

VOORBURG GROUP ON SERVICES STATISTICS

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**Measurement of information technology use by
households and individuals**

Revised proposal for a model questionnaire

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Introduction

1. At the April 2000 and 2001 meetings of the OECD's Working Party on Indicators for the Information Society (WPIIS), Australia presented a model questionnaire for surveys of household ICT use (DSTI/ICCP/IIS(2000)7 and DSTI/ICCP/IIS(2001)2) ¹.
2. Discussion at the WPIIS meetings and subsequent correspondence indicated a diversity of views on the content of such a questionnaire. In an attempt to progress this work, Australia is proposing a simpler model questionnaire ² which incorporates core country requirements. These include the data items required to provide core e-commerce data for households and individuals as proposed at the WPIIS meeting of April 2001.
3. It is suggested that additional components of the questionnaire be added over time as technologies, usage practices and policy interests change. The suggested module approach facilitates this form of development.
4. This paper proposes several principles for a model questionnaire and associated survey of information technology use by households and individuals. They are :
 - comparability of data items, question wording and classifications across member countries;
 - as far as possible, comparability of scope and coverage, methodology, frequency and reference periods across member countries;
 - use of questions which have been successfully used in one or more member countries;
 - questions which are considered to satisfy core data requirements, including core e-commerce data, in respect of households and individuals; and
 - use of a module based approach to provide flexibility by enabling individual countries to include the proposed core modules as well as country specific questions and modules.

¹ The model questionnaire proposed in this paper does not include any questions on communication technologies so the subject of the model questionnaire has been changed from ICT use to information technology use.

² Shown at the Annex .

Summary of comments received on the model questionnaire

Issues on which there is general agreement

5. Comments received on the two WPIIS papers suggest that there is general agreement that the model questionnaire include:
 - frequency questions
 - barriers questions
 - Internet activities questions asked of individuals (rather than households).
6. Comments indicate that most countries think that the model questionnaire need not include:
 - information in respect of children
 - intentions questions.

Issues on which there are divergent views

7. **Statistical unit:** There are varying views regarding the statistical unit, with some countries preferring individuals as the appropriate unit, while other countries ask household questions on access to computers and the Internet. The current model proposes that both units be used.
8. **Recall period:** The recall period (particularly for value questions) is controversial. A number of countries have expressed concerns about a recall period of 12 months which was proposed in the WPIIS papers. The current paper suggests that countries select a recall period for value of Internet purchases such that they can produce unbiased annual aggregate data. Short recall periods can be used where surveys are conducted sub-annually (for instance, in a quarterly survey, the recall period could be three months). For annual (or less frequent) surveys, asking for value of Internet purchases in respect of a shorter period is likely to result in a biased annual estimate (because Internet purchasing value shows seasonal variation). Perhaps more importantly, results will not be comparable across countries (because the reference date will differ). The recall period of 12 months has been retained for more general questions (for example, computer and Internet use) where recall is expected to be less of a problem.
9. **Rating response categories:** There are a number of ways of rating barriers, purposes and activities items. In this paper, a simple method has been suggested in each case, with notes indicating how countries using different methods could compile data.

10. **Purpose and activities questions:** It has been suggested that purpose and activities questions not be restricted to home use. This version of the model questionnaire has been changed so that purposes and activities questions are asked separately in respect of home and other sites of Internet use. The OECD requirement for core e-commerce data suggests that most activities data only need to be collected in respect of any location. This is therefore an alternative for countries which prefer not to ask the questions twice.
11. **Mobile Internet access:** A couple of countries have asked how to classify location of Internet access in cases where respondents have used a mobile access device (for instance, Internet access via a WAP phone or a portable computer connected via a hotel phone). In order to obtain more information on mobile access, we have expanded the filter questions on Internet access to separate mobile and fixed access. For other locations, we suggest that mobile access at a particular location be distinguished from use of facilities at the location (in order to gain a measure of use of existing facilities). In the current questionnaire we have done this by filtering out those using only mobile access (away from home or work) from the other locations questions (Q12 and Q13). We would be very interested in Voorburg participants' views on the increasingly important question of mobile Internet access.

Proposed core modules for a model questionnaire on household and individual IT use

12. Five core modules are proposed as follows:

1. Household access to computers and the Internet
2. Household barriers to adoption of the Internet
3. Adult use of computers and the Internet: location and frequency of use
4. Purpose and nature of adult activities on the Internet
5. Internet-commerce details: adult activities and barriers.

Suggested classificatory variables

13. Suggested classificatory variables are almost the same as those proposed in the April 2001 WPIIS paper. They have deliberately been kept simple, with few categories in each classification. Many member countries will decide to use more detailed classifications and/or additional classifications. The suggested classifications are:

Household characteristics

- household type (couple no children, couple with children, single parent, single person, other)
- household size (number of members)

- annual household income (expressed in ranges).

Personal Characteristics for adults 15 years and over

- age
- gender
- highest education level received (primary, secondary, tertiary)
- annual income (usual gross income received)
- labour force status (employed/not employed/not in workforce etc)
- occupation (broad level e.g. manager, professional).

Given that age is a strong determinant of IT use, it is important that the age cut-off for adults either aligns in country surveys or that member countries are able to tabulate according to a common age cut-off.

Scope and coverage

14. While there will be differences in scope and coverage between countries, these are likely to be unavoidable because of use of existing population survey vehicles. It is suggested that countries note any exclusions from scope, or areas of poor coverage. Examples might be exclusion or undercoverage of particular sub-populations or remote regions. Where possible, the effect on aggregate data should be estimated and noted.

Methodology

Survey design and conduct

15. This paper, like the two WPIIS papers, does not recommend a particular methodological approach but notes that different approaches may lead to inconsistencies in output. Because most differences in approach are likely to be unmeasurable, Australia suggests that countries aim to eliminate survey error by:

- using well designed samples which are of sufficient size to produce reliable data
- careful design and testing of questions and question sequences (whether interview based or self-administered)
- intensive training and checking of interviewers
- reducing non-response as far as possible and
- minimising data entry, editing and other processing errors.

Units, selection and weighting

16. The current version assumes that both households and individuals are statistical units. Ideally, information would be sought from a randomly selected adult who responds in respect of the household (modules 1 and 2) and in respect of him/her self (modules 3 to 5). Households, and individuals within those households, need to be selected in an unbiased manner. With regard to individuals, for instance, the Australian surveys select the individual whose next birthday is closest to the interview date.
17. Because the sample of households and individuals selected is unlikely to be perfectly representative of the population as a whole, it is very important to weight responses according to an independent estimated distribution of the total population.

Survey vehicles

18. Member countries differ in the survey vehicles used. It appears that most, if not all, use existing surveys such as labour force, time use, household expenditure or general social surveys. Clearly it is not possible to prescribe a survey vehicle though the points made above on careful design and testing of questions, training of interviewers and weighting are particularly important given the diversity of survey vehicles.

Frequency and reference period/date

19. It is probably unrealistic to expect member countries to conduct surveys more frequently than annually. For some member countries, an annual collection will not be feasible, in which case it is important that those countries align their collection years as far as possible.
20. As much of the information collected is point-in-time data, it would be preferable also to have alignment of reference dates across member countries. However, the dependence of many countries on existing survey vehicles probably makes this an unreasonable expectation.

Relationship of model questionnaire to recommended core household sector e-commerce indicators

21. The 2001 WPIIS meeting was presented with a suggested set of core e-commerce indicators for households and individuals. The meeting agreed to provide data for those indicators in a general attempt to refine the set. The core indicators presented were:

Number and proportion of households:

- with computers
- with access to the Internet (PC and by any means)
- recognising barriers to Internet access (by reason)

Number and proportion of individuals:

- using the Internet (any means, any location, any purpose)
- using the Internet (any means, any location, personal use)
- undertaking specific activities over the Internet (any location)
- placing orders over the Internet (home and any location)
- recognising barriers to Internet commerce (by reason).

The proposed model questionnaire allows the production of these indicators.

Concluding remarks

22. The Voorburg Group is invited to discuss the proposed model questionnaire and provide input to a final version which will be presented to the 2002 WPIIS meeting.

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Proposed model questionnaire for household and individual use of information technology ³

Module 1: Household access to computers and the Internet (*Questions are asked of a responsible adult answering for the household. The respondent can be the same randomly chosen person who answers the individual questions in later modules.*)

1. DOES ANY MEMBER OF THIS HOUSEHOLD HAVE ACCESS TO A COMPUTER AT HOME (REGARDLESS OF WHETHER IT IS USED)?

- Yes
- No

2. DOES ANY MEMBER OF THIS HOUSEHOLD HAVE ACCESS TO THE INTERNET AT HOME (REGARDLESS OF WHETHER IT IS USED)?

- Yes
- No

3. HOW IS THE INTERNET ACCESSED AT HOME?

- Through a desktop or portable computer connected via a modem
- Through a television set (either digital TV or through a set top box)
- Through a fixed phone with Internet connection
- Through a mobile (including WAP) phone with Internet connection
- Through a games console with Internet connection
- Using any other means? (*Specify*)
- Don't know

See Note 1 below.

³ The model questionnaire shows questions which would be asked in a survey of household and individual use of information technology. It is not intended to be an operational questionnaire, the form of which will vary according to factors which are specific to each survey and country. Because it is not an operational questionnaire, it does not show:

- filter questions which have no data content (e.g. whether the respondent is an employee)
- definitions of terms used
- sequencing or other interview instructions
- how questions are asked (this will vary depending on the collection methodology used, for instance, personal interviewers might use prompt cards for a number of the “list” questions whereas telephone interviewers might use a running prompt i.e. ask each response item as a yes/no question).

Module 2: Household barriers to adoption of the Internet (*Questions are asked of the same adult who answered module 1 questions.*)

- 4. WHAT IS THE MAIN REASON FOR THIS HOUSEHOLD NOT HAVING ACCESS TO THE INTERNET AT HOME?** (*Not having the means to access the Internet, e.g. no computer, is not a valid response.*)

Costs are too high

Lack of confidence or skills

Lack of interest or no use for Internet

Privacy or security concerns

Concern that children will access inappropriate sites

Have access to Internet elsewhere

Other (*Specify*)

Don't know

See Notes 2 and 3 below.

Module 3: Adult use of computers and the Internet: location and frequency of use (*Questions are asked of a randomly chosen adult respondent.*)

- 5. IN THE LAST 12 MONTHS, DID YOU USE A COMPUTER AT HOME?**

Yes

No

- 6. IN THE LAST 12 MONTHS, DID YOU ACCESS THE INTERNET AT HOME?**

Yes, using a mobile access device

Yes, using a fixed access device

No

- 7. HOW OFTEN DID YOU USUALLY ACCESS THE INTERNET AT HOME IN THE LAST 12 MONTHS?**

At least once a day

At least once a week but not every day

At least once a month but not every week

Less than once a month

Don't know

See Note 4 below.

- 8. IN THE LAST 12 MONTHS, DID YOU USE A COMPUTER AT WORK?** (*This question is asked of those who did paid or unpaid work in a job or business in the last 12 months.*)

Yes

No

9. IN THE LAST 12 MONTHS, DID YOU ACCESS THE INTERNET AT WORK? *(This question is asked of those who did paid or unpaid work in a job or business in the last 12 months.)*

Yes, using a mobile access device

Yes, using a fixed access device

No

10. HOW OFTEN DID YOU USUALLY ACCESS THE INTERNET AT WORK IN THE LAST 12 MONTHS?

At least once a week

At least once a month but not every week

Less than once a month

Don't know

See Note 4 below.

11. DID YOU ACCESS THE INTERNET AT PLACES OTHER THAN HOME OR WORK IN THE LAST 12 MONTHS?

Yes, using a mobile access device

Yes, using a fixed access device

No

See Note 5 below.

12. IN THE LAST 12 MONTHS, AT WHICH OF THESE PLACES (IF ANY) DID YOU ACCESS THE INTERNET (EXCLUDING BY A MOBILE ACCESS DEVICE)?

School

Tertiary education institution

Public library

Government agency/department/shopfront

Internet/cyber cafe or similar

Community or voluntary organisation

Neighbour/friend/relative's house

Other (Specify)

See Note 2 below.

13. HOW OFTEN DID YOU USUALLY ACCESS THE INTERNET AT ANY OF THESE PLACES IN THE LAST 12 MONTHS?

At least once a week

At least once a month but not every week

Less than once a month

Don't know

See Note 4 below.

Module 4: Purpose and nature of adult activities on the Internet (*Questions are asked of the same randomly chosen adult respondent who answered module 3.*)

14. FOR WHICH PURPOSES DID YOU USE THE INTERNET AT HOME IN THE LAST 12 MONTHS?

- Work or business
- Education or study
- Volunteer or community groups
- Personal or private
- Don't know

See Note 6 below.

15. FOR WHICH PURPOSES DID YOU USE THE INTERNET AT PLACES OTHER THAN HOME IN THE LAST 12 MONTHS?

- Work or business
- Education or study
- Volunteer or community groups
- Personal or private
- Don't know

See Notes 6 and 7 below.

16. FOR WHICH ACTIVITIES DID YOU USE THE INTERNET AT HOME IN THE LAST 12 MONTHS?

- Obtaining information or general browsing/surfing
- Purchasing or ordering goods or services (excl investment products, shares)
- Financial or investment activities (e.g. Internet banking, share purchasing)
- Using Internet email or chat rooms/sites
- Dealing with government (e.g. tax or electoral authorities, local government)
- Entertainment (e.g. playing games, downloading music, gambling)
- Downloading patches or software
- Other (*Specify*)
- Don't know

See Notes 2, 6 and 8 below.

17. ON WHICH ACTIVITY DID YOU SPEND THE MOST TIME?

18. FOR WHICH ACTIVITIES DID YOU USE THE INTERNET AT PLACES OTHER THAN HOME IN THE LAST 12 MONTHS?

- Obtaining information or general browsing/surfing

Purchasing or ordering goods or services (excl investment products, shares)
 Financial or investment activities (e.g. Internet banking, share purchasing)
 Using Internet email or chat rooms/sites
 Dealing with government (e.g. tax or electoral authorities, local government)
 Entertainment (e.g. playing games, downloading music, gambling)
 Downloading patches or software
 Other (*Specify*)

Don't know

See Notes 2, 6, 7 and 8 below.

19. ON WHICH ACTIVITY DID YOU SPEND THE MOST TIME?

At work
 At other places

Module 5: Internet-commerce details: adult activities and barriers (*Questions are asked of the same randomly chosen adult who answered modules 3 and 4.*)

20. IN THE LAST 12 MONTHS, DID YOU BUY OR ORDER GOODS OR SERVICES FOR PERSONAL OR DOMESTIC USE OVER THE INTERNET?

Yes, at home
 Yes, at work
 Yes, at other places
 No

21. HOW OFTEN? (DID YOU USUALLY BUY OR ORDER GOODS OR SERVICES FOR PERSONAL OR DOMESTIC USE OVER THE INTERNET IN THE LAST 12 MONTHS)

At least once a day
 At least once a week but not every day
 At least once a month but not every week
 At least once every three months but not every month
 Less than once every three months
 Don't know

See Note 4 below.

22. WHAT TYPES OF GOODS AND SERVICES DID YOU BUY OR ORDER OVER THE INTERNET (FOR PERSONAL OR DOMESTIC USE) IN THE LAST 12 MONTHS?

Food or groceries
 Videos or DVDs
 Music or CDs
 Books, magazines or newspapers (including those on-line)

Computer software or hardware (excluding computer games)
Games or toys (including computer games)
Motor vehicles or parts
Financial services
Other (*Specify*)

See Note 2 below.

23. WHAT WAS THE TOTAL VALUE OF GOODS AND SERVICES YOU BOUGHT OR ORDERED (FOR PERSONAL OR DOMESTIC USE) OVER THE INTERNET IN THE LAST 12 MONTHS? (*This question excludes the value of capital items such as investment products, shares and loans but includes financial services charges such as Internet broking fees.*)

\$0 – 250
\$251 – 500
\$501 – 1000
\$1,001 - 2,000
\$2,001 - 5,000
\$5,001 - 10,000
over \$10,000 (*Specify*)
Don't know

See Notes 9 and 10 below.

24. DID YOU PAY FOR ANY OF THOSE GOODS OR SERVICES BY GIVING YOUR CREDIT CARD DETAILS OVER THE INTERNET?

Yes
No

25. WHAT WAS THE MAIN REASON FOR NOT BUYING ANY GOODS OR SERVICES FOR YOUR OWN PRIVATE USE?

Have no need/not interested
Prefer to shop in person/like to see the product
Security concerns/worried about giving credit card details over the Internet
Privacy concerns/worried about giving personal details over the Internet
Trust concerns/concerned about receiving or returning goods
Other (*Specify*)

See Note 2 below.

Notes to the questionnaire

Note 1: Possible country variations are: remove categories where technologies are not available; add or split categories according to technologies available and country data requirements.

Note 2: Possible country variations are: add or split categories according to country data requirements.

Note 3: Member countries currently ask barriers questions in a variety of ways. They include asking for all reasons, asking respondents to rate the importance of each reason or asking for the main plus a secondary reason. We have taken the 'main reason' approach as it is probably the least burdensome presentation and is known to work well in the Australian context. This paper proposes that countries ask barriers questions according to past practices or preferences. Where this is different to the 'main reason' approach, for the purposes of international comparability, data should be tabulated to show the reason most commonly reported or most commonly selected as the most important reason.

Note 4: Frequency questions differ somewhat from the WPIIS versions of this questionnaire. Firstly, the word usually has been included in all frequency questions to avoid confusion, noting that respondents would tend to reply in respect of usual use. Secondly, response categories vary slightly across questions depending on the nature of use. For instance, for work use, the daily category has been removed as most people do not work seven days each week. A new frequency question has been added for Internet purchasing and, because it is a relatively rare event, a response category of three months has been added. Note that countries are able to add additional frequency categories if they wish to obtain finer level information.

Note 5: A response to the second item will direct the respondent to the next two questions. Where the only means of access is mobile, respondents are not asked Q12 and Q13.

Note 6: There are alternative ways of asking purposes and activities questions. For instance, each could be rated according to its frequency or intensity of use. This paper uses a simplified method of presentation which asks respondents for all purposes and all plus main activities. As for barriers, it is presumed that reasonably comparable output can be compiled by those countries taking a different approach.

Note 7: In the previous version (April 2001), the Internet purpose and activities questions were asked in respect of home use only.

Note 8: There is a very large amount of Internet activities information which could be collected. This paper proposes a small set of possibilities, recognising that some member countries will wish to collect far more detail. It is envisaged that, as the model questionnaire evolves, separate modules on activities undertaken using the Internet can be included. Possible modules include:

- communicating using the Internet (e.g. email, chat, bulletin boards, Internet phone)
- entertainment (e.g. music, gambling, games, radio, video)
- searching for/obtaining information on a wide range of topics (e.g. education, medical/health, employment, goods & services, travel, news & current affairs, IT etc)
- government dealings (e.g. taxation, voting, government, benefits lodgment/information)
- use of particular on-line services such as health and education.

The determination of additional modules and questions within those modules could be an appropriate task for future WPIIS Expert Groups.

Note 9: The issue of bias arising from recall error is especially relevant for this question. The current paper suggests that countries select a recall period for value of Internet purchases which would enable calculation of 12 months value. For instance, countries which collect monthly information should collect

information in respect of the last month; countries collecting quarterly data, in respect of the last quarter etc. It is suggested that use of value ranges is likely to reduce recall bias.

Note 10: These are the value categories to be used by Australia in 2002 and 2003. They are based on responses to the 2000 surveys (about half the responses fell into the lowest range). Other countries should determine currency ranges based on the distribution of responses. The top (open) category should apply to a very small proportion of respondents (in Australia, in 2000, it was fewer than 1 per cent). Alternatively, an exact value can be collected instead of using ranges; this is more likely to be feasible where a shorter recall period is used. Information on value of Internet purchases could also be collected in a household expenditure survey rather than a use of IT collection. Whichever method is chosen, it should deliver a reasonable estimate of total domestic Internet expenditure.