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CONFIDENTIAL

STATISTICAL SERVICE
1444 NICOSIA

SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2021

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	S/N	
	Legal Status	
	Enterprise Size	
	NACE	

GENERAL INFORMATION:

1. The aim of the survey is to collect data about the use of information and communication technologies by the enterprises, the access and use of the Internet, e-commerce, sharing of information electronically within the enterprise, use of cloud computing services, internet of things and the use of Artificial Intelligence. These data are necessary for the implementation of policy programmes of both the Goverment and the Private Sector.

2. All requested information must be supplied by the **IT manager of the enterprise**. Regarding the enterprise's background information (Module X), these should be provided by the General Manager or by the Accountant or by any other person responsible.

3. An authorised employee of the Statistical Service will contact the IT manager of the enterprise by phone in order to fill in the questionnaire.

4. Definitions of the terms used in the questionnaire can be found in the glossary attached.

5. The reference period for the data is the survey period (2021), unless the question refers to other specific period.

6. The collection of data is carried out in accordance with the Statistics Law 15(I)/2000. The Statistical Service is bound by the Statistics Law to treat all information obtained as **CONFIDENTIAL.** Your responses will be used solely for statistical purposes.

S. Karagiorgis
Director
Statistical Service

January, 2021

MODULE A: Access and use of the Internet

A1. **Please answer (a) or (b):**

a) **How many persons employed have access to the Internet for business purposes? (including fixed line and mobile connection)**

or

b) **Indicate an estimate of the percentage of the total number of persons employed who have access to the Internet for business purposes.**

|_|_|_|_|

|_|_|_| %

→ **If "0" Go to X1**

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

A2. **Does your enterprise use any type of fixed line connection to the Internet?** (e.g. ADSL, SDSL, VDSL, fiber optics technology (FTTH), cable technology (CableNet), etc.)

Yes	No
☐	☐ → Go to A4

A3. **What is the maximum contracted download speed of the fastest fixed line Internet connection of your enterprise?**

a) Less than 30 Mbit/s	☐
b) At least 30 Mbit/s 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	☐

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.

		Yes	No
A4.	**Does your enterprise provide portable devices that allow a mobile connection to the Internet using mobile telephone networks, for business purposes ?** (e.g. via portable computers or other portable devices such as Smartphones)	☐	☐ → Go to A6
A5.	a) **How many persons employed use a portable device provided by the enterprise, that allows Internet connection via mobile telephone networks, for business purposes?** (e.g. portable computers, tablets or other portable devices like Smartphones) or b) **Indicate an estimate of the percentage of the total number of persons employed who use a portable device provided by the enterprise, that allows Internet connection via mobile telephone networks, for business purposes.**	☐☐☐☐ ☐☐☐ %	

Use of a Website

		Yes	No
A6.	**Does your enterprise have a Website[31]?** **If yes, give the address of your website:**	☐	☐ → Go to A8

A7. **Does the Website of your enterprise have any of the following?**

	Yes	No
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 in the website for regular/recurrent visitors	☐	☐
f) Links or references to the enterprise's social media[26] profiles	☐	☐

Use of Social Media[25]

Enterprises using social media are considered those that have a user profile, an account or a user licence depending on the requirements and the type of the social media.

A8. **Does your enterprise use any of the following social media? (not solely used for paid adverts)**

	Yes	No
a) Social networks (e.g. Facebook, LinkedIn, Xing, Viadeo, Yammer, etc.)	☐	☐
b) Enterprise's blog or microblogs (e.g. Twitter, Present.ly, etc.)	☐	☐
c) Multimedia content sharing websites (e.g. YouTube, Flickr, SlideShare, Instagram, Pinterest, Snapchat etc.)	☐	☐
d) Wiki based knowledge sharing tools	☐	☐

Module B: e-Commerce

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

In e-commerce sales of goods or services, the order is placed via web sites, apps or EDI-type messages by methods specifically designed for the purpose of receiving orders.
The payment may be done online or offline.

e-commerce sales do not include orders written in e-mail.

Please report web and EDI-type sales separately. They are defined by the method of placing the order:

- WEB sales: the customer places the order on a website or through an app
- EDI type sales:an EDI-type order message is created from the business system of the customer

Web sales of goods or services

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

- the enterprise's websites or apps :
  - online store (webshop)
  - web forms[30]
  - extranet[15] (webshop or web forms)
  - booking/reservation applications for services
  - apps[3] 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.	During 2020, did your enterprise have web sales of goods and services via:	Yes	No
a)	your enterprise's website or "apps"? (including those of parent or affiliate enterprises, extranets)	☐	☐
b)	an e-commerce marketplace website or "apps" used by several enterprises for trading products? (e.g. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, etc.)	☐	☐

If both B1 a) and B1 b) = "No" then go to B10

B2.	Please state for 2020 (answer (a) or (b)):	
a)	What was the value of your web sales of good and services (in monetary terms, excluding VAT)	€ ☐☐☐☐☐☐☐☐
	If you can't provide this value,	
b)	Indicate an estimate of the percentage of the total turnover resulting from web sales of goods and services	☐☐☐ %

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 2020 for the following:
(Please refer to the value of web sales you **repeorted in B2**)
If you cannot provide the exact percentages an approximation will suffice.

a)	via your enterprise's website or "apps"? (including extranets)	☐☐☐ %
b)	via an e-commerce marketplace [18] website or "apps" used by several enterprises for trading products? (e.g. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, etc.)	☐☐☐ %
c)	**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 2020?

a)	Via one	☐
b)	Via two	☐
c)	Via more than two	☐

If only B4a = "Yes" then go to B6

B5.	Did more than half of your turnover from e-commerce marketplaces in 2020 come from only one e-commerce marketplace?	Yes	No
		☐	☐

B6. **Please provide a percentage breakdown of the value of web sales in 2020 by type of customer** (estimates in percentage of the monetary values, excluding VAT)

a) **B2C** (Sales to private consumers)	___ %
b) **B2B** (Sales to other enterprises) **and B2G** (Sales to public authorities)	___ %
c) **TOTAL**	100 %

B7. **During 2020, did your enterprise have web sales to customers located in the following geographic areas?**	**Yes**	**No**
a) Own country	☐	☐
b) Other EU countries	☐	☐
c) Rest of the world	☐	☐

The following question (B8) should only be answered if at least two of the above possible responses in question B7 a) , b) or c) are answered with "Yes", otherwise check next filter instruction before question B9

B8. **What was the percentage breakdown of the value of web sales in 2020 to customers located in the following geographic areas?** (Please refer to value of web sales you reported in B2)
If you cannot provide the exact percentages an approximation will suffice.

a) Own country	___ %
b) Other EU countries	___ %
c) Rest of the world	___ %
TOTAL	100 %

The following question (B9) should only be answered if B7 b) = "Yes" otherwise go to B10

B9. **Regarding web sales to other EU countries: did your enterprise experience any of the following difficulties during 2020?**	**Yes**	**No**
a) High costs of delivering or returning products when selling to other EU countries	☐	☐
b) Difficulties related to resolving complaints and disputes when selling to other EU countries	☐	☐
c) Adapting product labelling for sales to other EU countries	☐	☐
d) Lack of knowledge of foreign languages for communicating with customers in other EU countries	☐	☐
e) Restrictions from your business partners to sell to certain EU countries	☐	☐
f) Difficulties related to the VAT system in EU countries (e.g. uncertainty regarding VAT treatment in different countries)	☐	☐

EDI-type sales

EDI-type sales[10] 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)

B10. **During 2020, did your enterprise have EDI-type sales of goods or services?**	**Yes** ☐	**No** ☐ → **Go to C1**
B11. **Please state for 2020 (answer (a) or (b)):**		
a) **The value of your EDI-type sales of goods and services** **(in monetary terms, excluding VAT)**	€ ☐☐☐☐☐☐☐☐☐	
If you can't provide this value, **b)** **Indicate an estimate of the percentage of the total turnover resulting from EDI-type sales**	☐☐☐ %	

B12. **During 2020, did your enterprise sellvia EDI-type messages to customers located in the following geographic areas?**	**Yes**	**No**
a) Own country	☐	☐
b) Other EU countries	☐	☐
c) Rest of the world	☐	☐

MODULE C: Sharing of information electronically within the enterprise (Scope: enterprises with access to the internet, i.e. if A1>0)			
An ERP (Enterprise Resource Planning) is a software used to manage resources by sharing information among different functional areas (e.g. accounting, planning, production, marketing, etc.). ERP software can be off-the-shelf software, customised to the needs of the enterprise or self-created software. (e.g. SAP)			
C1.	**Does your enterprise use ERP software?**	**Yes** ☐	**No** ☐
CRM (Customer Relationship Management) refers to any software application for managing information about customers			
C2.	**Does your enterprise use CRM software to manage:**	**Yes**	**No**
	a) the collection, storing and making available information on customers to various business functions	☐	☐
	b) the analysis of information on customers for marketing purposes, (e.g. setting prices, sales promotion, choosing distribution channels, etc.)	☐	☐

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)

		Yes	No
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)	☐	☐ → Go to E1

		Yes	No
D2.	**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)**		
a)	E-mail (e.g. Email Enterprise, Microsoft Exchange Online / Office 365, etc.) (as a cloud computing service)	☐	☐
b)	Office software[22] (e.g. word processors, spreadsheets (e.g. Microsoft Office Cloud), etc.)) (as a cloud computing service)	☐	☐
c)	Finance or accounting software applications (e.g. StepStone, Hubwoo, SAP Business ByDesign, etc.) (as a cloud computing service)	☐	☐
d)	Enterprise Resource Planning (ERP) software applications (as a cloud computing service)	☐	☐
e)	Customer Relationship Management (CRM) software applications (as a cloud computing service)	☐	☐
f)	Security software applications (e.g. antivirus program, network access control) (as a cloud computing service)	☐	☐
g)	Hosting the enterprise's database(s) (as a cloud computing service)	☐	☐
h)	Storage of files (as a cloud computing service)	☐	☐
i)	Computing power to run the enterprise's own software (as a cloud computing service)	☐	☐
j)	Computing platform providing a hosted environment for application development, testing or deployment (e.g. reusable software modules, application programming interfaces (APIs)) (as a cloud computing service)	☐	☐

Module E: Internet of Things

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

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:

a) "smart"-meters, -thermostats, -lamps (lights), -alarm systems, -smoke detectors, -door locks, -cameras

b) Sensors, RFID tags connected to a base station that allows them to be managed via the internet;

Please **exclude** plain detection and sensors (e.g. motion, sound, temperature, smoke, etc.) and RFID tags that cannot be monitored or remotely controlled via the internet)

Internet of Things **may include various types of network connections** via WAN, WiFi, LAN, Bluetooth, ZigBee, Virtual Private Networks (VPN) etc.

E1.	**Does your enterprise use interconnected devices or systems that can be monitored or remotely controlled via the internet (Internet of Things)?**	**Yes** ☐	**No** ☐ → **Go to F1**
E2.	**Does your enterprise use interconnected devices or systems that can be monitored or remotely controlled via the internet (Internet of Things) for any of the following?**	**Yes**	**No**
	a) for energy consumption management (e.g. "smart"-meters, -thermostats,-lamps (lights))	☐	☐
	b) for premises' security (e.g. "smart" -alarm systems, -smoke detectors, -door locks, -security cameras)	☐	☐
	c) for production processes (e.g. sensors or RFID tags that are monitored/controlled via the internet and used to monitor or automate the process)	☐	☐
	d) for logistics management (e.g. sensors monitored/controlled via the internet for tracking products or vehicles in warehouse management)	☐	☐
	e) for condition-based maintenance (e.g. sensors monitored/controlled via the internet to monitor maintenance needs of machines or vehicles)	☐	☐
	f) for customer service (e.g. "smart" cameras or sensors monitored/controlled via the internet to monitor customers' activities or offer them a personalised shopping experience)	☐	☐
	g) for other purposes	☐	☐

Module F: Artificial Intelligence

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

Artificial intelligence refers to systems that use technologies such as: text mining, computer vision, speech recognition, natural language generation, machine learning, deep learning to gather and/or use data to predict, recommend or decide, with varying levels of autonomy, the best action to achieve specific goals.

Artificial intelligence systems can be purely software based, e.g.:

- chatbots and business virtual assistants based on natural language processing,
- face recognition systems based on computer vision or speech recognition systems,
- machine translation software,
- data analysis based on machine learning,etc.

or embedded in devices, e.g.:

- autonomous robots for warehouse automation or production assembly works
- autonomous drones for production surveillance or parcel handling, etc.

F1.	**Does your enterprise use any of the following Artificial Intelligence technologies?**	Yes	No
	a) Technologies performing analysis of written language (text mining)	☐	☐
	b) Technologies converting spoken language into machine-readable format (speech recognition)	☐	☐
	c) Technologies generating written or spoken language (natural language generation)	☐	☐
	d) Technologies identifying objects or persons based on images (image recognition, image processing)	☐	☐
	e) Machine learning (e.g. deep learning) for data analysis	☐	☐
	f) Technologies automating different workflows or assisting in decision making (Artificial Intelligence based software robotic process automation)	☐	☐
	g) Technologies enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, autonomous drones)	☐	☐

If F1 a) to g) = "No" then go to F4

F2.	**Does your enterprise use Artificial Intelligence software or systems for any of the following purposes?**	Yes	No
	a) **for marketing or sales** e.g. • chatbots based on natural language processing for customer support, • customer profiling, price optimisation, personalised marketing offers, market analysis based on machine learning, etc.	☐	☐
	b) **for production processes** e.g. • predictive maintenance based on machine learning, • tools to classify products or find defects in products based on computer vision, • autonomous drones for production surveillance, security or inspection tasks, • assembly works performed by autonomous robots, etc.	☐	☐
	c) **for organisation of business administration processes** e.g. • business virtual assistants based on machine learning and/or natural language processing, • voice to text conversion based on speech recognition for document drafting, • automated planning or scheduling based on machine learning, • machine translation, etc.	☐	☐

	d) **for management of enterprises** e.g. • machine learning to analyse data and help make investment or other decisions, • sales or business forecasting based on machine learning, • risk assessment based on machine learning, etc.	☐	☐
	e) **for logistics** e.g. • autonomous robots for pick-and-pack solutions in warehouses, • route optimization based on machine learning, • autonomous robots for parcel shipping, tracing, distribution and sorting, • autonomous drones for parcel delivery, etc.	☐	☐
	f) **for ICT security** e.g. • face recognition based on computer vision for authentication of ICT users, • detection and prevention of cyber-attacks based on machine learning, etc.	☐	☐
	g) **for human resources managementor recruiting** e.g. • candidates pre-selection screening, automation of recruiting based on machine learning, • employee profiling or performance analysis based on machine learning, • chatbots based on natural language processing for recruiting or supporting human resources management, etc.	☐	☐
F3.	**How did you enterprise acquire the Artificial Intelligence software or systems that it uses?**	**Yes**	**No**
	a) They were developed by own employees (including those employed in parent or affiliate enterprise)	☐	☐
	b) Commercial software or systems were modified by own employees (including those employed in parent or affiliate enterprise)	☐	☐
	c) Open-source software or systems were modified by own employees (including those employed in parent or affiliate enterprise)	☐	☐
	d) Commercial software or systems ready to use were purchased (including examples where it was already incorporated in a purchased item or system)	☐	☐
	e) External providers were contracted to develop or modify them	☐	☐

	Questions F4 and F5 are presented only to respondents who answered 'No' to F1a)-g) i.e. enterprises that did not use any of the Artificial Intelligence technologies listed in question F1.		
F4.	**Has your enterprise ever considered using any of the Artificial Intelligence technologies listed in question F1?**	**Yes** ☐	**No** ☐ → Go to X1
F5.	**What are the reasons for your enterprise not to use any of the Artificial Intelligence technologies listed in question F1?**	**Yes**	**No**
	a) The costs seem too high	☐	☐
	b) There is a lack of relevant expertise in the enterprise	☐	☐
	c) Incompatibility with existing equipment, software or systems	☐	☐
	d) Difficulties with availability or quality of the necessary data	☐	☐
	e) Concerns regarding violation of data protection and privacy	☐	☐
	f) Lack of clarity about the legal consequences (e.g. liability in case of damage caused by the use of Artificial Intelligence)	☐	☐
	g) Ethical considerations	☐	☐
	h) Artificial Intelligence technologies are not useful for the enterprise	☐	☐

	Module G: Covid - 19 impact			
G1.	**During 2020, did the enterprise increase the:**	**Yes**	**No**	**Not Applicable**
	a) percentage of persons employed having remote access to the e-mail system of the enterprise (via computers or mobile phones)	☐	☐	☐
	b) percentage of persons employed having remote access the ICT systems of the enterprise other than e-mail (via computers or mobile phones)	☐	☐	☐
	c) number of remote meetings conducted by the enterprise (e.g. via Skype, Zoom, MS Teams, etc.) (via computers or mobile phones)	☐	☐	☐
		Fully	**Partly**	**Not at all**
G2.	a) **(If G1a)=yes)** To what degree were these changes (remote access to the e-mail system of the enterprise) due to the covid-19 pandemic?	☐	☐	☐
	b) **(If G1b) =yes)** To what degree were these changes (remote access the ICT systems of the enterprise other than e-mail) due to the covid-19 pandemic?	☐	☐	☐
	c) **(If G1c) =yes)** To what degree were these changes (increase the number of remote meetings conducted by the enterprise) due to the covid-19 pandemic?	☐	☐	☐
G3.	**During 2020, due to the Covid-19 pandemic did your enterprise start or increased efforts to sell goods or services via internet (via website or apps, marketplaces or EDI-type messages)?**		**Yes** ☐	**No** ☐

MODULE X: Background information	
X1. Main economic activity of the enterprise, during 2020 (description)	.....
X2. Average number of employees and self-employed persons (persons employed), during 2020	
X3. Total turnover (in monetary terms, excluding VAT), for 2020	€

MODULE J: General Information	
J1.	If you have any comments about the survey, please write down below:
	.....
J2.	Name of the person who answered the questionnaire:
	Position in the enterprise:
	Telephone:
	Fax:
	E-mail:
J3.	Name of the person who completed the questionnaire:
	Time needed to fill out this questionnaire:
	Signature:
	Date:

TO BE COMPLETED BY THE ENUMERATOR:

J4.	**Completion of the questionnaire:**
	a) The questionnaire is completed..... 1
	b) The enterprise has closed..... 2
	c) The enterprise can not be located..... 3
	d) The enterprise refuses to cooperate..... 4
	e) The enterprise was closed during the collection of the data..... 5
	f) Merged with another enterprise..... 6
	g) Other reasons for no completion 7
	Please specify:
	.....
	.....
	.....

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J5.	**Name of the person who checked the questionnaire:**

GLOSSARY

1	**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
2	**Bluetooth**	Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances using short-wavelength UHF radio waves in the industrial, scientific and medical radio bands, from 2.400 to 2.485 GHz, and building personal area networks (PANs). Source: https://en.wikipedia.org/wiki/Bluetooth
3	**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
4	**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.
5	**Computer Vision**	Computer vision tasks include methods for acquiring, processing, analysing and understanding digital images, and extraction of high-dimensional data from the real world in order to produce numerical or symbolic information, e.g. in the forms of decisions. Source: https://en.wikipedia.org/wiki/Computer_vision
6	**Cloud computing**	Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. There are three service models of cloud computing services:Software as a Service (SaaS), Platform as a Service (PaaS)andInfrastructure as a Service (IaaS). Source: https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf
7	**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.

8	**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
9	**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
10	**EDI e-Commerce**	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 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
11	**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

12	**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.
13	**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.
14	**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.
15	**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.
16	**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.
17	**LAN**	A local area network (LAN) is a computer network that interconnects computers within a limited area such as a residence, school, laboratory, university campus or office building. By contrast, a wide area network (WAN) not only covers a larger geographic distance, but also generally involves leased telecommunication circuits. Source: https://en.wikipedia.org/wiki/Local_area_network

18	**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.
19	**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.
20	**Natural language generation (NLG)**	Natural language generation is the ability for a computer program to convert data into natural language representation.
21	**Natural language processing (NLP)**	Natural language processing is the ability for a computer program to understand human language as it is spoken.
22	**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.
23	**Online payment**	An online payment is an integrated ordering-payment transaction
24	**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.
25	**Robotic process automation (Artificial Intelligence based)**	Artificial Intelligence based robotic process automation refers to software that automates business processes (e.g. workflows automation) based on Artificial Intelligence technologies.
26	**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

27 **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.

28	**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.
29	**Text mining**	Text mining refers to the use of advanced techniques for automated detection of patterns in (large) texts.
30	**VPN**	A virtual private network (VPN) extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. Applications running on a computing device, e.g., a laptop, desktop, smartphone, across a VPN may therefore benefit from the functionality, security, and management of the private network. Encryption is a common, though not an inherent, part of a VPN connection. Source: https://en.wikipedia.org/wiki/Virtual_private_network
31	**WAN**	A wide area network (WAN) is a telecommunications network that extends over a large geographical area for the primary purpose of computer networking. Wide area networks are often established with leased telecommunication circuits. Source: https://en.wikipedia.org/wiki/Wide_area_network
32	**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
33	**Web form**	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
34	**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.
35	**Wi-Fi**	Wi-Fi (or Wi-fi, WiFi, Wifi, wifi), short for 'Wireless Fidelity', is a set of ethernet standards for wireless local area networks (WLAN) currently based on the IEEE 802.11 specifications. New standards beyond the 802.11 specifications, such as 802.16 have been developed. Wi-Fi was intended to be used for wireless devices and LANs, but is now often used for internet access (one of the main international standards for wireless broadband internet access and networking, with widespread use in business, homes and public spaces). It is based on radio signals with a frequency of 2.4 GHz and theoretically capable of speeds of over 54 Mbit/s. It enables a person with a wireless-enabled computer or personal digital assistant to connect to the internet when close to an access point called a hotspot.
36	**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.
37	**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/

38 **ZigBee**

ZigBee is an IEEE 802.15.4-based specification for a suite of high-level communication protocols used to create personal area networks with small, low-power digital radios, such as for home automation, medical device data collection, and other low-power low-bandwidth needs, designed for small scale projects which need wireless connection. Hence, ZigBee is a low-power, low data rate, and close proximity (i.e., personal area) wireless ad hoc network.
Source: https://en.wikipedia.org/wiki/Zigbee