

Annex: Methodology of the e-Business Survey 2002

Background

The data presented in this report are derived from the European e-Business Survey 2002, a cornerstone of the monitoring activities of the *e-Business W@tch*. In total, 9,264 telephone interviews with decision-makers in European enterprises in all EU Member States were conducted during June and July 2002. For the construction of the questionnaire and for underlying definitions, OECD recommendations were taken into account.

Fieldwork

The fieldwork of the survey was carried out by INRA Germany in co-operation with its partner organisations on behalf of the *e-Business W@tch*:

Country	Organisation	Country	Organisation
Austria	Spectra Marktforschung: Brucknerstr. 3-5/4, 4020 Linz	Italy	INRA Demoskopea S.p.A., Via Rubicone 41, 00199 Roma
Belgium	INRA Belgium, Avenue de la Couronne 159-165, 1050 Brussels	Luxembourg	ILReS Market Research, 46, Rue di Cimentière, L-1338 Luxemburg
Denmark	Gallup TNS Denmark, Masnedogade 22-26, 2100 Copenhagen	Netherlands	Blauw Contactcenter, Conradstraat 18, 3013 AP Rotterdam
Germany	INRA Deutschland GmbH, Papenkamp 2-6, 23879 Mölln	Portugal	Metris GfK, Av. Eng. Arantes e Oliveira 3-2, 1900-221 Lisboa
Finland	Taloustutkimus Oy, Lemuntie 9, 00510 Helsinki	Spain	INRA España S.A., C. Alberto Aguilera, 7-5, 28015 Madrid
France	CSA TMO, 22 rue du 4 Septembre, 75065 Paris Cedex 02	Sweden	GfK Sverige, Box 401, 221 00 Lund
Greece	MEMRB – K.E.M.E, 24 Ippodamou St., 11635 Athens	UK	Continental Research, 132-140 Goswell Road, EC1V 7DY London
Ireland	Lansdowne Market Research, 49 St. Stephens Green, Dublin 2		

Interview method

The fieldwork was carried out in June and July 2002 using computer-aided telephone interview (CATI) technology. The decision-maker in the enterprise targeted by the survey was normally the person responsible for ICT within the company, typically the IT manager. Alternatively, especially in small enterprises without a separate IT unit, the managing director or owner was interviewed.

Population coverage and sampling

The highest level of the population for the e-Business Survey was the set of all enterprises which are active at the national territory of one of the EU Member States and which have their primary business activity in one of the 15 sectors specified by NACE Rev. 1 codes. The most important used viewpoints for breakdown of the population in the survey were (i) the economic activity, (ii) the national territory of the enterprise and (iii) the size in terms of employees. The survey was carried out as an enterprise survey, i.e. data collection and reporting focuses on the enterprise (rather than on the establishment), defined as a business organisation of one or more establishments comprised as one legal unit.

The sample included enterprises from 15 sectors of the economy, defined by NACE Rev. 1 business activities (see table below). The composition of sectors took into account their economic importance, homogeneity with respect to the analysis of e-business, and the relevance of e-business activities.

Population coverage of the e-Business Survey (2002)			
No.	NACE Rev. 1 Codes (Section – Division/Group)		Sector Name
01	D	15, 16	Manufacture of food products, beverages and tobacco
02	D / O	22, 92.1, 92.2	Publishing, printing, reproduction of recorded media, audiovisual services
03	D	24, 25	Manufacture of chemicals and chemical products
04	D	28	Manufacture of metal products
05	D	29 (except 29.6, 29.7)	Manufacture of machinery and equipment
06	D	30, 31 (except 31.3 – 31.6), 32	Manufacture of Electrical machinery and electronics
07	D	34, 35	Manufacture of transport equipment
08	G	52.11, 52.12, 52.4	Retail
09	H / I / O	55.1, 55.2, 62.1, 63.3, 92.33, 92.52, 92.53	Tourism
10	J	65.12, 65.2	Credit institutions, investment firms and leasing enterprises
11	J	66	Insurance and pension funding services
12	K	70	Real estate activities
13	K	74	Business services
14	I / K	64.2, 72	Telecommunications and computer-related services
15	N	85.11, 85.12, 85.3	Health and social services

The sample drawn was a random sample of companies from the respective sector population in each Member State where the respective sector was to be surveyed with the objective of fulfilling quota with respect to company size class. Target quota were to include a share of at least 10% of large companies (250+ employees) per country-sector cell and at least 30% of medium sized enterprises (50-249 employees). Samples were drawn locally by the INRA partner organisations based on the following business directories and databases:

Country	Directory / Database	Country	Directory / Database
Austria	Herold BUSINESS MARKETING database	Italy	Dun & Bradstreet
Belgium	SPECTRON database by Vicindo	Luxembourg	Répertoire des entreprises luxembourgeoises by STATEC (the official list of the National Statistic Administration).
Denmark	KOB (Købmandsstandens Oplysnings Bureau)	Netherlands	MarktSelect
Germany	Heins und Partner Business Pool	Portugal	Business directory by INE (the National Statistics Institute)
Finland	Blue Book - Salesleads database by the Helsinki Media Company Oy (Sanoma Magazines Finland)	Spain	Dun & Bradstreet
France	IDATA, based on „INSEE Siren file“ (the National Institute of Statistics) and other directories	Sweden	Swedish Post Address Register (PAR)
Greece	ICAP directory (the major database for Greece and member of the European Association of Directory and database Publishers)	UK	Dun & Bradstreet
Ireland	Bill Moss / Dun & Bradstreet		

Interviews per country and average interview length

In total, 9,264 interviews were carried out. The following table shows the breakdown by country and the average interview length:

Country	No. of interviews	Average length	Country	No. of interviews	Average length
Austria	308	17.0 min.	Italy	1517	22.5 min.
Belgium	300	18.2 min.	Luxembourg	102	17.4 min.
Denmark	304	20.2 min.	Netherlands	500	17.2 min.
Germany	1500	18.8 min.	Portugal	300	23.0 min.
Finland	308	20.6 min.	Spain	502	18.4 min.
France	1362	17.2 min.	Sweden	260	19.8 min.
Greece	308	16.5 min.	UK	1538	16.5 min.
Ireland	155	20.1 min.	TOTAL	9264	~ 18 min.

Problems encountered

No major problems were reported by the fieldwork organisations with respect to interviewing (e.g. comprehensibility of the questionnaire, logical structure). A statement from the institute that carried out the survey in the UK summarises this general assessment very well: "On the whole, the fieldwork went relatively smoothly. The questionnaire was logically structured and flowed naturally. Most problems stemmed from the difficulties of conducting research projects among ICT decision-makers in general rather than from any specific flaws in design of this project itself. Dedicated ICT professionals are heavily researched and therefore securing their participation can be difficult. This is a particular problem in larger companies."

In some countries, it was not possible to accomplish the number of interviews envisaged, mainly in those cases where the total population of enterprises was relatively small (e.g. in the insurance sector in smaller countries). In some cases, the objective to include a share of 10% of large companies could not be accomplished; if possible, these were then replaced by interviews with SMEs.

An issue – which was known in advance but is unavoidable in telephone interviews – is that it is not always easy to find the right target person. Field work organizations reported that sometimes a data processing manager is not very aware of the consequences of e-business on the whole of the company, on the personnel level and on the financial level. On the other hand, the general manager may not always be aware of the implementation status and technical consequences.

Tabulations

Within the coverage specified above, and in line with the special task of the *e-Business W@tch*, results were compiled for mainly two sets of data:

1. An activity breakdown of the population of enterprises into 15 sectors. This breakdown is based on the aggregate of four countries (D, F, I, UK), as in these countries all 15 sectors were included in the survey and therefore comparability of the sample is given. These four countries represent more than 60% of the market volume in any of the 15 sectors and in most sectors actually more than 70%.
2. A size-class breakdown of the population of enterprises into three categories: small enterprises (including micro-enterprises, i.e. enterprises with 0-49 employees), medium sized enterprises (50-249 employees) and large enterprises (250+ employees).

A breakdown of the population by EU Member States is also available, but it is restricted to four countries (D, F, I, UK) for the same reason as explained in (1.) above. This implies that two different kinds of totals were calculated: (i) an EU-4 total consisting of the results from Germany, France, Italy and the UK and (ii) a sector total consisting of all countries included in the survey of a particular sector. For reasons of comparability and consistency, the tables in this scoreboard build on the EU-4 totals. Sector totals are composed of 6-8 countries per sector.

(cf. databases on http://www.empirica.com/marketwatch/database/sector_database.htm)

In addition, the activity breakdown was cross-tabulated with the country as well as with the size-class breakdown. These cross-tabulations are offered in special sector databases. However, depending on the indicator and the filter questions, the number of observations can become very small in many cells of this cross-tabulation. It is therefore recommended to limit the breakdown of data to one dimension (in the case of pre-filtered questions) or two dimensions (if all enterprises were asked).

Weighting principles

Two weighting schemes have been applied: weighting by employment and by the number of enterprises. Data are presented in either way depending on the kind of the analysis to be made.

- Values that are reported as employment-weighted figures should be read as "enterprises comprising x% of employees". To give an example: The indicator "*percentage of companies selling online*" is – if employment-weighted – defined as "*companies comprising x% of employees sell online*". The reason for using employment weighting is that there are very many more micro enterprises than non-micro enterprises. The unweighted figure would effectively represent mainly the smallest sizes of firm.
- Values that are reported as enterprise-weighted figures are to be read as "x% of enterprises", reflecting the number of enterprises as legal entities but not their relative economic importance in terms of employment.

Weighting was based on the latest available universe figures by Eurostat. Missing or undisclosed universe data had to be imputed. The imputation procedures depended on auxiliary or proxy data availability, taking into account information (where available) about higher industry aggregations, nearest neighbour data, turnover-employment correlation and secondary sources other than Eurostat and allowing for the constraint of predetermined ranges such that imputed data had to be contingent with published sectoral, national and European universe totals as well as for final plausibility checks for every single imputed data item. The weighting cells correspond to the data reporting pattern used as regards industries and employment size-classes. Uniform expansion factors are applied to enterprises within one of the three size-classes per industry per country. As for data that refer to a base other than the universe of all enterprises (e.g. indicators appropriately reported for on-line selling enterprises only), expansion factors are adjusted to the different shares of observations per cell that build the computation base.

Variables - indicators

The set of ICT and e-business indicators for which data were collected in this survey can be structured into five main modules:

- Module A: ICT infrastructure and e-skills development in the company
- Module B: E-commerce and e-business usage
- Module C: Barriers to e-commerce
- Module D: Impact of selling and procuring online
- Module E: Impact of and satisfaction with electronic business

The choice of indicators includes a basic set of widely accepted measures for e-commerce and e-business (as used in related surveys on e-commerce and e-business e.g. by Eurostat), but also introduces a few innovative indicators which have a pilot character and are not yet widely tested. The full list of variables which was the basis for preparing the questionnaire can be downloaded (in *.xls format) from the [e-Business W@tch](#) website at its "database" section.