SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES
Glossary

3D printing

(ALM: Additive Layer Manufacturing)

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 4th 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/3G; http://en.wikipedia.org/wiki/4G; 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

Authentication methods

Authentication is a way to ascertain that a user is who they claim to be. This is usually performed by presenting one or more challenges to the user. There are three broad categories of challenges:

1) Something the user knows. The user is asked for a secret, known only to her. Typical examples are passwords and PINs, but can also take the form of security questions.

2) Something the user has. The user is in possession of a unique token, like a key. In the case of computer tokens, this can take the form of an NFC tag, or a device.

3) Something the user is. Aka biometrics. The user is asked to present a part of her body that forms unique and repeatable patterns, like fingerprints, voice, or face recognition.

Source: https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/authentication-methods

Biometric authentication

Biometric authentication is a security process that relies on the unique biological characteristics of an individual to verify that he is who is says he is. Biometric authentication systems compare a biometric data capture to stored, confirmed authentic data in a database. If both samples of the biometric data match, authentication is confirmed. Typically, biometric authentication is used to manage access to physical and digital resources such as buildings, rooms and computing devices.

Types of biometric authentication technologies:

Retina scans produce an image of the blood vessel pattern in the light-sensitive surface lining the individual's inner eye.

Iris recognition is used to identify individuals based on unique patterns within the ring-shaped region surrounding the pupil of the eye.

Fingerscanning, the digital version of the ink-and-paper fingerprinting process, works with details in the pattern of raised areas and branches in a human finger image.

Finger vein ID is based on the unique vascular pattern in an individual's finger.

Facial recognition systems work with numeric codes called faceprints, which identify 80 nodal points on a human face.

Voice identification systems rely on characteristics created by the shape of the speaker's mouth and throat, rather than more variable conditions.

Source: https://searchsecurity.techtarget.com/definition/biometric-authentication

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
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
Chatbot 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.
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) and Infrastructure as a Service (IaaS). Source: https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf
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
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.
Data	Representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automated means. Any representations such as characters or analogue quantities to which meaning is or might be assigned. Source: http://www.its.bldrdoc.gov/projects/devglossary/_data.html

DoS attack	A Denial-of-Service attack (DoS attack) or Distributed Denial-of-Service attack (DDoS attack) is an attempt to make a computer resource unavailable to its intended users. Although the means to carry out, motives for, and targets of a DoS attack may vary, it generally consists of the concerted efforts of a person or persons to prevent an internet site or service from functioning efficiently or at all, temporarily or indefinitely. Perpetrators of DoS attacks typically target sites or services hosted on high-profile web servers such as banks, credit card payment gateways, and even root name servers.
	One common method of attack involves saturating the target (victim) machine with external communications requests, such that it cannot respond to legitimate traffic, or responds so slowly as to be rendered effectively unavailable. In general terms, DoS attacks are implemented by either forcing the targeted computer(s) to reset, or consuming its resources so that it can no longer provide its intended service or obstructing the communication media between the intended users and the victim so that they can no longer communicate adequately.
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 E-invoice is an invoice where all data are in digital format suitable for automated processing. A distinctive feature of a structured E-invoice is automation: a structured E-invoice will be transferred automatically in inter-company invoicing from the invoice issuer's or service provider's system directly into the recipient's financial or other application.
	The E-invoice 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 TIFF, 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.
GPS	The Global Positioning System (GPS) is a satellite-based radionavigation system. Is one of the global network of satellites that enable satellite navigation through GPS signals. GPS receiver anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites can determine location, time, and velocity using this information. Source: https://en.wikipedia.org/wiki/Global_Positioning_System; https://en.wikipedia.org/wiki/GPS_signals
Information	1) Facts, data, or instructions in any medium or form. 2) The meaning that a human assigns to data by means of the known conventions used in their representation. Source: http://www.its.bldrdoc.gov/projects/devglossary/_information.html
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.
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.
Intrusion	An intrusion is an attempt to bypass security controls on an information system. Means of intrusion can be eavesdropping, viruses, worms, trojan horses, logic or time bombs, brute force attacks, etc. Intrusion detection is a process with the purpose of detecting intrusions or attempts of intrusions into a computer or network to compromise the confidentiality, integrity or availability by observation of system, application and user activity as well as network traffic. Intrusion detection systems take preventive actions against intrusions without direct human intervention.

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
Machine learning	Machine learning (e.g. deep learning) involves "training" a computer model to better perform an automated task, e.g. pattern recognition.
Malicious software	Malicious software, also known as "malware" is any piece of software that performs undesirable operations such as data theft or some other type of computer compromise. Source: https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/malware
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.
Message	Any thought or idea expressed briefly in a plain or secret language, prepared in a form suitable for transmission by any means of communication. Source: http://www.its.bldrdoc.gov/projects/devglossary/_message.html
Mobile broadband	Mobile broadband (mobile connection to the internet over telephone networks) is the name used to describe various types of wireless high-speed internet access through a portable modem, telephone or other device (viz. 3G). Source: http://en.wikipedia.org/wiki/Mobile_broadband
NLG	Natural Language Generation (NLG) is the ability for a computer program to convert data into natural language representation.
NLP	Natural Language Processing (NLP) 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.
Pharming	The term "pharming" connotes an attack to redirect the traffic of a website to another, bogus website in order to acquire sensitive information.
Phishing	"Phishing" is a criminally fraudulent attempt to acquire sensitive information such as usernames, passwords and credit card details by masquerading as a trustworthy entity in an electronic communication.
Ransomware	Ransomware is a type of malware (like viruses, Trojans, etc.) that infect the computer systems of users and manipulates the infected system in a way, that the victim cannot (partially or fully) use it and the data stored on it. The victim usually shortly after receives a blackmail note by pop-up, pressing the victim to pay a ransom (hence the name) to regain full access to system and files. Source: https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/ransomware
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.

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.
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.

Text mining	Text mining refers to the use of advanced techniques for automated detection of patterns in (large) texts.
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
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
WAN	A Wide Area Network (WAN) is a telecommunications network that extends over a large geographical area for the primary purpose of computer networking. WANs are often established with leased telecommunication circuits. Source: https://en.wikipedia.org/wiki/Wide_area_network
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
Webserver	A web server is a computer program that delivers (serves) content, such as web pages, using the Hypertext Transfer Protocol (HTTP), over the World Wide Web. The term web server can also refer to the computer or virtual machine running the program. Source: http://en.wikipedia.org/wiki/Web_server
Website (own or shared)	Location on the World Wide Web identified by a Web address (e.g.: http://www.). Collection of Web pages on a particular subject that includes a home page which normally allows the access to the other web pages. Information is encoded with specific languages (e.g. Hypertext mark-up language (HTML), XML, Java) readable with a Web browser, like e.g. Microsoft Edge, Internet Explorer, Google Chrome, Mozilla Firefox, Safari. All publicly accessible websites collectively constitute the World Wide Web. There are also private websites that can only be accessed on a private network, such as a company's internal website for its employees. An own website, created by the enterprise, allows this enterprise to customize the content, design and features of the website. It is irrelevant whether this website is made available via the enterprise's own or a third party's IT infrastructure. A shared website is a website representing more than one enterprise (e.g. an enterprise group).
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.

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 (XML) 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/
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