Eurostat model for a Community Survey on ICT Usage and e-Commerce in Enterprises 2009

(Model Questionnaire Version 1.1)

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COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2009

General outline of the survey

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Sampling unit: Enterprise.

Scope / Target Population:

Economic activity:
Enterprises classified in the following categories of NACE-Rev.2:
- Section C – *"Manufacturing"*;
- Section D,E – *"Electricity, gas and steam, water supply, sewerage and waste management"*;
- Section F – *"Construction"*;
- Section G – *"Wholesale and retail trade; repair of motor vehicles and motorcycles"*;
- Section H – *"Transportation and storage"*;
- Section I – *"Accommodation and food service activities"*;
- Section J – *"Information and communication"*;
- Section L – *"Real estate activities"*;
- Division 69 -74 –*"Professional, scientific and technical activities"*;
- Section N - *"Administrative and support activities"*;

  Only for modules A to C, E and X (X1, X2 and X5):
- Classes/groups 64.19 + 64.92 + 65.1 + 65.2 + 66.12 + 66.19 - *"Financial and insurance activities"*.

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 2008 for the % of sales/orders data and where specified.
January 2009 for the other data.

Survey period: First quarter 2009.

Questionnaire: The layout of the national questionnaire should be defined by the country. However, countries should follow the order of the list of variables 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 should be someone at the level of

managing director or the owner. In any case the respondent should not be someone with responsibilities only in accounting.

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.

The NACE Rev. 2 should be implemented in the 2009 survey. The results should be reported also in terms of the NACE Rev. 1.1. This means that samples should be drawn in order to provide accurate results in both classifications for 2009.

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 Rev 2 aggregates for possible calculation of **national** NACE Rev 2 aggregates:

1	10 - 18
2	19 - 22
3	23 - 25
4	26 - 33
5	35 - 39
6	41 - 43
7	45 - 47
8	49 - 53
9	55
10	56
11	58 - 63
12	68
13	69 – 74
14	77 - 82
15	79

Only for modules A to C, E and X (X1, X2 and X5):
16   64.19 + 64.92 + 65.1 + 65.2 + 66.12 + 66.19

Breakdowns for which national data should be provided with the purpose of possible calculation of **European** NACE aggregates:

1a	10-12
1b	13-15
1c	16-18
4a	26
4b	27-28
4c	29-30
4d	31-33
7a	45
7b	46
7c	47
11a	58-60
11b	61
11c	62-63
14a	77-78 + 80-82

Only for modules A to C, E and X (X1, X2 and X5):
16a 64.19 + 64.92
16b 65.1 + 65.2
16c 66.12 + 66.19

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   1-9
    6   1-4
    7   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   convergence regions (ex-objective 1 regions)
    2   non-convergence regions (ex-non-objective 1 regions)

Note: See glossary for the list of convergence regions in each country.

Weighting of results:	Results should in general be weighted by number of enterprises.

<u>Turnover/Purchases weighting</u> should be used for sales/purchases related questions. Quantitative variables in the e-commerce module related to sales/purchases should be weighted by total turnover/total purchases.

<u>Weighting by the Number of Persons Employed</u> should be applied for questions A2, B2 and for % using the Internet, % having broadband, % having DSL, % having a website or homepage, % purchasing via computer networks, % receiving orders via computer networks, % receiving orders via computer 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 be imputed with the exception of F4 (breakdown of e-commerce sales by origin of client) and F11 (breakdown of e-commerce purchases 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 (see also Methodological Manual).

Tabulation of results:	For the categorical variables, estimates should be made for the total number of enterprises for each response category, tabulated using the breakdowns specified above.

For the quantitative variables (turnover, sales, 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, tabulated using the breakdowns 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

2009

Model Questionnaire

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

	Module A: Use of computers and computer networks		
A1.	**Did your enterprise use computers, in January 2009?** (Filter question)	Yes	No → Go to X1
A2.	**How many persons employed used computers at least once a week, in January 2009?** *- Optional* If you can't provide this value, **Please indicate an estimate of the percentage of the number of persons employed who used computers at least once a week, in January 2009. -** *Optional*	*(Number)* |__|__|__| %	
A3.*	**Was your enterprise using an internal computer network (e.g. LAN - Local Area Network) in January 2009?** (Filter question)	Yes	No → Go to A5
A4*	**Did your enterprise use wireless access within its internal computer network (e.g. wireless LAN), in January 2009?**	Yes	No
A5.	**Did your enterprise have in use an internal home page (Intranet), in January 2009?**	Yes	No
A6.*	**In January 2009, did your enterprise have an extranet (a website or an extension of the Intranet with access restricted to business partners)?**	Yes	No
A7.*	**Did your enterprise have in use, in January 2009, 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

	Module B: Access and use of the Internet		
	(Scope: enterprises with Computers)		
B1.	**Did your enterprise have access to the Internet, in January 2009?** (Filter question)	Yes	No → Go to C1
B2.*	**How many persons employed used computers with access to the World Wide Web at least once a week, in January 2009?**		*(Number)*
	If you can't provide this value, **Please indicate an estimate of the percentage of the number of persons employed who used computers with access to the World Wide Web at least once a week, during January 2009.**		☐☐☐ %

	B3.* **Did your enterprise have the following types of external connection to the Internet, in January 2009?**	Yes	No
	a) Traditional Modem (dial-up access over normal telephone line) or ISDN connection		
	b) DSL (xDSL, ADSL, SDSL etc) connection		
	c) 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 communication, etc.), fixed wireless connections)		
	d) 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, in January 2009?** *- Optional*		
	(as consumer of Internet services)	Yes	No
	a) Banking and financial services		
	b) Training and education		

B5.*	**Did your enterprise use the Internet for interaction with public authorities, during 2008?** (Filter question)	Yes	No → Go to B7

	B6.* **Did your enterprise use the Internet to interact with public authorities in the following ways, during 2008?**	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) For treating an administrative procedure (e.g. declaration, registration, authorisation request) completely electronically without the need for additional paper work (including payment if required)		
	e) For submitting a proposal in a public electronic tender system (e-procurement) (in the system itself and not by e-mail)		

B7.	**Did your enterprise have a Website or Home Page, in January 2009?**	Yes	No → Go to B9

	B8. **Did the Website or Home Page have any of the following facilities, in January 2009?** *Optional*	Yes	No
	a) A privacy policy statement, a privacy seal or certification related to website safety		
	b) Product catalogues or price lists		
	c) Possibility for visitors to customise or design the products		
	d) Online ordering or reservation or booking, e.g. shopping cart		
	e) Order tracking available on line		
	f) Personalised content in the website for regular/repeated visitors		
	g) Advertisement of open job positions or online job application		

		Yes	No
B9.*	**Was your enterprise, in January 2009, 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 C: Automated Data Exchange with systems outside the enterprise
	(Scope: enterprises with Computers)

Automated data exchange between ICT systems means:
– exchange of messages (e.g. orders, invoices, payment transactions or description of goods)
– via the internet or other computer networks
– in an agreed format which allows their automatic processing (e.g. XML, EDIFACT)
– without the individual message being manually typed.

		Yes	No
C1.*	**In January 2009, was your enterprise using such automated data exchange with ICT systems out side the enterprise?** (Filter question)	Yes	No → Go to D1

C2. Was automated data exchange used for the following purposes?

		Yes	No
*	a) Sending orders to suppliers		
*	b) Receiving e-invoices		
*	c) Receiving orders from customers		
*	d) Sending e-invoices		
*	e) Sending or receiving product information (e.g. catalogues, price lists)		
*	f) Sending or receiving transport documents (e.g. consignment notes)		
	g) Sending payment instructions to financial institutions **Optional**		
	h) Sending or receiving data to/from public authorities (e.g. tax returns, statistical data, [national examples]) **Optional**		

	Module D: Sharing electronically information on the Supply Chain Management		
	(Scope: enterprises with Computers)		

Sharing electronically information on the supply chain management means:
– exchanging all types of information with suppliers and/or customers in order to coordinate the availability and delivery of products or services to the final consumer;
– including information on demand forecasts, inventories, production, distribution or product development;
– via computer networks, not only the Internet but also other connections between computers of different enterprises.
– it can be from you to your suppliers/customers or the other way around.
This information may be exchanged via websites or via automated data exchange (recall definition in module C), but it excludes normal e-mail messages manually written.

D1.	In January 2009, was your enterprise regularly sharing electronically information on the supply chain management with your suppliers or customers? (Filter question)	Yes	No → Go to E1

D2.	Was your enterprise regularly sharing electronically the following information with its <u>suppliers</u>, in January 2009?	Yes	No
	a) Inventory levels, production plans or demand forecasts		
	Optionally, the 3 items may be collected separately:		
	A1) Demand forecasts		
	A2) Inventory levels		
	A3) Production plans		
	b) Progress of deliveries (i.e. distribution of raw materials or finished products)		

D3.	Was your enterprise regularly sharing electronically the following information with its <u>customers</u>, in January 2009?	Yes	No
	a) Inventory levels, production plans or demand forecasts		
	Optionally, the 3 items may be collected separately:		
	A1) Demand forecasts		
	A2) Inventory levels		
	A3) Production plans		
	b) Progress of deliveries (i.e. of distribution of raw materials or finished products)		

D4.	Were the following methods used for the electronic exchange of this information, in January 2009? *Optional*	Yes	No
	a) Websites (yours, those of your business partners or web portals)		
	b) Automated data exchange (XML, EDIFACT, etc.)		

	Module E: Automatic share of information within the enterprise			
	(Scope: enterprises with Computers)			

	Sharing information electronically and automatically between different functions of the enterprise means any of the following: – Using one single software application to support the different functions of the enterprise; – Data linking between the software applications that support the different functions of the enterprise – Using a common database or data warehouse accessed by the software applications that support the different functions of the enterprise; – Automated data exchange between different software systems (recall definition in module C);			
E1.*	**In January 2009, when your enterprise received a sales order (either electronically or not), was the relevant information about it shared electronically and automatically with the software used for the following functions?**	Yes		No
	a) Your management of inventory levels			
	b) Your accounting			
	c) Your production or services management			
	d) Your distribution management			
E2.*	**In January 2009, when your enterprise sent a purchase order (either electronically or not), was the relevant information about it shared electronically and automatically with the software used for the following functions?**	Yes		No
	a) Your management of inventory levels			
	b) Your accounting			
E3.*	**In January 2009, did your enterprise have in use an ERP software package to share information on sales and/or purchases with other internal functional areas (for example, finance, planning, marketing)?**	Yes	No	Don't know
E4.*	**In January 2009, did your enterprise have in use 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) Analyse the information about clients for marketing purposes (setting prices, making sales promotion, choosing distribution channels, etc.)?			

Module F: e-Commerce		
(Scope: enterprises with Computers)		

e-Commerce means:
- the placement of orders, where an order is a commitment to purchase goods or services,
- via computer networks, not only the Internet but also other connections between computers of different enterprises,
- where payment and delivery does not have necessarily to be done via computer networks.
- e-Commerce may be done via websites or via automated data exchange between enterprises or organisations,(recall definition in module C), but it excludes normal e-mail messages that are manually typed.
- Sales via website ,i.e. orders made at an online store or via web forms on the Internet or extranet.

Orders received via computer networks (Sales)

F1.*	**Did your enterprise receive orders for products or services via computer networks (excluding manually typed e-mails), during 2008?** (Filter question)	Yes	No → Go to F8

F2.	**Please indicate what percentage represented orders received via each one of the following ways, out of total turnover, in 2008.**	
	a) via a website	__ __ __ %
	b) via automated data exchange (XML, EDIFACT, etc.)	__ __ __ %
	Optionally the 2 items may be collected separately *(b1 and b2 add to % b)*	
	b1) via automated data exchange using Internet	__ __ __ %
	b2) via automated data exchange using other networks	__ __ __ %

F3.*	**Please state the value of the turnover resulted from orders received electronically (in monetary terms, excluding VAT), in 2008.**	(National currency) _____
	If you can't provide this value,	
	Please indicate an estimate of the percentage of the total turnover resulted from orders received electronically, in 2008.	__ __ __ %

F4.	**Please provide a percentage breakdown of all electronic sales in 2008, by destination.** (estimates in percentage of the monetary values)	
	a) Own country	__ __ __ %
	b) Other EU countries	__ __ __ %

optional
b1) In case of sales to EU countries, please tick **up to three** most important EU countries related to value of electronic sales

Austria	Belgium	Bulgaria	Cyprus
Czech Republic	Denmark	Estonia	Finland
France	Germany	Greece	Hungary
Ireland	Italy	Latvia	Lithuania
Luxembourg	Malta	Netherlands	Poland
Portugal	Romania	Slovakia	Slovenia
Spain	Sweden	United Kingdom	

(Own country to be excluded from possible options)

	c) Rest of the world	__ __ __ %
	TOTAL	1 0 0 %

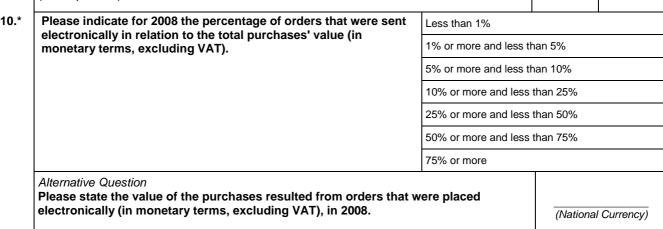|			
F5.	**Which of the following means of payment were accepted for sales via a website in January 2009?** (Tick all that apply) *Optional*	Yes	No
	a) Online payment, i.e. payment integrated in the ordering transaction (e.g. Credit, debit card, direct debit authorisation, via 3rd party accounts)		

		Yes	No
	b) Offline payment, i.e. payment process is **not** included in the order transaction (e.g. Cash on delivery, bank transfer, cheque payment and other non-online payment)		
F6.*	**For the reception of orders via Internet, was your enterprise using a secure protocol, such as SSL and TLS, in January 2009?**	Yes	No

	Effects of and barriers to electronic sales		

F7.	**Has the adoption of electronic sales by your enterprise had favourable effects according to the following categories?**		
	Optional	Yes	No
	a) Access to new markets, increasing sales potential		
	b) Lower transaction costs		
	c) Increased turnover		
	d) Other		

F8.	**Please indicate if any of the following problems or barriers to electronic sales are currently important to your enterprise**		
	Optional	Yes (a barrier)	No (No barrier)
	a) Products or services not suitable for e-commerce		
	b) Customers do not want to buy via e-commerce		
	c) Security concerns (related to payments or transactions)		
	d) Problems related to logistics (shipping of goods or delivery of services)		
	e) Uncertainty about legal framework		
	f) Technical issues in implementing e-commerce		
	g) Need to reorganise business processes for e-commerce		
	h) Adverse experiences with electronic sales in past		
	i) Language problems related to international e-commerce		

	Orders placed via computer networks (Purchases)		
F9.*	**Did your enterprise send orders for products or services via computer networks, during 2008 (excluding manually typed e-mails)?** (Filter question)	Yes	No → Go to G1
F10.*	**Please indicate for 2008 the percentage of orders that were sent electronically in relation to the total purchases' value (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 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 that were placed electronically (in monetary terms, excluding VAT), in 2008.**	_____ *(National Currency)*	

		Yes	No
	If you can't provide this value **Please indicate an estimate of the percentage of the total purchases that resulted from orders placed electronically, in 2008.**	___ ___ ___ %	
F11.	**In 2008, did your enterprise regularly send e-commerce orders via computer networks to suppliers located in the following geographic areas?**	Yes	No
	a) Own country		
	b) Other EU countries		
	c) Rest of the world		

	Module G: Use of Radio Frequency Identification (RFID) technologies		
	(Scope: enterprises with Computers)		
	Radio Frequency identification technologies (RFID) means: - an automatic identification method to store and remotely retrieve data using RFID tags or transponders, - a RFID tag is a device that can be applied to or incorporated into a product or object and transmits data via radiowaves.		
G1	**Did your enterprise make use of Radio Frequency Identification instruments in January 2009?** (Filter question)	Yes	No → Go to X1
G2	**For what purposes did your enterprise use RFID in January 2009?**	Yes	No
	a) Product identification (e.g. to prevent counterfeiting, theft control)		
	b) Monitoring and control of industrial production		
	c) Supply chain and inventory tracking and tracing		
	d) Service and maintenance information management, asset management		
	e) Payment applications (e.g. highway tolls, passenger transport)		
	f) Person identification or access control		

	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 2008**	
X2.	**Average number of persons employed, during 2008**	
X3.	**Total purchases of goods and services (in value terms, excluding VAT), for 2008**	
X4.	**Total turnover (in value terms, excluding VAT), for 2008**	
X5.	**Location (Convergence or phasing-out / non-Convergence region), in 2008**	

COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2009

Glossary

Convergence regions

The rationale of the **Convergence objective** is to promote growth-enhancing conditions and factors leading to real convergence for the least-developed Member States and regions. In EU-27, this objective concerns – within 17 Member States – 84 regions and **per capita GDP at less than 75 % of the Community average**, and – on a "**phasing-out**" basis – another 16 regions with GDP only slightly above the threshold, due to the statistical effect of the larger EU.

Countries *entirely or partially composed* **of Convergence regions:**

Bulgaria: the whole territory

Czech Republic: Střední Čechy, Jihozápad, Severozápad, Severovýchod, Jihovýchod, Střední Morava, Moravskoslezsko

Germany: Brandenburg-Nordost, Mecklenburg-Vorpommern, Chemnitz, Dresden, Dessau, Magdeburg, Thüringen

Estonia: the whole territory

Greece: Anatoliki Makedonia, Thraki, Thessalia, Ipeiros, Ionia Nisia, Dytiki Ellada, Peloponnisos, Voreio Aigaio, Kriti

Spain: Andalucía, Castilla-La Mancha, Extremadura, Galicia

France: Guadeloupe, Guyane, Martinique, Réunion

Hungary: Közép-Dunántúl, Nyugat-Dunántúl, Dél-Dunántúl, Észak-Magyarország, Észak-Alföld, Dél-Alföld

Italy: Calabria, Campania, Puglia, Sicilia

Latvia: the whole territory

Lithuania: the whole territory

Malta: the whole island

Poland: the whole territory

Portugal: Norte, Centro, Alentejo, Região Autónoma dos Açores

Romania: the whole territory

Slovenia: the whole territory

Slovakia: Západné Slovensko, Stredné Slovensko, Východné Slovensko

United Kingdom: Cornwall and Isles of Scilly, West Wales and the Valleys

Countries *with* **phasing-out regions:**

Belgium: Province du Hainaut

Germany: Brandenburg-Südwest, Lüneburg, Leipzig, Halle

Greece: Kentriki Makedonia, Dytiki Makedonia, Attiki

Spain: Ciudad Autónoma de Ceuta, Ciudad Autónoma de Melilla, Principado de Asturias, Región de Murcia

Italy: Basilicata

Austria: Burgenland

Portugal: Algarve

United Kingdom: Highlands and Islands

Countries with *no* **Convergence** *and no* **phasing-out regions:**

Denmark

Éire-Ireland

Cyprus

Luxembourg

The Netherlands

Finland

Sweden

The list of convergence regions was published in OJ L 243/44 (6.9.2006), "Commission Decision of 4 August 2006 drawing up the list of regions eligible for funding from the Structural Funds under the Convergence objective for the period 2007-2013"

DSL (Digital Subscriber Line)	A high-bandwidth (broadband), local loop technology to carry data at high speeds over traditional (copper) telephone lines.
e-Invoice	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.
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.
ERP	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.
Digital Signature	A **digital signature** is some kind of electronic information attached to or associated with a contract or another message used as the <u>legal</u> 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.

Extranet	A closed network that uses Internet protocols to securely share enterprise's information with suppliers, vendors, customers or other businesses partners. It can take the form of a secure extension of an Intranet that allows external users to access some parts of the enterprise's Intranet. It can also be a private part of the enterprise's website, where business partners can navigate after being authenticated in a login page.
Free / Open Source operating systems	Open source operating system 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.
Internal computer network	An internal computer network is a group of at least two computers connected together using a telecommunication system for the purpose of communicating and sharing resources within an enterprise. It typically connects personal computers, workstations, printers, servers, and other devices. It is used usually for internal file exchange between connected

users; intra business communications (internal e-mail, internal web based interface etc), shared access to devices (printers etc) and other applications (databases) or for joint business processes.

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.

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.
ISDN	Integrated Services Digital Network.
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.
Online payment (New)	An online payment is an integrated ordering-payment transaction
RFID (New)	Radio-frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders.
	An RFID tag is an object that can be applied to or incorporated into a product for the purpose of identification using radiowaves. Some tags can be read from several meters away and beyond the line of sight of the reader.
Sales via website (New)	A part of the e-commerce activities, sales via website are orders made in an online store or filled in and sent by an electronic form on the Internet. Sales in Extranet following the same criteria are included.
SSL/TLS	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.
Website	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.
Wireless access	The use of wireless technologies such as radio-frequency, infrared, microwave, or other types of electromagnetic or acoustic waves, for the last internal link between users devices (such as computers, printers, etc) and a LAN backbone line(s) within the enterprise's working premises. It

includes mainly Wi-fi and Bluetooth technologies.

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.

xDSL, ADSL etc.   DSL technologies designed to increase bandwidth over standard copper telephone wires; includes ADSL (Asymmetric Digital Subscriber Line) etc.