COMMUNITY SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES

2020

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, steam and air conditioning supply"* "*Water supply, sewerage, waste management and remediation activities";* - 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 service activities";* - Group 95.1 – "*Repair of computers and communication equipment*" **Enterprise size:** Enterprises with 10 or more persons employed. Optional: enterprises with number of persons employed between 0 and 9. **Geographic scope:** Enterprises located in any part of the territory of the country.
Reference period:	Year 2019 for the value or % of sales/orders data and where specified. Where not specified respondents should consider as reference their current situation (survey period in 2020).
Recommended survey period:	First quarter 2020.
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 ICT-related issues in the enterprise (the ICT manager or a senior professional in the ICT 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 47 9 49 - 53 10 55 11 58 - 63 12 68 13 69 - 74 14 77 - 82 15 26.1 - 26.4, 26.8, 46.5, 58.2, 61, 62, 63.1, 95.1 Breakdowns for which national data should be provided with the purpose of possible calculation of **European** NACE aggregates. The production and transmission of these aggregates with an accuracy that allows the release at national level is optional. The production and transmission of these aggregates with an accuracy that may not allow the release at national level (use of flag u: unreliable) but are accurate enough to be combined with other countries' aggregates to be released at European level is mandatory.) 1a 10 - 12 1b 13 - 15 1c 16 - 18 4a 26 4b 27 - 28 4c 29 - 30 4d 31 - 33 7a 45 7b 46 10a 55 - 56 11a 58 - 60 11b 61 11c 62 - 63 14a 77 - 78 + 80 - 82 14b 79 15a 95.1

Size class breakdown:	**(To be applied to: all variables; aggregate of all mandatory NACE aggregates [1 to 15 defined above]; whole territory of the country.)** Data should be broken down by the following size classes according to 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 0 – 9 6 0 – 1 7 2 – 9
Weighting of results:	Results should in general be weighted by number of enterprises. Turnover weighting should be used for sales related questions. Quantitative variables in the e-Commerce module related to sales should be weighted by total turnover. Weighting by the number of Persons Employed should be applied for variables related to questions A2, C2, C6, and for other variables e.g. % using the internet, % sending orders via a website or EDI-type messages, etc., as specified in the transmission format document.
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 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 breakdowns as specified in the transmission format document.
Data transmission:	Results are to be sent to Eurostat following the transmission format described in a forthcoming Eurostat document.

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ICT-Entr 2020 - Model Questionnaire V 1.2.Docx – Response burden

Module	Description	Mandatory questions	Optional questions
A	Access and use of the internet	**13**	**2**
B	E-commerce	**9**	**2**
C	Invoicing	**3**	**1**
D	Use of cloud computing services	**8**	**0**
E	Big data analysis	**10**	**10**
F	ICT specialists and skills	**7**	**4**
G	Internet of Things	**0**	**6**
H	Use of 3D printing technologies	**6**	**0**
I	Use of robotics	**9**	**0**
X	Background characteristics	**(3)**	**(0)**
	Total number of questions/responses	**65(62)**	**25**

*In parenthesis the number of questions/responses without Module X: Background characteristics

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2020
Model Questionnaire version 1.2

(Questions related to Monitoring the *"Digital Economy & Society 2016-2021"* are marked with an asterisk *)

Module A: Access and use of the internet

A1 *[1]	**How many persons employed have access to the internet for business purposes?** (including fixed line and mobile connection) (Filter question)	*(Number)*
	If you can't provide this value, **please indicate an estimate of the percentage of the total number of persons employed who have access to the internet for business purposes**	%
		If the value=0, go to F1

Use of a fixed line connection to the internet for business purposes

A2. *[2]	**Does your enterprise use any type of fixed line connection to the internet?** (e.g. ADSL, SDSL, VDSL, fiber optics technology (FTTP), cable technology, etc.) *(Add national examples*) (Filter question)	Yes ☐	No ☐ ->go to A5 (if optional included) or to A7
A3 *[2]	**What is the maximum contracted download speed of the fastest fixed line internet connection of your enterprise?** **(additional categories at national level can be added, if needed)** *(Tick only one)*		
	a) less than 30 Mbit/s	☐	
	b) at least 30 but less than 100 Mbit/s	☐	
	c) at least 100 Mbit/s but less than 500 Mbit/s	☐	
	d) at least 500 Mbit/s but less than 1 Gbit/s	☐	
	e) at least 1 Gbit/s	☐	
A4.	**Is the speed of your fixed line connection(s) to the internet usually sufficient for the actual needs of the enterprise?**	Yes ☐	No ☐

[1] For indicators on connectivity of the monitoring framework 2016-2021 – annual or biennial
[2] For indicator E1 on connectivity of the monitoring framework 2016-2021 – annual or biennial

Use of a mobile connection to the internet for business purposes

A mobile connection to the internet means the usage of portable devices connecting to the internet through mobile telephone networks for business purposes. Enterprises provide portable devices and pay for all or at least up to a limit, the subscription and the use costs.

A5. *[3]	**Does your enterprise provide <u>portable devices</u> that allow a <u>mobile</u> connection to the internet using mobile telephone networks, for business purposes?** (e.g. via portable computers or other portable devices such as smartphones) ***- Optional***	Yes ☐	No ☐ →go to A7
A6. *[4]	**How many persons employed use a <u>portable device</u> provided by the enterprise, that allows internet connection via mobile telephone networks, for business purposes?** (e.g. portable computers, or other portable devices such as smartphones) *(Please enter a value, field cannot be left blank)* If you can't provide this value, **please indicate an estimate of the percentage of the total number of persons employed who use a <u>portable device</u> provided by the enterprise, that allows internet connection via mobile telephone networks, for business purposes** (e.g. portable computers, or other portable devices such as smartphones) *(Please enter a value, field cannot be left blank)* ***- Optional***	*(Number)* ␣ ␣ ␣ %	

Use of a website

A7.	**Does your enterprise have a website?** (Filter question)	Yes ☐	No ☐ ->go to **A9**
A8.	**Does the website have any of the following?**	Yes	No
*[5]	a) Description of goods or services, price information	☐	☐
	b) Online ordering or reservation or booking, e.g. shopping cart	☐	☐
	c) Possibility for visitors to customise or design online goods or services	☐	☐
	d) Tracking or status of orders placed	☐	☐
	e) Personalised content on the website for regular/recurrent visitors	☐	☐
	f) Links or references to the enterprise's social media profiles	☐	☐

A9.	**Does your enterprise have the following chat service for customer contacts?**	Yes	No
	a) A chat service where a person replies to customers	☐	☐
	b) A chatbot or virtual agent replying to customers	☐	☐

[3] For indicator E2 on connectivity of the monitoring framework 2016-2021 – annual
[4] For indicator E3 on connectivity of the monitoring framework 2016-2021 – annual
[5] For indicator E18 on connectivity of the monitoring framework 2016-2021 – annual or biennial

Module B: E-commerce

(Scope: enterprises with access to the internet, i.e. if A1>0)

E-commerce 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 payment and the 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

In the following questions please report separately for web sales and EDI-type sales.

Web sales of goods or services

Web sales covers orders, bookings and reservations placed by your customers via

- your enterprise's **websites or apps** :
  - online store (webshop)
  - web forms
  - extranet (webshop or web forms)
  - booking/reservation applications for services
  - apps for mobile devices or computers
- **e-commerce marketplace websites or apps** (used by several enterprises for trading goods or services).

Orders written in e-mail are **not** counted as web sales.

B1. ***[6]**	**During 2019, did your enterprise have web sales of goods or services via:**	Yes	No
	a) your enterprise's websites or apps? (including extranets)	☐	☐
	b) e-commerce marketplace websites or apps used by several enterprises for trading goods or services? **(**e.g. e-Bookers, Booking, hotels.com, eBay, Amazon, Amazon Business, Alibaba, Rakuten, TimoCom etc.) *[Please add national examples of e-commerce marketplaces incl. government marketplaces]*	☐	☐
	If both B1 a) and B1 b) = "No" then go to B7		
B2. ***[7]**	**What was the value of your web sales?** (please refer to the provided definition of web sales) Please answer to a) OR b)		
	a) What was the value of your web sales of goods or services, in 2019?	(National currency, excluding VAT) _____	
	OR **b) What percentage of total turnover was generated by web sales of goods or services, in 2019?** *If you cannot provide the exact percentage an approximation will suffice.*	⊔ ⊔ ⊔ , ⊔ %	

[6] For indicator E19 (annual), E21 (annual or biennial) on e-commerce of the monitoring framework 2016-2021

[7] For indicator E20 on e-commerce of the monitoring framework 2016-2021 – annual

Question B3 should be answered only if both B1 a) and B1 b) = "Yes"		
B3.	**What was the percentage breakdown of the value of web sales in 2019 for the following:** (Please refer to value of web sales you reported in B2) *If you cannot provide the exact percentages an approximation will suffice.*	
	a) via your enterprise's websites or apps? (including extranets)	⊔ ⊔ ⊔ %
	b) via e-commerce marketplace websites or apps used by several enterprises for trading goods or services? **(**e.g. e-Bookers, Booking, hotels.com, eBay, Amazon, Amazon Business, Alibaba, Rakuten, TimoCom etc.) *[Please add national examples of e-commerce marketplaces incl. government marketplaces]*	⊔ ⊔ ⊔ %
	TOTAL	**1 0 0** %

Question B4 should be answered only if B1 b) = "Yes"				
B4.	**Via how many e-commerce marketplaces did you have web sales during 2019?** ***- Optional***	Via one ☐	Via two ☐	Via more than two ☐
If B4 = "one" then go to B6				

B5.	**Did more than half of your turnover from e-commerce marketplaces in 2019 come from only one e-commerce marketplace?** ***- Optional***	Yes ☐	No ☐

B6. *[8]	**What was the percentage breakdown of the value of web sales in 2019 by type of customer:** (Please refer to value of web sales you reported in B2) *If you cannot provide the exact percentages an approximation will suffice.*	
	a) Sales to private consumers (**B2C**)	⊔ ⊔ ⊔ %
	b) Sales to other enterprises (**B2B**) and Sales to public sector (**B2G**)	⊔ ⊔ ⊔ %
	TOTAL	**1 0 0** %

EDI-type sales

EDI-type sales cover **orders placed** by your customers via EDI-type messages (EDI: Electronic Data interchange) meaning:

- in an **agreed or standard format** suitable for automated processing
- EDI-type order message created from the **business system** of the customer
- including orders transmitted via EDI-service provider
- including automatic system generated **demand driven orders**
- including orders received directly into your **ERP** system

Examples of EDI : EDIFACT, XML/EDI (e.g. UBL, Rosettanet, *[please add national examples]*)

[8] For indicator E20 on e-commerce of the monitoring framework 2016-2021 – annual

B7. ***[9]**	**During 2019, did your enterprise have EDI-type sales of goods or services?** (Filter question)	Yes ☐	No ☐ -> go to C1

B8. ***[10]**	**What was the value of your EDI-type sales?** (please refer to the provided definition of EDI-type sales) Please answer to a) OR b)	
	a) What was the value of your EDI-type sales of goods or services, in 2019?	(National currency, excluding VAT) _____
	OR **b) What percentage of total turnover was generated by EDI-type sales of goods or services, in 2019?** *If you cannot provide the exact percentage an approximation will suffice.*	⊔ ⊔ ⊔ , ⊔ %

Module C: Invoicing

(Scope: enterprises with access to the internet, i.e. if A1>0)

C1 - Mandatory ***C2 - Optional***

There are invoices in **paper form** and **electronic form.** Invoices in **electronic form** are of two types:

- **E-invoices** in a standard structure **suitable for automated processing,** excluding the transmission of PDF files. They are exchanged either directly or via service operators or via an electronic banking system.
- **Invoices** in electronic form **not suitable for automated processing,** including the transmission of PDF files

C1.	**In 2019, did your enterprise <u>send</u> any of the following types of invoices:** *Include also invoices sent via intermediaries, e.g. accountants, e-invoice service providers, etc.* (Filter question)	**Yes**	**No**
***[11]**	a) Invoices in electronic form, in a standard structure **suitable for automated processing** (e-invoices)? (EDI (e.g. EDIFACT), XML (e.g. UBL) [please add national examples]) Excluding the transmission of PDF files	☐	☐
	b) Invoices in electronic form **not suitable for automated processing?** (e.g. emails, JPEG or other format) Including the transmission of PDF files	☐	☐
	c) Paper invoices?	☐	☐

[9] For indicator E19 on e-commerce of the monitoring framework 2016-2021 – annual
[10] For indicator E20 on e-commerce of the monitoring framework 2016-2021 – annual
[11] For indicator E16 on integration of digital technology of the benchmarking framework 2016-2021 - biennial

Filter – if C1a) answered with 'Yes', go to C2, otherwise go to D1.

C2.	**Concerning e-invoices: In 2019, out of all invoices your enterprise <u>sent</u> (in electronic or paper form) to private customers, other enterprises or public authorities, how many were e-invoices in a <u>standard structure suitable for automated processing</u>?** (Tick only one) ***- Optional***	
	a) Less than 10%	☐
	b) At least 10% but less than 25%	☐
	c) At least 25% but less than 50%	☐
	d) At least 50% but less than 75%	☐
	e) At least 75%	☐

Alternative

C2.bis	**Concerning e-invoices: In 2019, out of all invoices your enterprise <u>sent</u> (in electronic or paper form) to private customers, other enterprises or public authorities, what percentage were e-invoices in a <u>standard structure suitable for automated processing</u>?** (*If you cannot provide the exact percentage an approximation will suffice.*) ***- Optional***	⌴	⌴	⌴	**%**

Module D: Use of cloud computing services

(Scope: enterprises with access to the internet, i.e. if A1>0)

Cloud computing refers to **ICT services** that are used **over the internet** to access software, computing power, storage capacity etc.;

where the services have all of the following characteristics:

- are delivered from **servers** of service providers

- can be easily **scaled** up or down (e.g. number of users or change of storage capacity)

- can be used **on-demand by the user,** at least after the initial set up (without human interaction with the service provider)

- are **paid** for, either per user, by capacity used, or they are pre-paid

Cloud computing may include connections via Virtual Private Networks (VPN).

D1.	**Does your enterprise buy any cloud computing services used over the internet?** (Please refer to the definition of cloud computing above, exclude free of charge services.) (Filter question)	Yes ☐	No ☐ ->go to **E1**
D2. *[12]	**Does your enterprise buy any of the following cloud computing services used over the internet?** (Please refer to the definition of cloud computing above, exclude free of charge services.)	Yes	No
	a) E-mail (as a cloud computing service)	☐	☐
	b) Office software (e.g. word processors, spreadsheets, etc.) (as a cloud computing service)	☐	☐
	c) Hosting the enterprise's database(s) (as a cloud computing service)	☐	☐
	d) Storage of files (as a cloud computing service)	☐	☐

[12] For indicator E8 on integration of digital technology of the benchmarking framework 2016-2021 - biennial

	e) Finance or accounting software applications (as a cloud computing service)	☐	☐
	f) Customer Relationship Management (CRM) software application for managing information about customers (as a cloud computing service)	☐	☐
	g) Computing power to run software used by the enterprise (as a cloud computing service)	☐	☐

Module E: Big data analysis

(Scope: enterprises with access to the internet, i.e. if A1>0)

Big data have the following characteristics:

- **Volume:** vast amounts of data.

- **Variety:** different formats of complex data (e.g. text, video, voice, sensor data, activity logs, coordinates).

- **Velocity:** data is frequently generated.

Big data analysis refers to the use of technologies, techniques or software tools such as data or text mining, machine learning, etc., for analysing **big data** extracted from your own enterprise's data sources or other data sources.

E1. *[13]	**During 2019, did your enterprise perform big data analysis on any of the following data sources**? *(Please exclude big data analysis conducted by external service providers)*	Yes	No
	a) Data from smart devices or sensors (e.g. Machine to Machine - M2M- communications, digital sensors, Radio frequency identification tags RFID[14], etc.) *(in the context of big data)*	☐	☐
	b) Geolocation data from the use of portable devices (e.g. portable devices using mobile telephone networks, wireless connections or GPS) *(in the context of big data)*	☐	☐
	c) Data generated from social media (e.g. social networks, blogs, multimedia content sharing websites, etc.) *(in the context of big data)*	☐	☐
	d) Other big data sources not specified above, e.g. stock index data, transaction data, other open web data.	☐	☐

If at least one "yes" in E1a)-d) then go to E2.

E2.	**During 2019 did your enterprise use any of the following methods to analyse big data?**	Yes	No
	a) Machine Learning (e.g. deep learning) *Machine learning (e.g. deep learning) involves 'training' a computer model to better perform an automated task, e.g. pattern recognition.*	☐	☐
	b) Natural language processing, natural language generation or speech recognition *NLP, NLG and speech recognition is the ability for a computer program to understand human language as it is spoken, to convert data into natural language representation or to identify words and phrases in spoken language and convert them to a machine-readable format.*	☐	☐
	c) Other methods of big data analysis	☐	☐

[13] For indicator E13, E14 on integration of digital technology of the benchmarking framework 2016-2021 – biennial or triennial

[14] A **Radio Frequency identification-RFID** tag is a device that can be applied to or incorporated into a product or an object and transmits data via radio waves.

E3. *[15] **During 2019, did your enterprise have another enterprise or organisation perform big data analysis for your enterprise?**		Yes	No
		☐	☐

Questions E4 and E5 are presented only to respondents who answered only 'No' to E1a-d and 'No' to E3 i.e. enterprises that were not involved in big data analysis (by themselves or by others).

E4.	**Has your enterprise ever considered performing big data analysis?** *Either conducted by your enterprise's own employees or by other enterprises or organisations* ***- Optional***	Yes ☐	No ☐ -> Go to E6

E5.	**Are any of the following factors a reason for your enterprise not to perform big data analysis?** *Please include reasons for not having other enterprises or organisations performing big data analysis for your enterprise* ***- Optional***	Yes, this is a reason not to perform big data analysis	No, this is not a reason not to perform big data analysis
	a) The costs seemed too high compared to the benefits	☐	☐
	b) Insufficient human resources, knowledge, skills *E.g. the required specialists are insufficiently available within the enterprise, or it is difficult to hire them*	☐	☐
	c) Insufficient sources of big data, either from within or outside your enterprise, that would be needed to perform big data analysis	☐	☐
	d) Insufficient ICT infrastructure *E.g. a lack of adequate software or hardware to perform the required processing and analysis*	☐	☐
	e) Difficulties in complying with privacy laws	☐	☐
	f) Not a priority for the enterprise	☐	☐
	g) Insufficient quality of the big data source(s)	☐	☐
	h) Big data analysis is not useful for the enterprise	☐	☐
	i) Other factors	☐	☐

Questions E6 and E7 are presented to respondents who answered 'Yes' at least once in E1 or E3.

E6.	**During 2019, did your enterprise sell (access to) any of its own big data?** *E.g. big data from your enterprise's smart devices or sensors, big data about your enterprise's customers.*	Yes ☐	No ☐

E7.	**During 2019, did your enterprise purchase (access to) any big data?** *E.g. big data from other enterprise's smart devices or sensors, big data about other enterprise's customers.*	Yes ☐	No ☐

[15] For indicator E14 integration of digital technology of the benchmarking framework 2016-2021 – biennial or triennial

Module F: ICT specialists and skills

F1. *[16]	**Does your enterprise employ ICT specialists?** ICT specialists are employees for whom **ICT is the main job.** For example, to develop, operate or maintain ICT systems or applications.	Yes ☐	No ☐
F2. *[17]	**Did your enterprise provide any type of training to develop ICT related skills of the persons employed, during 2019?**	Yes	No
	a) Training for ICT specialists *Tick "No" if your enterprise didn't employ ICT specialists during 2019.*	☐	☐
	b) Training for other persons employed	☐	☐
F3. *[18]	**Did your enterprise recruit or try to recruit ICT specialists during 2019?** (Filter question)	Yes ☐	No ☐ ->go to **F6**
F4. *[19]	**During 2019, did your enterprise have vacancies for ICT specialists that were difficult to fill?**	Yes ☐	No ☐ ->go to F6
F5.	***Optional*** **Did your enterprise have any of the following difficulties to recruit ICT specialists during 2019?**	Yes	No
	a) Lack of applications	☐	☐
	b) Applicants' lack of relevant ICT related qualifications from education and/or training;	☐	☐
	c) Applicants' lack of relevant work experience	☐	☐
	d) Applicants' salary expectations too high	☐	☐
F6. *[20]	**Who performed your enterprise's ICT functions in 2019** (e.g. maintenance of ICT infrastructure; support for office software; development or support of business management software/systems and/or web solutions; security and data protection)**?**	Yes	No
	a) own employees (incl. those employed in parent or affiliate enterprises)	☐	☐
	b) external suppliers	☐	☐

[16] For indicator E27 on human capital of the monitoring framework 2016-2021 – annual (or biennial)
[17] For indicator E29 on human capital of the monitoring framework 2016-2021 – annual (or biennial)
[18] For indicator E28 on human capital of the monitoring framework 2016-2021 – annual (or biennial)
[19] For indicator E28 on human capital of the monitoring framework 2016-2021 – annual (or biennial)
[20] For indicator E30 on human capital of the monitoring framework 2016-2021 – annual (or biennial)

Module G: Internet of Things

(Scope: enterprises with access to the internet, i.e. if A1>0)
- Optional

The Internet of Things (IoT) refers to interconnected devices or systems, often called "smart" devices or systems. They collect and exchange data and can be monitored or remotely controlled via the Internet.

Examples of usage are:

- smart thermostats, smart lamps or smart meters;
- Radio Frequency Identification (RFID) or Internet Protocol (IP) tags applied or incorporated into a product or an object in order to track them;
- sensors for tracking the movement or maintenance needs of vehicles monitored over the Internet.

G1.	**Does your enterprise use interconnected devices or systems that can be monitored or remotely controlled via the Internet (Internet of Things)?** Please exclude the usage of computers, smartphones, printers (Filter question)	Yes ☐	No ☐ ->go to H1

G2. *[21]	**Does your enterprise use any of the following interconnected devices or systems that can be monitored or remotely controlled via the Internet (Internet of Things)?**	Yes	No
	a) Smart meters, smart lamps, smart thermostats to optimize energy consumption in enterprise's premises (warehouses, production sites, distribution sites)	☐	☐
	b) Sensors, RFID or IP tags* or Internet-controlled cameras to improve customer service, monitor customers' activities or offer them a personalised shopping experience (targeted and relevant discounts, self-checkout)	☐	☐
	c) Movement or maintenance sensors to track the movement of vehicles or products, to offer condition-based maintenance of vehicles	☐	☐
	d) Sensors or RFID tags to monitor or automate production processes, to manage logistics, to track the movement of products	☐	☐
	e) Other Internet of Things devices or systems	☐	☐

* A **Radio Frequency identification-RFID** tag is a device that can be applied to or incorporated into a product or an object and transmits data via radio waves.

[21] For indicator E12 on integration of digital technology of the monitoring framework 2016-2021 – biennial or triennial

Module H: Use of 3D printing

Use of 3D printing aka additive layer manufacturing refers to the use of special printers either by the enterprise itself or the use of 3D printing services provided by other enterprises for the creation of three-dimensional physical objects using digital technology.

		Yes	No
H1.	**During 2019, did your enterprise use 3D printing:** (Filter question)		
	a) using your enterprise's 3D printers? Include use of rented or leased 3D printers	☐	☐
	b) using printing services provided by other enterprises?	☐	☐

Filter question: The next question should be answered if either H1 a) or H1 b) are answered "Yes". If both H1 a) and b) are answered "No" the respondent should be routed to I1.

		Yes	No
H2. *[22]	**During 2019, did your enterprise use 3D printing for any of the following:**		
	a) Prototypes or models for sale.	☐	☐
	b) Prototypes or models for internal use.	☐	☐
	c) Goods for sale excluding prototypes or models. (e.g. moulds, tools, parts of goods, semi-finished goods, etc.)	☐	☐
	d) Goods to be used in your enterprise's production process excluding prototypes or models. (e.g. moulds, tools, parts of goods, semi-finished goods, etc.)	☐	☐

[22] For indicator E9 on integration of digital technology of the monitoring framework 2016-2021 – biennial or triennial

Module I: Use of robotics

- An industrial robot is an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use. Most existing industrial robots are based on the robot arm with a solid base and a series of links and joints with an end effector that carries out the task.
- A service robot is a machine that has a degree of autonomy that enables it to operate in complex and dynamic environment that may require interaction with persons, objects or other devices, excluding its use in industrial automation applications. They are designed to fit their tasks, working in the air (e.g. as a drone), under water, or on land, using wheels or legs to achieve mobility with arms and end effectors to physically interact and are often used in inspection and maintenance tasks.

  Software robots (computer programs) and 3D printers are out of the scope of the following questions.

		Yes	No
I1.	**Does your enterprise use any of the following types of robots?** (Filter question)		
	a) Industrial robots (e.g. robotic welding, laser cutting, spray painting, etc.) (Please see the definition of industrial robots)	☐	☐
	b) Service robots (e.g. used for surveillance, cleaning, transportation, etc.) (Please see the definition of service robots)	☐	☐

If I1 b) = "Yes" then go to I2 else X1

		Yes	No
I2. *****[23]	**Does your enterprise use service robots for any of the following?** (Please see the definition of service robots when considering the relevant tasks mentioned below)		
	a) Surveillance, security or inspection tasks (e.g. use of autonomous airborne drones, etc.)	☐	☐
	b) Transportation of people or goods (e.g. use of automated guided vehicle, etc.)	☐	☐
	c) Cleaning or waste disposal tasks	☐	☐
	d) Warehouse management systems (e.g. palletising, handling goods, etc.)	☐	☐
	e) Assembly works performed by service robots	☐	☐
	f) Robotic store clerk tasks	☐	☐
	g) Construction works or damage repair tasks	☐	☐

Module X: Background information*[24]

(X1-X3) 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 2019**	…
X2.	**Average number of persons employed, during 2019**	…
X3.	**Total turnover (in monetary terms, excluding VAT), for 2019**	…

[23] For indicator E10 on integration of digital technology of the monitoring framework 2016-2021 - biennial or triennial
[24] For indicators E31, E32, E33 (background characteristics) of the monitoring framework 2016-2021

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

3D printing

(Additive Layer Manufacturing - ALM)

Additive Layer Manufacturing (ALM) and 3D printing are equivalent terms for the same process. The latter is the popular term widely known while the former describes more precisely the process of joining materials to make physical objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies such as CNC machining or milling (e.g. lathe) that uses a rotating milling cutter to remove material from a solid block of material.

3G,

3rd Generation

4G,

4th Generation

3G or 3rd Generation, is a family of standards for mobile telecommunications (W-CDMA, CDMA2000, etc.) defined by the International Telecommunication Union (ITU). 3G devices allow simultaneous use of speech and data services and higher data transmission 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.

4G is the fourth generation of cellular wireless standards. It is a successor of the 3G and 2G families of standards. The ITU-R organization specified the International Mobile Telecommunications Advanced requirements for 4G standards, setting peak speed requirements for 4G service at 100 Mbit/s for high mobility communication (such as from trains and cars) and 1 Gbit/s for low mobility communication (such as pedestrians and stationary users).

Source: http://en.wikipedia.org/wiki/; http://www.itu.int

App(s)

A mobile app, short for mobile application or just app, is application software designed for a specific purpose (e.g. entertainment, shopping, etc.), downloaded and used on computers depending on their operating system. (e.g. portable devices such as tablets, Smartphones, etc.)

Further information: http://en.wikipedia.org/wiki/Mobile_app; http://www.techopedia.com/definition/2953/mobile-application-mobile-app

Business process

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

Chatbots or Virtual agent

A chatbot or virtual agent is a computer generated, animated, artificial intelligence virtual character that serves as an online customer service representative.

Counterfeiting

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

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.

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

EDI, EDI-type

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 suitable for automated processing.

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

EDI e-commerce

Orders initiated with EDI-type messages. 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 suitable for automated 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

Electronic invoices comprises payment information exchanged between business parties – enterprises, public authorities - involved in commercial transactions, transmitted via the internet or other electronic means.

A structured eInvoice is an invoice where all data are in digital format suitable for automated processing. A distinctive feature of a structured eInvoice is automation: a structured eInvoice will be transferred automatically in inter-company invoicing from the invoice issuer's or service provider's system directly into the recipient's financial or other application.

The eInvoice data could be structured according to the XML, EDI or other similar format.

Unstructured invoices in an electronic form are not suitable for automated processing (e.g. emails, e-mail attachment as pdf, images in TIF, JPEG or other 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 or apps, 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.

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.

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.

Internet of Things (IoT)

The Internet of Things (IoT) refers to interconnected devices or systems, often called "smart" devices or "smart" systems. They collect and exchange data and can be monitored or remotely controlled via the Internet, through software on any kind of computers, smartphones or through interfaces like wall-mounted controls.

Marketplace(s)

(e-commerce marketplaces)

The term "e-commerce marketplaces" refers to websites or apps used by several enterprises for trading products e.g. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, etc.). E-commerce marketplaces are different from e-commerce platforms. The latter provide scalable, self-made online solutions for business that would like to set up their own e-commerce website.

Machine learning (incl. deep learning)

Machine learning (e.g. deep learning) involves 'training' a computer model to better perform an automated task, e.g. pattern recognition.

Natural language generation (NLG)

Natural language generation is the ability for a computer program to convert data into natural language representation.

Natural language processing (NLP)	Natural language processing is the ability for a computer program to understand human language as it is spoken.
Office (automation) software	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
Robots - Robotics	According to their intended application, robots may be industrial or service robots. An industrial robot is an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use in industrial automation applications. A service robot is a machine that has a degree of autonomy and is able to operate in complex and dynamic environment that may require interaction with persons, objects or other devices, excluding its use in industrial automation applications.
Sales via website (web sales)	Web sales are sales made via an online store (web shop), via web forms on a website or extranet, or apps. 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-type 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
Social media	In the context of the ICT usage survey, the central point of the social media is to establish and maintain social relationships within and around the enterprise. From that aspect we refer to the use of social media (as applications based on internet technology or communication platforms) and the use of Web 2.0 technologies and tools for connecting, conversing and creating content online, with customers, suppliers, or other partners, or within the enterprise. It is not simply the use of Web 2.0 platform (although it is the enabling technology) but the use of social media implies the development of new forms of collaboration and information management within the enterprises as well as helping employees, customers and suppliers to collaborate, to innovate, to share, and to organize knowledge and experiences. The following are the main social media communication platforms and tools for enterprises: **Social networks or websites** are applications based on internet technologies that enable users to connect by creating personal information profiles, share interest and/or activities, share ideas, invite others to have access to their profile and create communities of people with common interests. **Blogs:** A blog is a website or a part of a website, that is updated frequently, either owned by individuals, interest groups of individuals or corporate (in the current context it is the blog of the enterprise and not other blogs to which employees contribute). An update (called an entry or a post) is usually quite short and readers can respond, share, comment or link to the entry online. Blogs can be used either within an enterprise (corporate blog) or for communicating with customers, business partners or other organisations. **Content communities** offer the possibility of sharing media content between users. Photo and video services / Podcasting: A podcast (or non-streamed webcast) is a series of digital media files (either audio or video in various file

format e.g. .aiff, .wav, .midi etc for the former and .mov, .avi etc for the latter) that are released episodically. The mode of delivery differentiates podcasting from other means of accessing media files over the internet, such as direct download, or streamed webcasting. Presentation sharing websites offer the possibility to share presentations, documents and professional videos over the internet (share publicly or privately among colleagues, clients, intranets, networks etc). These websites offer the possibility to upload, update and access presentations and/or documents. Very often, presentation sharing websites are linked to blogs and other social networking services or websites.

Microblogging refers to the posting of very short updates about oneself. It is in contrast to long-form blogging, where there are usually at least a few hundred words. Microblog posts usually involve a few hundred characters or less. For example, in the context of microblogging services Tweets (Twitter) are text-based posts of up to 140 characters displayed on the user's profile page.

Wiki: A wiki is a website that allows the creation and editing of any number of interlinked web pages via a web browser using a simplified markup language or a WYSIWYG text editor. Wikis are typically powered by wiki software and are often used collaboratively by multiple users. Examples include community websites, corporate intranets, and knowledge management systems.

Speech recognition

Speech recognition is the ability of a machine or program to identify words and phrases in spoken language and convert them to a machine-readable format.

UBL

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

Web e-commerce

Web (e-commerce) sales are sales made via an online store (web shop), via web forms on a website or extranet, or apps regardless of how the web is accessed (computer, laptop, mobile phone etc.)

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

Webform

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/Webform

Website

Location on the World Wide Web identified by a Web address. Collection of Web files on a particular subject that includes a beginning file called a home page. Information is encoded with specific languages (Hypertext mark-up language (HTML), XML, Java) readable with a Web browser, like Netscape's Navigator or Microsoft's internet Explorer.

Wireless access

The use of wireless technologies such as radio-frequency, infrared, microwave, or other types of electromagnetic or acoustic waves, for the last internal link between users devices (such as computers, printers, etc) and a LAN backbone line(s) within the enterprise's working premises. It includes mainly Wi-fi and Bluetooth technologies.

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

XML 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/