Eurostat model for a Community Survey on ICT Usage and e-Commerce in Enterprises 2007

(Model Questionnaire Version 3)

COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES

2007

General outline of the survey

Sampling unit: Enterprise.

Scope / Target Population:

Economic activity:

Enterprises classified in the following categories of NACE-Rev.1:

- Section D – *"Manufacturing"*;
- Section F – *"Construction"*;
- Section G – *"Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods"*;
- Groups 55.1 and 55.2 – *"Hotels"* and *"Camping sites and other provision of short-stay accommodation"*;
- Section I – *"Transport, storage and communication"*;
- Section K – *"Real estate, renting and business activities"*;
- Groups 92.1 and 92.2 – *"Motion picture and video activities"* and *"Radio and television activities"*.

Only for modules A, B, E and X (X1, X2 and X5):

- Classes 65.12, 65.22; 66 except 66.02 – *"Banking, financial leasing and insurance"*.

Optional:

- Section E – *"Electricity, gas and water supply"*;
- Groups from 55.3 to 55.5 inclusive;
- Groups from 92.3 to 92.7 inclusive; and
- Division 93 – *"Other service activities"*.

Only for modules A, B, E and X (X1, X2 and X5):

- Classes 67.12, 67.13, 67.2 – *"Activities auxiliary to financial intermediation, except administration of financial markets"*.

Enterprise size:

Enterprises with 10 or more persons employed;
Optional: enterprises with number of persons employed between 1 and 9.

Geographic scope:

Enterprises located in any part of the territory of the Country.

Reference period: Year 2006 for the % of sales/orders data and where specified.
January 2007 for the other data.

Survey period: First quarter 2007.

Questionnaire: The layout of the national questionnaire should be defined by the country. However, countries should follow the order of the list of variable enclosed, if possible. The background information (Module X) should be placed at the end of the questionnaire. This information can be obtained in 3 different ways: from national registers, from Structural Business Statistics or collected directly with the ICT usage survey. Every effort should be made to obtain them from the most recent SBS survey. Countries can include additional questions.

Note on the use of "Don't know" response categories:
In general "Don't know" response categories are not recommended as it is considered that such an answer would provide the same information as a blank one. Even if the respondent doesn't have the information, it should be possible to gather it from records or from someone else in the enterprise. However, there are a few exceptions in which cases a "Don't know" response category is used in the model questionnaire.

Target respondent:

A decision maker with major responsibility for IT-related issues in the enterprise (the IT manager or a senior professional in the IT department). In smaller enterprises, the respondent may be someone at the level of managing director or the owner.

Sample size, stratification:

The sampling design and the resulting sample size should be appropriate for obtaining accurate, reliable and representative results on the variables and items in the model questionnaire.

This objective should be achieved for the overall proportions as well as for the proportions for the different breakdowns of the population defined below: NACE, size class and geographic. NACE breakdown and enterprise size class breakdown are not required to be cross-tabulated.

This requirement aims at ensuring the collection of a complete dataset – without empty, confidential or unreliable cells - for these indicators.

NACE breakdown:

(To be applied to: all variables; enterprises with 10 or more persons employed; whole territory of the Country.)

Data should be broken down by the following NACE aggregates:

1 DA+DB+DC+DD+DE
2 DF+DG+DH
3 DI+DJ
4 DK+DL+DM+DN
5 45
6 50
7 51
8 52
9 55.1+55.2
10 60+61+62+63
11 64
12 72
13 70+71+73+74
14 92.1+92.2

Only for modules A, B, E and X (X1, X2 and X5):

F1 65.12+65.22
F2 66.01+66.03

Optional:

17 22
18 40+41
19 55.3+55.4+55.5
20 92.3 to 92.7
21 93

Only for modules A, B, E and X (X1, X2 and X5):

F3 67.12+67.13+67.2

Size class breakdown:

(To be applied to: all variables; aggregate of all mandatory NACE aggregates [1 to 14 defined above]; whole territory of the Country.)

Data should be broken down by the following size classes of the number of persons employed:

1 10 or more
2 10 - 49 (small enterprises)
3 50 - 249 (medium enterprises)
4 250 or more (large enterprises)

Optional:

5 1-4
6 5-9

Geographic breakdown:

(To be applied to: all variables; aggregate of all mandatory NACE aggregates [1 to 14 defined above]; enterprises with 10 or more and less than 250 persons employed [small and medium enterprises as defined above].)

Data should be broken down by the following regional groups:

1 objective 1 regions
2 non-objective 1 regions

Note: See glossary for the list of objective-1 regions in each country.

Weighting of results:

Results should in general be weighted by number of enterprises.

Turnover/Purchases weighting should be also used for turnover/orders related questions (Turnover: C4, C6, D4; Purchases: C2, D2: if possible purchases weighting, otherwise turnover weighting).

Weighting by the Number of Persons Employed should be also applied for questions A2, A3, B2 and for % using the Internet, % using broadband, % using xDSL, % using a website or homepage, % purchasing via the Internet, % receiving orders via the Internet, % receiving orders via the Internet or other computer mediated networks.

Treatment of non-response/'Do not know':

Unit non-response:

The non-respondent units should be assumed to resemble those who have responded to the survey and be treated as non-selected units. For this, the weighting or the grossing up factors should be adjusted: the design weight N_h / n_h is replaced by N_h / m_h where N_h is the size of stratum h, n_h is the sample size in stratum h and m_h is the number of respondents in stratum h.

Item non-response:

Logical corrections should be made, when information can be deducted from other variables, and priority given to further contacts with enterprises to collect the missing information.

For the categorical variables (e.g. the YES/NO questions), respondents with item non response or 'do not know' should not be imputed with values from respondents who answered the question.

Numerical variables shouldn't also be imputed with the exception of C7 (breakdown of Internet sales by type of client) and C8 (breakdown of Internet sales by destination). The imputation of these two variables should take into account, at least, the breakdowns by size class and NACE in the tabulated results.

Tabulation of results:

For the categorical variables, estimates should be made for the total number of enterprises for each response category, broken down by the NACE categories and size classes specified above.

For the quantitative variables (turnover, purchases and number of persons employed), when collected in absolute or percentage terms (and not in percentage classes), estimates should be made for the total values in absolute terms, broken down by the NACE categories and size classes specified above.

Data transmission:

Results are to be sent to Eurostat following the transmission format described in another Eurostat document.

COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES

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Model Questionnaire (Version 3 of 23 March 2006)

(Questions relating to the *i*2010 Benchmarking Indicators are marked with an asterisk *)

	Module A: General information about ICT systems			
A1.	**Did your enterprise use computers, during January 2007?** (Filter question)	Yes ☐	No ☐ → Go to X	
A2.	**How many persons employed used computers at least once a week, during January 2007? - Optional** If you can't provide this value, **Please indicate an estimate of the percentage of the number of persons employed used computers at least once a week, during January 2007. - Optional**	*(Number)* %		
A3.*	**Did your enterprise have the following information and communication technologies, during January 2007?**	Yes	No	
	a) Wireless LAN	☐	☐	
	b) Wire based LAN	☐	☐	
	c) Intranet	☐	☐	
	d) Extranet	☐	☐	
A4.*	**Did your enterprise have in use, in January 2007, any software application to manage the placing and/or receipt of orders?** (Filter question)	Yes ☐	No ☐ → Go to A6	
A5.*	**Did that software application to manage orders link automatically with any of the following, as of January 2007?**	Yes	No	
	a) Internal system for re-ordering replacement supplies	☐	☐	
	b) Invoicing and payment systems	☐	☐	
	c) Your system for managing production, logistics or service operations	☐	☐	
	d) Your suppliers' business systems (for suppliers outside your enterprise group)	☐	☐	
	e)Your customers' business systems (for customers outside your enterprise group)	☐	☐	
A6.*	**Did your enterprise have in use, in January 2007, an ERP software package to share information on sales and purchases with other internal functional areas (for example, finance, planning, marketing, etc.)?**	Yes ☐	No ☐	Don't know ☐
A7.*	**Did your enterprise have in use, in January 2007, any software application for managing information about clients (so called CRM) that allows it to:**	Yes	No	
	a) Capture, store and make available to other business functions the information about its clients?	☐	☐	
	b) Make analysis of the information about clients for marketing purposes (setting prices, make sales promotion, choose distribution channels, etc.)?	☐	☐	
A8.*	**Did your enterprise have in use, in January 2007, third party free or open source operating systems, such as Linux ? (i.e. with its source code available, no copyright cost, and the possibility to modify and/or (re)distribute it)**	Yes ☐	No ☐	
A9.*	**Was your enterprise, in January 2007, sending e-invoices in a digital format which allows its automatic processing?**	Yes ☐	No ☐	
A10.*	**Was your enterprise, in January 2007, receiving e-invoices in a digital format which allows its automatic processing?**	Yes ☐	No ☐	
A11.*	**Was your enterprise, in January 2007, using a digital signature in any message sent, i.e. using encryption methods that assure the authenticity and integrity of the message (uniquely linked to and capable of identifying the signatory and where any subsequent change to the message is detectable)?**	Yes ☐	No ☐	

Module B: Use of Internet

(asking enterprises with ICT)

B1.	**Did your enterprise have access to Internet, during January 2007?** (Filter question)	Yes ☐	No ☐ → Go to D1
B2.*	**How many persons employed used computers connected to the World Wide Web at least once a week, during January 2007?** If you can't provide this value, **Please indicate an estimate of the percentage of the number of persons employed used computers connected to the World Wide Web at least once a week, during January 2007.**	*(Number)* ☐☐☐ %	

B3.*	**Did your enterprise have the following types of external connection to the Internet, during January 2007?**	Yes	No
	a) Traditional Modem (dial-up access over normal telephone line)	☐	☐
	b) ISDN connection	☐	☐
	c) DSL (xDSL, ADSL, SDSL etc) connection	☐	☐
	d) Other fixed internet connection (e.g. cable, leased line (e.g. E1 or E3 at level 1 and ATM at level 2), Frame Relay, Metro-Ethernet, PLC - Powerline comunication, etc.)	☐	☐
	e) Mobile connection (e.g. e.g. analogue mobile phone, GSM, GPRS, UMTS, EDGE, CDMA2000 1xEVDO)	☐	☐
B4.	**Did your enterprise use the Internet for the following purposes, during January 2007?** **(as consumer of Internet services)**	Yes	No
	a) Banking and financial services	☐	☐
	b) Training and education	☐	☐
	c) Market monitoring (e.g. prices)	☐	☐
B5.*	**Did your enterprise use the Internet for interaction with public authorities, during 2006?** (Filter question)	Yes ☐	No ☐ → Go to B8
B6.*	**Did your enterprise interact with public authorities in the following ways, during 2006?**	Yes	No
	a) For obtaining information	☐	☐
	b) For obtaining forms, e.g. tax forms	☐	☐
	c) For returning filled in forms, e.g. provision of statistical information to public authorities	☐	☐
	d) Submitted a proposal in an electronic tender system (e-procurement)	☐	☐
B7.	**Did your enterprise have a Web Site / Home Page, during January 2007?** (Filter question)	Yes ☐	No ☐ → Go to B10
B8.	**Did the Web Site of your enterprise provide the following facilities, during January 2007?** **(your enterprise as provider of Internet services)**	Yes	No
	a) Marketing the enterprise's products	☐	☐
	b) Facilitating access to product catalogues and price lists	☐	☐
	c) Providing after sales support	☐	☐

Module C: e-commerce via Internet

(asking enterprises with Internet access)

Orders placed via Internet (Purchases)

C1.*	**Did your enterprise order products/services via the Internet, during 2006 (excluding manually typed e-mails)?** (Filter question)	Yes ☐	No ☐ → Go to C3
C2.*	**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 ☐	
	Alternative Question: **Please state the value of the purchases resulted from orders placed via Internet (in monetary terms, excluding VAT), in 2006.**	*(National Currency)*	
	If you can't provide this value, **Please indicate an estimate of the percentage of the total purchases resulted from orders placed via Internet, in 2006.**	☐☐☐ %	

Orders received via Internet (Sales)

C3.*	**Did your enterprise receive orders via the internet, during 2006 (excluding manually typed e-mails)?** (Filter question)	Yes ☐	No ☐ → Go to D1
C4.*	**Please state the value of the turnover resulted from orders received via Internet (in monetary terms, excluding VAT), in 2006.**	*(National Currency)*	
	If you can't provide this value, **Please indicate an estimate of the percentage of the total turnover resulted from orders received via Internet, in 2006.**	☐☐☐ %	
C5.*	**Was your enterprise using a secure protocol, such as SSL and TLS, for the reception of orders via Internet, in January 2007?**	Yes ☐	No ☐

Module D: E-commerce via external computer networks other than Internet

(asking enterprises with ICT)

Orders placed via external computer networks other than Internet (Purchases)

D1.*	**Did your enterprise order products/services via external computer networks other than Internet, during 2006?** (Filter question)	Yes ☐	No ☐ → Go to D3
D2.*	**Please indicate for 2006 the percentage of the orders placed or transmitted via computer networks other than Internet, in relation to the total purchases (in monetary terms, excluding VAT).**	Less than 1% ☐ 1% or more and less than 25% ☐ 25% or more and less than 50% ☐ 50% or more and less than 75% ☐ 75% or more ☐	
	Alternative Question: **Please state the value of the purchases resulted from orders placed via external computer networks other than Internet (in monetary terms, excluding VAT), in 2006.**	*(National Currency)*	
	If you can't provide this value, **Please indicate an estimate of the percentage of the total purchases resulted from orders placed via external computer networks other than Internet, in 2006.**	☐☐☐ %	

Orders received via external computer networks other than Internet (Sales)

D3.*	**Did your enterprise receive orders via external computer networks other than Internet, during 2006?** (Filter question)	Yes ☐	No ☐ → Go to E1
D4.*	**Please state the value of the turnover resulted from orders received via computer networks other than Internet (in monetary terms, excluding VAT), in 2006.**	*(National Currency)*	
	If you can't provide this value, **Please indicate an estimate of the percentage of the total turnover resulted from orders received via computer networks other than Internet, in 2006.**	☐☐☐ %	

Module E*: e-Skills – ICT competence in the enterprise unit and the demand for ICT skills

(asking enterprises with ICT)

E1. **Did your enterprise employ ICT/IT specialists, in January 2007?** (Filter question)

Yes ☐ | No ☐ → Go to E3

Definition ICT/IT specialists **:** *ICT specialists or IT specialists have the capability to specify, design, develop, install, operate, support, maintain, manage, evaluate and research ICT and ICT systems. ICT is the main job.*

E2. **How many ICT/IT specialists were employed by your enterprise, during January 2007?**

(Number)

If you can't provide this value,
Please indicate an estimate of the percentage of the number of ICT/IT specialists in relation to the total number of persons employed, during January 2007.

☐☐☐ %

E3. **Did your enterprise recruit or try to recruit personnel for jobs requiring ICT specialist skills, during 2006?** (Filter question)

Yes ☐ | No ☐ → Go to E6

E4. **Did your enterprise have hard-to-fill vacancies for jobs requiring ICT specialist skills, during 2006?** (Filter question)

Yes ☐ | No ☐ → Go to E6

E5. **What do you believe were the main reasons of having hard-to-fill vacancies for jobs requiring ICT specialist skills?**

	Yes	No
a) Lack or too low number of applicants with ICT specialist skills	☐	☐
b) Lack of ICT related qualifications from education and/or training	☐	☐
c) Lack of work experience in the field of ICT	☐	☐
d) Salary requests too high	☐	☐
e) Other **- Optional**	☐	☐

E6. **Did your enterprise recruit or try to recruit personnel for jobs requiring skills in the use of ICT, during 2006?** (Filter question)

Yes ☐ | No ☐ → Go to E8

Definition ICT user skills**:** *Capabilities enabling the effective use of common, generic software tools (basic user skills) or advanced, often sector-specific, software tools (advanced user skills). Jobs requiring ICT user skills: ICT is an important tool for the job and is used to produce work output and/or used intensively at work (in day-to-day activities)*

E7. **Did your enterprise have hard-to-fill vacancies due to applicants' lack of skills in the use of ICT, during 2006?**

Yes ☐ | No ☐

E8. **Did your enterprise provide training to develop or upgrade ICT related skills of your personnel, during 2006?**

	Yes	No
a) Training for ICT/IT specialists	☐	☐
b) Training for users of ICT	☐	☐

E9. **Were any ICT functions requiring ICT/IT specialists performed by external suppliers (fully or partly), during 2006?**

Yes ☐ | No ☐

Definition External Suppliers: *Other enterprises, includes also foreign enterprises/legal entities, associated or not associated to a group of enterprises.*

E10. **Were any ICT functions requiring ICT/IT specialists performed by suppliers <u>in a foreign country</u> (fully or partly), during 2006?** (Filter question)

Definition Suppliers in a foreign country*: Suppliers in a foreign country or foreign suppliers can be 1) foreign affiliates, usually legal entities, established by the enterprise (internal suppliers from abroad) and/or 2) other foreign enterprises (external suppliers from abroad).*

Yes by foreign affiliates established by the enterprise	Yes by other foreign enterprises	No
☐	☐	☐ → Go to E13/X

E11.	**Which ICT functions were performed by suppliers' ICT/IT specialists in a foreign country? - Optional**	Yes	No
	a) ICT management (includes e-business and ICT systems management)	☐	☐
	b) ICT development and implementation (includes business software development, programming, web development, database development, communication network development, systems integration and installation)	☐	☐
	c) ICT operations (includes technical support, user help and support, network administration, web administration, database administration)	☐	☐
	d) Other ICT functions	☐	☐
E12.	**From which of the following geographical regions did your enterprise engage suppliers' ICT/IT specialists?**	Yes	No
	a) other EU Member States	☐	☐
	b) Non-EU Countries	☐	☐

E13.	**Were any business functions requiring users of ICT performed by external suppliers (fully or partly), during 2006? - Optional**	Yes ☐	No ☐

E14.	**Were any business functions requiring users of ICT performed by suppliers in a foreign country (fully or partly), during 2006? - Optional** (Filter question)	Yes by foreign affiliates established by the enterprise	Yes by other foreign enterprises	No
		☐	☐	☐ → Go to X

E15.	**Which business functions (non-ICT) were performed by suppliers' ICT users in a foreign country? - Optional**	Yes	No
	a) Sales and marketing, customer services	☐	☐
	b) Research and development, product design and engineering	☐	☐
	c) Other (non-ICT) business functions	☐	☐
E16.	**Please indicate the geographical regions from where you engaged business services requiring ICT users. - Optional**	Yes	No
	a) other EU Member States	☐	☐
	b) Non-EU Countries	☐	☐

Module X: Background information

(X1-X5) available in some countries from SBS and thus not to be included; latest available information should be provided

X1.	**Main economic activity of the enterprise, during 2006**	
X2.	**Average number of persons employed, during 2006**	
X3.	**Total purchases of goods and services (in value terms, excluding VAT), for 2006**	
X4.	**Total turnover (in value terms, excluding VAT), for 2006**	
X5.	**Location (Objective 1/ non-Objective 1 region), in 2006**	

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Glossary

ERP (New)

Enterprise Resource Planning (ERP) consists of one or of a set of software applications that integrate information and processes across the several business functions of the enterprise. Typically ERP integrates planning, procurement, sales, marketing, customer relationship, finance and human resources.

ERP software can be customised or package software. These latter are single-vendor, enterprise wide, software packages, but they are built in a modular way allowing enterprises to customise the system to their specific activity implementing only some of those modules.

ERP systems typically have the following characteristics:

1. are designed for client server environment (traditional or web-based);
2. integrate the majority of a business's processes;
3. process a large majority of an organization's transactions;
4. use enterprise-wide database that stores each piece of data only once;
5. allow access to the data in real time.

CRM (New)

Customer Relationship Management (CRM) is a management methodology which places the customer at the centre of the business activity, based in an intensive use of information technologies to collect, integrate, process and analyse information related to the customers.

One can distinguish between:

1. **Operational CRM** – Integration of the front office business processes that are in contact with the customer.
2. **Analytical CRM** – Analysis, through data mining, of the information available in the enterprise on its customers. This aims to gather in depth knowledge of the customer and how to answer to its needs.

e-Invoice (New)

An **e-invoice** is an invoice where all data is in digital format and it can be processed automatically. A distinctive feature of an e-invoice is automation. E-invoice will be transferred automatically in inter-company invoicing from the invoice issuer's or service provider's system directly into the recipient's financial or other application.

The transmission protocol might be XML, EDI or other similar format.

e-Signature (New)

An **e-signature** is some kind of electronic information attached to or associated with a contract or another message used as the legal equivalent to a written signature. Electronic signature is often used to mean either a signature imputed to a text via one or more of several electronic means, or cryptographic means to add non-repudiation and message integrity features to a document. Digital signature usually refers specifically to a cryptographic signature, either on a document, or on a lower-level data structure.

For either of them to be considered a signature they must have a legal value, otherwise they are just a piece of communication.

Some web pages and software EULAs claim that various electronic actions are legally binding signatures, and so are an instance of electronic signature. For example, a web page might announce that, by accessing the site at all, you have agreed to a certain set of terms and conditions. The legal status of such claims is uncertain.

An electronic signature can also be a digital signature if it uses cryptographic methods to assure both message integrity and authenticity. Because of the use of message integrity mechanisms, any changes to a digitally signed document will be readily detectable if tested for, and the attached signature cannot be taken as valid.

It is important to understand the cryptographic signatures are much more than an error checking technique akin to checksum algorithms, or even high reliability error detection and correction algorithms such as Reed-Solomon. These can offer no assurance that the text has not been tampered with, as all can be regenerated as needed by a tamperer. In addition, no message integrity protocols include error correction, for to do so would destroy the tampering detection feature.

Popular electronic signature standards include the OpenPGP standard supported by PGP and GnuPG, and some of the S/MIME standards (available in Microsoft Outlook). All current cryptographic digital signature schemes require that the recipient have a way to obtain the sender's public key with assurances of some kind that the public key and sender identity belong together, and message integrity measures (also digital signatures) which assure that neither the attestation nor the value of the public key can be surreptitiously changed. A secure channel is not required.

A digitally signed text may also be encrypted for protection during transmission, but this is not required when the digital signature has been properly carried out. Confidentiality requirements will be the guiding consideration.

SSL/TLS (New)

Secure Sockets Layer (SSL) and Transport Layer Security (TLS) are cryptographic protocols which provide secure communications on the Internet. SSL provides endpoint authentication and communications privacy over the Internet using cryptography. In typical use, only the server is authenticated (i.e. its identity is ensured) while the client remains unauthenticated; mutual authentication requires PKI deployment to clients. The protocols allow client/server applications to communicate in a way designed to prevent eavesdropping, tampering, and message forgery.

Free / Open Source (New)

Open source software refers to computer software under an open source license. An open-source license is a copyright license for computer software that makes the source code available under terms that allow for modification and redistribution without having to pay the original author. Such licenses may have additional restrictions such as a requirement to preserve the name of the authors and the copyright statement within the code.

Related to the Open Source Definition is the Free Software definition by the Free Software Foundation, which attempts to capture what is required for a program license to qualify as being free-libre software. In practice, licenses meet the open source definition almost always also meet the Free software definition. All licenses reported to meet the free software definition as of 2005 also meet the open source definition.

B2B

Business-to-Business transactions conducted over IP based networks and over other computer-mediated networks.

B2C

Transactions conducted between Business and private Consumer over IP based networks and over other computer-mediated networks.

Broadband

No generally accepted definition of broadband can be given. Common definitions refer to either: a) the connection speeds measured in kbps or mbps (in at least the downstream direction) or bandwidth measured by the amount of digital bits that one can transmit per second, measured in kbps or

	mbps; b) the type of connection, of which the following provide broadband access: xDSL (ADSL, SDSL, etc), Cable TV network (cable modem), UMTS (mobile phone), or other (e.g. satellite, fixed wireless); c) the content that is provided with the examples of high definition movie trailers, short films, flash animation, three dimensional video games, video on demand, internet radio, streaming video, video conferencing and so on.
Computer-mediated networks other than Internet	Minitel or interactive telephone systems Networks that are employed for communication between computers but that are not publicly accessible Wide Area Networks such as the Internet. They are usually proprietary networks made up of leased lines and can cover local and wide geographical areas. Examples are EDI over private networks, Minitel or interactive telephone systems. They exclude all IP/Internet Protocol based networks (www, extranet, EDI over Internet, virtual private network over Internet, internet enabled mobile phones).
Digital products or services	Goods/services that can be ordered and delivered directly to a computer over the Internet, e.g. music, videos, games, computer software, online newspapers, consulting services, etc.
DSL (Digital Subscriber Line)	A high-bandwidth (broadband), local loop technology to carry data at high speeds over traditional (copper) telephone lines.
xDSL, ADSL etc.	DSL technologies designed to increase bandwidth over standard copper telephone wires; includes ADSL (Asymmetric Digital Subscriber Line) etc.
Electronic commerce (e-commerce)	Transactions conducted over Internet Protocol-based networks and over other computer-mediated networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or off-line. Orders received via telephone, facsimile, or manually typed e-mails are not counted as electronic commerce.
E-mail	Electronic transmission of messages, including text and attachments, from one computer to another located within or outside of the organisation. This includes electronic mail by Internet or other computer networks.
Extranet	A secure extension of an Intranet that allows external users to access some parts of an organisation's Intranet.
e-Skills / ICT Skills	Two main types of e-skills can be distinguished: ICT specialists skills: specifying, designing, developing, installing, operating, supporting, maintaining, managing, evaluating and researching ICT systems. ICT users skills: apply systems to support own work, use of generic software tools and use of specialised tools supporting business functions within industry.

e-Skills / External Suppliers / (Outsourcing e-skills)	Other enterprises, includes also foreign enterprises/legal entities, associated or not associated to a group of enterprises. (e-skills sourced from external suppliers address the phenomena of outsourcing, i.e. activities are contracted out to other enterprises in the same country or abroad.)
e-Skills / Foreign Suppliers / Suppliers in a foreign country / (Offshoring e-skills)	Suppliers in a foreign country can be 1) foreign affiliates, usually legal entities, established by the enterprise (internal suppliers from abroad) or 2) other foreign enterprises (external suppliers from abroad). (e-skills sourced from suppliers in a foreign country address the phenomena of offshoring. E-skills sourced from foreign affiliates address offshore insourcing. E-skills sourced from other foreign enterprises address offshore outsourcing.)
ICT/IT Specialists (New)	ICT specialists or IT specialists have the capability to specify, design, develop, install, operate, support, maintain, manage, evaluate and research ICT and ICT systems. ICT is the main job. Related ISCO-88 classification codes: 1236 Computing services managers 2131 Computer systems designers, analysts and programmers 2139 Computing professionals not elsewhere classified 2144 Electronics and telecommunications engineers 3114 Electronics and telecommunications engineering technicians 3121 Computer assistants 3122 Computer equipment operators 3132 Broadcasting and telecommunications equipment operators
ICT User Skills (New)	Capabilities enabling the effective use of common, generic software tools (basic user skills) or advanced, often sector-specific, software tools (advanced user skills). ICT is an important tool for the job and is used to produce work output and/or is used intensively at work (in day-to-day activities)
ISDN	Integrated Services Digital Network.
Internet	Relates to Internet Protocol based networks: www, Extranet over the Internet, EDI over the Internet, Internet-enabled mobile phones.
Intranet	An internal company communications network using Internet protocol allowing communications within an organisation.
LAN (Local Area Network)	A network for communication between computers confined to a single building or in closely located group of buildings, permitting users to exchange data, share a common printer or master a common computer, etc.
Modem	Device that modulates outgoing digital signals from a computer or other digital device to analogue signals for a conventional copper twisted pair telephone line and demodulates the incoming analogue signal and converts it to a digital signal for the digital device.
Web site	Location on the World Wide Web identified by a Web address. Collection of Web files on a particular subject that includes a beginning file called a home

page. Information is encoded with specific languages (Hypertext mark-up language (HTML), XML, Java) readable with a Web browser, like Netscape's Navigator or Microsoft's Internet Explorer.

xDSL

Digital Subscriber Line. DSL technologies are designed to increase bandwidth available over standard copper telephone wires. Includes IDSL, HDSL, SDSL, ADSL, RADSL, VDSL, DSL-Lite.

Objective 1 regions

"Objective 1" promotes the development and structural adjustment of regions whose development is lagging behind, i.e. whose average per capita GDP is below 75% of the European Union average.
The NUTS regions (statistical demarcation) eligible for support from the Structural Funds under Objective 1, including transitional or phasing-out Objective 1 regions which are marked in italic, are listed below.

Countries *entirely covered* **by Objective 1:**

Estonia (the whole country counts as one single region at NUTS2-level)

Greece

Ireland (Southern and Eastern under transitional support)

Latvia (the whole country counts as one single region at NUTS2-level)

Lithuania (the whole country counts as one single region at NUTS2-level)

Hungary

Malta (the whole country counts as one single region at NUTS2-level)

Poland

Portugal (Lisboa (NUTS 2) and Oeste, Médio Tejo and Lezíria do Tejo (NUTS 3) under transitional support)

Slovenia (the whole country counts as one single region at NUTS2-level)

Countries *partially covered* **by Objective 1:**

Belgium: *Hainaut*

Czech Republic: Střední Čechy, Jihozápad, Severozápad, Severovýchod, Jihovýchod, Střední Morava, Moravskoslezsko (i.e. the whole country except Praha)

Germany: Brandenburg Nord-Ost, Brandenburg Süd-West, Mecklenburg-Vorpommern, Chemnitz, Dresden, Leipzig, Dessau, Halle, Magdeburg, and Thüringen, *Berlin (part: former East Berlin)*

Spain: Galicia, Principado de Asturias, Castilla y Leon, Castilla-La Mancha, Extremadura, Comunidad Valenciana, Andalucía, Región de Murcia, Ceuta, Melilla and Canarias, *Cantabria*

France: Guadeloupe, Martinique, French Guyana and Réunion, *Corse, Nord - Pas-de-Calais (parts: arrondissements Avesnes, Douai, Valenciennes*

Italy: Campania, Puglia, Basilicata, Calabria, Sicilia and Sardegna, *Molise*

The Netherlands: *Flevoland*

Austria: Burgenland

Slovakia: Západné Slovensko, Stredné Slovensko, Východné Slovensko (i.e. the whole country except Bratislavsky kraj)

Finland: Itä-Suomi (all), Länsi-Suomi (part: northern part of Keski-Suomi), Pohjois-Suomi (parts: all of Lappi, part of Pohjois-Pohjanmaa, eastern part of Keski-Pohjanmaa)

Sweden: Norra Mellansverige (parts: northwestern part of Gävleborgs län, northern and western parts of Dalarnas län, northern part of Värmlands län), Mellersta Norrland (all, but coastal part is under the "Special Programme") and Övre Norrland (all, but coastal part is under the "Special Programme")

United Kingdom: South Yorkshire, West Wales and the Valleys, Cornwall and Isles of Scilly and Merseyside, *Highlands and Islands, Northern Ireland*

Countries with *no* Objective 1 regions:

Cyprus (the whole country counts as one single region at NUTS2-level)

Denmark (the whole country counts as one single region at NUTS2-level)

Luxembourg (the whole country counts as one single region at NUTS2-level)

The list of Objective 1 regions was published in O.J. L194 p. 53 of 27/07/1999, Annexes I and II
(http://europa.eu.int/eur-lex/pri/en/oj/dat/1999/l_194/l_19419990727en00530057.pdf).

The list of Objective 1 regions in the Member States who entered the EU in 2004 can be found in Annex II to the *Act concerning the conditions of accession* of these countries. The list is valid from 01/05/2004 until 31/12/2006
(http://www.europa.eu.int/eur-lex/en/treaties/dat/L_2003236EN/L2003236EN.065803.htm).

Type of the External Internet Connection

By term an external connection it is meant the type of the (last mile) connection of the enterprise (e.g. enterprise's computer-mediated network) to the network of the Internet access 'service' provider 'ISP'.

"The last mile is the final leg of delivering communications connectivity to a resident or customer (enterprise)."

Type of external Internet connection:

a) *Dial-up is a temporary connection to the Internet via an analogue (standard) modem and standard telephone line (Public switched telephone network PSTN), which requires that the modem dial a phone number when Internet access is needed (to dial the Internet service provider's node to establish a modem-to-modem link, which is then routed to the internet).*

"Dial-up pertains to a telephone connection in a system of many lines shared by many users. A dial-up connection is established and maintained for limited time duration. A dial-up connection can be initiated manually or automatically by your computer's modem or other device. This once most common used type of the Internet connection is capable of carrying up to 56 kilobits per second (kbit/s) and is consider as typical example of the low capacity 'speed' connection (narowband)."

b) *ISDN (Integrated Services Digital Network) connection is a temporary connection to the Internet using a type of circuit switched telephone network system (a set of CCITT/ITU standards), designed to allow digital (as opposed to analog) transmission of voice and data over ordinary telephone copper wires (enables digital transmission over the public switched telephone network), resulting in better quality and higher speeds, than available with analog systems.*

"Enterprise that installs an ISDN adapter (in place of a telephone modem) receives up to 128 Kbps compared with the maximum 56 Kbps rate of an analog (standard) modem connection. ISDN services can simultaneously transmit voice, data and video. ISDN is also consider as the low capacity 'speed' connection (narowband)."

"It includes Basic Rate Interface (BRI**)** - consisting of two B channels, each with bandwidth of 64 kbit/s, and one D channel with a bandwitdth of 16 kbit/s."

"This category does not include Primary-Rate Interface, a type of ISDN service designed for larger organizations. PRI includes 23 B-channels (30 in Europe) and one D-Channel. PRI service is generally transmitted through a T-1 line (or an E1 line in Europe). This type of connection belongs under alternative e)."

c) *Connection via low capacity 'speed' mobile phone networks is an access to the Internet using a long range wireless transmission of the mobile network technologies as High-Speed Circuit-Switched Data (HSCSD) or General Packet Radio Service (GPRS) that is sometimes called as 2,5 mobile generation technology (2,5 G).*

Access to the Internet via mobile phone networks should be consider as low capacity 'speed' mobile connection (narowband) if it is being equal to, or greater than 256 kbit/s, as the sum of the capacity in both directions (download or upload).

However for the Enterprise survey definition based on the type of the "mobile Internet

connection" is decisive factor for an identification if the particular Internet connection belongs to the low capacity 'speed'' connection. See following two examples:

HSCSD is a development of Circuit Switched Data, the original data transmission mechanism of the GSM mobile phone system. As with CSD channel allocation is done in circuit switched mode. The difference comes from the ability to use different coding methods and even multiple time slots to increase data throughput. HSCSD is a temporary mobile connection.

"2.5G is a stepping stone between 2G and 3G cellular (mobile) wireless technologies. The term "second and a half generation" is used to describe 2G-systems that have implemented a packet switched domain in addition to the circuit switched domain. While the terms "2G" and "3G" are officially defined, "2.5G" is not. It was invented for marketing purposes only. 2.5G provides some of the benefits of 3G (e.g. it is packet-switched) and can use some of the existing 2G infrastructure in GSM and CDMA networks. The most commonly known 2.5G technique is GPRS."

GPRS is a 2.5G mobile standard typically adopted by GSM operators as a migration step towards 3G (W-CDMA). GPRS is based on packet-switched technology enabling high-speed data transmission.

Examples of some most common spread standards of low capacity 'speed' mobile network connection and their bandwidth (can be different between the countries and also within the same country):

	download	upload
GPRS 4+1	57.6 kbit/s	14.4 kbit/s
GPRS 3+2	43.2 kbit/s	28.8 kbit/s
CSD	9.6 kbit/s	9.6 kbit/s
HSCSD	28.8 kbit/s	14.4 kbit/s
HSCSD	43.2 kbit/s	14.4 kbit/s

"Connection via low capacity 'speed' mobile phone networks belongs to the category of the 'mobile' wireless Internet connection (mobile Internet) compare with the 'fixed' wireless Internet connection (FWA). It is also considered as the narrowband."

d) xDSL (Digital Subscriber Line) refers to a family of a high-bandwidth (broadband), local loop technologies that provide a digital permanent Internet connection over the copper wires of the local telephone network.

"Asymmetric Digital Subscriber Line (ADSL) where more bandwidth is allocated to download than upload and High Rate Digital Subscriber Line (HDSL) are considering as dominant DSL technologies. Typically, individual connections will provide from 1.544 Mbps to 512 Kbps downstream and about 128 Kbps upstream. Actual bandwidth may vary significantly between the states as wells as within the state. A DSL line can carry both data and voice signals and the data part of the line is continuously connected. DSL connection is considered as one of the high capacity 'speed' permanent 'fixed' Internet connection (broadband)."

e) Other high capacity 'speed' fixed (wire or wireless) connection includes following types of the Internet connection: Cable modem 'cable TV network connection'; High capacity leased lines 'Frame Relay, ATM, Digital Multiplex'; Ethernet LANs connection; Optical fibre connection; Satellite connection; Wi-fi connection, other FWA connections etc..

Cable modem is using modems attached to cable television networks (cable TV lines) for permanent 'fixed' access to the Internet.

"The term cable internet (or simply cable) refers to the delivery of internet service over this infrastructure. A cable modem is a device that enables you to hook up your PC to a local cable TV line and receive data at about 1.5 Mbps. It is considered as one of the high capacity 'speed' permanent 'fixed' Internet connection (broadband)."

High capacity leased line is a permanent telephone connection between two points set up by a telecommunications common carrier. Typically, leased lines are used by businesses to connect geographically distant offices.

"Unlike normal dial-up connections, a leased line is always active. Because the connection doesn't carry anybody else's communications, the carrier can assure a given level of quality. For example, a T-1 channel is a type of leased line that provides a maximum transmission speed of 1.544 Mbps. You can divide the connection into different lines for data and voice communication or use the channel for one high speed data circuit. Dividing the connection is called multiplexing. Increasingly, leased lines are being used by companies, and even individuals, for Internet access because they afford faster data transfer rates and are cost-effective if the Internet is used heavily.

"A leased line is a telephone line that has been leased for private use. In some contexts, it's called a dedicated line. A leased line is usually contrasted with a switched line or dial-up line". Leased lines are usually available at speeds of 64k, 128k, 256k, 512k, 2Mb and provided to the customer on X.21 presentation. Frame relay protocol and T-1 and T-3 (in Europe called E-1 and E-3) lines are used for the Internet connection via a leased lines. Higher speeds are available on alternative interfaces.

"Frame relay is an efficient data transmission technique used to send digital information quickly and cheaply to one or many destinations from one point. It is a packet-switching protocol for connecting devices on a Wide Area Network (WAN). Frame Relay networks in the U.S. support data transfer rates at T-1 (1.544 Mbps) and T-3 (45 Mbps) speeds. In fact, you can think of Frame Relay as a way of utilizing existing T-1 and T-3 lines owned by a service provider. Most telephone companies now provide Frame Relay service for customers who want connections at 56 Kbps to T-1 speeds. (In Europe, Frame Relay speeds vary from 64 Kbps to 2 Mbps. Frame relay is being displaced by ATM and native IP based products, including IP virtual private networks."

Fixed wireless Internet connection (FWA) are technologies using radio-frequency, infrared, microwave, or other types of electromagnetic or acoustic waves in place of wires, cables, or fibre optics to transmit signals or data (provide Internet access) between stationary (fixed) points. It includes e.g. a satellite Internet connection (long range wireless transmission) or Wi-fi (medium range wireless transmission).

Wi-Fi (or Wi-fi, WiFi, Wifi, wifi), short for "Wireless Fidelity", is a set of Ethernet standards for wireless local area networks (WLAN) currently based on the IEEE 802.11 specifications. New standards beyond the 802.11 specifications, such as 802.16 are currently in the works, they offer many enhancements, anywhere from longer range to greater transfer speeds. Wi-Fi was intended to be used for wireless devices and LANs, but is now often used for Internet access (one of the main international standards for wireless broadband Internet access and networking, with widespread use in business, homes and public spaces). It is based on radio signals with a frequency of 2.4 Ghz and capable of speeds of up to 11 Mbps. It enables a person with a wireless-enabled computer or personal digital assistant to connect to the Internet when in proximity of an access point called a hotspot.

Under this category is not included the Internet connection via high capacity 'speed' mobile phone networks - see next alternative f).

f) Connection via high capacity 'speed' mobile phone networks is an access to the Internet using a long range wireless transmission of the 3rd generation (3G) mobile network technologies based on the CDMA (Code Division Multiple Access) as UMTS (Universal Mobile Telephone System - Wideband 'W'-CDMA); CDMA2000x; CDMA 2000 1x EV-DO; CDMA 2000 1x EV-DV; or some other high capacity mobile technologies based on the GPRS as EDGE (Enhanced Data rates for Global Evolution - EGPRS) etc.

"3G (or 3-G) is short for third-generation mobile telephone technology. The services associated with 3G provide the ability to transfer both voice data (a telephone call) and non-voice data (such as downloading information, exchanging email, and instant messaging). It includes high-speed mobile networks (e.g., CDMA2000 1X, WCDMA, CDMA2000 1xEV-DO, etc.)."

Universal Mobile Telecommunications System (UMTS) is one of the third-generation (3G) mobile phone technologies. It uses W-CDMA as the underlying standard, is standardized by the 3GPP, and represents the European answer to the ITU IMT-2000 requirements for 3G Cellular radio systems. It presently delivers packet switched data transmission speeds up to 384 kbps and up to 2 Mbps when fully implemented.

CDMA2000 1x is an IMT-2000 3G mobile network technology, based on CDMA that delivers packet switched data transmission speeds of up to 144 kbps. Also referred to as 1XRTT.

CDMA2000 1xEV-DO is an IMT-2000 3G mobile network technology, based on CDMA that delivers packet switched data transmission speeds of up to 2.4 Mbps.

Enhanced Data rates for Global Evolution (EDGE) is an intermediate technology that brings second-generation GSM closer to third-generation capacity for handling data speeds up to 384 kbits/s. The standard is based on the GSM standard and uses TDMA multiplexing technology.

Narrowband defined by type of the Internet connection (tiacc_nrb) includes:

Dial-up (connection via standard telephone line 'PSTN using analog modem) and ISDN (Integrated Services Digital Network)

Connection via low capacity 'speed' mobile phone networks (HSCSD, GPRS etc) –

mobile Internet narrowband

Broadband defined by type of the Internet connection (tiacc_broad) includes:

xDSL (Digital Subscriber Line) technologies as ADSL, HDSL, SDSL, VDSL that form core broadband;

Other high capacity 'speed' fixed (wire or wireless) connection (Cable modem 'cable TV network connection'; Leased lines 'Frame Relay, ATM, Digital Multiplex'; Ethernet LANs connection; Optical fibre connection; Satellite connection; Wi-fi connection etc) – extendend fixed wire based and wireless broadband

Connection via high capacity 'speed' mobile phone networks (UMTS 'W-CDMA'; EDGE 'EGPRS'; CDMA 2000x etc) – mobile Internet broadband

Mobile Internet - connection via mobile phone network (tiaac_mph) includes:

Connection via low capacity 'speed' mobile phone networks (HSCSD, GPRS etc) – mobile Internet narrowband

Connection via high capacity 'speed' mobile phone networks (UMTS 'W-CDMA'; EDGE 'EGPRS'; CDMA 2000x etc) – mobile Internet broadband