Corporate education and digital literacy: ICTs in small and micro-enterprises

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Summary

Information and communication technologies are present in the everyday life of society, as well as in organizations, from the obsolete technologies BI (Business Intelligence[5]). With this digital literacy and education promote the technology in all sectors, and serves as a facilitator, not only for greater agility and process optimization, but also as a tool for development of strategies and processes of communication, individual training and excellence in business management. Because, these days, that small businesses are showing more and more their potential on the market. Soon, this paper aims to point
out and highlight the information and communication technologies in contributing to an effective internal and external communication from the education and digital literacy.

**Keywords:** corporate education; Digital Literacy; Education and communications; Information and communication technology.

**INTRODUCTION**

The present work makes the issue of digital literacy to the use of ICT (information and Communication Technology) in the corporate environment of micro and small enterprises. Thereby, enable and elucidate the importance of digital literacy in the micro and small companies, not in the sense of assessing costs and investments, but demonstrate the importance of literacy and corporate education.

Although the movement of appropriation of the medium used to join to the network requires a specific skill set, there is a Government effort to extend internet access for all citizens. Countries invest in public so that the infovias information and communication technologies (ICTs) do not become – through the market – social exclusions...[n factor the first meaning refers to how network access order: just as citizens have a right to public lighting, paving streets or sanitation, modern life demands the right to be connected to the digital culture (BIZELLI, 2015[online]).

So, this article is a case study of a company in the field of repair of electrical systems, with qualitative analysis from the questionnaires to employees (total 10) shopping sectors, projects and designs, in order to examine the use of information and communication technologies. Focusing on digital literacy – education for corporate use of technological tools-which although there are still reports being discussed to promote information and knowledge for the use of ICT in the corporate environment. The methodology used was bibliographical research exploratory and descriptive. This is a survey of the entire bibliography in the form of books, magazines, publications and print and online single. "Its purpose is to put the researcher in direct contact with everything that has been written about a particular subject" (MARCONI and LAKATOS, 2012, p. 43).

With the advancement of information and communication technologies, there has been an increase of data transfer speed. And, consequently, is increasingly difficult for micro and small businesses neglect the importance of investments for an education focused on communication, organizational skills and to digital literacy appropriate to an integration, interaction and effective communication. In this way, it becomes relevant that there is an education for the use of the means, therefore, ICT become viable in society, however should have access and ownership, reflection and critical technologies for in its use.

In this picture, we put forth the corporate education systems, to understand the use of open educational
resources (OER) and distance education, generating communication skills and digital literacy, preparing employees to market requirements and promoting professional growth, causing personal well-being. In this way, the organization works, too, with the precepts of a socially responsible management, ensuring your reputation and image and bringing benefits to society (GORDON; CALONEGO; Teixeira, 2014, p. 2[online]).

Due to this aspect, the micro and small companies are viewing the importance of technologies to compare or compete with the big companies, but to improve the processes between sectors, promote education and training for the use of ICT and, in particular, promote internal and external communication. From this look, there is a need to educate the users from the concept of digital literacy, using the strategies of corporate education.

In recent years, the internet and the technological advancement in General, was able to modify shapes and behaviors. The excess of information, the ease and agility are factors that modified the judgment of all individuals of society (TEIXEIRA; GORDON, 2015, p. 2[online]).

Digital literacy in micro and small enterprises is focused on the dissemination of information and knowledge using ICTs. Yes, the business technologies are present and often became the means of work and certain essential activities in the corporate world and in society today. In this sense, there is a quest: how the micro and small businesses use digital literacy to promote the effective use of information and communication technologies?

The information, which always had prominence in society, conquering more and more recognition and space. The livelihoods of democracy, which involves the existence of conditions of participation in making decisions that affect people, depends on access to information. The idea of participation, however, traverses the discussion on right to information which, in turn, chains to the notion of citizenship, considered as the exercise of rights and civil, political and social duties (TEIXEIRA; GORDON, 2015, p. [online]2);

Explained here on information and communication technologies and their uses in large companies, as businesses were growing, the follow-up of the technologies that were present at the time, become essential in the present day, and today, with this technological evolution to disseminate information and knowledge. Therefore, understand how they provide improvements in quality of work and communication. But the reality is that ICT are not only in large companies, they are realities in the micro and small companies, however, without the correct exploitation. The applicability of digital literacy is relevant to the micro and small enterprises can enjoy effective way of ICT. According to Bizelli (2013) the tools create the virtual model of the city, thereby producing information and knowledge.
In General, demonstrate the importance of digital literacy ICT applied to promote education for the effective use of ICT in the micro and small enterprises had two specific goals: information and communication technologies assist in all internal and external sectors of the company. And so turning the company more efficient; the presentation of the concepts of digital literacy, ICT and the scenario of the micro and small enterprises.

The present research is justified by the dissemination of information and analysis is being applied to digital literacy in the micro and small companies, as with the existence of technology, the individual must enter in the digital context and the use of ICT as tools of work and promote positive differential in order to boost competitiveness, digital inclusion, agility and business communication. However, it is often within the corporate setting to learn the appropriate functions of each technology. In this sense, corporate education becomes relevant to that individuals can use ICT to promote the quality, access and appropriation of ICT.

Therefore, treat the information and communication technologies, corporate education and digital literacy, brings experience to be applied in companies, in which becomes relevant show their utilities and their influence on business communication and education. Therefore, facilitate digital literacy to the professional growth of the individual to the use of the means both organizationally as also in professional training and citizen.

**CONTEXT OF THE INFORMATION AND COMMUNICATION TECHNOLOGY-ICT AND DIGITAL LITERACY**

Information and communication technology (ICT) is found in most environments; in education, training of the individual, both personally and in the corporate environment, as it is a tool of entertainment, study and work. With this, Castells (2006) defines ICT as human extension.

Information and communication technologies (ICT) refers to all technology used to handle communications, including telephone systems, Web site, and audio and video streams within the context of business, had a great impact on the internal and external communications, marketing transformation of data. To increase efficiency and effectiveness in the Organization and in all means improving departments how to use ICT in their organization "(SANTOS, 2012, p 19).

According to Veloso (2012), the mere existence of a process of computerization and the mere presence of technological resource doesn't mean that ICT have been appropriated by professionals, being necessary for that, among other factors, its use is not restricted to the automation of tasks and activities, or replacement of computer professionals and/or machines, but in their personal and professional formation.
When thinking about the appropriation of ICT, it is essential to refer to the effects that these can provide in terms of saving time and resources, such as rationalization of work, or as generator factor of competitiveness and productivity, among other principles of capitalist logic, productivist and quantitativista takes care of the contemporary management processes, both public toilets. More than get the satisfaction of managerial interests, it is pertinent to worry the conditions necessary and conducive to meeting the demands of users of the services and professional actions, and can fit to ICT plays an important role in this regard (VELOSO, 2012).

The speed in research and development is vital to stay on top of the competition in the business world. Information technologies offer companies with urgency at all levels, keeping in touch as if they were in the next room. This level of connectivity helps to create a more equal opportunity for both employers to find your ideal job and for small businesses to have the same advantages and access to customers such as large companies". (Saints and MEDINA, 2012, p. 10).

Companies began to apply the advances of information technology years ago, with the creation of websites by increasing their visibility at local, national and even international, attracting new customers. Today, many companies are also harnessing the power of social networking tools like Linkedin, Facebook and Twitter, which helps them to share the latest news and reach their customers more effectively. The reason is in the interactivity of these tools, companies can use the instant feedback you receive as a way to speed up the investigation, helping them develop and grow your business faster (Saints and MEDINA, 2012).

So, to have competence in digital literacy, it is necessary the competence in information literacy, because, in General, the first is to have knowledge of the technology and the use of technology, which requires the second, i.e. ability to search and selection of information (GORDON; CALONEGO; Teixeira, 2014, p. 2[online]).

In this way, therefore, the business communication is communication that exists between the company or institution and its stakeholders that can be the company's own employees, customers, the media and society in General. "Being the communication based on any administrative process, it is essential to work it planned. When this occurs, she has the amazing ability to work on several positive factors in the Organization "(TAVARES, 2009, p. 15).

Corporate communication is considered a fundamental tool for the development and growth of any organization, functioning as a link between the community and the market. And efficient communication brings results that can be measured in the company's revenue. (PERSON, 2003, p. 4).

To provide ICT in the corporate environment, employees must have abilities and skills for the use of all
the features they offer, facilitating and optimizing communications, both internal as external. According to Bahia (2006) in particular, in order to be effective, systems or business communication structures need to be professional, proper presentation consistency, compatibility of thought and action, and bi aiming.

The technology issue is linked to the recognition of the role of information. The so-called information society, which is characterized by having the internet as paradigm, technology is recognized by features that change the old way of mediated communication, of which can stand out: greater access to information; different representation of this information is in audio, video, text or photo; winds of change, with speed of generation and accumulation of knowledge; possibility of interactivity; principle of network communication and, above all, changes in polo, allowing all individuals with technological resources and knowledge to use them can send information and reviews (TEIXEIRA; GORDON, 2015, p. 4[online]).

This process must be genuinely beneficial to the company, to the employees and also for consumers. A communication system and business education should be guided and directions from concepts that are common to information, staff training-employees-and to business. "How, for example, the fact that both the company as the media play vital roles in the progress and development of modern society" (BAHIA, JUAREZ, 2006, p. 17).

**Digital literacy: education for the technologies in the workplace**

The term digital literacy refers to the expertise that goes beyond the common use of the functions of the technology. This term is not new, but has been widely used in recent decades, notes that when working with some authors, the concept of digital literacy can differentiate one from the other.

When the first universities in Europe, Thomas Aquinas decided by order in knowledge and built a vigorous philosophical-theological synthesis from the Aristotelian thought and wrote the *Summae Theologiae*. The medieval philosopher took on this company that endures to the present day. In our time, Harold Bloom wrote the *Western Canon*. In this work fed presumably by the anguish of making the best choice in selecting the best reading, Bloom ventured a list of works that supposedly were the Western Canon or, translated in a more casual expression, proposes the *best of the best*. "(RAMOS; Faria, 2012, p. 33).

Second Capobianco (2010), the term digital literacy was quoted for the first time by Paul Gilster in 1997, a historian and professor of English, who writes about ICTS for over twenty years. And defines digital literacy as the ability to understand and use information from multiple formats and from different sources when presented through computers. And States that in addition to acquiring the ability to find things; must also acquire the ability to use them in your life[7].
Studies on digital literacy can promote integration between different areas of knowledge and contribute to the creation of portals, virtual learning environments, databases, among other features tailored to the needs of the users. In this way, the whole society will be able to enjoy the benefits promoted by ICT as soon as scientists, technicians, educators, public and private organizations can use the available knowledge to facilitate the processes of communication." (CAPOBIANCO, 2010, p. 26).

Therefore, when you use the digital literacy, the individual enhances knowledge on technologies and improves your professional side, as well as probably the same or even other technologies that are in society at large, having the ability to improve your knowledge and use it in their daily lives.

Corporate education can have several guidelines in their educational systems, namely, may give rise to a formal education, with academic training courses, formal or not, using, for example, programs with knowledge geared towards the specific area of the company that includes more comprehensive training both professional and personal. Corporate education must estimate, however, the various modalities that education may have, including the unintended, informal when they are exercised influences the natural environment, whether they are derived from customs, laws and religion; the informal, intentional, that is the case, for example, the mass media and, finally, the intentional, formal has clear educational objectives (OKADA et al., 2012 apud TEIXEIRA; GORDON, 2015, p. 6[online]).

The micro and small business use of information and communication technologies, not to be compare to large companies and corporations, and Yes to improve processes and increase competitiveness. "Being the communication based on any administrative process, it is essential to work it planned. When this occurs, she has the amazing ability to work on several positive factors in the Organization "(TAVARES, 09, p. 15).

Second marine (2006) the use of ICT enables greater competitiveness for small businesses, by facilitating the flow of external information, allowing an increase in interaction with customers and suppliers, as well as promote the intensification of internal communication flow by increasing the interaction among workers.

For Oliveira (2003), a basic model contains five ICT resources: software, hardware, networks, data, and humans. In human resources, include people using the tool, both the client and the Administrative Manager; Hardware resources include physical devices and equipment used in processing information. So we have: computer systems, which contains central processing units and a variety of peripheral devices interconnected. Examples: computers, tablets, and etc.; And computer peripherals, like a keyboard for data entry and commands, a video monitor or printer to output information and Flash drive or external HD to store data resources.
The information society is increasingly incorporating the immense volume of content available on the net. Access by electronic devices and the resulting ease of mobility and portability feed discussions on actual capacity of appropriation of this knowledge that circulates by Cyberspace (cross; BIZELLI, 2014, p. 1).

Data resources, they have a variety of ways, including alphanumeric data, text data, image data and auditory data. Are usually organized in: database that store data processed and organized; and knowledge bases store knowledge in a multitude of ways as facts, rules and examples on successful business practices.

Software resources include all processing instruction sets of information. Thus not only the operating instruction sets called programs, who run and control the hardware, but also the instruction sets of information processing required by people, called procedures. Examples that refer to features of software: System software, such as operating system, a program that controls and supports the operations of a computer system; application software are programs that process right to private use of computers for end users. Examples include a sales analysis program, a payroll program and a word processing program; and procedures, which are operating instructions to people who will use an ICT tool. Examples are the instructions for filling out a form on paper or for the use of a software package.

And the last, is the network resource that consists of computers, communications processors, and other devices connected by communications media and communications software-controlled. The resource includes: communications media – examples include twisted-pair wire, fiber-optic cable, microwave and satellite communications systems. And network support-includes all human resources, hardware, software and data that directly support the operation and use of a communications network. Examples are the communications processors as modem and inter-network processors and communications control software such as network operating systems and internet browser packages.

After the use of computers and the internet, if perfected technologies and if have addressed the society in General. And came the notebooks, tablets and smartphones. Mobile technologies have enabled the process of communication and transmission of information occur in different spaces and time. According to pepper (2006), the company can use e-business, or e-business, which is based on the development of strategies based on widespread use of global communications networks. E-business represents a broader involvement of virtual business, which e-commerce.

E-commerce is an online sales system (via the World Wide Web or www, mobiles, digital TV etc.) which allows a direct and interactive communication with customers, bringing advantages in cost and time of transactions. However there are several factors that interfere in decisions on the choice of technology to be deployed in small businesses, the most frequent are: human and financial. But the most striking factors PMBOK brings in the choice of a technology.
According to the PMBOK (2013), the factors that can affect the choice of communication technology include: urgency of the need for information—it is necessary to consider the urgency, frequency and format of the information to be communicated, as they may vary according to the project and also in the different stages of a project; Availability of technology—it is necessary to ensure that the technology required to facilitate communication is compatible, is available and can be accessed by all stakeholders throughout the project life cycle; Ease of use—it is necessary to ensure that the choice of communication technologies is appropriate for participants of the project and that appropriate training events are planned, where appropriate; Project environment—it is necessary to determine whether the team will meet and will operate in person or in a virtual environment; If will be located in one or multiple time zones; If you use multiple languages in communications and, finally, if there are any other environmental factors, such as cultural project, that can affect communications; Sensitivity and confidentiality of the information it is necessary to determine whether the information to be communicated are sensitive or confidential, and if additional measures should be taken or not. In addition, the most appropriate way to communicate the information should be considered (PMBOK, 2013, p. 292).

Digital literacy as project implementation for a corporate education

The internet in a corporate environment allows decisions to be taken more agility, optimize processes and also assists between the company's relationship with its stakeholders. But to access the information employees need to use so aware of the benefits that the new and old technologies can offer.

The integration of new technologies as a tool in the development of learning, as well as the incorporation of learning methods that lead to active and autonomous work, provide conditions for the development of the ability to act in a context of multiple sources of information, continuous search and comparison of data, offering the individual opportunities to develop your skills as an employee and citizen able to live with dignity in society of uncertainties of the 21st century. The knowledge society, and the Brazilian scenario, demand citizens more critics, proactive and autonomous in relation to the training itself. People committed to your training itinerary and willing to invest in self-development. (MARINELLI, 2007, p. 19).

Companies can get a professional qualified already, what she needs, or invest in corporate education to your own employees. Because we don't have to only have access to information, but also to good use with criticality, reflection and ownership.

Focus on digital literacy, here understood as the knowledge and critical use of information technology tools, applied to the access, use and production of content focused on key areas for organizations. That is, it is not enough to train people in a technical vision, teaching them to operate machinery. The main idea is that access to information and communication technologies is important, but not enough, anyway you
must give priority to the formation of the citizen and not the consumer. Therefore, when it comes to technological inclusion must be thought, too, in the apprehension of the speech technology and not just in language learning programs for certain purposes. In other words, defends the integration between education, technology and citizenship. (GORDON; CALONEGO, 2012, p. 4).

There are some settings on small businesses, the data that is taken into account are such as number of employees and gross annual revenue.

The Brazilian support Service for Micro and small enterprises (Sebrae), which limits the micro-those employing up to 9 persons, in the case of trade and services, or up to 19 people, in the case of industrial or building sectors. Already small are defined as those that employ of the 49 10 people, in the case of trade and services, and from 20 to 99 people, in the case of industry and construction companies. The multiple definitions of existing Mses in Brazil and its methodological treatment subsidize the production of information whose homogenization is very limited. (Saints; KREIN; CALIXTRE, 2012, p. 17).

The micro and small enterprises are generally formed by family members of a person who had a desire to own your own establishment. For this reason it is common to find human resources as management and controlling technological centrally.

**CASE STUDY: ANALYSIS AND RESULTS**

Being a small business, the answers were not so distinct. However, it was possible to analyze and find out what some employees consider important or not.

On the relationship of ICT as tools of communication and if it helps the relationship, between the employees all agree; If ICT influence the way people work within the Organization, namely, the organizational culture, everyone agreed clarifying the fact that the company contains a structure and organizational hierarchy where the professionals are accustomed.

In relation to ICT as an instrument of work and contributing to the good performance of their duties, in which considered the use of ICT as a tool for effective job within the company, all were positive.

When the question referred if the company provided training or qualification of its staff to develop or improve skills in it/ICT, most pointed out positively, probably because some sectors have a greater improvement and qualification in some technological resources than the others.

And finally, one of the questions sought to emphasize on the professional use of some feature that the smartphone can offer access to and ownership of the information, in this aspect the majority was positive.
Thus demonstrates how technologies are present in the middle of the company. To demonstrate visually this questionnaire, below figure 1, the chart with the answers:

**Figure 1**: research data

**Source**: authors

Four factors were completely positive, and so demonstrates that ICTs are already used, and staff realize the importance and practicality that she could offer when used correctly. The factors are: a) the company knows that ICT support in the relationship between customers, employees, collaborators and suppliers; (b) the company understands the influence that ICT brings in the form of work of people within the Organization, namely, the organizational culture; c) All have the perception of how ICTs facilitate and contribute to their tasks; d) the company believes that the use of ICT as a tool for effective internal communication, this becomes a breakthrough, because the focus of the company becomes the external communication. Because having an efficient internal communication demonstrates that the relationship between employees and between sectors of the company, brings trust, respect, and so employees will be worked more satisfied.

Mainly there are two factors that were raised during the search: first, consider expendable ICT as a tool for competitiveness. Therefore, it is probable that in a small business use of ICT can be delayed, but not denied that she brings ease. The second time, for communication, process optimization, development of skills and competencies, in addition to digital inclusion, contributes to the efficient use of ICT, and can get this faster and more efficient performance.

It is possible that the perception of the use and importance of information and communication technologies bring to the company may be harmed because of this second factor, which is the case of the company does not provide any type of training or improvement in relation to the Technology Department. The small company has the possibility of bringing some kind of training for all departments and so the employees possess the digital literacy.

The last question was about the professional use of some resource available *on your* smartphone, where most also responded positively, and so again if you have to *use the* smartphone as a device that is increasingly useful and versatile both *in software*, in the creation of new platforms, applications and *hardware* issue, diverse sizes and several resistors.

**Final Considerations**

The work addressed a look at digital literacy in the micro and small enterprises, whose number increases
every year in Brazil, being necessary to differentiate the common point of view, when we deal with companies, we should not see only large companies, but also the micros and small. And even considered little strategic planning is needed so you can interact with all areas, even with those that have centralized administrations. This interaction will by necessity of corporate education focused on digital literacy for all involved.

With technological advances, it was possible to demonstrate the importance of ICT, because they offer the convenience of registering and access information and thus facilitate communication both internally and external. For the company fully utilize technological capacity that she has, she has the need to train, qualify or perfecting the skill and knowledge of the employees, because they are going to be using the technology chosen by the company.

Digital literacy must interact in all areas, and you can set different modes of incorporating the knowledge, being portals, virtual learning environments, database or other, but always adapting user needs. Finally, indicates to the company, promoting education to corporate education strategies and elaborate an improvement of this technology so common in our everyday lives, and so the company could use some basic resources for the official be as familiar as possible to your own work.

Thanks: I appreciate immensely the God for the strength and health to be able to continue in this period. My parents, for your dedication and patience in difficult moments and joys in the course of these years; My colleagues and friends who understood how hard it was, however, essential in my life this graduate and therefore this work; In particular I want to thank my colleagues who have become my friends Goddess Angelino and Patrícia da Costa, that even busy with articles of them, always with a lot of patience, they support both by an unseen knowledge how much advice and encouragement; And the teacher and counselor José Anderson Santos cross with a lot of wisdom and knowledge referred me and carefully targeted in the course of the work.

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2016.


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[5] Business Intelligence (BI) can be translated as business intelligence or business intelligence. This means that it is a method that aims to help companies make smart decisions through data and information collected by the various information systems.

[6] The company operates in the market for 18 years and has 45 employees.