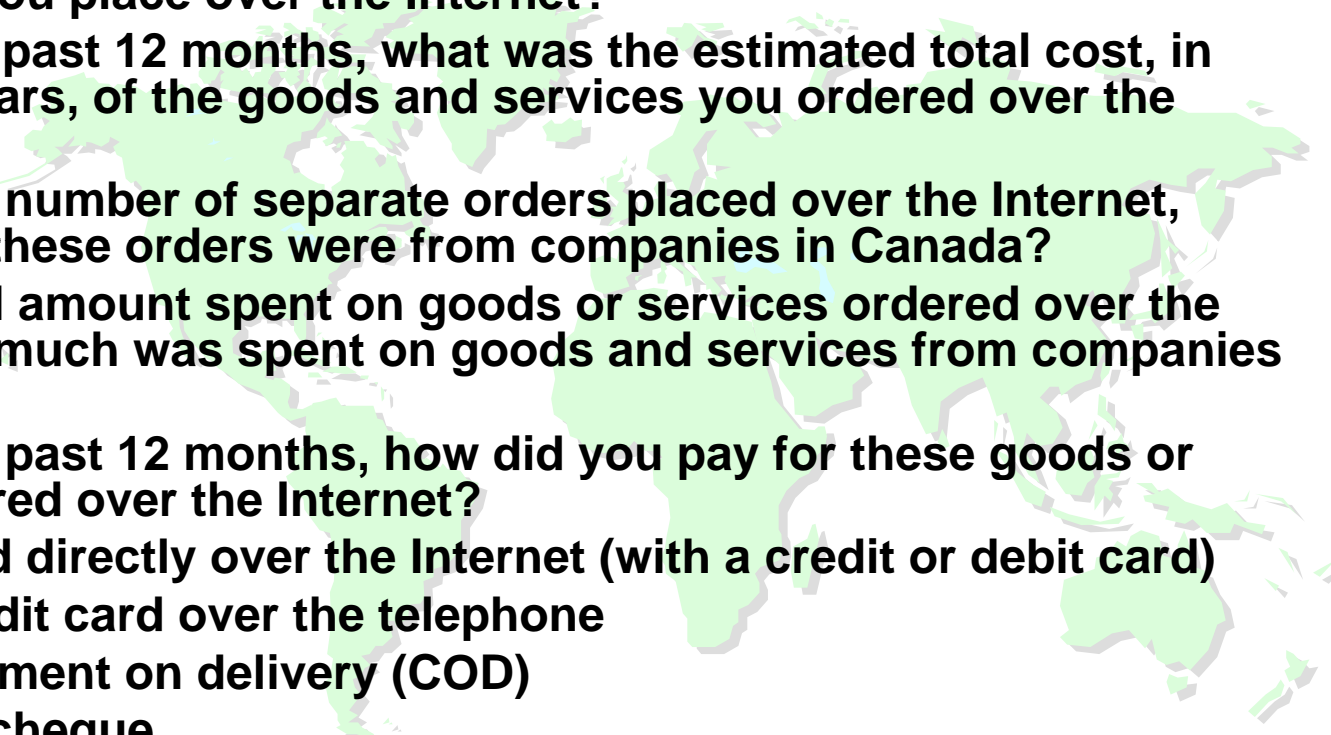
International standards: Canada – Household Survey on Internet Use

a) During the past 12 months, have you ordered a good or service over the Internet? (For your personal or household use, not business use.) Yes... No...

b) During the past 12 months, what types of goods or services were ordered?

- 01 Computer software
- 02 Computer hardware
- 03 Music (e.g., CDs, tapes, MP3)
- 04 Books, magazines, on-line newspapers
- 05 Videos, digital video disc (DVD discs)
- 06 Other entertainment products (concert, theatre tickets)
- 07 Food, condiments, beverages
- 08 Prescription drugs
- 09 Other health, beauty, vitamins
- 10 Clothing, jewellery and accessories
- 11 Housewares (e.g., large appliances, furniture)
- 12 Consumer electronics (e.g. camera, computer, stereo, TV, DVD player)
- 13 Automotive (e.g., cars, trucks, recreational vehicles or products)
- 14 Travel arrangements (e.g., hotel reservations, travel tickets, rental cars)
- 15 Flowers - gifts
- 16 Sports equipment
- 17 Toys and games
- 18 Real Estate
- 19 Other - Specify.....

International standards: Canada – Household Survey on Internet Use (cont.)

- 
- c) What other type of goods or services were ordered?**
 - d) During the past 12 months, how many separate orders for goods or services did you place over the Internet?**
 - e) During the past 12 months, what was the estimated total cost, in Canadian dollars, of the goods and services you ordered over the Internet?**
 - f) Of the total number of separate orders placed over the Internet, how many of these orders were from companies in Canada?**
 - g) Of the total amount spent on goods or services ordered over the Internet, how much was spent on goods and services from companies in Canada?**
 - h) During the past 12 months, how did you pay for these goods or services ordered over the Internet?**
 - 1 Paid directly over the Internet (with a credit or debit card)**
 - 2 Credit card over the telephone**
 - 3 Payment on delivery (COD)**
 - 4 By cheque**
 - 5 Other**
 - i) Have you used the Internet to 'Window Shop' for personal or household products or services? That is, have you used the Internet during the past 12 months to narrow down the search for goods or services without placing an order directly over the Internet?**

Potential Data Sources

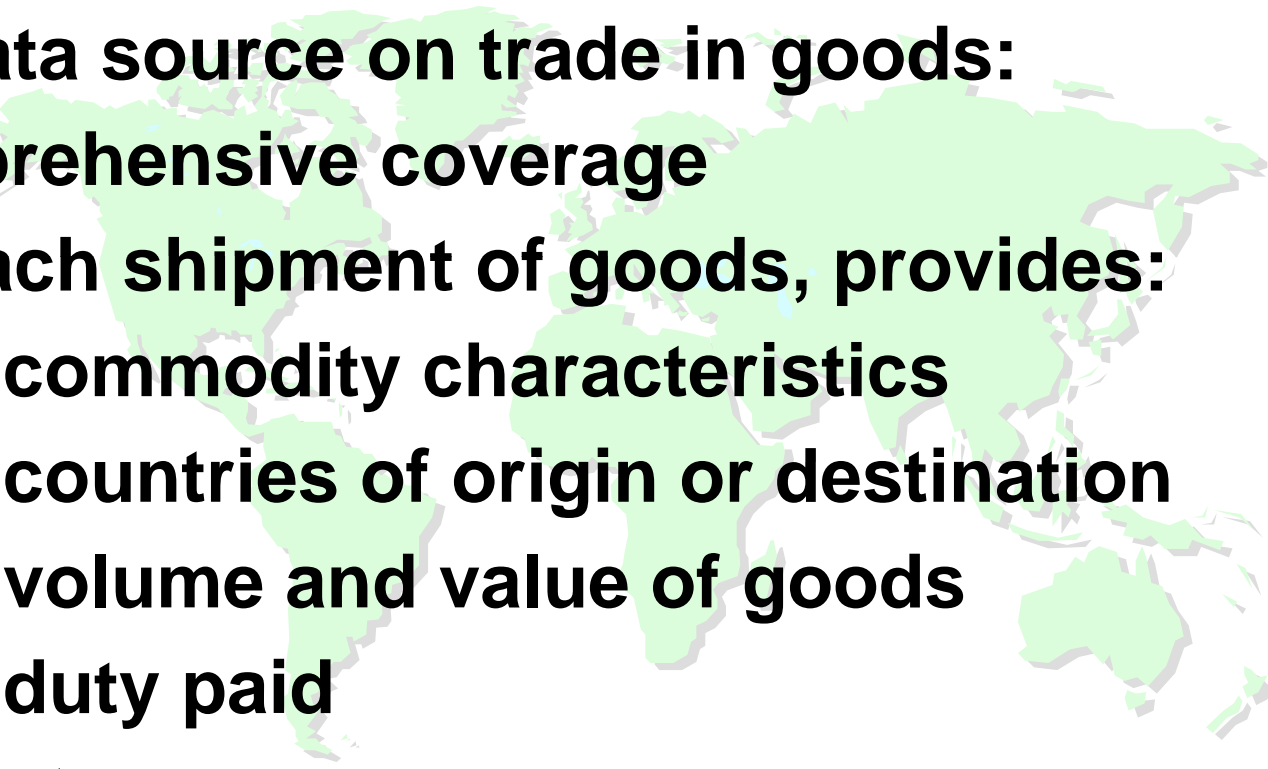
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- **Customs data**
 - **International Transactions Reporting Systems (ITRS)**
 - **Enterprise Surveys**
 - **Household Surveys**
 - **Other (e.g. Administrative Records)**

Potential Data Sources: Customs data

- **based on data from exporters, importers or their agents**
 - **reflects physical movement of goods into or out of the country.**
 - **traditionally compiled by Customs authorities**
 - **data increasingly supplied electronically by importers, exporters, shippers, or their agents**
- 


Potential Data Sources: Customs data

Rich data source on trade in goods:

- **comprehensive coverage**
 - **for each shipment of goods, provides:**
 - **commodity characteristics**
 - **countries of origin or destination**
 - **volume and value of goods**
 - **duty paid**
 - **etc.**
- 

Potential Data Sources: Customs data

Not all-inclusive:

- **Gaps associated with:**
 - items mailed through the postal service
 - items sent by courier
 - digitized products (publications, music, software, etc.)
 - **No information on:**
 - how goods are ordered (E-Commerce)
- 

Potential Data Sources: ITRS

- records foreign exchange transactions through the banking system
- originally a part of foreign exchange controls
- even if controls are lifted, ITRS often continues to provide information on demand for foreign exchange

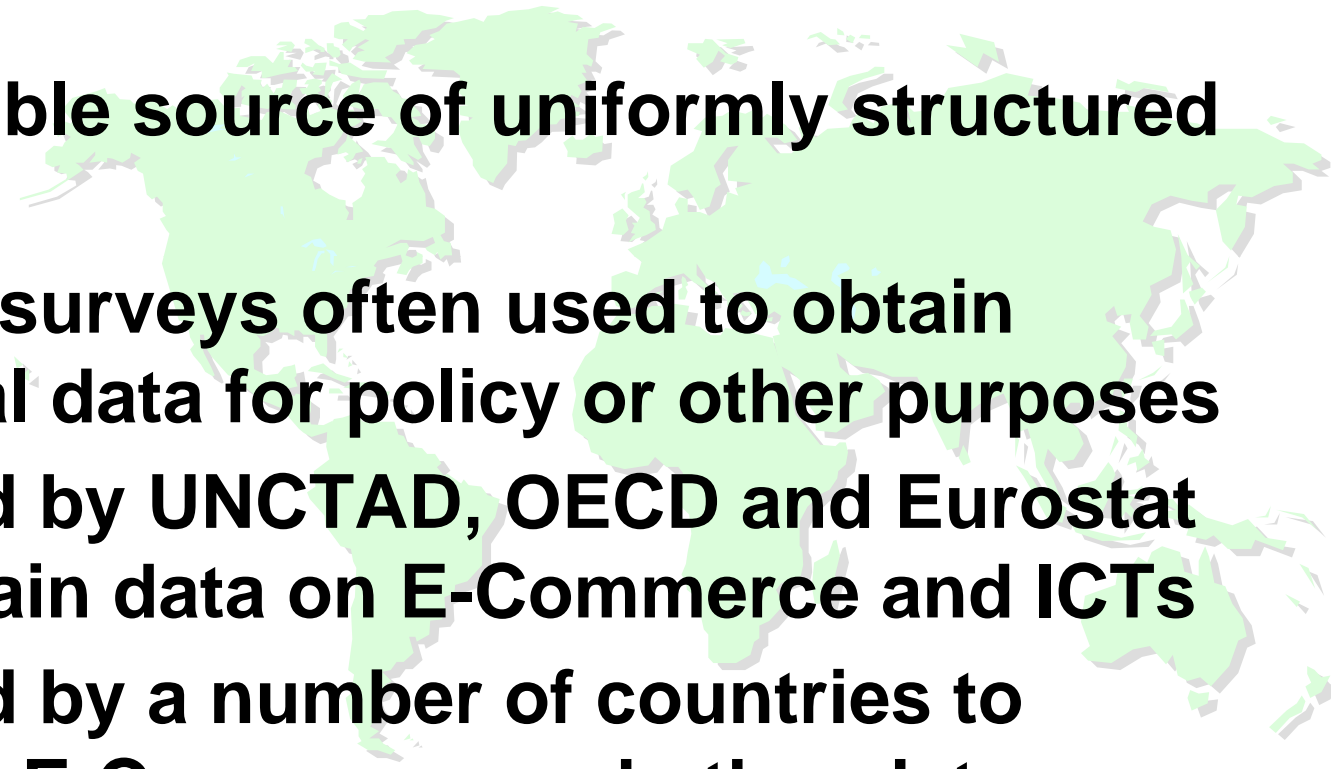
Potential Data Sources: ITRS

- broad coverage, but significant omissions
- reflects settlement of company accounts, not individual shipments
- can occur on regular (e.g. monthly) basis, covering accumulated transactions
- can cover different types of transactions (e.g. payment to IBM could cover computer services as well as equipment)
- can reflect offsetting transactions (e.g. export receipts reduced by charges for administrative services by parent company)

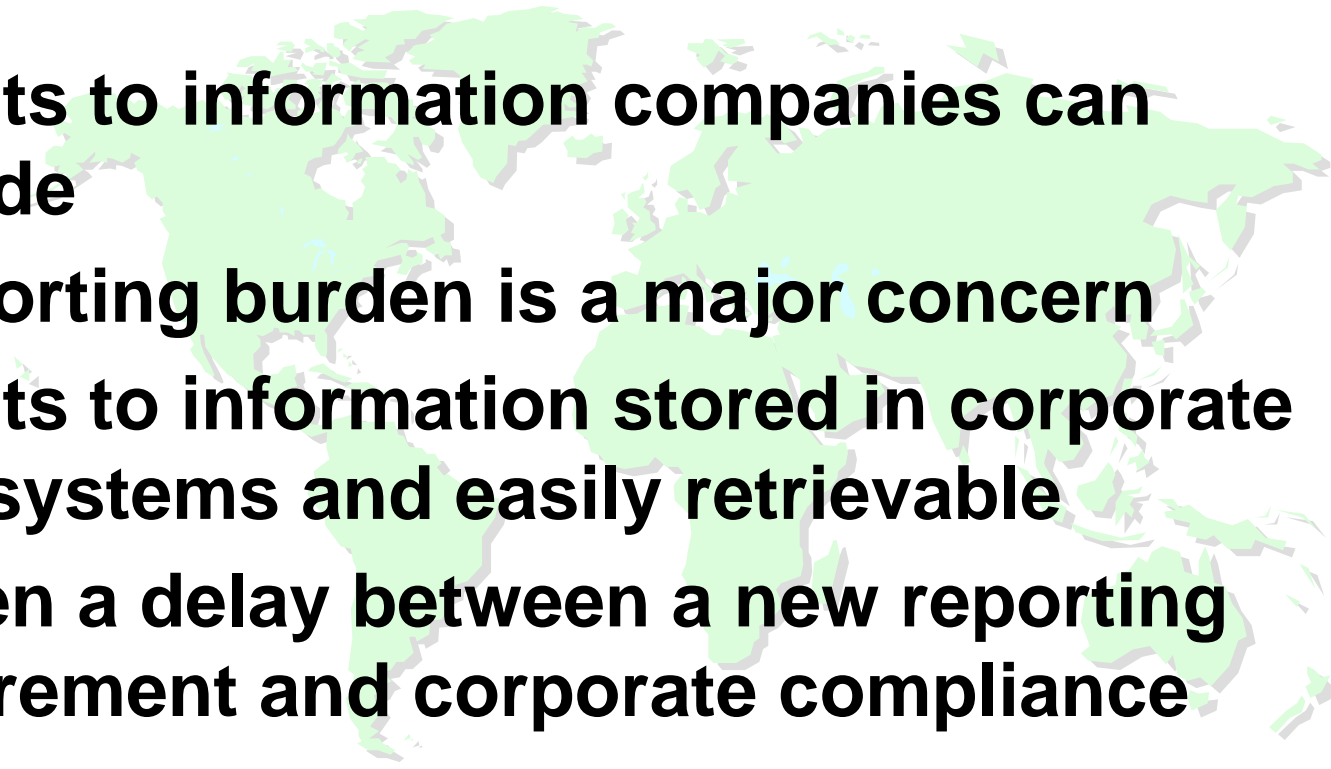
Potential Data Sources: ITRS

- ITRS data closely related to foreign exchange transactions, but significant omissions due to offsetting transactions
- limited detail on underlying nature of transactions or geographic information
- no information on the mode of transaction (i.e. E-Commerce)
- accordingly, ITRS not a good source for E-Commerce data

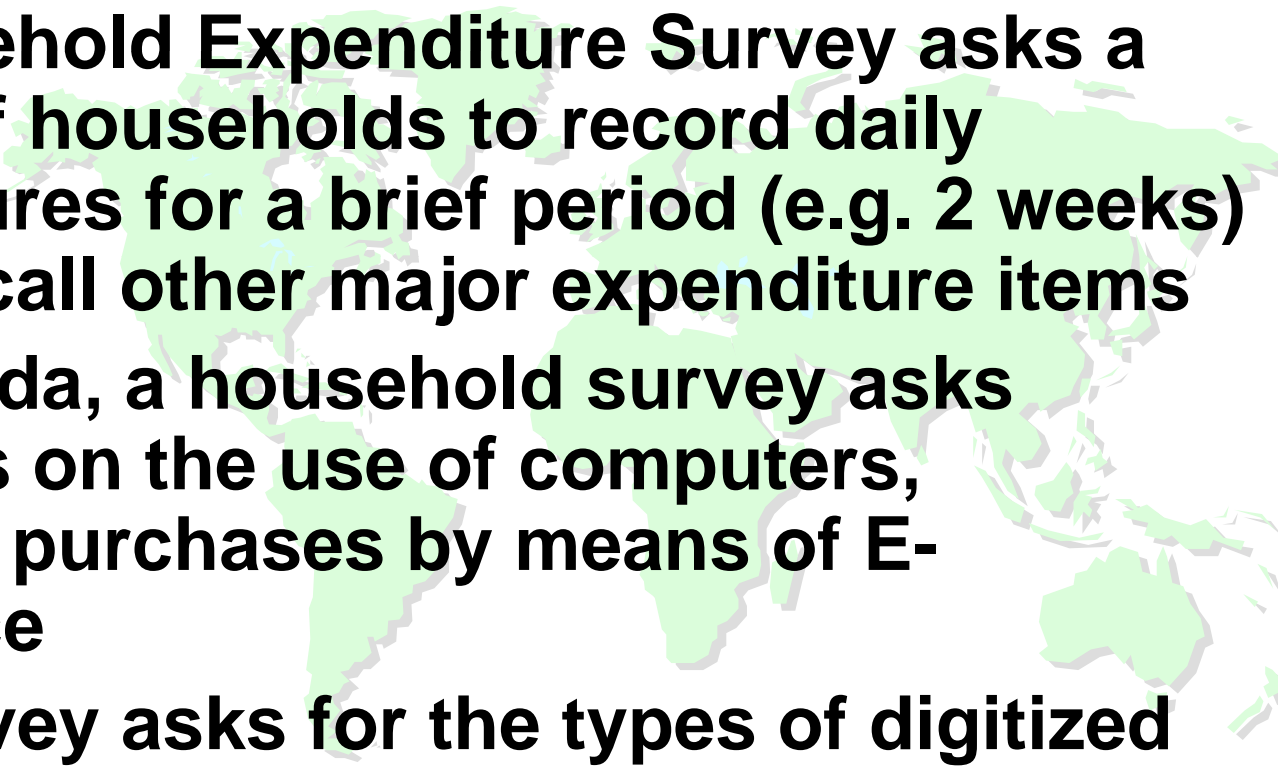
Potential Data Sources: Enterprise surveys

- **flexible source of uniformly structured data**
 - **ent. surveys often used to obtain special data for policy or other purposes**
 - **used by UNCTAD, OECD and Eurostat to obtain data on E-Commerce and ICTs**
 - **used by a number of countries to obtain E-Commerce and other data**
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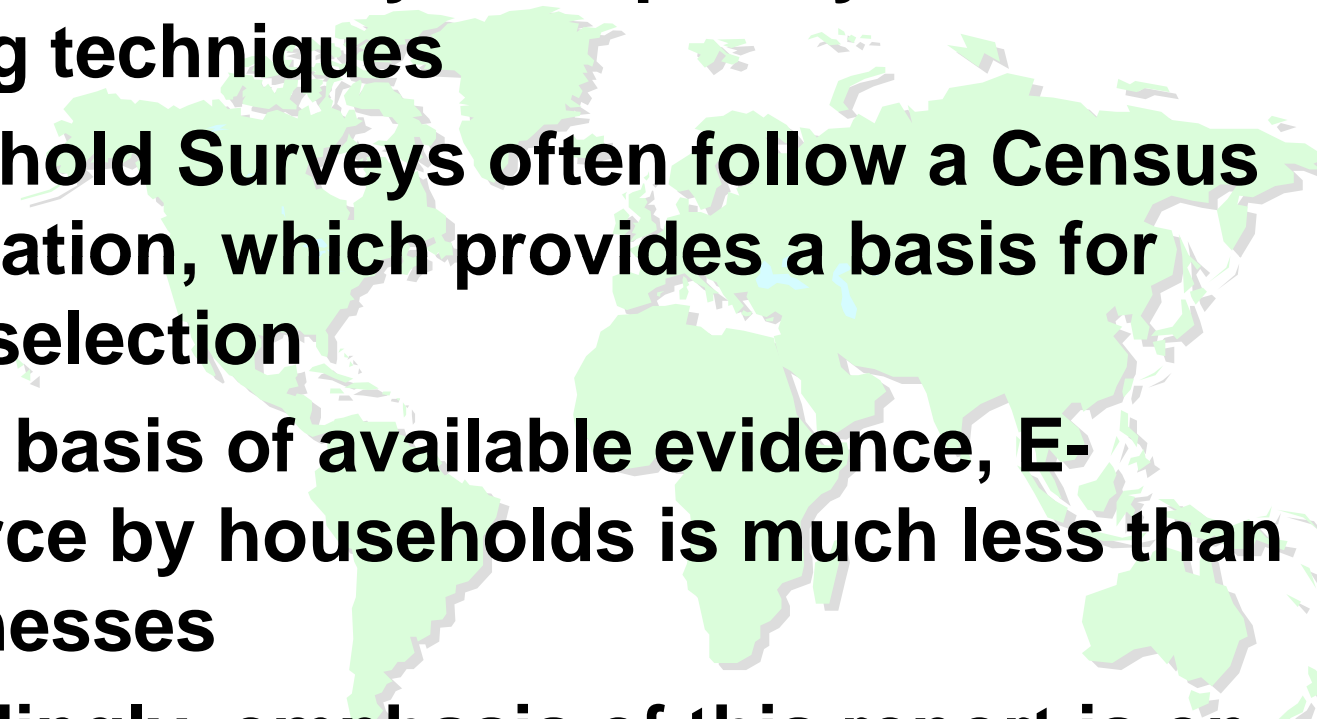
Potential Data Sources: Enterprise surveys

- **limits to information companies can provide**
 - **reporting burden is a major concern**
 - **limits to information stored in corporate data systems and easily retrievable**
 - **often a delay between a new reporting requirement and corporate compliance**
- 

Potential Data Sources: Household Surveys

- **Household Surveys are another significant source of E-Commerce data**
 - **a Household Expenditure Survey asks a sample of households to record daily expenditures for a brief period (e.g. 2 weeks) and to recall other major expenditure items**
 - **in Canada, a household survey asks questions on the use of computers, including purchases by means of E-Commerce**
 - **the survey asks for the types of digitized and non-digitized products ordered on-line, method of payment, and whether goods were imported**
- 

Potential Data Sources: Household Surveys

- Household Surveys tend to be costly, are conducted relatively infrequently and involve sampling techniques
 - Household Surveys often follow a Census of Population, which provides a basis for sample selection
 - on the basis of available evidence, E-Commerce by households is much less than by businesses
 - accordingly, emphasis of this report is on enterprise surveys
- 

Challenges in Measuring International E-Commerce

- **Customs data a unique and richly detailed data source**
- **product of many years of development involving broad international agreement**
- **wealth of information, but not whether shipments ordered through electronic network**
- **Issue: can E-Commerce data be obtained by adding relevant data fields to the Customs input form?**

Challenges in Measuring International E-Commerce

Mandatory Data Fields in Single Administrative Document (SAD):

Reference No. (Lodgement)

Date of issue

Transport document No.

Consignee

Country of Origin

Marks & numbers

Description of goods

Gross weight

Customs value

Country where consigned

Documents attached

Import Licence No. (optional)

Invoice date (optional)

Place of issue

Manifest No.

Exporter / Consignor

Declarant

Number of packages

Type of packages

Commodity code

Net weight

Means of transport

Country of destination

Bank (optional)

Export Licence No. (optional)

Invoice No. (optional)

Challenges in Measuring International E-Commerce

Customs documents:

- Customs documents increasingly prepared by Customs brokers
- brokers are not exporters, importers or shippers, and do not know if goods were ordered on-line
- businesses increasingly report to Customs periodically, instead of for individual shipments

Challenges in Measuring International E-Commerce

International Transactions Reporting Systems (ITRS):


- the ITRS monitors foreign exchange transactions by businesses and individuals
- foreign exchange settlements may cover a number of different transactions, some of them offsetting
- a significant volume of transactions do not pass through the banking system or the ITRS
- absence of information on whether or not transactions relate to E-Commerce
- revisions to the ITRS to identify E-Commerce would require the cooperation of the monetary authorities and commercial banks (which collect the information)

Challenges in Measuring International E-Commerce

Enterprise surveys

- relatively flexible, uniform data source
- do not need broad inter-agency agreement
- recommended by UNCTAD and OECD for collection of e-commerce data
- already used by some countries to collect E-Commerce and other ITC data
- BUT: they provide aggregate information rather than at a detailed commodity level
- might not be capable of indicating method of ordering goods (i.e. e-commerce)

Challenges in Measuring International E-Commerce

- **enterprise surveys are completed by the principals engaged in exporting and importing goods**
 - **enterprise surveys offer better potential for generating E-Commerce data than other sources of information**
 - **BUT: they cannot provide as much commodity detail as Customs data**
- 

Implications of International E-Commerce on WTO Arrangements

- Customs arrangements increasingly streamlined under WTO
- development of ASYCUDA, now used by many countries, has facilitated computerized trade processing
- ASYCUDA can cover special needs of individual countries - risk management, transit operations, security standards, etc.
- BUT priorities are to protect fiscal revenue, detect fraud and smuggling, and ensure secure trade
- “Data not essential for assessment of duties, taxes, control of goods, and application of Customs Laws should be excluded”
- Customs data normally shared with NSOs to produce merchandise trade data
- changes in data specifications involve coordination and agreement with Customs and other agencies

Implications of International E-Commerce on WTO Arrangements

Conditions to be met if arrangements with Customs for data collection are to be changed:

- **Customs authorities of exporting and importing countries both agree to add data field to show if a shipment is E-Commerce**
- **modification of trade documents might need to receive international agreement through the WTO**
- **parties to a transaction (including Customs brokers) must know if shipments of goods were ordered on-line**
- **statistical software must be modified to take account of new data inputs**

Unless above conditions are met, Customs data will be incapable of generating reliable e-commerce data

Capacity-building issues: Statistical Strengthening

- ***Identify data requirements through discussions with data users (policy departments, business sector)***
- ***Assess potential data sources (particularly enterprise surveys)***
- ***Create data collection instruments, with reference to international standards and ESCWA questionnaire***
- ***Obtain feedback from respondents, including detailed testing of questionnaires***

Capacity-building issues: Statistical Strengthening

- ***Develop information program to obtain cooperation from survey respondents***
- ***Develop sound survey methodology (through Business Register, statistical sampling, quality control)***
- ***Develop data analysis and dissemination strategy to highlight findings and ensure timely access to data***
- ***Assess feasibility of Household Survey to measure the use of E-Commerce by households***


Capacity-building issues: Coordination and institutional arrangements at the national level

NSOs to:

- **coordinate data collection activities within the statistical program**
- **obtain input by senior government officials**
- **develop information programs to obtain cooperation from business leaders**

Capacity-building issues: Regional and international cooperation

ESCWA's role:

- **ensure program meets regional objectives**
 - **obtain support of member countries**
 - **facilitate implementation by NSOs and successful outcome**
 - **regional spokesperson and advocate with international agencies (e.g. UNCTAD, WTO, UNDP)**
 - **convene Workshops to reach agreement on data requirements, definitions, methodologies and dissemination**
- 

Capacity-building issues: Data gaps

- **significant volumes of international merchandise trade take the form of e-commerce**
- **E-commerce generally results in physical shipments of goods, which are included in the trade data based on Customs declarations**
- **available data suggest that only a small proportion of merchandise trade is in digitized form (publications, software, audio-visual recordings, etc.), which is not included in the trade data**
- **based on international experience with e-commerce surveys, there are substantial overlaps between different data sources**

Capacity-building issues: Data gaps (continued)

- **existing surveys tend to show trade through electronic networks, rather than the proportion of trade not covered by other data sources (IMTS)**
- **a foreign firm might establish a domestic subsidiary (or other affiliate) with warehousing capacity to fill orders received on-line**
- **In this case, the domestic subsidiary (or affiliate) might fill orders from goods imported and stored in its warehouse, so that the import of a good can occur in a different time period from the sale of the good**
- **enterprise surveys can provide overall estimates of E-Commerce, but do not provide precise figures on gaps in IMTS due to E-Commerce**

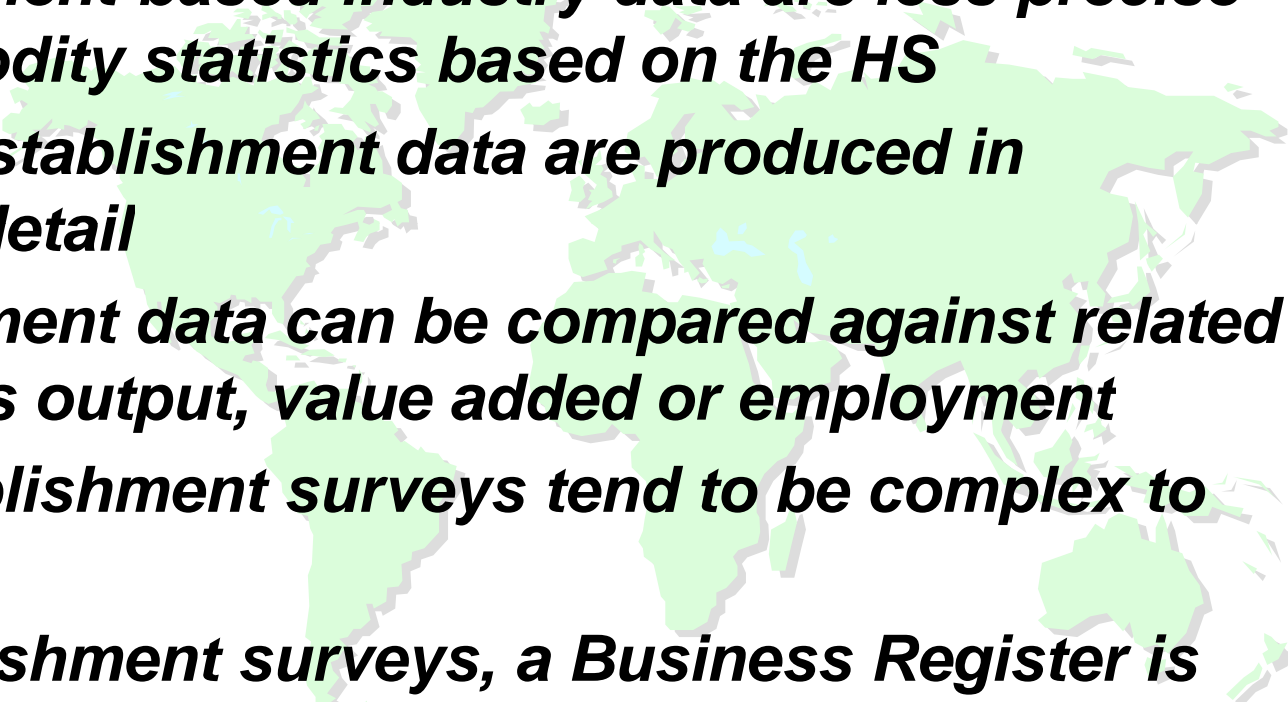
Capacity-building issues: Methods and approaches to collecting data

Enterprise and Establishment surveys

- ***an Enterprise might produce multiple products in multiple locations***
- ***for example, Korea's Hyundai Corporation produces ocean-going vessels, machinery, automobiles, steel, chemical products, electronic products, and other commodities. It also invests in oil, LNG projects, and ICTs***
- ***if all production was allocated to a single industry code, significant distortions would result***
- ***to avoid this, enterprises are often surveyed at the level of the individual establishment***
- ***an establishment is the smallest unit of economic activity for which a business maintains a separate record of accounts; it typically consists of an individual plant, and often produces a single product***
- ***in the case of Hyundai, an establishment survey would involve sending a questionnaire to each of its plants, which would be allocated to the industry of its principal product***

Capacity-building issues: Methods and approaches to collecting data

Enterprise and Establishment surveys

- ***establishment-based industry data are less precise than commodity statistics based on the HS***
 - ***but U.S. establishment data are produced in significant detail***
 - ***establishment data can be compared against related data such as output, value added or employment***
 - ***BUT establishment surveys tend to be complex to administer***
 - ***for establishment surveys, a Business Register is required to document the structure of enterprises***
- 

Capacity-building issues: *Need for System of Business Registers*

- **Business Register (BR) used to produce detailed industry and commodity data**
- **BR provides a list of the known survey universe – all active businesses covered by a specific survey**
- **serious gaps can arise if significant companies are excluded from the BR**
- **comprehensive BR required to ensure data quality**
- **the more complete the BR, the better will be the basis for the survey**

Capacity-building issues: *Need for System of Business Registers*

- **businesses are neither static nor simple**
- **businesses can merge or acquire companies, and dispose of others**
- **business universe shares similar characteristics to human universe: families of companies have heads of enterprises, sons and daughters (subsidiaries), and brothers, sisters, uncles and aunts (affiliates)**
- **all members of a business enterprise are known as 'related' companies**
- **new companies are 'born', while companies may 'die' by winding up their affairs**
- **but some companies do not die – the oldest trace their roots back 400 years or more**

Capacity-building issues: Sources for building a BR

- **administrative/legal system underlying the creation (incorporation) and licensing of businesses**
- **company name and address information maintained by the taxation authorities. (In some countries, however, confidentiality safeguards prevent the transmission of information by the taxation authorities.)**
- **Other sources – public announcements, press reports, etc.**

Capacity-building issues: Sources for building a BR - issues

- **as a rule, easier to add new information to the BR than to delete outdated information**
- **companies can go out of business for a number of reasons – financial failure, mergers and takeovers, competitive reasons, etc. – but the company might not give public notice of its discontinuation**
- **the BR might continue to maintain a record of failed businesses for many years until authoritative information is obtained on their changed status**

Capacity-building issues: Sources for building a BR - issues

- a company might cease operations, but rather than winding up its affairs it becomes 'dormant' (asleep)
- this can happen where an enterprise chooses to maintain the legal existence of a dormant corporation in case it wishes to create a new business operation in the future
- from a statistical standpoint, dormant companies need to be identified and excluded from surveys
- 'shell' or 'special purpose' corporations: corporations which exist in the accounts of an enterprise but have no employees
- shell corporations may exist as financing vehicles for large firms with the sole purpose of channelling funds from one source (e.g. capital markets) to another

Capacity-building issues: Sources for building a BR - issues

- **businesses are increasingly flexible and capable of changing their corporate structure for a variety of reasons**
- **for cost reasons, survey data tailored to statistical needs are in some cases being replaced by standard financial data produced by corporations. (Canada is one country where annual survey data for smaller companies have been replaced by data obtained from tax returns.)**
- **‘virtual corporations’, which exist without a physical presence, are increasingly common, creating difficulties for the BR**

Capacity-building issues: Sources for building a BR - issues

- **BRs in industrial countries are often complex and costly records systems**
- **possible to reduce the complexity of a BR if more aggregate information is acceptable, e.g. for financial data**
- **particularly appropriate where business decisions are centralized within the enterprise**

Capacity-building issues: Sources for building a BR - issues

- **E-Commerce similar to finance, i.e. centralized administration rather than decentralized to individual plants**
- **the enterprise is therefore an appropriate level for obtaining E-Commerce data**
- **BR for E-Commerce survey should focus on enterprise groups**
- **to ensure comprehensive coverage, companies need to identify related entities *not* included in the return, as well as related entities that are included**

Capacity-building issues: Sampling procedures

- for reasons of cost, timeliness and practicality, surveys may be conducted for a sample of businesses
- because businesses are not homogeneous, but may differ significantly in size, the target population is segmented into *strata* of firms with common characteristics
- common characteristics consist of economic activity (i.e. industry), size, and geographical variables (e.g. by province), etc.
- sampling methodology assigns *weights* that reflect the relative size represented by units within the sample
- in an exhaustive survey (census), all units are surveyed, with weights equal to one (i.e. the data are unadjusted). In sample surveys, each of the strata represents a proportion of the total, and sampled units are given a weight proportional to their share of the total

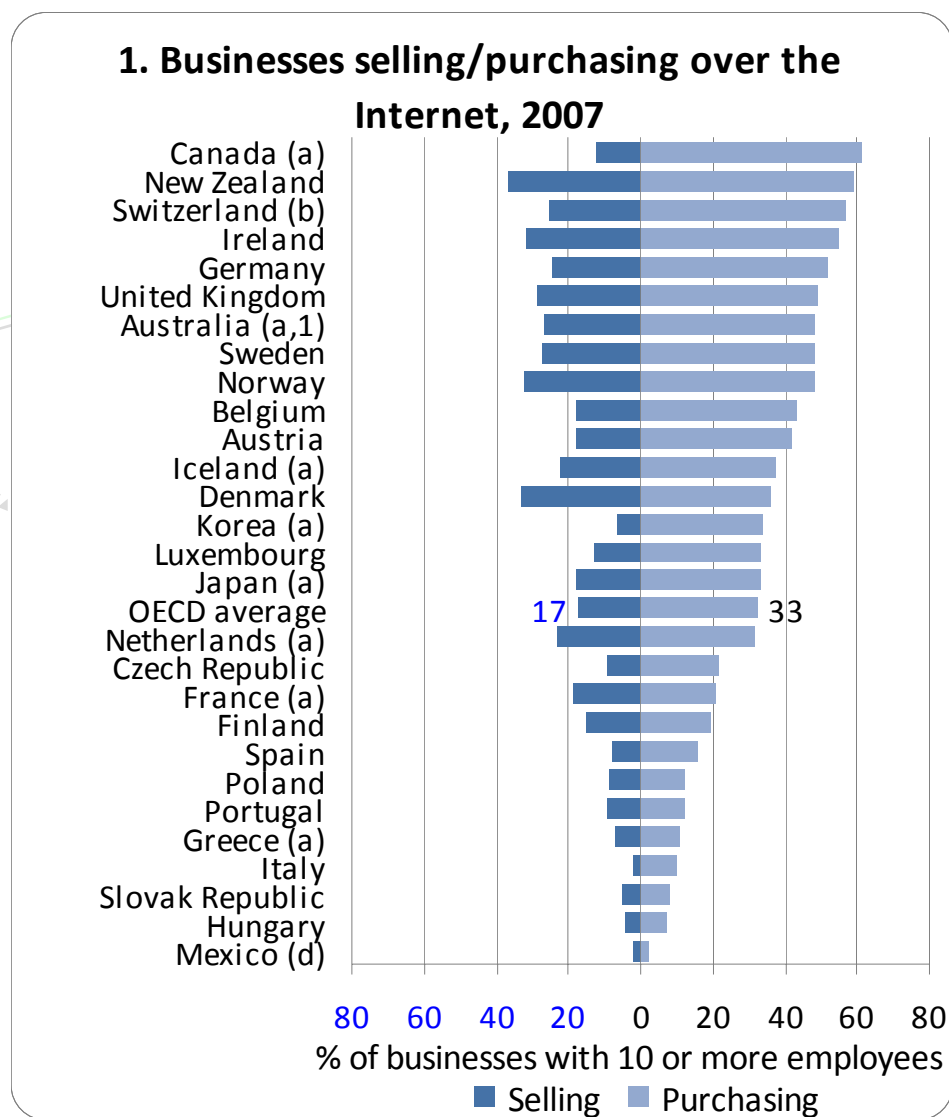
Capacity-building issues: Sampling for Business Surveys

- sampling methodologies are more complex in business surveys because of the unequal size and impact of firms
- for business surveys, where there is significant disparity in the size of survey units, *stratified sampling* is typically used
- stratified sampling includes strata for large businesses which may need to be exhaustively sampled (i.e. all units selected). Other strata would consist of smaller firms of comparable size and operating characteristics which are sampled
- the BR is a vital tool for identifying key characteristics of corporations – sales, employment, industry, location, etc. – to determine how they should be treated in a sample survey

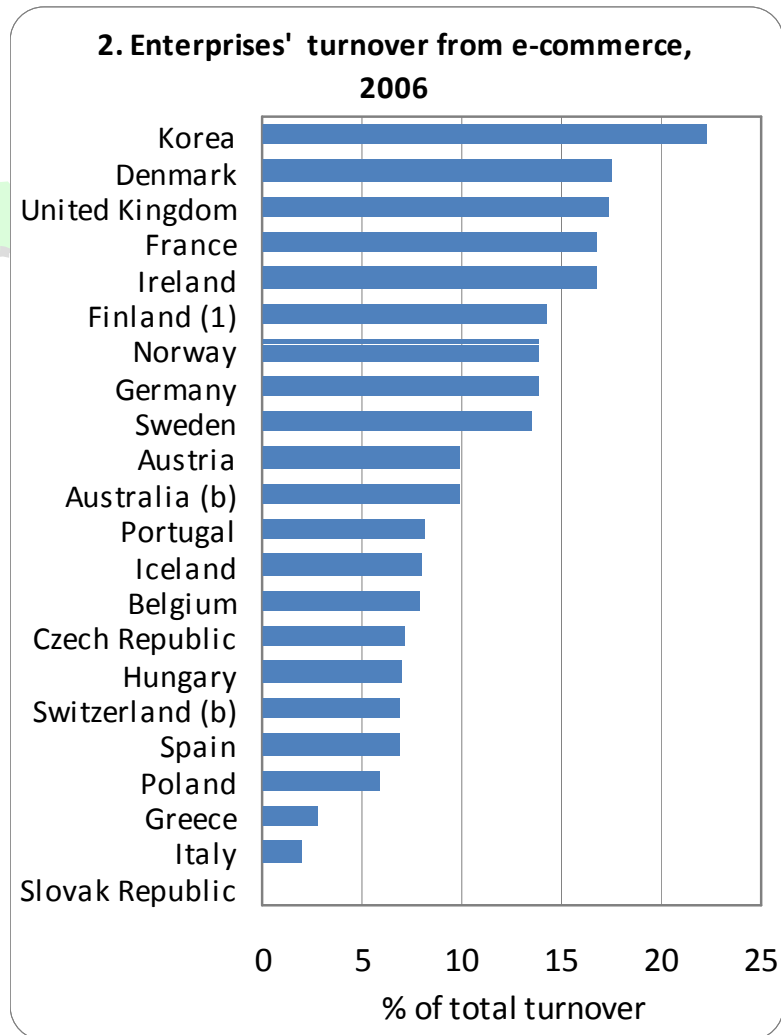
Capacity-building: Data dissemination

- **the impact of E-Commerce has been measured with some consistency for major economies.**
- **the analysis indicates that despite the rapid expansion of E-Commerce, it still represents a relatively small proportion of total sales**
- **the OECD recently produced a statistical summary on the extent and growth of ICTs, the proportion of businesses selling goods on-line, total turnover from E-Commerce, and the rate of increase in E-Commerce**

Data dissemination: E-Commerce in OECD



Data dissemination: E-Commerce in OECD



Data dissemination: E-Commerce in the U.S.

- **survey data indicate that E-Commerce grew roughly twice as fast as economic activity in 2006**
- **but E-Commerce represents only 14% of total turnover**
- **over 90% of E-Commerce represents Business-to-Business (B2B) transactions**
- **the fastest growth of E-Commerce is in the Business-to-Consumer (B2C) market**

Data dissemination: E-Commerce in the U.S.

Table 1. U.S. Shipments, Sales, Revenues and E-commerce: 2006 and 2005									
Shipments, sales and revenues are in billions of dollars.									
Description	Value of Shipments, Sales, or Revenue				Year to Year Percent Change		% Distribution of E-commerce		
	2006		2005						
	Total	E-commerce	Total	E-commerce	Total	E-commerce	2006	2005	
Total *	20,912	2,937	19,583	2,579	6.8	13.9	100.0	100.0	
B-to-B*	10,605	2,716	9,924	2,393	6.9	13.5	92.5	92.8	
Manufacturing	5,020	1,568	4,742	1,344	5.9	16.7	53.4	52.1	
Wholesale Merchant	5,585	1,148	5,181	1,049	7.8	9.4	39.1	40.7	
Excluding MSBOs ¹	3,909	613	3,586	551	9.0	11.3	20.9	21.4	
MSBOs	1,676	535	1,596	498	5.0	7.3	18.2	19.3	
B-to-C*	10,307	221	9,659	186	6.7	18.8	7.5	7.2	
Retail	3,887	107	3,688	87	5.4	22.0	3.6	3.4	
Selected Services	6,420	114	5,971	99	7.5	14.9	3.9	3.8	