Information and Knowledge Society

Information and Communication Technologies Usage and e-Commerce in Enterprises 2016

Portugal among the EU countries with the highest rate of mobile broadband usage by enterprises

- 70% of enterprises with 10 or more persons employed use mobile broadband, with a growth rate above the UE average since 2010;

- 45% of enterprises with 10 or more persons employed use social networks as a strategy to connect to customers, suppliers or business partners, 7 p.p. above the previous year;

- 64% of the enterprises reported having a website, with no significant improvement in the indicator when compared to the EU average;

- 41% of enterprises sent electronic invoices to other enterprises or to public authorities in 2015, but only 27% did it in an electronic format suitable for automated processing;

- 18% of enterprises with 10 or more persons employed have acquired cloud computing services, mainly electronic mail;

- 13% of enterprises with 10 or more persons employed analyzed Big data in 2015, mainly using geolocation data (57%) and data generated from social media (54%) as data sources.

Mobile broadband connection by portable devices continues to widespread

The 2016 results of the Survey on Information and Communication Technologies Usage indicate that 70% of enterprises with 10 or more persons employed use mobile broadband to connect to the Internet, with a further increase in the series: 2 p.p. compared to the previous year (68%).

In contrast to the situation at the beginning of the decade, where the proportion of national enterprises with 10 or more persons employed (25%) was below the EU-15 (29%) and the EU-28 (27%) averages, the gains over the following five years placed Portugal in 2015 among the countries with the highest mobile broadband penetration among enterprises, although still far from the 85% and 92% recorded in Denmark and Finland.

Usage of mobile broadband by enterprises with 10 or more persons employed, Portugal and EU, 2010-2016
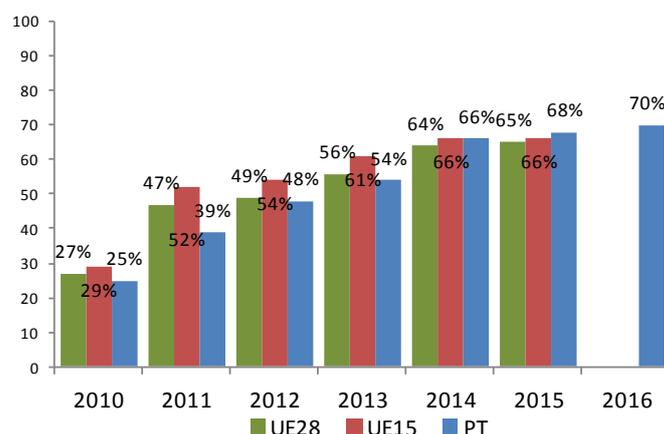
With regard to mobile broadband access (3G or 4G) in Portugal and in 2016, 61% of enterprises do it by mobile phone, PDA or Smartphone, and 52% by portable computer (for example, Laptop, notebook, netbook).

In 2016, 71% of enterprises under review provide portable devices with mobile internet connection to its workers.

The proportion of enterprises using mobile broadband increases with the size of enterprises: it accounts for 67% of enterprises with 10 to 49 persons employed, 82% of medium-sized enterprises (50 to 249 persons employed) and 96% of large enterprises (250 or more persons employed). Small-sized enterprises are the ones that mostly have been increasing the use of broadband through mobile technology: an increase of 47 p.p. compared to 20% at the beginning of the decade.

Usage of mobile broadband by enterprises with 10 or more persons employed, by employment size class, Portugal, 2010-2016
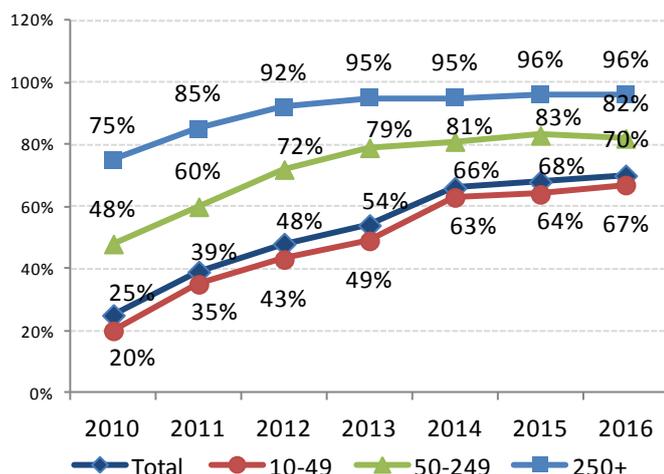
In 2016, the penetration rate of fixed broadband (93%) among national enterprises remains stable compared to the previous two years.

Usage of broadband by enterprises with 10 or more persons employed, by type of connection, Portugal, 2010-2016
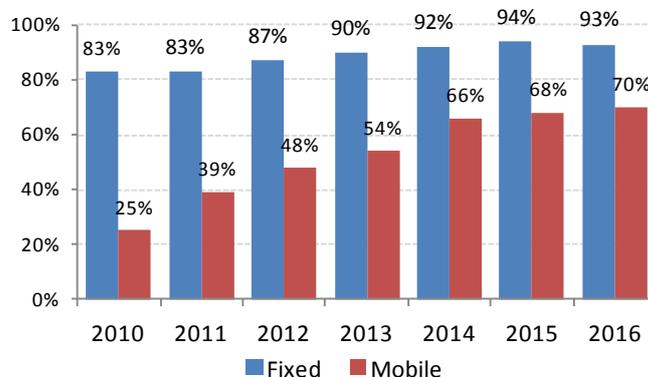
Among these enterprises, 75% use other fixed broadband connection (e.g. cable, dedicated access, satellite, fiber optics, WI-FI) and the reduction of enterprises using DSL (ADSL, SDSL, etc.): 52% in 2015 and 46% in 2016.

In 2016, 25% of enterprises with 10 or more persons employed access the internet by narrowband, such as modem over analogue telephone line or ISDN or mobile connection over a mobile phone.

The percentage of enterprises with 10 or more persons employed using social media as a strategy to connect to customers, suppliers or business partners continues to grow

In 2016, 45% of enterprises use internet-based applications or communication platforms designed to connect, create and exchange content online with customers, suppliers or business partners, with an increase vis-à-vis 2015 (38%) and 2014 (30%).

The proportion of enterprises using social media increases with the size of the enterprise, varying from 43% in enterprises with 10 to 49 persons employed, 50% in medium-sized enterprises and 68% in large enterprises. The highest increase in proportion (7 p.p.

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compared to 36% in 2015) was registered by small-sized enterprises.

Use of social media by enterprises with 10 or more persons employed, by employment size class, Portugal, 2015-2016
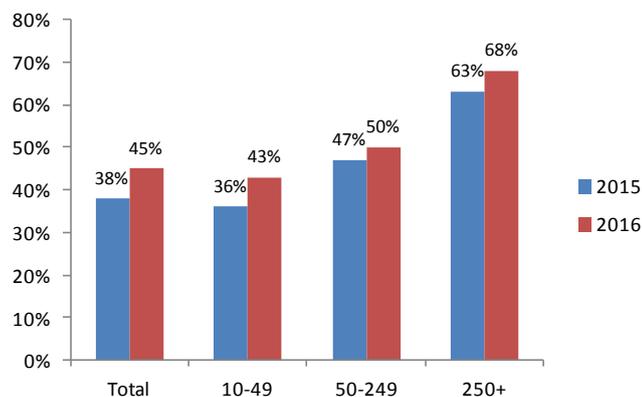
The use of a social network (Facebook, Linkedin, Xing, Viadeo, etc.) prevails among the enterprises using social media, accounting for 96% users. In turn, the use of multimedia content-sharing websites (Youtube, Flickr, Picasa, etc.) is mentioned in 2016 by 36% of enterprises (28% in the previous year) and the use of enterprise's blogs or microblogs (Twiter, Present,ly, Etc.) by 17% (13% in 2015). The use of wiki-based knowledge-sharing tools is the least used tool, accounting for 6% of the enterprises.

Use of social media by enterprises with 10 or more persons employed, by type of network, Portugal, 2016
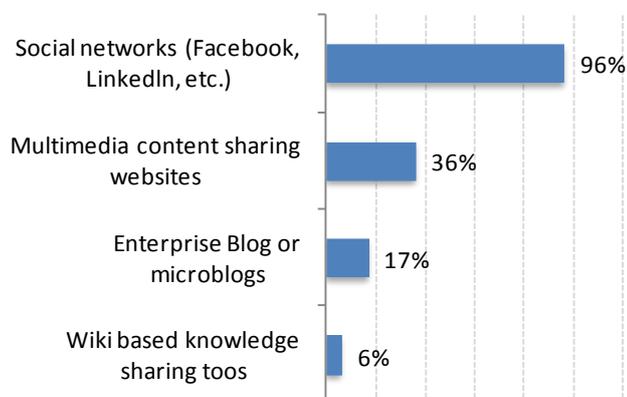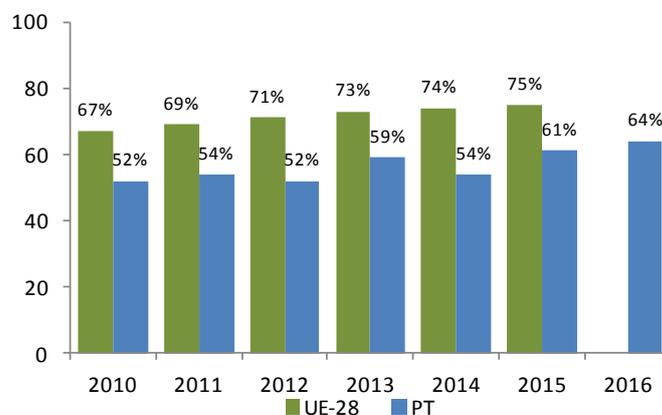

64% of enterprises have a website

In 2016, 64% of the enterprises reported having a website, 3 p.p. more than in the previous year (61%) and 12 p.p. as compared to 2010 (52%).

However, by 2015, the improvements were not enough to get a relevant convergence of the national indicator to the European average.

Enterprises with 10 or more persons employed having a website, Portugal and EU-28, 2010-2016

The proportion of enterprises with a website increases with the size of the enterprises: in 2016, it was 61% for enterprises with 10 to 49 persons employed, 80% for enterprises with 50 to 249 persons employed, and 95% for large enterprises.
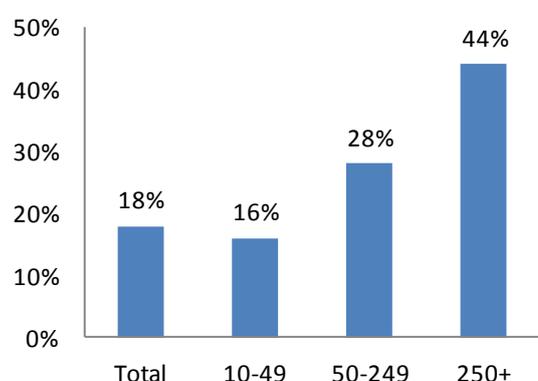
Enterprises with 10 or more persons employed having a website, by employment size class, Portugal, 2016

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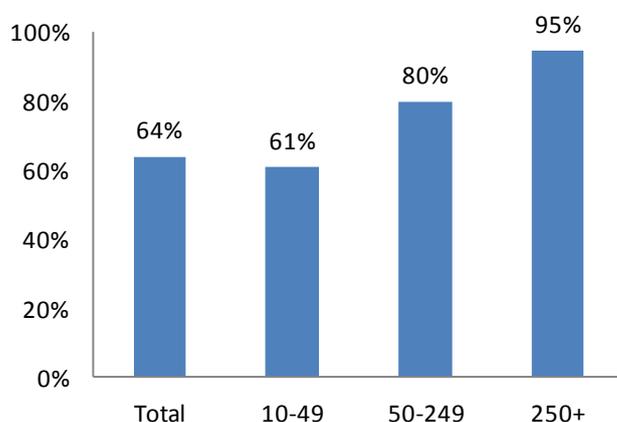
18% of enterprises buy cloud computing services

In 2016, 18% of enterprises reported purchasing cloud computing services over the internet, a proportion that increases with the size of the enterprise: 16% of small-sized enterprises, 28% of medium-sized enterprises and 44% of enterprises with 250 or more persons employed.

Enterprises with 10 or more persons employed purchasing cloud computing services, by employment size class, Portugal, 2016

Types of cloud computing services purchased by Enterprises with 10 or more persons employed, Portugal, 2016
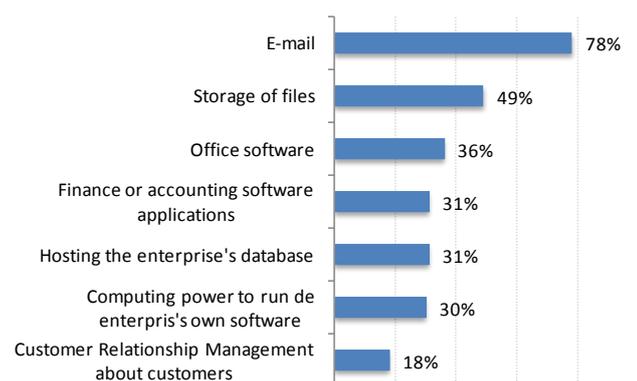
Among the enterprises with 10 or more persons employed who have purchased cloud computing services, 78% acquired e-mail, 49% files storage, and 36% office software as cloud computing services. The acquisition of finance or accounting software applications and the acquisition of hosting enterprises'
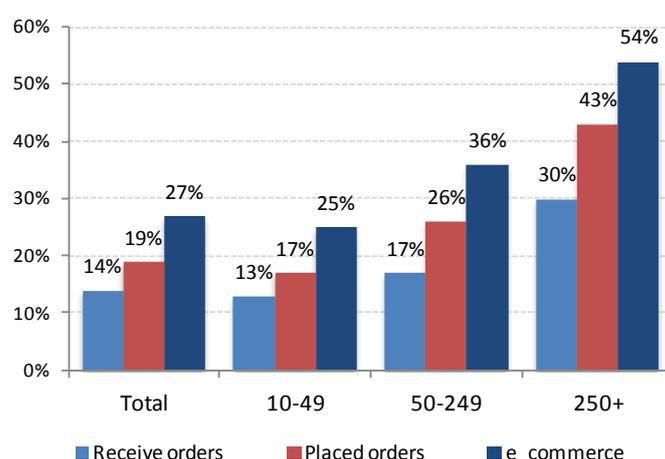
databases as cloud computing services were referred by 31% of enterprises, while acquiring computing power for running the enterprise's own software as a cloud computing service was mentioned by 30%. The acquisition of Customer Relationship Management (CRM) as a cloud computing service was indicated by 18% of the enterprises under review.

The proportion of enterprises carrying out e-commerce[1] increased in 2015

According to the survey carried out in 2016, 19% of enterprises report having received orders for goods or services that were placed via a website or 'app' (web sales) in 2015[2], 2 p.p. more than in 2014. In turn, 14% of enterprises have placed orders for goods or services via a website or 'app' in 2015 (12% in 2014).

Enterprises with 10 or more persons employed carrying out e-commerce (at least 1%), by employment size class and type of transaction, Portugal, 2015

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[1] E-commerce data refers to orders received representing at least 1% of turnover and to orders placed representing at least 1% of purchases.

[2] Data on e-commerce refers to the year prior to the survey.

E-commerce usage increases with the size of the enterprise: 25% in enterprises with 10 to 49 persons employed, 36% in enterprises with 50 to 249 persons employed and 54% in large enterprises (250 or more persons employed).

41% of enterprises have sent electronic invoices to other enterprises or public authorities, but less than half in **a standard structure suitable for automatic processing**

According to the survey, 41% of enterprises with 10 or more persons employed reported having sent invoices in electronic format in 2015[3], an indicator that also increases with the size of the enterprise, ranging from 40% for small enterprises, 45% in enterprises with 50 to 249 persons employed and 59% in large enterprises.

Enterprises with 10 or more persons employed sending invoices to other enterprises or to public authorities, by employment size class, Portugal, 2015
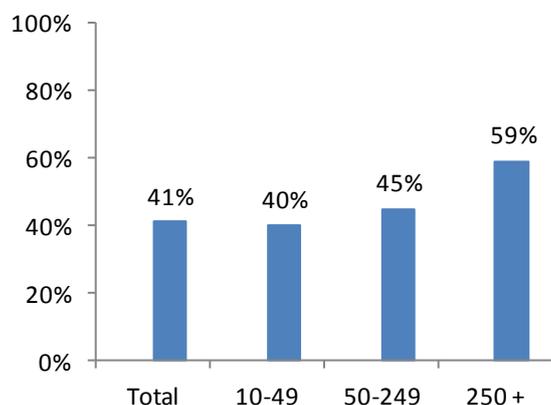

Among the enterprises that sent electronic invoices, 75% reported sending electronic invoices to other enterprises or public authorities in a structure not suitable for automated processing, and 46% in a standard structure suitable for electronic processing.

Type of invoices sent to other enterprises or public authorities by enterprises with 10 or more persons employed, Portugal, 2015
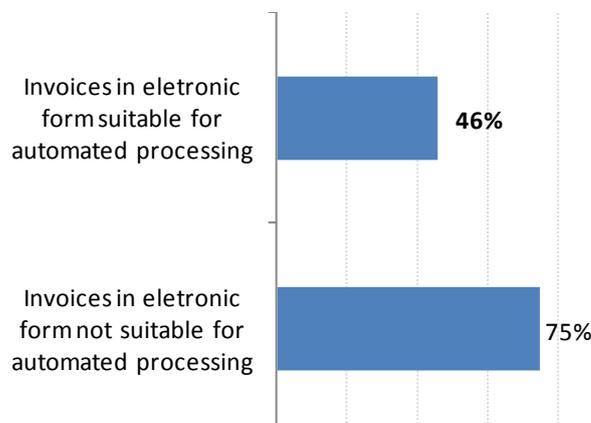
13% of enterprises with 10 or more persons employed analyzed Big data

Data sources used by enterprises with 10 or more persons who analyzed Big data, Portugal, 2016
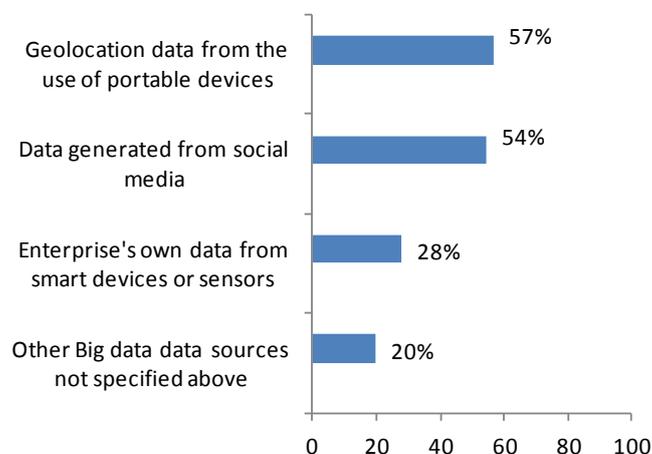
Recent technological advances and their generalization have increased the interest and feasibility of Big data analysis, i.e. large amounts of different types of data produced at high speed from a large number of different types of sources. According to the survey carried out in 2016, 13% of enterprises with 10 or more persons employed reported having analyzed Big Data in 2015[4].

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[3] Data on invoices refers to the year prior to the survey.

[4] Data on Big data refers to the year prior to the survey.

Of the enterprises reporting Big data analysis, 57% used geolocation data as a data source (e.g. handheld devices using mobile telephone networks, wireless or GPS), and 54% used data generated from social media as a data source (e.g. social networks, blogs, multimedia content sharing sites, etc.). 28% of the enterprises having analyzed Big data, used the enterprise's own data from smart devices or sensors as a data source (e.g. machine to machine communication M2M, digital sensors, radiofrequency, etc.).

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TECHNICAL NOTE

Indicators in this press release were based on data from the Survey on Information and Communication Technologies Usage in Enterprises (IUTICE), carried out by Statistics Portugal annually as from 2001 (since 2006 in accordance with specific Community regulations and pursuant to Regulation (EC) No 808/2004 of the European Parliament and of the Council of 21 April 2004).

The IUTICE is an annual survey based on a representative sample of enterprises in Portugal carrying out their main economic activity in manufacturing, energy, construction, trade and repair, hotels and restaurants, transport and communication, and other services (excluding education and health activities and, as from 2014 onwards, financial activities).

A sample of 3,421 units was selected among the population of enterprises with 10 or more persons employed and whose economic activity is classified in one of the following NACE Rev.2 sections: C, D and E, F, G, H, I, J, L, M (division 69-74), N, S (group 95.1).

The reference period for the information is 2016 for the majority of variables, with the exception of the ones related to e-commerce, invoicing, Big data and ICT training, which refer to 2015. In the case of e-commerce indicators, only orders received representing at least 1% of turnover and orders placed representing at least 1% of purchases are taken into account.

From 2015 onwards enterprises covered by the IUTICE do not include those mainly carrying out on financial or insurance activities, in line with the criteria established for EU countries. In this context, historical series have been rebuilt for the same scope of activities aiming to ensure comparability over time.

Main concepts:

DEDICATED ACCESS - Also referred to as a dedicated line or dedicated circuit, it is used to transmit data, characterised by its permanent connection between 2 points, either analogical or digital.

ADSL - Asymmetric digital subscriber line for broadband transmission using the copper pairs of the existing telephone cables for high-speed data communication and access to multimedia services. An ADSL circuit provides three information channels: a high-speed downstream channel (internet to PC) (1.5 to 8 Mbit/s), a high average speed upstream duplex channel (PC to Internet) (16 to 640 Kbit/s) and a telephone channel.

ECONOMIC ACTIVITY - Combination of resources such as labour, raw materials, equipment, etc., are joined, leading to the creation of specific goods or services. Regardless of the factors of production integrating the good or service produced, all activities generically imply an input of products (goods or services), a production process and an output of products (goods or services).

PRINCIPAL ACTIVITY - The activity which contributes most to the total value added of a unit under consideration. It is ranked according to the gross value added at factor cost which it generates. If no value-added figures are available, other criteria must be used, and then the principal or main activity shall be considered the one that accounts for the highest turnover or alternatively the one that occupies the greatest number of employees on a permanent basis.

BROABAND - A connection that makes possible the transmition, at a high speed, of considerable quantities of information, such as television images. The types of broadband connection are: XDSL (ADSL, SDSL, etc.),cable, UMTS or other such as satellite.

BIG DATA - Large amounts of different types of data produced at high speed from a large number of different types of sources**.**

BLOG - The same as weblog. It describes an internet diary using user-friendly publication systems. Weblogs have become popular in recent years, with personal sites appearing as real sources of opinion and online information.

E-COMMERCE - Business process conducted via Internet Protocol-based networks or via other computer-mediated networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or off-line. Orders received via telephone, facsimile, or manually typed e-mails are not counted as electronic commerce. Note: if the e-mail system is used for the transmission of an automatic message, i.e. computer-to-computer without human intervention, then it is considered an e-commerce transaction.

CUSTOMER RELATIONSHIP MANAGEMENT (CRM) - Management methodology that is based on the intensive use of information technologies to collect, integrate, process and analyze the information related to customers and which aims to put the customer at the center of the business process.

EDI (ELECTRONIC DATA INTERCHANGE) - The standardised exchange of information between computers, which may use the internet as a platform (EDI on TCP/IP) or closed computer networks between institutions. It can be used for the paper-free exchange of documents (invoices, receipts, contracts, order forms).

FIBER OPTICS - Cable made of fiberglass, through which signals are transmitted in the form of light pulses. It is a broadband medium that can easily provide capacity for transmitting large amounts of information over long distances with reduced distortion.

INTERNET (www access) - The connection to the set of global computer networks interlinked by the TCP/IP protocol (Transmission Control Protocol/Internet Protocol), where data and service servers are located (FTP, WWW, email, etc.).

CABLE CONNECTION - A broadband connection using the cable television network's cable. The same cable can carry television, internet and telephone communications.

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TECHNICAL NOTE (continuation)

SATELLITE CONNECTION- A broadband connection through satellite. There are two types: unidirectional, used only for receiving data, for which the client must have another Internet service; and bidirectional satellite access for receiving and sending data.

CLOUD - System/network of remote servers hosted on the Internet and used to store, manage, and process data in place of local servers or personal computers.

SOCIAL NETWORK- Set of sites which favour the formation of virtual communities with common interests.

INTEGRATED SERVICES DIGITAL NETWORK (ISDN) - System of telecommunications infrastructures providing a land-line service within the basic telecommunications network, allowing for the digital connections between 2 terminals which support a wide range of telecommunications services according to the applicable recommendations of the International Telecommunications Union (ITU).

SOFTWARE - A set of non-material resources (as opposed to hardware) used for automatic data processing and enables the ¿dialogue¿ between user and computer.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) - A branch of computing science and its practical uses which aims at classifying, preserving and disseminating information. Information systems and special knowledge are applied to businesses and learning. Hardware and software create the electronic structure to support the information logic.

RADIO FREQUENCY IDENTIFICATION - Automatic identification method for storing and retrieving data using remote identifiers or electronic tags.

TURNOVER - The net amount of sales and services rendered (covering compensatory allowances) relating to entities' normal business, consequently after reductions in sales and not including the value added tax nor other taxes directly related to sales and services rendered. In practice, it corresponds to the sum of classes 71 and 72 of the Official Accounting Standards.

WEBSITE - A programmed webpage or set of webpages viewed using a browser (Internet Explorer, Netscape, etc.). Each webpage has its own www address (e.g., www.organismo.pt), known as a URL (Uniform Resource Locator).

WIKI - Web site oriented to provide and share knowledge in some domain, where content is created by anyone wanting to enter or change information or comment anyone else's contribution.

WIRELESS FIDELITY (WI-FI) - Set of radio communication technologies supported in the 802.11x protocols. Wi-Fi technology can be used to create a home or enterprise wireless network, also allowing access to the network at Wi-Fi public hotspots, called Hotspots.

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