



# **e-Business W@tch Event, Brussels 26 October 2005**

## **OECD MODEL SURVEY OF ICT USE BY BUSINESSES**

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# Introduction

- n The first OECD model survey of business ICT use was agreed at the end of 2001 and was not revised until 2005.
- n As a result, it had not kept up with changes in policy needs and country practices....nor with changes in the technologies which businesses use.
- n In the interim, a number of aspects of the measurement of ICT use and electronic commerce by business were discussed at WPIIS and Expert meetings, including outstanding methodological issues
  - weighting of data
  - harmonisation of income concepts for electronic transactions
  - collection unit used
- n and measurement of electronic business and finance sector transactions.

# Survey methodology

- n The model is not comprehensive on methodology but includes general remarks on reducing bias, survey vehicles and collection techniques.
- n Statistical unit – the enterprise as defined by the EC.
- n Weighting methodologies used are explored
  - number-raised estimation
  - ratio estimation
  - economically weighted estimation.
- n Type of survey – usually an economy-wide business survey.

# Survey scope and coverage

n Type of organisation

n Industry (activity) scope

- Manufacturing
- Construction
- Wholesale and retail trade; repair etc
- Hotels and restaurants
- Transport, storage and communications
- Financial intermediation (**non-core**)
- Real estate, renting and business activities
- Recreational, cultural and sporting activities (**non-core**).

n Size cut-off - 10 or more employees.

# Classifications

- n Industry classification is broad and consistent with the scope
  - Manufacturing; Construction; Wholesale trade; Retail trade; Hotels and restaurants; Transport, storage and communications; Financial intermediation (non-core); Real estate, renting and business activities.
  - Financial intermediation and Recreational, cultural and sporting activities are non-core.
- n Size (number of employees)
  - 10-49 employees
  - 50-249 employees
  - 250 employees or more.

# Particular statistical issues associated with business ICT use measurement

## n Electronic commerce definition

- In 2000, OECD member countries endorsed two definitions of electronic transactions – determined by how the order is placed or received, not the payment nor channel of delivery.
- The narrow definition of electronic commerce transactions refers to those conducted over the Internet.
- The broad definition refers to all computer-mediated networks.

## Particular statistical issues, electronic commerce

n But it is not easy measuring e-commerce. Issues include:

- Technological convergence
- Commitment and timing issues
- Whether to include conventional email transactions
- Selling by agents
- The finance sector
- Reliability of splits of the value of Internet commerce transactions
- Online purchases data
- Data collection issues.

# Particular statistical issues associated with business ICT use measurement

## n Electronic business

- is of particular interest to policy makers because of the potential productivity impacts of ICT use on business functions
- measurement challenges are significant because it is a subject which is both complex and changing rapidly and...
- there are limitations imposed by NSO statistical vehicles used to collect ICT use data (economy-wide, mail-based surveys for which simple 'yes/no' questions work best).
- Nevertheless, it is seen as a priority area for measurement and has been on the OECD agenda since 2000.

## Particular statistical issues, electronic business

n Conceptual model for measuring e-business

n Model questions for measuring e-business

- no definition is used – ‘e-business’ may be a loaded term
- questions are asked in context rather than per a business processes model e.g. customer relation functions are included in a question on Web site features
- integration is particularly important but difficult – asked about in e-commerce linkage questions (all networks, purchasing and selling separately).

# Particular statistical issues, integrated e-business processes

- n Possible approaches:
  - EBW and Denmark. Directly ask if business uses SCM, ERP, CRM. Possibly describe process rather than use precise terms.
  - Statistics Canada. Ask about integrated business processes e.g. if a browser-based system is used to manage online sales/purchases, customer relations and logistics (if yes, ask about automatic linkages with other internal/external systems).
  - Ask only about sales and purchases transactions and whether transactions generate an automatic update in other internal/external systems.
  - Denmark. Ask about electronic exchange of data between the business' and other entities' systems (via structured messages, agreed message standards). Can include detail on nature of documents, transactions involved (e.g. electronic invoices).
- n Problem of measuring intensity.
- n Future work by NSOs, Eurostat and WPIIS (session at next WPIIS meeting).

# Particular statistical issues associated with business ICT use measurement

## n Trust in the online environment

- There are questions on IT security (measures and incidents), privacy and security features of a Web site and security and privacy as barriers or limitations to selling over the Internet.
- The main difficulties are
  - asking about security incidents – widespread evidence that respondents find this information sensitive
  - and the technical nature of the questions.

## Other topics which could be considered in the future

- n Outsourcing and offshoring
- n New technologies, such as:
  - VOIP
  - RFID
  - OSS
- n Incremental update may simplify the revision process in the future.

# Comparison with Eurostat's model survey

- n EU countries now comprise nearly two thirds of OECD countries and...
- n some non EU members use the Eurostat model survey.
- n It is therefore important to try to align the OECD and Eurostat model questionnaires and standards as far as possible.
- n The revised model questionnaire is reasonably consistent with Eurostat's 2006 Enterprise questionnaire – where they overlap.
  - however, Eurostat asks questions about topics which are not on the OECD model questionnaire and *vice versa*, in particular, in the area of e-business
  - In respect of scope and classificatory variables, the revised OECD and current Eurostat models are very similar.

# About the model questionnaire

## n Logic

- a business without a computer is not immediately excluded because it could still use the Internet
- a business which does not use any networks (internal or external) is filtered out of the questionnaire very early
- a business without the Internet (but with another network) is filtered out of most of the questionnaire and is not asked about IT security.

## n Core and non-core questions/response categories

- ‘non-core’ means either difficult to collect or relatively untested
- it is not used to indicate a lower priority.

## n Definitions of terms

- are included with questions.

## n Adaptation of the model questionnaire

## Model questionnaire – Section A, *General information about your business' use of ICT*

- n Did your business use computer/s during <period>?
- n Did your business use the Internet or any other computer network during <period>? (filter question)
- n Which of the following information technologies, if any, did your business have at <reference date>? (intranet, extranet, LAN, WAN)
- n Did your business use the Internet during <period>?
- n What proportion of persons employed in your business routinely used the Internet at work during <period>?
- n How did your business connect to the Internet during <period>? (analog modem, ISDN, other narrowband, DSL, cable modem, other broadband).

## Model questionnaire – Section A (ctd)

- n Did your business have any of the following IT security measures in place at <reference date>?
- Virus checking or protection software which is regularly updated
  - Anti-spyware software which is regularly updated
  - Firewall
  - Spam filter
  - Secured communication between clients and servers (e.g. via SSL, SHTTP)
  - Authentication software or hardware (for internal users, for external users)
  - Intrusion detection system
  - Regular back up of data critical to your business operations
  - Offsite data backup
  - No IT security measures in place.
- n Did your business experience an attack by a virus or similar (for example, a trojan horse or worm) which has resulted in loss of data or time, or damage to software during <period>?

## Model questionnaire – Section B, *How your business uses ICT in its operations*

### n Purchasing and selling goods or services via the Internet

- Did your business place orders (make purchases) for goods or services via the Internet during <period>?
- Did your business receive orders (make sales) for goods or services via the Internet during <period>?
- What proportion of your business' total turnover during <period> (excluding value added taxes) did those Internet orders (sales) represent?

## Model questionnaire – Section B, Purchasing and selling goods or services via the Internet

n Please provide percentage breakdowns of the value of those Internet orders (sales), by:

- Types of products your business sold (physical products ordered online and delivered offline, digitised products downloaded or accessed online, services which are ordered online but delivered offline)
- How orders were received (via an online ordering facility on your Web site, through another Web site, via EDI over the Internet, via other Internet technologies)
- Types of customers your business sold to (other businesses, individual consumers, government and other non-business organisations)
- The location of customers your business sold to (customers within your country/outside your country).

## Model questionnaire – Section B, Purchasing and selling goods or services via the Internet

n Which of the following benefits, if any, did your business realise through Internet selling during <period>?

- Reduced transaction time
- Increased quality of customer service
- Lower business costs
- Increased sales volume and/or number of customers
- Keeping pace with competitors
- Able to better target customers individually
- Other
- No benefits realised.

# Model questionnaire – Section B, Purchasing and selling goods or services via the Internet

- n Which of the following factors, if any, limited or prevented Internet selling by your business during <period>?
- Products of your business are not well suited to sale via the Internet
  - Security concerns
  - Privacy concerns
  - Prefer to maintain current business model, e.g. face to face interaction
  - Customers' or suppliers' computer systems are incompatible with yours
  - Insufficient level of customer demand for purchasing via the Internet
  - Uncertainty concerning legal/regulatory framework for selling over the Internet
  - Cost of development and/or maintenance is too high
  - Lack of skilled employees to develop, maintain or use the technology required
  - No limitations to selling over the Internet
  - Not relevant - as selling over the Internet is currently under development or planned for the near future
  - Other.

# Model questionnaire – Section B, Use of the Internet for other business processes within your business

n Did your business have a Web site at <reference date>?

n As at <reference date> did your business' Web site have any of the following features?

- Product catalogues or price lists
- Customised Web page or information provided for repeat clients
- Facility for collecting customer information online
- A privacy policy statement
- A privacy seal or certification
- An online ordering facility for your business' products
- Facility for online payment
- Provision of online after sales support
- Order tracking available online
- A security policy statement
- A security seal or certification.

## Model questionnaire – Section B, Use of the Internet for other business processes within your business

- n Did your business use the Internet for dealing with government organisations during <period>?
- For obtaining information from government organisations (e.g. from Web sites or via email)
  - For downloading or requesting government forms
  - Completing forms online or sending completed forms
  - For making online payments to government organisations
  - Other dealings with government
  - Did not use the Internet for dealing with government organisations.

## Model questionnaire – Section B, Use of the Internet for other business processes within your business

- n Did your business use the Internet in any of the following areas of your business during <period>? (*excluding conventional email*)
- Finance
  - Internal or external recruitment
  - Staff training
  - Sharing or distribution of information within your business
  - Sharing or distribution of information with other organisations
  - Did not use the Internet for any of the above business activities.

## Model questionnaire – Section B, Purchasing and selling goods or services via computer networks other than the Internet

- n Did your business place orders (make purchases) for goods or services via computer networks other than the Internet during <period>?
- n Did your business receive orders (make sales) for goods or services via computer networks other than the Internet during <period>?
- n What proportion of your business' total turnover during <period> (excluding value added taxes) did those orders (sales) represent?

## Model questionnaire – Section B, Integration of your business' processes

- n Did your business place or receive orders for goods or services via any computer networks during <period>?
- n Did your systems for placing orders via computer networks link automatically with any of the following internal or external systems as at <date>?
  - Your suppliers' computer system/s
  - Your purchasing partners' computer system/s
  - Your business' computer system/s
    - For ordering or inventory control
    - For accounting functions
    - For production or service operations
  - Other internal or external computer system/s
  - Your system/s for placing orders via computer networks were not linked automatically to any of the above.

## Model questionnaire – Section B, Integration of your business' processes

- n Did your business' computer systems for receiving orders via computer networks link automatically with any of the following internal or external systems as at <date>
- Your customers' computer system/s
  - Your suppliers' computer system/s
  - Your business' computer system/s
    - For ordering or inventory control
    - For accounting functions
    - For delivery of products
    - For production or service operations
    - For marketing or customer relations management
  - Other internal or external computer system/s
  - Your system/s for receiving orders via computer networks were not linked automatically to any of the above.

# Model questionnaire – Section C, Other information about your business

- n Main activity of the business
  - *(please describe)*
- n Number of employed persons at <date>
- n Total turnover during <period>
  - *(In national currency, excluding value added taxes)*

# Thank you

n Please feel free to send me any comments on issues raised in the presentation

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