



EU Twinning Project

Forwarding Armenian Statistics Through Twinning

AM09/ENP-PCA/TP/04

MISSION REPORT

on

ICT SOCIETY STATISTICS

Activity F1-F2: Identification of issues

Mission carried out by

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1. List of Abbreviations

BC	Beneficiary Country
MS	Member State
MSE	Member State Experts
ToR	Terms of Reference
NSSRA	National Statistical Services of the Republic of Armenia

2. Executive Summary

Statistics Armenia is already today producing ICT statistics on the supply side (the ICT sector) and partly on the demand side (ICT usage in households).

A survey on ICT usages in enterprises and institutions will close an important gap in the coverage of the Armenian information society statistics. The main focus will be on implementing EU standards in the enterprise survey as the public sector currently is not covered by an EU framework. However, a pilot will be conducted for a limited number of institutions, based on the enterprise questionnaire.

During the activity, no significant technical, organisational or legal obstacles for the survey were observed. However, resources to implement the survey need still to be allocated. A road map for the survey has been drafted in order to facilitate the construction of a budget.

User needs will have to be clarified before next activity, resulting in a draft list of indicators to be covered in the survey.

3. General comments

This mission report was prepared in the National Statistical Service of the Republic of Armenia. The MS Experts would like to thank the individuals met at the mission much for providing valuable information about the current and future situation and for their kind support during the stay.

The overall purpose and mandatory result for component F, Information Society is firstly to roll out and publish results from a survey on ICT usage by enterprises and institutions before the Twinning project ends, and secondly to train NSSRA staff on issues related to statistics for the information society.

The first mission was devoted to the following objectives:

1. Purpose of activity

- To obtain an overview of the ICT statistics currently produced by NSSRA;
- To discuss the EU regulations and recommendations concerning statistics on ICT usage;
- To present MS reporting forms concerning businesses' and institutions' ICT usage;
- To involve relevant external stakeholders in the discussions.

2. Expected output of the activity

- A conceptual delimitation of the type of units to be included in the statistics on ICT usage:
 - definition of enterprises in the perspective of ICT society statistics;
 - definition of organisations in the perspective of ICT society statistics;
- Other basic concepts concerning statistics on ICT usage discussed and defined – methodological questions, quality issues;
- A roadmap / an implementation plan for the new survey on ICT usage;
- A lining up of work programme for the next activity (F3);
- To decide upon the preferred timing of the next activity (F3).

The planned activities and the expected output were all achieved.

The views and observations stated in this report are those of the MS Experts and do not necessarily correspond to the views of Statistics Denmark and Statistics Lithuania.

4. Assessment and results

The purposes of the activity are:

- To obtain an overview of the ICT statistics currently produced by NSSRA;
- To discuss the EU regulations and recommendations concerning statistics on ICT usage;
- To present MS reporting forms concerning businesses' and institutions' ICT usage;
- To involve relevant external stakeholders in the discussions.

The discussion with Armenian experts provided a comprehensive overview of the current situation, and the possible obstacles and solutions.

4.1. *Present situation on ICT statistics at NSSRA*

Statistics on Information Society presently collected and published by NSSRA include information on the *supply side*. Statistics for the *demand side (take-up)* of ICT is available for Armenian households but is non-existent regarding the enterprises. Data regarding ICT use (take-up) by the public sector is also not available today.

Presently, the NSSRA produces and publishes the following *supply side* indicators:

- ICT services
- ICT products
- Telecommunication services and products
- Trade in ICT services and products

These indicators are disseminated on the NSSRA website and in publications like 'Socio-Economic situation of the Republic of Armenia' and 'Statistical Yearbook of Armenia'.

Supply-side information is available from enterprises within the ICT sector (e.g. telecom companies, hardware and software producers.)

For further details regarding the collection of supply side information by the NSSRA please refer to Annex 4: ICT Statistics carried out by NSSRA.

The *Division of Trade and Other Services Statistics* is main responsible for the production of ICT statistics with assistance of *regional offices* (data collection) and specialists in other units: *IT department* (data processing) and *Enterprise Register* (population and sample).

4.2. Data available from the Enterprise Incubator Foundation (EIF)

EIF is a business development and incubation agency supporting technology companies in Armenia with the objective of, among others, improving the competitiveness of Armenian IT companies and improve their access to knowledge and information on best practices and experience.

On annual basis, EIF collects basic economic and financial data from Armenian ICT companies. Besides, EIF has experience in research of engineering sector companies of Armenia. EIF cooperates with a number of industry organizations (e.g. the Union of Armenian IT Companies, 3D Association, etc.), and with the Ministry of Economy. EIF data describes supply-side information.

From the demand side perspective, EIF has conducted 2 surveys of households' PC and Internet penetration & usage. Currently EIF collects no information regarding the demand-side of ICT (ICT-usage) by enterprises.

At a meeting held between Member States' Experts, the NSSRA and EIF (4. May 2011), EIF expressed its' interest in NSSRA's planned production of statistics regarding Armenian enterprises' and institutions' use of ICT. This is believed to complete the picture of the Armenian information society. EIF is willing to assist the NSSRA in *defining the user needs*, and offered to participate in a brain-storming exercise, where the survey's content could be discussed. Also EIF offered *expert assistance* concerning ICT definitions and concepts in the questionnaire on ICT usage and in addition expressed support for the project in general.

4.3. User needs

A preliminary list of user needs was drawn up by NSSRA, concerning core indicators:

The number of enterprises using computers

1. The specific share of businesses having computers, among the total number of enterprises
2. The number of employees using computers
3. The specific weight of employees using internet
4. The number of enterprises that receive orders through internet
5. The specific weight of enterprises that receive orders through internet
6. The number of enterprises that place orders on the internet
7. The specific share of enterprises placing orders on the internet.

These indicators represent urgent user needs. Also the *annual data reporting to UNCTAD and EU* were considered to be important gaps to cover, concerning enterprise ICT usage, where NSSRA currently is reporting "Not Available". Reference to these data programmes is included in the annexes. The survey might also contribute to national inquiries from ministries (e.g. Ministry of Transport, Ministry of Economics), analysts and a broader range of users.

The MSE's also provided a draft list with suggestions of indicators to include (see annex 10).

4.4. Possible obstacles

The different stages of a survey were evaluated and no major technical, political or organizational obstacles for the survey were observed at this stage. However, at present there is no budget for implementation of the survey.

5. Conclusions and recommendations

The observations, conclusions and recommendations are in the following structured around the typical phases of a questionnaire-based survey.

In order to foresee possible problems, all phases, including the late ones, were discussed during the mission. The conclusions in the following are structured in order of the different phases of a survey. See also the overview of tasks in Annex 6: Roadmap of activities overview.

6. Preparing the frames of the survey

The resource situation was not clarified at the time of the mission. The MS Experts strongly recommend that a budget for the implementation of the ICT usage survey is established as soon as possible. The budget preferably could be made in two or three versions, reflecting the possible scenarios with respect to the expected financial situation of NSSRA.

The need for resources is determined especially by choice of data collection method, sample size and the number of indicators chosen. NSSRA thus needs to balance the available resources with the information requested by main users – including detail level and desired quality/certainty of the results.

According to the NSSRA there are no special legal issues related to the preparation and implementation of the survey, e.g. early warning of the participating enterprises before data collection.

Once the content of the questionnaire is agreed upon, the questionnaire is expected to be approved without problems and in a short time by the State Council. Shortly after approval the collection of data can be started.

The EU framework of the ICT surveys is defined in the relevant legislation and in several manuals, the most important of which are:

- The *frame regulation* of Information Society Statistics (regulation 808/2004 plus 1006/2009 amending Regulation 808/2004)
- The *annual ES model questionnaires* including general outline of the survey (see annex) and the corresponding *implementing regulation*. The latest in force concerns the 2011 data collection.
- The *annual Methodological manual*.

For this project the model questionnaire is believed to be the most useful document.

6.1. Define purpose of survey

Main purposes of the survey that were identified are:

- Collection of important information regarding the take-up of ICT products and services by Armenian enterprises (and institutions)
- To produce statistics comparable to European statistics re. the use of ICT
- To gain experience in order to be able to conduct a series of annual surveys during the coming years
- To be able to produce (some of the) necessary data for international questionnaires, e.g. UNCTAD, European Commissions questionnaire to CIS countries, etc.

6.2. Decision of overall survey design

MSE recommends that an early decision concerning the survey design is taken. Decisions regarding the overall survey design depend among other things on availability of resources and user needs. Any potential obstacles or challenges should be addressed as early as possible in the project.

6.3. Defining user needs and scope of survey

It is important to balance user needs with available resources and considerations for respondents' burden. The first proposal of possible indicators included in the annexes are rather extensive. It will be necessary to shorten this list via consultations with main users. It is the viewpoint of the MES that the final list should reflect also national Armenian needs and should not necessarily include all European Union indicators.

The results of the survey could be used to compare industries, small vs. large enterprises and sectors (enterprises, public institutions, households).

NSSRA expressed a need for establishing time series immediately by including question on previous year's activities, at least for selected questions. This approach is positively evaluated by the MSE.

6.4. Questionnaire

The new questionnaire should follow principles laid down in international questionnaire design. It should have a clear and logical, modular structure. The use of filter questions is recommended to minimise respondents' burden, for example enterprises without internet access will not be asked about internet usage.

The questionnaire should be accompanied by instructions, either to the enterprises (if a postal questionnaire), or to the interviewers, clear definitions and explanations of e.g. technological terms.

Methodological experts of NSSRA in other divisions are expected to assist Trade and Other Services Statistics with the design of the questionnaire.

6.5. Target and frame population

The target population of the survey are enterprises and institutions.

Enterprises

The coverage of the survey could follow the coverage of Eurostat survey 2011 including enterprises with min. 10+ employees (see annex 11). It is possible for NSSRA to expand the coverage (e.g. include smaller enterprises than 10 employees) if it is considered relevant.

The MSEs recommend to follow international classification of economic activities (NACE rev. 2) and a measure of size of the enterprise (number of possible full-time employees).

Institutions

During the activity, 'Institutions' was clarified to be mainly public sector organisations. It is important to underline that there are no European requirements and definitions of public sector organisations.

User needs and available resources should be taken into consideration when deciding on the target population. During the mission it was clarified that the survey of enterprises should have higher priority than the survey of institutions. Thus it was considered to make a pilot survey on public sector units:

1. based on the enterprise questionnaire with possible adjustments
2. covering a limited part of the public sector with somewhat uniform units, e.g. ministries.

6.6. Sample

Enterprises

It was stressed by the MSEs that the sample should be representative for the target and frame population concerning ICT usage and should aim at covering ICT-users as well as non-users of ICT.

For this purpose the MSEs recommend stratification by economic activity (NACE Rev. 2) and size classes. As a supplement stratification by region could be considered if it is thought to have special influence on ICT usage.

The data collection will take place in regional offices. If a random sample for practical reasons is not taken from all regions, it should be ensured that the chosen regions are representative concerning the target population.

Sample size should be determined from balancing user needs and available resources.

EU requirements for 2011 states: „*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...*”

Specific EU-requirements concerning breakdowns do not necessarily have to be followed in this respect as they require quite a large sample. Armenian user needs of degree of certainty (quality) of the results should be roughly estimated though. Therefore breakdowns for publication – by industry groups, size classes, perhaps regions – should be carefully considered before the sampling.

The unit responsible for the Business Register is expected to assist Trade and Other Services Statistics with providing the population and drawing the sample.

Institutions

The MSEs find that the suggested population of ministries for the pilot study will make it possible and relevant to survey the total population.

6.7. Data collection, -processing and -analysis

The NSSRA is considering personal interviews as means of data collection.

Personal interviews have some important advantages compared to e.g. postal questionnaire. The quality of the collected answers is expected to be more comprehensive. There is no need for reminders. On the other hand personal interviews are more expensive.

For personal interviews an *interview guide* should be prepared in advance.

Means should be taken to reduce unit non response and item non response to a minimum.

The *data processing* should include:

- Editing for logical errors
- Weighting (rasising to frame population) to correct for imbalances in the sample

The IT Department is expected to assist Trade and Other Services Statistics with the dataprocessing.

6.8. Documentation and dissemination

Dissemination and documentation has so far not been discussed much, however a form of publication is a likely outcome. However, the basic fact that the choice of indicators for the questionnaire in practice decides and limits the content of the publication was stressed by the MSEs.

The documentation of the survey should include assesment of the reliability of results and comparision of results with the EU surveys and compliance with EU methodology.

Furthermore the results should be presented to meet the defined user needs.

6.9. Action points before the next mission

Tasks to be completed and prepared us mentioned in Annex 8: Activities by NSSRA before next mission. Written material should be provided in English.

6.10.After the Twinning Project

The ICT usage surveys in EU take place on an annual basis. During the Twinning project, the continuation and consolidation of the survey, and its' frequency should be considered.

7. Annexes

Annex 1: Terms of Reference

Activity F1 and F2 Identification of issues and development of options and roadmap for implementation

1. Purpose of activity

The purposes of the activity are:

- To obtain an overview of the ICT statistics currently produced by NSSRA;
- To discuss the EU regulations and recommendations concerning statistics on ICT usage;
- To present MS reporting forms concerning businesses and institutions' IT usage;
- To involve relevant external stakeholders in the discussions.

2. Expected output of the activity

The expected outputs of the activity are:

- A conceptual delimitation of the type of units to be included in the statistics on ICT usage:
 - definition of enterprises in the perspective of ICT society statistics;
 - definition of organisations in the perspective of ICT society statistics;
- Other basic concepts concerning statistics on ICT usage discussed and defined – methodological questions, quality issues;
- A roadmap / an implementation plan for the new survey on ICT usage;
- A lining up of work programme for the next activity (F3);
- To decide upon the preferred timing of the next activity (F3).

3. Project Participants

Mr. Gagik Anayan, Member of State Council on Statistics (*BC Component Leader*);

Ms. Anahit Harutyunyan, Head of Trade and Other Services Statistics Division;

Ms. Inga Baroyan, Main Specialist of Trade and Other Services Statistics Division;

Ms. Heghine Babayan, Main Specialist of Trade and Other Services Statistics Division;

Ms. Mariam Dallakyan, Leading Specialist of Trade and Other Services Statistics Division;

Mr. Martin Lundø, Chief Adviser, Business Development Division, Statistics Denmark (*MS Component Leader*);

Ms. Agnes Tassy, Senior Adviser, Business Development Division, Statistics Denmark;

Mr. Gediminas Samoulis, Head of Knowledge Economy Division, Statistics Lithuania.

External Stakeholders taking part in the activity

“Enterprise Incubator” (Yerevan based agency assisting the development of ICT enterprises)

Annex 2: Programme for the mission

Meeting Programme for MS Experts: 2 May (Monday) – 6 May (Friday)

Time	Place	Event	Purpose / detail
Monday, morning	Congress Hotel	Meeting with RTA	To discuss the programme of the week
Monday, afternoon	NSSRA	Meeting with BC Component Leader and BC Experts	Introduction to current ICT statistics in NSSRA. Discussion of the new survey: ○ what units to include ○ what IT aspects to cover ○ what data sources are available for the sampling (business register, Incubator, other)
Tuesday, morning	NSSRA	Presentation	Ms Experts' presentation on EU Regulations on statistics on ICT usage
Tuesday, afternoon	NSSRA	Round table discussions	MS Experts' presentation on their practices on implementing surveys on enterprises' and organisations' ICT usage. Problems, obstacles, and other challenges. The design of the statistical forms used. Communication strategy.
Wednesday, morning	EIF	Meeting	Meetings with Enterprise Incubator Foundation and Business Register
Wednesday, afternoon	NSSRA	Meeting with BC Experts	Discussion of preliminary road map
Thursday, morning	NSSRA	Ad-hoc meetings	Further work on the road map and on the planning of the activities F3-F6
Thursday, afternoon	NSSRA	Meeting with RTA	Preliminary debriefing. Agreement on the structure and content of the mission report. Discussion of the Friday presentation to the BC Project Leader
Friday, morning	NSSRA	Ad-hoc meetings	Further work on the road map, on the report, and on the presentation to the BC Project Leader
Friday, afternoon	NSSRA	Meeting with BC Project Leader	Debriefing. Findings and recommendations, and the implied work programme for BC Experts before next activity (F3)

Annex 3: Persons met

List of all the people met during the mission.

Anahit Safyan - Division Head	International statistical cooperation division
Hasmik Egiazaryan - Leading specialist	International statistical cooperation division
Ruzanna Shaboyan - 1st category specialist	International statistical cooperation division
Gayane Vardanyan, 1st category specialist	Trade and other services division
Anahit Araqelyan, 1st category specialist	Trade and Other services division
Anna Antonyan	Trade and Other services division
Arevik Saghumyan, Leading specialist	Trade and Other services division
Inga Baroyan, Main specialist	Trade and Other services division
Heghine Babayan, Main specialist	Trade and Other services division
Anahit Harutyunyan - Division Head	Trade and Other services division
Natalya Poghosyan, Department Head	IT development department
Karine Aramyan, Leading specialist	Business Register Division
Laura Sargsyan, 1st category specialist	Business Register Division
Garik Khachatryan - Main specialist	Business Register Division
Laert Harutyunyan - Division Head	Business Register Division
Georgi Torosyan, Division Head	Transport and telecommunication division
Lusine Markosyan, Main Specialist	Household survey division
Ashot Ananayan - Division Head	Industry statistics division
Nadejda Astvadzaturova, Main Specialist	National Accounts division
Astghik Aleksanyan - Leading Specialist	Information Technologies and Innovation Policy Department, Ministry of Economy
Bagrat Yengibaryan - Director	Enterprise Incubator Foundation

Annex 4: ICT Statistics carried out by NSSRA

(ICT supply side)

Specification, Data, Content indicators	Source (survey, administrative register)	Frequency	Who is submitting data (reporting units)	Publication, Dissemination, Timeline
ICT Service Field NACE Rev.2 Part J sections 58.21.0, 58.29.0, 62.01.0, 62.02.0,62.09.0, 63.1	Data is collected through the reporting Form 1-IT on “Information Technologies and Information services „	Monthly, Quarterly	The report presented by 124 IT organizations	“Socio-Economic situation of RA,, information monthly report, Statistical Yearbook of Armenia, NSSRA web site
ICT Trade Field NACE Rev.2 Part G sections 46.51.0, 46.52	Data is collected through the reporting form 1-Trade on “Trade turnover,,	Quarterly	The report is presented by 5 organizations	-//-
ICT Production Field NACE Rev. 2 Part C sections 26.11.0, 26.12.0, 26.20.0, 26.30.0, 26.40.0, 26.80.0	Data is collected through the reporting form 1-Prod. on “Production of Industrial Enterprises Turnover,,	Quarterly	The report is presented by 39 organizations	-//-
ICT Telecommunication Field NACE Rev. 2 Part J section 61	Data is collected through the reporting form 13-Communication	Quarterly	The report is presented by 200 organizations	-//-

Annex 5: PowerPoint presentations

- Agnes Tassy: EU regulation
- Gediminas Samuolis: Lithuanian ICT statistics – areas and organisation
- Martin Lundø: OECD model, ICT usage in Danish enterprises

All presentations will be made available on a project website. The presentations also include extra material that, due to time constraints, were not presented at the meetings.

Annex 6: Roadmap of activities

Preliminary overall plan for the implementation of the survey on enterprises' and institutions' ICT usage.

Task	Deadline
Method of data collection decided upon	1 Aug. 2011
Gross list of indicators chosen	1 Sept. 2011
Questionnaire finished	1 Dec. 2011
Software for entering and storing data developed	1 Feb. 2012
Start of data collection	1 Feb. 2012
End of data collection, data entry and data editing	1 May 2012
Data base established	1 June 2012
End of data analysis	1 Oct. 2012
Publishing results	1 Nov. 2012

Overview of tasks

Task / Milestone	Content	Deadlines/ time	Project activity
0. Define purpose of survey	Provide relevant and reliable data on ICT usage in Armenian enterprises and institutions	15. May 2011	F1
	Meeting EU requirements (methodology, indicators)		
	Make existing ICT statistics more complete		
	Deliverance of data to UN, EU, other international organisations		
1. Decision of overall survey design	Strategy and general planning issues. incl. data collection method.	Dec. 2011	F5
1.1. Defining user needs and scope of survey	Possible hearing of users	Sept. 2011	F5
	List of indicators	Sept. 2011	
1.2. Questionnaire	Wording + design	Dec. 2011	F3
	Hearing (optional)		
	Testing (optional)		
	Guide + instructions (training) to field workers in case data is collected by personal interviews	febr. 2012	
1.3. Target population (desirable coverage)		10. Nov. 2011	F3
1.4. Frame population (actual coverage)	Business register	15. Nov. 2011	F3
	List of institutions		
	Delimitation (industry, size groups, perhaps regions, institutions)		
	Assesment of possible shortcomings in coverage		
1.5. Sample	Stratification (activity by Nace 2, no. of full-time employees by sizegroups, possible regions)	Dec. 2011	F3
	Sample type (e.g. random, stratified)		
2. Data collection	Method (postal questionnaire or collected and assisted by interviewers)	May 2012	
	System for data capture		
	Performing interviews		
	System of reminders if postal questionnaire		
3. Dataprocessing	Combining datasets	1. June 2012	F4
	Editing, error corrections		

	Raising results to population by weighting		
4. Dataanalysis	Tabulation programme for analysis	1. Oct. 2012	F4
	Assessment of quality and representativity		
	Comparability with EU and other countries.		
5. Documentation and dissemination	Tables and charts for publication	Nov. 2012	F6
	Description of results, explanations etc.		
	Documentation of survey		

Annex 7: Draft time plan for missions

To be checked by participants.

Twinning Project Activity	Dates	Subject and output
F1-F2	2-6 May 2011	Identification of issues. Assessment of current status; presentation of MS practices; discussion of issues to be addressed; roadmap established
F5	26-30 September 2011 (?)	Study visit to Statistics Denmark. BC Experts presented to Danish ICT statistics. Questionnaire design and instructions; storage and processing of data; stratification and sampling; tabulation and analytical tools
F3	7-11 November 2011 (?)	Sampling method. Definition of the population and the sampling techniques. Final input to the questionnaire.
F4	11-15 June 2012 (?)	Analysis and data processing. Discussion of preliminary results from the survey; discussion of dissemination strategy; consolidation of production system
F6	19-23 November 2012 (?)	Review of implementation. Review of the obtained results

Annex 8: Activities by NSSRA before next mission

All written material to be provided to the MSEs in English one week before the next mission (F5).

- Decision of survey design (incl. user needs on indicators and target population for both enterprises and institutions)
- Estimation of resources (inclusive financial resources) for implementing the survey
- Draft list of indicators to be included in the survey, draft questionnaire

Annex 9: Existing international reporting systems on ICT statistics

- Unctad questionnaire on ICT usages by enterprises and on the ICT sector.
- Eurostat dataquestionnaire ("STATISTICAL CO-OPERATION WITH TRANSITION COUNTRIES").

Not enclosed, available in electronic form.

Annex 10: List of indicators and themes – ICT usage in enterprises

No	ICT usage in enterprises	Eurostat questionnaires				UNSTAD		OECD		Denmark	Lithuania
		2012	2011	2010	remarks	2010	remarks	2005	remarks	2011	2011
	Module A: Use of computers and computer networks										
A1	Number (share) of enterprises using computer (<i>include Personal Computers, nettops, portable computers (e.g. laptops, notebooks, netbooks), other portable devices like Smartphones, Personal Digital Assistants (PDA)</i>)	X	X	X		X		X		X	X
A2	Number (share) of persons employed using computer at least once a week	Op	Op	Op		X					X
A3	Number (share) of enterprises using an internal computer network (e.g. LAN - Local Area Network)			X		X		X		X	X
A4	Number (share) of enterprises having an internal home page (Intranet)			X		X		X		X	X
A5	Number (share) of enterprises using internal home page for sharing the following information										
	a) The general policy or strategy of the enterprise				model questionnaire 2008						
	b) Internal company newsletters or daily news										
	c) Day-to-day / working documents (e.g. for meeting)										
	d) Manuals, guides or training material										
	e) Product or services catalogues										
A6	Number (share) of enterprises having extranet			X		X		X			
A7	Number (share) of enterprises using third party open source software <i>can by separated to subgroups</i>		Op	X						X	X
A8	Number (share) of enterprises using IT applications to provide persons employed remote access to the enterprise's e-mail system, documents or applications (via fixed, mobile or wireless connection to the Internet)	Op								X	
A9	Number (share) of enterprises employing ICT/IT specialists	X									
A10	Number (share) of enterprises enterprise recruit or try to recruit personnel for jobs requiring ICT/IT specialist skills, during reference year	X									
A11	Number (share) of enterprises having hard-to-fill vacancies for jobs requiring ICT/IT specialist skills	X									
A12	Number (share) of enterprises providing training to develop or upgrade ICT related skills of personnel										
	a) Training for ICT/IT specialists	X									

	b) Training for other persons employed	X									
A13	Number (share) of enterprises in which the persons employed having access to personal human resources services electronically, e.g. working time recording system, request annual leave, view or download payslips, or other services		X							X	X
A14	Number of computers in enterprises (<i>for first estimation in business sector</i>)										
	Can be added questions related to barriers of computers use										
	Module B: Access and use of the Internet										
B1	Number (share) of enterprises using the Internet	X	X	X		X		X		X	X
B2	Number (share) of persons employed using internet at least once a week	X	Op	X		X		X			X
B3	Type of internet connection (share of enterprises):										
	a) dial-up access over normal telephone line or ISDN connection	X	X	X		X	separated to narrowband and broadband (fixed and mobile)			X	X
	a1) dial-up access over normal telephone line							X			
	a2) ISDN connection							X			
	c) DSL (xDSL, ADSL, SDSL etc) connection	X	X	X		X		X		X	X
	d) optical fibre connection									X	X
	e) Cable modem							X			
	f) Other fixed internet connection (leased line, fixed wireless connections)	X	X	X		X		X		X	X
	g) Mobile connection (e.g. e.g. analogue mobile phone, GSM, GPRS, UMTS, EDGE, CDMA2000 1xEVDO)					X					
	g1) Mobile broadband connection (via at least 3G modem or 3G handset) using e.g. UMTS, CDMA2000 1xEVDO, HSDPA	X	X	X						(X)	X
	g1-1) via portable computer with at least 3G modem e.g. notebook, netbook, laptop, Ultra Mobile PC-UMPC, tablet PC using e.g. UMTS, CDMA2000 1xEVDO, HSDPA	Op	Op	Op						X	
	g1-2) via handset with at least 3G technology e.g. Smartphone, PDA phones using e.g. UMTS, CDMA2000 1xEVDO, HSDPA	Op	Op	Op						X	
	g2) Other mobile connection using e.g. analogue mobile phone, GSM, GPRS, EDGE	X	X	X						X	X
B4	Number (share) of enterprises by maximum contracted download speed of the fastest Internet connection										
	a) less than 2 Mbit/s	X	X							X	X

	b) at least 2 but less than 10 Mbit/s	X	X							X	X
	c) at least 10 but less than 30 Mbit/s	X	X							X	X
	d) at least 30 but less than 100 Mbit/s	X	X							X	X
	e) at least 100 Mbit/s	X	X							X	X
B5	Internet purposes (share of enterprises)										
	a) Banking and financial services			X				X			
	banking					X					
	financial services					X					
	b) Training and education			X		X		X			
	c) Market monitoring (e.g. prices)				model 2006-2007						
	d) Receiving digital goods or services										
	e) Obtaining after-sales service										
	f) Sending and receiving e-mail					X					
	g) Telephoning over the Internet/VoIP, including video conferencing					X					
	h) Getting information about goods and services					X					
	i) Providing customer services					X					
	j) Delivering products online					X					
	k) Internal or external recruitment					X		X			
	l) for instant messaging, bulletin boards					X					
	m) Getting information from general government organizations					X	Eurostat B6-B7				
	n) interaction with general government organisations (excluding getting of information)					X					
B6	Number (share) of enterprises using the Internet for interaction with public authorities	X	X	X				X		X	X
B7	Number (share) of enterprises by purposes for interaction with public authorities:										
	a) obtain information from public authorities' websites or home pages	X	X	X				X		X	X
	b) obtain forms from public authorities' websites or home pages, e.g. tax declaration	X	X	X				X		X	X
	c) return filled in forms electronically, e.g. forms for customs or VAT declaration, provision of statistical information to public authorities	X	X	X				X		X	X
	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)	X	Op	X				X		X	X

	e) For submitting a proposal in a public electronic tender system (e-procurement) (in the system itself and not by e-mail)			X						X	X
B8	Number (share) of enterprises using the Internet to manage the following administrative procedures electronically										
	a) Declaration of social contributions	X	X							n.a.	X
	b) Declaration of corporate tax		X							X	X
	c) Declaration of VAT	X	X							X	X
	d) Declaration of customs/excise		X							X	X
B9	Reasons limiting electronic interaction with public authorities										
	a) Concerns related to data confidentiality and security		X							X	X
	b) Electronic procedures are too complicated and/or too time consuming		X							X	X
	c) Electronic procedures still require exchange of paper mail or personal visits		X							X	X
	d) Not aware of availability of electronic procedures		X							X	X
B10	Number (share) of enterprises using the Internet for accessing tender documents and specifications in electronic procurement systems of public authorities?	X	X							X	X
B11	Number (share) of enterprises using the Internet for offering goods or services in public authorities' electronic procurement systems (eTendering) in following countries										
	a) in own country	X	X							X	X
	b) in CIS countries										
	c) in EU countries	X	X							X	X
	d) in other countries										
B11	Number (share) of enterprises with a Web Site/homepage	X	X			X		X		X	X
B12	Number (share) of enterprises by website or homepage facilities:										
	a) Marketing the enterprise's products				model 2006-2007						
	b) Delivering digital goods or services										
	c) Providing after sales support										
	d) A privacy policy statement, a privacy seal or certification related to website safety	Op	Op	X				X		X	X
	e) Product catalogues or price lists	Op	Op	X				X		X	X
	f) Possibility for visitors to customise or design the products	Op	Op	X						X	X
	g) Online ordering or reservation or booking, e.g. shopping cart	X	X	X				X		X	X

	h) Order tracking available on line	Op	Op	X				X		X	X
	i) Personalised content in the website for regular/repeated visitors	Op	Op	X				X		X	X
	j) Advertisement of open job positions or online job application	Op	Op	X						X	X
B13	Number (share) of enterprises 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)			X						X	X
	<i>Can be added questions on mobile connection to the Internet for business</i>										
	Module C: Sending/receiving of messages suitable for automatic processing (e-business)										
C1	Number (share) of enterprises sending or receiving electronically information in a format that allowed its automatic processing	X	X	X						X	X
C2	Purpose for automated data exchange (share of enterprises)										
	a) Sending orders to suppliers			X				X		X	X
	b) Receiving e-invoices		X	X				X		X	X
	c) Receiving orders from customers			X				X		X	X
	d) Sending e-invoices		X	X				X		X	X
	e) Sending or receiving product information (e.g. catalogues, price lists, etc.)	X	X	X						X	X
	f) Sending or receiving transport documents (e.g. consignment notes)	X	X	X						X	X
	g) Sending payment instructions to financial institutions	X	X							X	X
	h) Sending or receiving data to/from public authorities (e.g. tax returns, statistical data, [national examples], etc.)	X	X	X						X	X
	Module D: Sharing electronically information on Supply Chain Management (e-business, sharing all types information with suppliers and/or customers)										
D1	Number (share) of enterprises regularly sharing electronically information on the supply chain management with suppliers or customers	X		X							X
D2	Number (share) of enterprises sharing the information electronically with suppliers	X		X							X

D3	Number (share) of enterprises sharing the information electronically with customers	X		X							X
D4	Purpose for regularly sharing information electronically (share of enterprises)										
	a) On Inventory levels, production plans or demand forecasts										
	b) Progress of deliveries (i.e. distribution of raw materials or finished products)										
	Module E: Automatic share of information within the enterprise (internal sharing information)										
E1	Number (share) of enterprises that received a sales order (either electronically or not) and shared about it electronically and automatically with the software	X	X	X						X	X
E2	Purpose for automatic share of information (share of enterprises)										
	a) With management of inventory levels	X	X	X				X		X	X
	b) With accounting division	X	X	X				X		X	X
	c) With production or services management	X	X	X				X		X	X
	d) With distribution management	X	X	X				X		X	X
E3	Number (share) of enterprises that send a purchase order (either electronically or not) and the relevant information about it shared electronically and automatically with the software	X	X	X						X	X
E4	Purpose for automatic share of information (share of enterprises)										
	a) With management of inventory levels	X	X	X				X		X	X
	b) With accounting division	X	X	X				X		X	X
E5	Number (share) of enterprises using an ERP (enterprise resource planning) software package to share information between different functional areas (e.g. accounting, planning, production, marketing)	X		X							X
E6	Number (share) of enterprises using any software application for managing information about clients (so called-Customer Relationship Management – CRM software)										X
	a) Capturing, storing and making available to other business functions the information about clients?	X		X							
	b) Analysing the information about clients for marketing purposes (setting prices, making sales promotion, choosing distribution channels, etc.)?	X		X							

	Module F: e-Commerce (sale or purchase products over computer networks)										
F1	Number (share) of enterprises having purchased via the Internet	X	X	X		X		X		X	X
F2	Enterprise Internet purchases in % of total purchases	X	X	X						X	X
F3	Number (share) of enterprises having received orders via the internet	X	X	X		X		X		X	X
F4	Enterprise Internet sales in % of the total turnover	X	X	X				X		X	X
F5	e-Commerce by type of client - B2B, B2G and B2C	X						X			
F6	e-Commerce by destination - Own country, EU countries, CIS countries, Rest of the world		X					X		X	X
F7	Number (share) of enterprises using a secure protocol, such as SSL and TLS for the reception of orders via Internet			X							
F8	Effects of electronic sales										
	a) Access to new markets, increasing sales potential										
	b) Lower transaction costs							X			
	c) Increased turnover							X			
	d) Reduced transaction time							X			
	e) Increased quality of customer service							X			
	f) Keeping pace with competitors							X			
	g) Able to better target customers individually							X			
F10	Problems of electronic sales										
	a) Products or services not suitable for e-commerce							X			
	b) Customers do not want to buy via e-commerce							X			
	c) Security concerns (related to payments or transactions)							X			
	d) Problems related to logistics (shipping of goods or delivery of services)										
	e) Uncertainty about legal framework							X			
	f) Technical issues in implementing e-commerce							X			
	g) The need to reorganise business processes for e-commerce							X			
	h) Adverse experiences with electronic sales in past										
	i) Language problems related to international e-commerce										
	j) Privacy concerns							X			
	<i>can be separated in two groups - e-commerce via the Internet and via other computer networks</i>										
	Module G: Use of Radio Frequency Identification (RFID) technologies										
G1	Number (share) of enterprises using Radio Frequency Identification instruments		X							X	X

G2	Purposes for use RFID (share of enterprises)										
	a) Person identification or access control		X							X	X
	b) as part of the production and service delivery process (Monitoring and control of industrial production, supply chain and inventory tracking, service -, maintenance - or asset management)		X							X	X
	c) for after-sales product identification, e.g. theft control, counterfeiting, allergen information		X							X	X
	Module H: E-security										
H1	Internal security facilities in enterprises (share of enterprises)										
	a) Virus checking or protection software							X			X
	b) Anti-spyware software							X			
	c) Firewalls (software or hardware)							X			X
	d) Spam filter							X			
	e) Secure servers (support secured protocols such as https)							X			X
	f) Off-site data backup							X			
H2	Communication with enterprise using the following security facilities										
	a) Electronic digital signature as customer's authentication mechanism			X				X			
	b) Other authentication mechanism (e.g. PIN code)			X							X
	c) Data encryption for confidentiality			X							X
H3	Time of update any of its security facilities (include automatic updates).										
H4	Encountered ICT related security problems in the last 12 months:										
	a) Computer virus, worm or Trojan attack resulting in loss of information or working time			X				X	not separated		X
	b) Unauthorised access to enterprise computer systems or data			X				X			X
	c) Blackmail or threats to the enterprise data or software			X				X			X
	Module I: ICT Investment in enterprises (OPTIONAL)										
I1	Purchases of IT goods (computers and peripheral equipment) and Communication goods (equipment),	Op		Op							
I2	Purchases of other ICT goods (Consumer electronic equipment, Miscellaneous ICT components and goods, Manufacturing services for ICT equipment)	Op		Op							
I3	Purchases of software, pre-packaged and customised (Business and productivity	Op		Op							

	software and licensing services),										
I4	Total cost for creation of own account software,	Op		Op							
I5	Purchases of Information technology consultancy and service, Telecommunication services and other ICT services,	Op		Op							
I6	Purchases of leasing or rental services for ICT equipment,	Op		Op							
	<i>can be separated in two groups - purchases and share of purchased in balance sheet</i>										
	Module K: Green ICT and environmental impact										
K1	Number (share) of enterprises using following policies:										
	a) Policies designed to reduce the amount of paper used in printing or copying.		X							X	X
	b) Policies designed to reduce the energy consumption of ICT equipment, e.g. Computers and screens to be turned off, use of automated power down devices for the ICT equipment, use of multi-function peripheral imaging devices (printers, scanners, photocopiers) etc.		X							X	X
	c) Policies for using telephone, web or video conferencing instead of physical travel.		X							X	X
K2	Number (share) of enterprises dedicated IT applications to reduce the energy consumption of business processes		X							X	X
	Module X: Background information about enterprise (<i>Can be obtained from SBS survey or register</i>)										
X1	Main economic activity of the enterprise,	X	X	X						X*	X**
X2	Average number of persons employed,	X	X	X						X*	X**
X3	Total purchases of goods and services (in value terms, excluding VAT)	Op	Op	X							X**
X4	Total turnover (in value terms, excluding VAT)	X	X	X						X*	X**

* From register

* From SBS surveys

List of indicators and themes – ICT usage in public administration institutions

No	ICT usage in public administration institutions	Denmark	Lithuania
		???	2010
	Module A: Use of computers and computer networks		
A1	Number (share) of institutions using computer		X
A2	Number of computers in institutions		X
A3	Number (share) of persons employed using computer at least once a week		X
A4	Number (share) of ICT specialists		X
A5	Number (share) of institutions providing training to develop or upgrade ICT related skills of personnel		X
A6	Number (share) of training persons in ICT area		X
A7	Number (share) of institutions using an internal computer network (e.g. LAN - Local Area Network)		X
A8	Number (share) of institutions having an internal home page (Intranet)		X
A9	Number (share) of institutions using internal home page for sharing the following information		
	a) The general policy or strategy		X
	b) Internal newsletters or daily news		X
	c) Day-to-day / working documents (e.g. for meeting)		X
	d) Manuals, guides or training material		X
A10	Number (share) of institutions having extranet		X
A11	Number (share) of institutions using third party open source software (<i>can be separated to subgroups</i>)		X
A12	Number (share) of institutions using following ICT systems:		
	a) ERP (enterprise resource planning) software package to share information between different functional areas (e.g. accounting, planning)		X
	b) software application for managing information about clients (so called-Customer Relationship Management – CRM software)		X
	c) electronic record of working time		X
	d) web site content management system		X
	e) Document Management System		X
	f) Geographic Information System (GIS)		X
	Module B: Access and use of the Internet		
B1	Number (share) of institutions using the Internet		X
B2	Number (share) of persons employed using internet at least once a week		X
B3	Type of internet connection (share of institutions):		
	a) dial-up access over normal telephone line or ISDN connection		X
	a1) dial-up access over normal telephone line		
	a2) ISDN connection		
	c) DSL (xDSL, ADSL, SDSL etc) connection		X
	d) optical fibre connection		X
	e) Cable modem		
	f) Other fixed internet connection (leased line, fixed wireless connections)		X
	g) Mobile connection (e.g. e.g. analogue mobile phone, GSM, GPRS, UMTS, EDGE, CDMA2000 1xEVDO)		

	g1) Mobile broadband connection (via at least 3G modem or 3G handset) using e.g. UMTS, CDMA2000 1xEVDO, HSDPA		X
	g2) Other mobile connection using e.g. analogue mobile phone, GSM, GPRS, EDGE		X
B4	Number (share) of institutions 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)		X
	Module C: e-Services		
C1	The methods of implementation of administrative services:		
	a) Direct communication, face to face		X
	b) By post		X
	c) Through a call centre		X
	d) By phone		X
	e) By mobile phone		X
	f) By Internet telephony (e.g. Skype)		X
	g) By e-mail		X
	h) Via a website		X
	i) Via Internet social networks (e.g. Facebook)		X
C2	Number (share) of institutions with a Web Site/homepage		X
C3	Number (share) of institutions by website or homepage facilities:		
	a) Structure and contacts		
	b) Information about the institution's activity		X
	c) Relevant news related to the institution's activity		X
	d) Information about services		X
	e) Consulting services via website		X
	f) Advertisement of open job positions or online job application		X
C4	Number (share) of institutions by e-services		
	a) possibility to download forms		X
	b) possibility to return filled out forms		X
	c) possibility to perform administrative procedures electronically, without additional paperwork		X
	d) e-services possibility using previous registration of the user (without repeated data entry, automatically using the information already available)		X
	Module D: E-security		
D1	Internal security facilities in enterprises (share of enterprises)		
	a) Virus checking or protection software		X
	b) Anti-spyware software		X
	c) Firewalls (software or hardware)		X
	d) Spam filter		X
	e) Secure servers (support secured protocols such as https)		X
	f) Off-site data backup		X
D2	Communication with enterprise using the following security facilities		
	a) Electronic digital signature as customer's authentication mechanism		X
	b) Other authentication mechanism (e.g. PIN code)		X
	c) Data encryption for confidentiality		X

D3	Time of update any of its security facilities (include automatic updates).		X
D4	Encountered ICT related security problems in the last 12 months:		
	a) Computer virus, worm or Trojan attack resulting in loss of information or working time		X
	b) Unauthorised access to enterprise computer systems or data		X
	c) Blackmail or threats to the enterprise data or software		X

Annex 11: Eurostat model questionnaire 2011

Remark: The model questionnaires covers the annual implementation regulations in force. The contents change annually. Some questions are voluntary for member states to cover.

COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2011 General outline of the survey

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”; - Group 95.1 – “Repair of computers”; Optional: 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; <u>Optional:</u> 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 2010 for the % of sales/orders data and where specified. January 2011 for the other data.
Survey period:	First quarter 2011.
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.

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 and size class. 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 – with an exception for those broken down by economic activity for the calculation of European NACE aggregates.
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 - 23 3 24 - 25 4 26 - 33 5 35 - 39 6 41 - 43 7 45 - 47 8 49 - 53 9 55 10 58 - 63 11 68 12 69 – 74 13 77 - 82 14 26.1-26.4, 26.8, 46.5, 58.2, 61, 62.01, 62.02, 62.03, 62.09, 63.1, 95.1 Optional: 15 64.19 + 64.92 + 65.1 + 65.2 + 66.12 + 66.19 <u>Breakdowns for which national data should be provided with the purpose of possible calculation of European NACE aggregates:</u> 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 9a 55 - 56 10a 58-60 10b 61 10c 62-63

	13a 77-78 + 80-82 13b 79 14a 95.1 Optional: 15a 64.19 + 64.92 15b 65.1 + 65.2 15c 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
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, B4, B5 and for % using the Internet, % having broadband, % having DSL, % having a website or homepage, % purchasing 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 deduced 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 (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

2011

Model Questionnaire

(Questions relating to the Benchmarking Framework 2011-2015 are marked with an asterisk *)

Module A: Use of computers and computer networks (Scope: all enterprises)		
A1. Did your enterprise use computers, in January 2011? (Filter question) Computers include Personal Computers, portable computers (e.g. laptops, notebooks, nettops), personal digital assistants (PDA) or smartphones.	Yes ☐	No ☐ Go to X1
A2. How many persons employed used computers at least once a week, in January 2011? <i>- Optional</i> If you can't provide this value, Please indicate an estimate of the percentage of the total number of persons employed who used computers at least once a week, in January 2011. – Optional	(Number) %	
A3.*¹ Did your enterprise have in use, in January 2011, third party open source software in the following classes? (i.e. with its source code available, no copyright cost, and the possibility to modify and/or (re)distribute it) <i>- Optional</i>	Yes	No
a) Operating system(s), e.g. Linux	☐	☐
b) Internet browser software, e.g. Mozilla, Firefox, Chromium	☐	☐
c) Office software, e.g. OpenOffice	☐	☐
d) Web server (e.g. Apache, Tomcat)	☐	☐
e) Open source ERP or CRM applications for business process automation, e.g. OpenERP, Joomla, Ruby on Rails, MySQL	☐	☐
f) Other <u>open source</u> , e.g. security software (e.g. Open SSL, SSH), e-learning platforms (e.g. Moodle), e-mail servers (e.g. Send Mail, Postfix)	☐	☐
A4.*² In January 2011, did the persons employed have access to personal human resources services electronically? e.g. working time recording system, request annual leave, view or download payslips, or other services	Yes ☐	No ☐

¹ Indicator to be added to the benchmarking framework after adequate testing

² For indicator D2 of the benchmarking framework (bi-annual)

Module B: Access and use of the Internet		
(Scope: enterprises with Computers)		
B1.	Did your enterprise have access to the Internet, in January 2011? (Filter question)	Yes ☐ No ☐ -> Go to C1
B2.	Did your enterprise have the following types of external connection to the Internet, in January 2011?	Yes No
	a) Traditional Modem (dial-up access over normal telephone line) or ISDN connection	☐ ☐
^{*3}	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 broadband connection (via at least 3G modem or handset) using e.g. UMTS, CDMA2000 1xEVDO, HSDPA	☐ ☐
	d1) Mobile broadband connection via portable computer using modem with at least 3G technology , e.g. laptop, notebook, nettop with at least 3G modem using e.g. UMTS, CDMA2000 1xEVDO, HSDPA - optional	☐ ☐
	d2) Mobile broadband connection via handset with at least 3G technology , e.g. smartphone using e.g. UMTS, CDMA2000 1xEVDO, HSDPA - optional	☐ ☐
	e) Other mobile connection using e.g. analogue mobile phone, GSM, GPRS, EDGE	☐ ☐
B3.	What was the maximum contracted download speed of the fastest Internet connection of your enterprise, in January 2011? (tick only one)	
	a) less than 2 Mbit/s	☐
	b) at least 2 but less than 10 Mbit/s	☐
	c) at least 10 but less than 30 Mbit/s	☐
	d) at least 30 but less than 100 Mbit/s	☐
	e) at least 100 Mbit/s	☐
B4.^{*4}	How many persons employed used computers with access to the World Wide Web at least once a week, in January 2011? - Optional If you can't provide this value, Please indicate an estimate of the percentage of the total number of persons employed who used computers with access to the World Wide Web at least once a week, during January 2011. - Optional	(Number) %
B5.^{*5}	How many persons employed were provided with a portable device with at least 3G technology for accessing the Internet, in January 2011? e.g. via portable computer with modem or via handset, with at least 3G technology using e.g. UMTS, CDMA2000 1xEVDO, HSDPA, while excluding GPRS If you can't provide this value, Please indicate an estimate of the percentage of the total number of persons employed who were provided with a portable device with at least 3G technology for accessing the Internet, in January 2011? e.g. via portable computer with modem or via handset using e.g. UMTS, CDMA2000 1xEVDO, HSDPA, while excluding GPRS	(Number) %

³ For indicator B11 of the benchmarking framework

⁴ For indicator B10 of the benchmarking framework

⁵ For indicators B12 and B13 of the benchmarking framework

B6.	Did your enterprise have a Website or Home Page, in January 2011? (Filter question)	Yes ☐	No ☐ -> go to B8
B7.	Did the Website or Home Page have any of the following facilities, in January 2011?	Yes	No
O P T I O N A L	a) Online ordering or reservation or booking, e.g. shopping cart	☐	☐
	b) A privacy policy statement, a privacy seal or certification related to website safety	☐	☐
	c) Product catalogues or price lists	☐	☐
	d) Possibility for visitors to customise or design the products	☐	☐
	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	☐	☐

Use of the Internet in contact with public authorities (Scope: enterprises with access to the Internet)		
Public authorities refer to both public services and administration activities, e.g. tax, customs, business registration, social security, public health, environment or commune administrations. (please add national examples) Public authorities can be at local, regional or national level.		
B8.*⁶	During 2010, did your enterprise use the Internet to	
		Yes No
	a) obtain information from public authorities' websites or home pages?	☐ ☐
	b) obtain forms from public authorities' websites or home pages? e.g. tax declaration	☐ ☐
	c) return filled in forms electronically, e.g. forms for customs or VAT declaration	☐ ☐ Go to B10
	- optional d) treat an administrative procedure completely electronically without the need for paper work (including payment, if required), e.g. declaration, registration, authorisation request	☐ ☐
B9.	During 2010, did your enterprise use the Internet to manage the following administrative procedures electronically? (by returning filled in forms electronically)	Yes No
	a) Declaration of social contributions for the persons employed	☐ ☐
	b) Declaration of corporate tax	☐ ☐
	c) Declaration of VAT	☐ ☐
	d) Declaration of customs/excise	☐ ☐
B10.	Do you consider any of the following reasons as limiting your electronic interaction with public authorities?	Yes No
	a) Concerns related to data confidentiality and security	☐ ☐
	b) Electronic procedures are too complicated and/or too time consuming	☐ ☐
	c) Electronic procedures still require exchange of paper mail or personal visits	☐ ☐

⁶ For indicator E3 of the benchmarking framework

d) Not aware of availability of electronic procedures	☐	☐
---	--------------------------	--------------------------

Public electronic Procurement refers to the use of the Internet by enterprises to offer goods or services to public authorities at national level or in other EU countries. The eProcurement process is based on a number of stages from the notification process (online availability of procurement notices and tender specifications) through tendering, awarding, to payment. eTendering is the stage of an eProcurement process dealing with the preparation and submission of tenders or proposals online; this includes bids submitted through open, restricted, or negotiated procedures, as well as Framework Agreements and Dynamic Purchasing Systems (DPS). Submission of bids by e-mail is excluded.			
B11.	During 2010, did your enterprise use the Internet for accessing tender documents and specifications in electronic procurement systems of public authorities?	Yes ☐	No ☐
B12.	During 2010, did your enterprise use the Internet for offering goods or services in public authorities' electronic procurement systems (eTendering)?	Yes	No
	a) in your own country	☐	☐
	b) in other EU countries	☐	☐
B13.	If "No" to B12 a Was any of the following issues a reason for not offering goods or services in public authorities' electronic procurement systems (eTendering), during 2010?	Yes	No
	- optional		
	a) Your enterprise does not sell to the public sector	☐	☐
	b) Concerns related to confidentiality and security	☐	☐
	c) Not aware of electronic tendering relevant to the enterprise	☐	☐
	d) Other reasons	☐	☐

Module C: Sending/receiving of messages suitable for automatic processing to/from systems outside the enterprise																	
(Scope: enterprises with Computers)																	
Electronic transmission of data suitable for automatic processing means: – sending and/or receiving of messages (e.g. orders, invoices, payment transactions, product descriptions, transport documents, tax declarations) – in an agreed or standard format which allows their automatic processing, e.g. EDI, EDIFACT, ODETTE, TRADACOMS, XML, xCBL, cXML, ebXML – to or from other enterprises, public authorities or financial institutions – without the individual message being typed manually – via any computer network [national examples]																	
C1.*⁷	In January 2011, did your enterprise send or receive electronically such information in a format that allowed its automatic processing? (Filter question)	Yes ☐ No ☐ -> go to D1															
C2.*⁸	Did your enterprise send or receive electronically such information for the following purposes?	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>a) Sending payment instructions to financial institutions</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>b) Sending or receiving product information (e.g. catalogues, price lists)</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>c) Sending or receiving transport documents (e.g. consignment notes)</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>d) Sending or receiving data to/from public authorities (e.g. tax returns, statistical data, import or export declarations [national examples])</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>		Yes	No	a) Sending payment instructions to financial institutions	☐	☐	b) Sending or receiving product information (e.g. catalogues, price lists)	☐	☐	c) Sending or receiving transport documents (e.g. consignment notes)	☐	☐	d) Sending or receiving data to/from public authorities (e.g. tax returns, statistical data, import or export declarations [national examples])	☐	☐
	Yes	No															
a) Sending payment instructions to financial institutions	☐	☐															
b) Sending or receiving product information (e.g. catalogues, price lists)	☐	☐															
c) Sending or receiving transport documents (e.g. consignment notes)	☐	☐															
d) Sending or receiving data to/from public authorities (e.g. tax returns, statistical data, import or export declarations [national examples])	☐	☐															

Module D: Electronic invoicing											
(Scope: enterprises with Computers)											
An electronic invoice is an electronic transaction document that contains billing information. Two different types of electronic invoices are distinguished: - e-invoices are electronic invoices in a standard structure (suitable for automatic processing) that may be processed automatically. They may be directly exchanged between suppliers and customers, via service operators or via an electronic banking system. - Invoices in electronic format not suitable for automatic processing.											
D1.*⁹	In January 2011, did your enterprise <i>send</i> electronic invoices?	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>a) e-invoices in a standard structure suitable for automatic processing? e.g. EDI, UBL, XML, (please add national examples)</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>b) Electronic invoices not suitable for automatic processing e.g. emails, email attachment in PDF format</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>		Yes	No	a) e-invoices in a standard structure suitable for automatic processing? e.g. EDI, UBL, XML, (please add national examples)	☐	☐	b) Electronic invoices not suitable for automatic processing e.g. emails, email attachment in PDF format	☐	☐
	Yes	No									
a) e-invoices in a standard structure suitable for automatic processing? e.g. EDI, UBL, XML, (please add national examples)	☐	☐									
b) Electronic invoices not suitable for automatic processing e.g. emails, email attachment in PDF format	☐	☐									
D2.*¹⁰	In January 2011, did your enterprise <i>receive</i> e-invoices in a standard structure suitable for automatic processing? e.g. EDI, UBL, XML, please national examples	Yes ☐ No ☐									

⁷ For indicator D3 of the benchmarking framework

⁸ For indicator D3 of the benchmarking framework

⁹ For indicator D5 of the benchmarking framework

¹⁰ For indicator D5 of the benchmarking framework

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, e.g. ERP (Enterprise Resource planning) software; – 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; – within this enterprise, sending or receiving electronically information that can be processed automatically.			
E1.* ¹¹	In January 2011, 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.* ¹²	In January 2011, 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	☐	☐

¹¹ For indicator D1 of the benchmarking framework

¹² For indicator D1 of the benchmarking framework

Module F: e-Commerce (Scope: enterprises outside the financial sector with Computers)			
An e-commerce transaction is the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. e-commerce transactions exclude orders made by manually typed e-mail messages.			
E-commerce Sales			
Web sales			
Web sales are sales made via an online store (web shop) or via web forms on your enterprise's website or extranet, regardless of how the web is accessed (computer, laptop, mobile phone ...).			
F1.* 13	During 2010, did your enterprise <i>receive</i> orders for products or services placed via a website? (excluding manually typed e-mails) (Filter question)	Yes ☐	No ☐ -> Go to F4
F2.* 14	Please state the value of the turnover resulting from orders <i>received</i> that were placed via a website (in monetary terms, excluding VAT), in 2010. If you can't provide this value, Please indicate an estimate of the percentage of the total turnover resulting from orders <i>received</i> that were placed via a website, in 2010.		
		(National currency) _____	
		_____ %	
F3.*15	In 2010, did your enterprise <i>receive</i> orders placed via a website by customers located in the following geographic areas?		
		Yes	No
a) Own country		☐	☐
b) Other EU countries		☐	☐
c) Rest of the world		☐	☐
EDI-type sales			
EDI-type sales are sales made via EDI-type messages. EDI (electronic data interchange) is used here as a generic term for sending or receiving business information in an agreed format which allows its automatic processing (e.g: EDIFACT, UBL, XML, ...).			
F4.	During 2010, did your enterprise <i>receive</i> orders for products or services placed via EDI-type messages? (Filter question)	Yes ☐	No ☐ -> Go to F7
F5.	Please state the value of the turnover resulting from orders <i>received</i> that were placed via EDI-type messages (in monetary terms, excluding VAT), in 2010. If you can't provide this value, Please indicate an estimate of the percentage of the total turnover resulting from orders <i>received</i> that were placed via EDI-type messages, in 2010.		
		(National currency) _____	
		_____ %	
F6.	In 2010, did your enterprise <i>receive</i> orders placed via EDI-type messages by customers located in the following geographic areas?		
		Yes	No
a) Own country		☐	☐

¹⁵ For indicator D12 of the benchmarking framework (biennial)

	b) Other EU countries	☐	☐														
	c) Rest of the world	☐	☐														
E-commerce Purchases																	
F7.*¹⁶	During 2010, did your enterprise send orders for products or services via computer networks? (via a website or EDI-type systems, and excluding manually typed e-mails)	Yes ☐	No ☐ -> go to G1														
F8.*¹⁷	-optional During 2010, did your enterprise place orders for products or services via a website?	Yes ☐	No ☐														
F9.*¹⁸	-optional During 2010, did your enterprise place orders for products or services via EDI-type messages?	Yes ☐	No ☐														
F10.	Please indicate for 2010 the value of orders that were sent electronically in relation to the total purchases' value (in monetary terms, excluding VAT) -optional <table border="1"> <tr><td>Less than 1%</td><td>☐</td></tr> <tr><td>1% or more and less than 5%</td><td>☐</td></tr> <tr><td>5% or more and less than 10%</td><td>☐</td></tr> <tr><td>10% or more and less than 25%</td><td>☐</td></tr> <tr><td>25% or more and less than 50%</td><td>☐</td></tr> <tr><td>50% or more and less than 75%</td><td>☐</td></tr> <tr><td>75% or more</td><td>☐</td></tr> </table>			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	☐
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	☐																
<i>Alternative Question</i> Please state the value of the purchases resulted from orders placed electronically (in monetary terms, excluding VAT), in 2010. (National Currency) -optional If you can't provide this value Please provide an estimate of the percentage of the total purchases that resulted from orders placed electronically, in 2010. ___ ___ % -optional																	
F11.*¹⁹	In 2010, did your enterprise place orders via a website or EDI-type messages to suppliers located in the following geographic areas?																
		Yes	No														
	a) Own country	☐	☐														
	b) Other EU countries	☐	☐														
	c) Rest of the world	☐	☐														

¹⁶ For indicator D11 of the benchmarking framework

¹⁷ For indicator D11 of the benchmarking framework

¹⁸ For indicator D3 and D11 of the benchmarking framework

¹⁹ For indicator D12 of the benchmarking framework (biennial)

Module G: Use of Radio Frequency Identification (RFID) technologies										
(Scope: enterprises with Computers)										
Radio Frequency identification technologies (RFID) means: - please add national examples - 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.*²⁰	In January 2011, did your enterprise make use of Radio Frequency Identification instruments? (Filter question)	Yes ☐ No ☐ -> go to H1								
G2.*²¹	In January 2011, for what purposes did your enterprise use RFID?									
		<table border="1"> <thead> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>☐</td> <td>☐</td> </tr> <tr> <td>☐</td> <td>☐</td> </tr> <tr> <td>☐</td> <td>☐</td> </tr> </tbody> </table>	Yes	No	☐	☐	☐	☐	☐	☐
Yes	No									
☐	☐									
☐	☐									
☐	☐									
	a) Person identification or access control									
	b) as part of the production and service delivery process (Monitoring and control of industrial production, supply chain and inventory tracking, service -, maintenance - or asset management)									
	c) for after-sales product identification, e.g. theft control, counterfeiting, allergen information									

Module H: ICT and environmental impact										
(Scope: enterprises with Computers)										
H1.	In January 2011, did your enterprise have in place any of the following policies? <i>-optional</i>	<table border="1"> <thead> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>☐</td> <td>☐</td> </tr> <tr> <td>☐</td> <td>☐</td> </tr> <tr> <td>☐</td> <td>☐</td> </tr> </tbody> </table>	Yes	No	☐	☐	☐	☐	☐	☐
Yes	No									
☐	☐									
☐	☐									
☐	☐									
	a) Policies designed to reduce the amount of paper used in printing or copying.									
	b) Policies designed to reduce the energy consumption of your ICT equipment. e.g. Computers and screens to be turned off, use of automated power down devices for the ICT equipment, use of multi-function peripheral imaging devices (printers, scanners, photocopiers) etc.									
	c) Policies for using telephone, web or video conferencing instead of physical travel.									
H2.	In January 2011, did your enterprise have in place any dedicated IT applications to reduce the energy consumption of business processes? (including the optimisation of work routines, production processes, transport or logistics) <i>-optional</i>	<table border="1"> <thead> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>☐</td> <td>☐</td> </tr> </tbody> </table>	Yes	No	☐	☐				
Yes	No									
☐	☐									
H3.	In January 2011, did your enterprise provide to the persons employed remote access to the enterprise's e-mail system, documents and applications? <i>-optional</i>	<table border="1"> <thead> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>☐</td> <td>☐</td> </tr> </tbody> </table>	Yes	No	☐	☐				
Yes	No									
☐	☐									

²⁰ For indicator D6 of the benchmarking framework (biennial)

²¹ For indicator D6 of the benchmarking framework (biennial)

Module X: Background information^{*22} (X1-X4) available in some countries from SBS, the business register or administrative data and thus not to be included; latest available information should be provided		
X1.	Main economic activity of the enterprise, during 2010	
X2.	Average number of persons employed, during 2010	
X3.	Total purchases of goods and services (in value terms, excluding VAT), for 2010 - Optional / conditional	
X4.	Total turnover (in value terms, excluding VAT), for 2010	

²² For background information of the benchmarking framework

COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2011 Glossary

3G, 3rd Generation (new)

3G or 3rd Generation, is a family of standards for mobile telecommunications (W-CDMA, CDMA2000, etc) defined by the International Telecommunication Union (ITU). 3G standards' aim is to unify the world's mobile computing devices through a single, worldwide radio transmission standard. 3G devices allow simultaneous use of speech and data services and higher data rates. Cellular mobile services were initially offered using analogue radio technologies and these were considered as the first generation systems (1G). 2G technology replaced analogue radio networks with digital ones (2G networks) in the 1990's.

Source: <http://en.wikipedia.org/wiki/>; [http://www.itu.int](http://www.itu.int;);
http://www.three-g.net/3g_standards.html

Business process (new)

A business process or business method is a collection of related, structured activities or tasks that produce a specific service or product (serve a particular goal) for a particular customer or customers. Business processes can be of three types: *Management processes* (e.g. corporate governance, strategic management), *Operational processes* (e.g. purchasing, manufacturing, marketing and sales etc) and *Supporting processes* (e.g. accounting, recruitment, technical support etc).

Source: http://en.wikipedia.org/wiki/Business_process

Counterfeiting (new)

A counterfeit is an imitation, usually one that is made with the intent of fraudulently passing it off as genuine. Counterfeit products are often produced with the intent to take advantage of the established worth of the imitated product. The word counterfeit frequently describes both the forgeries of currency and documents, as well as the imitations of products or goods (e.g. clothing, software, pharmaceuticals, jeans, watches, electronics, etc.).

Source: <http://en.wikipedia.org/wiki/Counterfeiting>

CDMA2000^(new)

Code Division Multiple Access is a channel access method utilized by various radio communication technologies. CDMA2000 refers to the mobile phone standards which use CDMA as an underlying channel access method and is an ITU approved 3G standard (3G, UMTS).

One of the basic concepts in data communication is the idea of allowing several transmitters to send information simultaneously over a single communication channel. This allows several users to share a bandwidth of different frequencies. This concept is called multiplexing. CDMA employs spread-spectrum technology and a special coding scheme (where each transmitter is assigned a code) to allow multiple users to be multiplexed over the same physical channel. By contrast, time division multiple access (TDMA) divides access by time, while frequency-division multiple access (FDMA) divides it by frequency. CDMA is a form of "spread-spectrum" signalling, since the modulated coded signal has a much higher data bandwidth than the data being communicated.

Source: <http://en.wikipedia.org/wiki/CDMA>

An analogy to the problem of multiple access is a room (channel) in which people wish to communicate with each other. To avoid confusion, people could take turns speaking (time division), speak at different pitches (frequency division), or speak in different languages (code division). CDMA is analogous to the last example where people speaking the same language can understand each other, but not other people. Similarly, in radio CDMA, each group of users is given a shared code. Many codes occupy the same channel, but only users associated with a particular code can understand each other.

Source: <http://en.wikipedia.org/wiki/CDMA> ;
<http://www.umtsworld.com/umts/faq.htm#f26>

CRM

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.

Data

Representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. Any representations such as characters or analogue quantities to which meaning is or might be assigned.

Source: http://www.its.bldrdoc.gov/projects/devglossary/_data.html

DSL

Digital Subscriber Line (DSL) is a family of technologies that provides digital data transmission over the wires of a local telephone network. DSL is widely understood to mean Asymmetric Digital Subscriber Line (ADSL), the most commonly installed technical varieties of DSL. DSL service is delivered simultaneously with regular telephone on the same telephone line as it uses a higher frequency band that is separated by filtering.

Source: <http://en.wikipedia.org/wiki/DSL>

DPS (new)

Dynamic Purchasing System. A completely electronic procedure which may be established by a contracting authority to purchase commonly used goods, works or services. It is limited in duration and open throughout its validity.

Source: http://www.ogc.gov.uk/documents/Guide_dynamic_purchasing.pdf

EDI, EDI-type (new)

Electronic Data Interchange (EDI) refers to the structured transmission of data or documents between organizations or enterprises by electronic means. It also refers specifically to a family of standards (EDI-type) and EDI-type messages which can be automatically processed.

Source: http://en.wikipedia.org/wiki/Electronic_Data_Interchange

EDI e-commerce (new)

Orders initiated with EDI. EDI (electronic data interchange) is an e-business tool for exchanging different kinds of business messages. EDI is here used as a generic term for sending or receiving business information in an agreed format which allows its automatic processing (e.g. EDIFACT, XML, etc.) and without the individual message being manually typed. "EDI e-commerce" is limited to EDI messages placing an order.

Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL

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. E-invoicing, comprises billing and payment information exchanged between the parties - businesses, the public sector, consumers - involved in commercial transactions, transmitted via the Internet or other electronic means. Source: http://ec.europa.eu/enterprise/sectors/ict/e-invoicing/ The transmission protocol might be XML, EDI or other similar format.
Electronic commerce (e-commerce)	An e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. E-commerce comprises orders made in Web pages, extranet or EDI and excludes orders made by telephone calls, facsimile, or manually typed e-mail. The type is defined by the method of making the order. Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL
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.
eTendering ^(new)	eTendering is the stage of an eProcurement process dealing with the preparation and submission of tenders or proposals online; this includes bids submitted through open, restricted, or negotiated procedures, as well as Framework Agreements and Dynamic Purchasing Systems (DPS).
EDGE ^(new)	Enhanced Data rates for GSM technology represent further enhancements to GSM networks providing up to three times the data capacity of GPRS. EDGE networks rely on Time Division Multiple Access transmission (TDMA) and General Packet Radio Service (GPRS). Source: http://gsmworld.com/technology/edge.htm

EVDO (1xEVDO) (new)	Evolution-Data Optimized or Evolution-Data only, abbreviated as EV-DO or EVDO and often EV, is a telecommunications standard for the wireless transmission of data through radio signals, typically for broadband Internet access. It uses multiplexing techniques including code division multiple access (CDMA) as well as time division multiple access (TDMA) to maximize both individual user's throughput and the overall system throughput. It is standardized by 3rd Generation Partnership Project 2 (3GPP2) as part of the CDMA2000 family of standards and has been adopted by many mobile phone service providers around the world – particularly those previously employing CDMA networks. http://en.wikipedia.org/wiki/1xEVDO
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.
GSM (new)	Global System for Mobile Communications. GSM is a digital cellular technology used for transmitting mobile voice and data services. It is the most popular standard for mobile telephone systems in the world. GSM differs from its predecessor technologies in that both signaling and speech channels are digital, and thus GSM is considered a second generation (2G) mobile phone system. Source: http://en.wikipedia.org/wiki/GSM
GPRS (new)	General Packet Radio Service is a very widely deployed wireless data service, available with most GSM networks. GPRS offers throughput rates of up to 40 kbit/s, so that users have a similar access speed to a dial-up modem, but with the convenience of being able to connect from almost anywhere. Source: http://www.gsmworld.com/technology/gprs.htm
HSDPA (new)	High-Speed Downlink Packet Access is an enhanced 3G (third generation) mobile telephony communications protocol in the High-Speed Packet Access (HSPA) family, also coined 3.5G, 3G+ or turbo 3G, which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data transfer speeds and capacity. Source: http://en.wikipedia.org/wiki/HSDPA
HUSPA (new)	High-Speed Uplink Packet Access (HSUPA) is a 3G mobile telephony protocol in the HSPA family with up-link speeds up to 5.76 Mbit/s. The name HSUPA was created by Nokia. The technical purpose of the Enhanced Uplink feature is to improve the performance of uplink dedicated transport channels, i.e. to increase capacity and throughput and reduce delay according to the ITU Rel.6 standard published by the 3rd Generation Partnership Project (3GPP). Source: http://en.wikipedia.org/wiki/HSUPA
Information (new)	1) Facts, data, or instructions in any medium or form. 2) The meaning that a human assigns to data by means of the known conventions used in their representation. (Source: http://www.its.bldrdoc.gov/projects/devglossary/information.html)
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	The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronic and optical networking technologies. The Internet carries a vast array of information resources and services, most notably the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail. Source: http://en.wikipedia.org/wiki/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.
Message	Any thought or idea expressed briefly in a plain or secret language, prepared in a form suitable for transmission by any means of communication. Source: http://www.its.bldrdoc.gov/projects/devglossary/_message.html
Mobile broadband ^(new)	Mobile broadband (Mobile Internet) is the name used to describe various types of wireless high-speed Internet access through a portable modem, telephone or other device. (viz. 3G) Source: http://en.wikipedia.org/wiki/Mobile_broadband
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. (MODEM: MODulator DEModulator)
Nettop ^(new)	A nettop is a small size, low-wattage computer designed for basic tasks such as surfing the Internet, accessing web-based applications, document processing, audio/video playback etc. The hardware specifications and processing power are usually reduced and hence make nettops less appropriate for running complex or resource intensive applications Source: http://en.wikipedia.org/wiki/Nettop
Odette (standards, organisation)	Odette International is an organisation, formed by the automotive industry for the automotive industry. It sets the standards for e-business communications, engineering data exchange and logistics management, which link the 4000 plus businesses in the European motor industry and their global trading partners. Source: http://www.odette.org/html/home.htm
Office (automation) software ^(new)	Office (automation) software is a generic type of software comprising (grouped together) usually a word processing package, a spreadsheet, presentations' software etc.
Online payment	An online payment is an integrated ordering-payment transaction
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.

PDA ^(new)	A Personal Digital Assistant (PDA) is a handheld device that combines computing, telephone/fax, Internet and networking features. A typical PDA can function as a cellular phone, fax sender, Web browser and personal organizer. Source: http://www.webopedia.com/TERM/P/PDA.html
Public Electronic Procurement eProcurement ^(new)	Public electronic Procurement refers to the use of the Internet by enterprises to offer goods or services to public authorities at national level or in other EU countries. The eProcurement process is based on a number of stages from the notification process (online availability of procurement notices and tender specifications) through tendering, awarding, to payment.
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 (web sales)	A part of the e-commerce activities, sales via website (web application) are orders made in an online store or filled in and sent by an electronic form on the www or extranet. Web sales are distinguished from EDI sales. In particular, the type of e-commerce transaction is defined by the method of making the order. This approach should mitigate the interpretation problems where both types, EDI and Web, are used in the process. An example is a situation where an order is made by the customer through a web application but the information is transmitted to the seller as an EDI-message. Here the type of selling application is however web, EDI is only a business application to transmit information about the sale. Web-sales can be done by mobile phones using an Internet-browser. Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL
SSL/TLS	Secure Sockets Layer (SSL) and its predecessor 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 Public Key Infrastructure (PKI) deployment to clients. The protocols allow client/server applications to communicate in a way designed to prevent eavesdropping, tampering, and message forgery.
UBL ^(new)	Universal Business Language (UBL) is a library of standard electronic XML business documents such as purchase orders and invoices. UBL was developed by an OASIS Technical Committee with participation from a variety of industry data standards organizations. UBL is designed to plug directly into existing business, legal, auditing, and records management practices. It is designed to eliminate the re-keying of data in existing fax- and paper-based business correspondence and provide an entry point into electronic commerce for small and medium-sized businesses. Source: http://en.wikipedia.org/wiki/Universal_Business_Language
UMTS ^(new)	Universal Mobile Telecommunications System (UMTS) is one of the third-generation (3G) mobile telecommunications technologies being developed within the ITU's (International Telecommunication Union) IMT-2000 framework (International Mobile Telecommunications-2000). It is a realisation of a new generation of broadband multi-media mobile telecommunications technology.

UMTS relies on the Wideband Code Division Multiple Access (W-CDMA) transmission for handling data transmission traffic and uses High Speed Packet Access at transmission rates that support large file transfers and mobile data-intensive Internet activities like video and music streaming.

Source:

http://en.wikipedia.org/wiki/Universal_Mobile_Telecommunications_System

Web e-commerce ^(new)

Orders made at an online store (webshop) or via web forms on the Internet or extranet regardless of how the web is accessed (computer, laptop, mobile phone etc.)

Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL

Webform ^(new)

A webform on a web page allows a user to enter data that is sent to a server for processing. Webforms resemble paper forms because Internet users fill out the forms using checkboxes, radio buttons, or text fields. For example, webforms can be used to enter shipping or credit card data to order a product or can be used to retrieve data.

Source: <http://en.wikipedia.org/wiki/>

Webserver

A Web server is a computer program that delivers (serves) content, such as Web pages, using the Hypertext Transfer Protocol (HTTP), over the World Wide Web. The term Web server can also refer to the computer or virtual machine running the program.

http://en.wikipedia.org/wiki/Web_server

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.

xCBL

XML Common Business Library (xCBL) is the pre-eminent XML component library for business-to-business e-commerce.

Source: <http://www.xcbl.org/>

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.

XML ^(new)

The Extensible Markup Language is a markup language for documents containing structured information. Structured information contains both content (words, pictures, etc.) and some indication of what role that content plays (for example, content in a section heading has a different meaning from content in a footnote, which means something different than content in a figure caption or content in a database table, etc.). Almost all documents have some structure. A markup language is a mechanism to identify structures in a document. The XML specification defines a standard way to add markup to documents.

Source: <http://www.xml.com/>