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E-Collaboration Tools as a Support to Businesses Internationalization – A Case Study Analysis

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Abstract

Within a context of economic, financial and social crises, Portuguese companies feel the need to internationalize their businesses, in order to ensure their survival, in a climate of severe contraction of the domestic demand. However, the process of internationalization is not free of multiple difficulties. In order to minimize these difficulties and to support the internationalization processes, organizations can implement and use e-collaboration tools. This research paper uses the case study methodology to analyze and understand the use and impact of the e-Collaboration tool, Lync, from Microsoft, to support the internationalization process of the ProCME group. Even though the company has found some difficulties associated to Lync implementation, this tool has shown to be a valuable asset in supporting the internationalization of ProCME. Indeed, the study results show evidence that the Lync is very well accepted by users and perceived as a technological tool very easy to use. In terms of organizational impacts, it is shown evidence that the Lync contributes significantly to increase work productivity of ProCME international teams made up of employees from different countries, by saving time in carrying out administrative tasks and facilitating the access to relevant data for decision making. Additionally, we conclude that the use of Lync contributes to significantly decrease communications costs and travel expenses.

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Keywords: Lync; Internationalization, e-collaboration, ProCME, Case Study

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1. Introduction

Within a context of a national and European crisis, companies look to foreign markets for new business opportunities, in order to survive, maintain growth ratios or keep shareholders returns. Associated with these dynamics, there are also the driving forces of economic globalization, forcing changes in the business strategies, procurement networks, government policies, and inducing technological progress. These forces emphasize the differences between companies that know and those that do not know how to profit from globalization, making global strategies or internationalization processes even more relevant [1].

Therefore, the internationalization of organizations lies in the extending of their strategies for marketing products and services to other markets or countries, resulting in a total or partial replication of their organizational and operational chain [2]. This replication needs the support of information systems in order to optimize existing resources that can streamline business processes and induce more fluid communications.

When used appropriately, the use of e-collaboration tools, defined as an information system that allows the interactions between individuals engaged in a common task [25], can improve financial, marketing and operational performances. Additionally, they can also have a positive impact on productivity, business profitability, and market share [3]. However, communications among employees and human resources planning are the areas that benefit the most from the use of this type of systems [3].

The approach to the problems of internationalization through the use of e-collaboration tools requires a detailed analysis. There are several studies about internationalization [4,5,12,13] and many studies about the implementation, use and impact of e-collaboration tools [25,26,27,28]. However, for the best of our knowledge there is no a study that crosses both areas of knowledge. This research is developed in order to fill this gap and to better understand (i) How e-collaboration tools are perceived by its adopters and non-adopters?; and (ii) What are the perceived organizational impacts of these information systems in a multinational environment? Beyond finding the answers for the research questions, this paper also aims to generate knowledge to allow the organization to improve the benefits obtained through the use of the e-collaboration tool.

This paper starts with an introduction, where the research problem is described and the research objectives are presented. Once the research problem is understood, we present the theoretical foundations, where the main concepts are defined. Then, we briefly introduce the organization under study as well as the research methodology, used in order to collect and analyze the data that supports the conclusions of this study. The next section presents and analyzes the data, and lastly, in the final section, we draw and present the main conclusions of this study as well as some limitations and directions for future research.

2. Theoretical Foundations

2.1. Internationalization

Within this context of need to seek other markets and opportunities, there has been a process of expansion of large European organizations to highly heterogeneous foreign markets, this process being characterized by huge communications and transport costs [4].

In this context, the growth of organizations is presented as a survival factor, under the pressure of competition and the need to maintain positions of dominance in its traditional market, organizations are forced to explore all opportunities to gain competitive advantage through the expansion of its business beyond the limits of its domestic market [4].

These complex processes are associated with motivations that have been widely studied, and which have several dimensions that were considered in this work. This dimensions derive from the literature review, are such as economic motivations, by the need for a higher return [5,6,7,8,9], the need to maintain levels of growth [4,5,6,7,10,11,12,13], problems with local markets, including stagnation [5,6,8,9,10,11,14], and their depletion [7,8,9,11,14], the level of dependence [6], the allocation of resources [8,12,14,15], and the reduction of the risk through the diversification of markets where the companies are present [7,13]. These are some of the main reasons that organizations take under consideration, to decide in advancing to foreign markets.

The difficulties inherent to internationalization processes have innumerable origins, having been selected those that can be minimized or mitigated by the use of collaboration tools. This study those not address the issues that according to the literature are beyond the capabilities of the e-collaboration systems, as those related to the high costs with investments that will necessarily have to be performed [15].

The difficulties experienced by organizations that initiate activities in foreign markets are as different as psychic distance [5,15,16], cultural differences [5,6,8,13,15,16], resource allocation [10,12,15,17], difficulties in communication between coworkers [13,15,17], raise of communication costs [4,12,13], and increase of travel costs [4,13,15].

In an attempt to remedy some of these problems, many organization envision the computer collaboration tools, as a viable solution that allows them to optimize their scarce resources, create new dynamics, and integrate people from different cultures, accelerating the process of normalization of business processes and methodologies.

Associated with this new way of viewing the world as a global market, communications have become virtual in many cases, and a standard for many organizations. With this new technologies, spatial barriers are dissolved, allowing easy communications between actors [18].

2.2. Collaboration

The benefits of collaboration referred to in the literature, appear linked to the optimization of processes and resources, and by this gain relevance in this study, since it can provide a possible solution to some of the difficulties faced by the organizations operating in foreign markets.

Collaboration can be defined as a coordinated and synchronized activity, which results in a continued attempt to construct and maintain a shared and similar perception of the problem. The importance of this perception increases in direct proportion to the physical distance, especially when the processes and business goals are common to the entities involved. The collaboration involves aspects that go through the integration of objectives, description of the current state of the problem by recognizing potential strategies, as well as the interconnection of all these elements [19].

The main benefits that are obtained with the use of collaboration tools include aspects such as, greater satisfaction of their users [20], an improvement of organizational efficiency [20,21,22], the simplification of procedures [21,22], greater ease of communication within the organization [21,23], the dissipation of cultural differences [23], the creation of trust among users [22,23,24], reducing communication costs [22,24], as a facilitator of training [22,23], and lower costs with travel expenses [23,24].

2.3. Socio-technical system (STS),

To this study it is important to refer the socio-technical systems, they are divided into two dimensions, the technical and the behavioral one. They are composed by machines, devices, and “hard” physical technology, and for them to work properly they require a substantial social, organizational, and intellectual investment [33].

To achieve an optimal organizational performance, it is essential to manage them jointly, and optimize both the social and technical systems, both the components need great attention. This means that technology must be changed and designed in such a way as to fit organizational and individual needs [33].

In an enterprise environment, with the focus in e-collaboration, this systems have drivers and constraints that can influence the success or failure in their wider adoption.

At a user level, the drivers can be the personal satisfaction, by making new connections and even share personal information, the use of the system hoping that their use will bring a career advancement, and the use of the tool to promote projects or ideas to get wider support or top management awareness [34].

Against this positive forces, the users can be afraid to share information if they are convinced that by giving it away they lose power within the organization, or the self-impression that they are not relevant or important enough, or that they will receive criticism or be ridiculed in consequence of the act of sharing ideas or information [34].

To the organization the main benefits are the ones already mentioned in this paper in point 2.1, by the other end the constraints to have a wider adoption are the lack of top-level management support since the early stages of implementation, the fact that power inside the organization can be obtain with the control of information, the fear that

the adoption will bring distraction and in consequence less productivity, and processes, practices and organization culture very fragmented and departmentalized [34].

2.4. *e-Collaboration*

The study focuses on the specific area designated by e-collaboration. This type of collaboration can be defined as the interaction performed by individuals engaged in a common task, using electronic technologies [25]. These systems facilitate communication and the creation of new knowledge, through more efficient processes and information collaboration [26].

In their genesis, the e-collaboration tools are a great example of a socio-technical system, they have a strong dimension of social interactions and influences, on top of a multidisciplinary technical basis, this include email, chat, bulletin boards, blogs, among others [32].

Regarding the technical basis, this is not just the communication infrastructure, but also the technology behind the features that are at the disposal of the user's. In the social side there are the collaboration task itself, that influences the way that the participant interact, the individuals involved in this task, their particular characteristics influence the outcome and the whole process, the mental schemas of the individuals, that are often called as knowledge or background, associated to the social constructed schemas that induce the way that they interpret information. The physical environment surrounding the individual also influence the collaboration process, this can influence the disposition that the participants input in the process, also the social surrounding environment like the hierarchical position that they occupies in the organization, influence the state of mind on which the individual enters [27], changing any of these factors, will significantly change the outcome of the interaction.

Variants of these systems, have characteristics which can be mapped in six criteria grid, the type of process involved (communication, coordination, collaboration), the type of communication (email, text, video, audio, instant messaging), shared features and functionalities (calendar, tasks, presentations, documents), type of use (continuous, sporadic), the dependence of them (primary, secondary), and the type of environment where it is used (informal, work, social) [28].

3. Characterization of the organization

ProCME is a group that had its origin in the company CME, founded in 1983 and whose initial activity encompassed the areas of electricity and telecommunications infrastructure, and industrial maintenance. Nowadays the main sectors of activity of the group are the construction and maintenance of the infrastructure of the electricity, gas, telecommunications and water utilities, wastewater treatment plants, small hydro, combined cycle electricity power plants, wind and photovoltaic plants, transmission lines for very high voltage, underground caverns for natural gas storage, among others. The group has the technical capabilities necessary to undertake all these activities, ensuring design, construction and maintenance of all of them.

In this sense, in addition to a strong technical component, the group as also a focuses on innovation, being one of the few company's able to undertake work under tension in transport line of extra high voltage, and having a patent for cleaning insulators on power lines with cork shavings, with the use of helicopters.

Currently has a physical presence in several countries, including Spain, France, Angola, Cabo Verde, Brazil, Chile, Peru, South Africa, Colombia and Mozambique, relying on an staff with about 1,250 direct employees in Portugal, with a strong component of engineering, it has an annual turnover of around 213M€.

During the process of internationalization, ProCME was faced with difficulties of communication between employees with highly diverse cultures, leading to increased operating costs, and the exponential growth of costs with support processes.

The group decided that it would invest in new technologies, though e-collaboration tools as a way to maximize existing resources, minimize work duplication, and standardize processes making them the same cross the entire organization.

As a further measure to enhance the profitability of its assets, ProCME also changed the organizations structure of the group, which evolved from an almost watertight hierarchical model, where each of the subsidiaries had great autonomy to a cross model where the support services are centralized in Portugal.

ProCME implemented in 2013 the e-collaboration tool Lync from Microsoft, initially covering just a group of key employees, having in its roadmap a second phase with the extension of the use of the tool to all the employees.

In table 1, it's reflected the evolution of the growth by ProCME in the foreign markets, which is expected to double by 2014, in corporation to 2011, constituting by that year 43.89% of the total volume of business of the group.

Table 1. Turnover

	2011 (M€)	2013 (M€)	2014 (preview) (M€)
Portugal	232,8	162,5	194,7
Foreign Markets	56,6	49,9	152,3
Total turnover	289,4	212,4	347,0
Weight in the total turnover	19,56%	23,49%	43,89%

This policy option has managed to reverse the decline of the domestic market turnover, and with this ProCME has been able to maintain sustainable growth ratios. For this scenario of growth Angola contributed with an increase of 15.2M€ to 23.6M€, and Brazil with an evolution of 7.8M€ to 65.5M€.

4. Research Methodology

Since we want to understand a contemporary phenomenon in which the Researcher has no interference we may use the case study methodology [29]. For the collection of qualitative data we used semi-structured interviews with the CEO of the group, the IT director, and all the seven managers of the subsidiaries. These interviews were then crossed with the literature to structure the questionnaire that was provided to all the Lync users. The interviews were used because we find it helpful in getting opinions that can reveal problems, hidden constraints and generalities that can be very important in understanding the organization, organizational and personal goals, and get insider information about informal processes that otherwise its detection would be if not impossible, at least very difficult to obtain [30].

For the collection of quantitative data, the questionnaire was sent to all the users of the Lync system, using the email as means of delivery, and using the online survey tool, Esurv, to collect and store the responses. The email and the Esurv tool ensures an efficient way of collecting responses from a large number of entities, even when they are widely geographically dispersed. Additionally, the use of questionnaires in organizational practices, allows the identification and description of the variability of different phenomena [31].

This questionnaire was divided into three parts. The first part collects data about the profile of the user and the second part is focused on the non-adopters of the e-collaboration tool. The third part gathers data about the Lync benefits at the organizational and personal level and data about the difficulties that the users had in the beginning of Lync use and one year after that moment.

5. Analysis and discussion of results

In this chapter, the data collected though the survey will be analyzed, this survey was online between February 19, 2014 and March 9, 2014, and addressed all employees to whom the e-collaboration tool Lync was delivered, one hundred and nine in Portugal, and thirty-seven abroad.

Adherence to the questionnaire had a significant value, with 84.25% of the population completing all questions.

In figure 1a, are featured the profiles of the users, with 78.86% of them located in Portugal, this ratio gives body to the greatest number of employees that are in the central support units at the headquarters of the group. In the type of work that the users have, in figure 1b it can be seen that 58.54% are from administrative services, here the effort of the organization has been to bring to the e-collaboration tool the production areas, and thereby harness the know-how available in the resources that the group have, and who have many years of experience and cumulative knowledge.

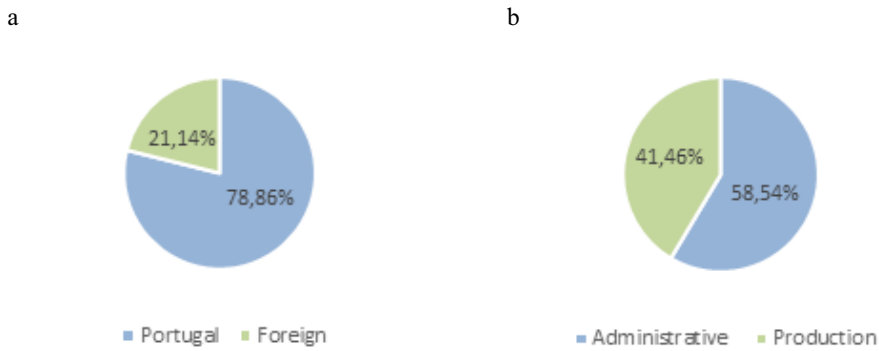


Fig. 1. (a) Geographical location; (b) Type of activity.

In figure 2a it is analyzed within the universe of employees that where given the tool, those who use (or not) in a daily basis the Lync, and within the non-users, what are the main reasons for not adopting. Despite the strong number of users that adopted the tool, it is important to note that this factor is not framed by any mandatory use, its use is only advised and encouraged. Regarding the motivations shown in figure 2b that lead to the rejection of this system, although there is a balance, the lack of training is one that can be mitigated with easy in the future.

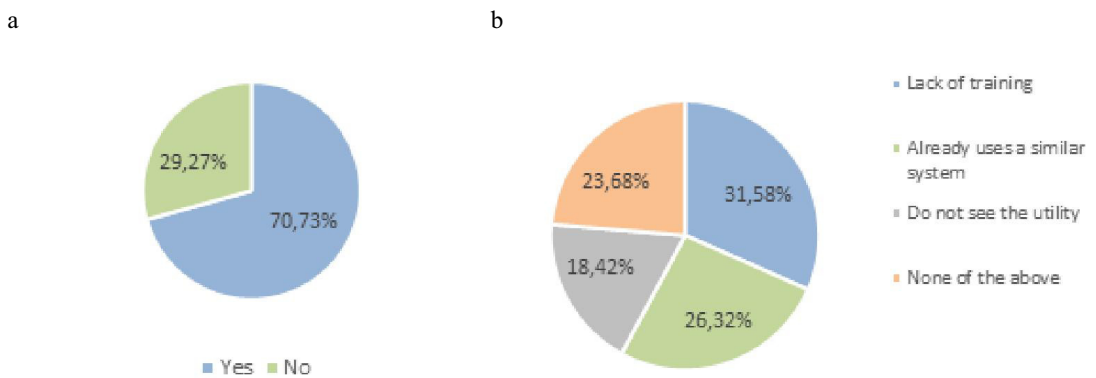


Fig. 2. (a) Tool adoption; (b) Non-adoption reasons.

Also an important number retrieved in the questionnaire, is the one that shows that only 18.42% of the respondents who do not use the tool, did not find that it is a useful system, this alone allows the organization to work towards a stage of well target actions to incorporate the majority of those into the system in a voluntary manner, since they are already aware of their benefits.

In figure 3a, is evaluated the levels of friendly use of the e-collaboration tool Lync, notice that the majority find it to be easy or very easy to interact with the system, 83.91% is within this group of users, with only 2,3% who think that the system is either difficult or very difficult to use. In figure 3b is important to note that 64.37% of the survey respondents felt that the distances between them and the rest of the organization was shortened with the use of the Lync, and 9.2% of them have not seen this effect occur during its use.

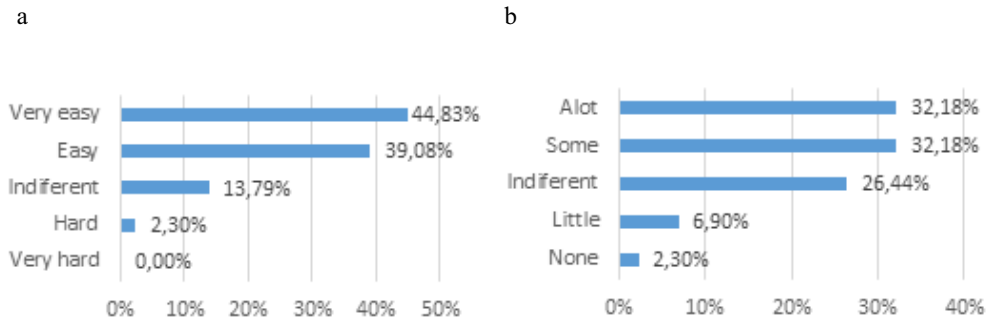


Fig. 3. (a) Ease of use. (b) Brings the users and the organization together.

This results associate to the strong adoption, shows that Lync is well accepted by users, and as a great effect on the sensation of belonging to the organization, and helps in the inter-employees relations.

In figure 4, it is described the productivity gains experienced by users, here the majority think that the system brings real benefits, 68.96% agree that the introduction of this tool has brought benefits in terms of increase of productivity in their daily tasks.

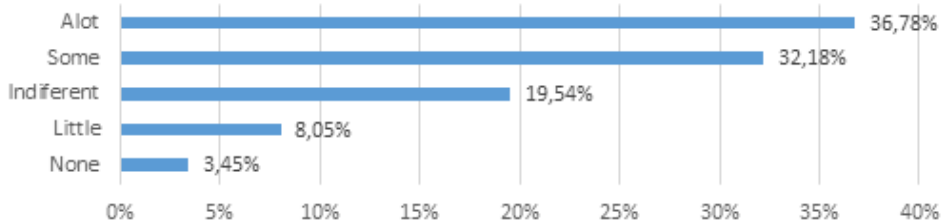


Fig. 4. Productivity gains.

In figure 5 the perceived gains to the organization by the users are analyzed, what stands out is the fact that 87.36% of the users refer the reduction of costs with communications, the 62.07% who say that there is a reduction of costs with time wasted, and 47.13% who as indicated that there was a decrease of costs with travel expenses.

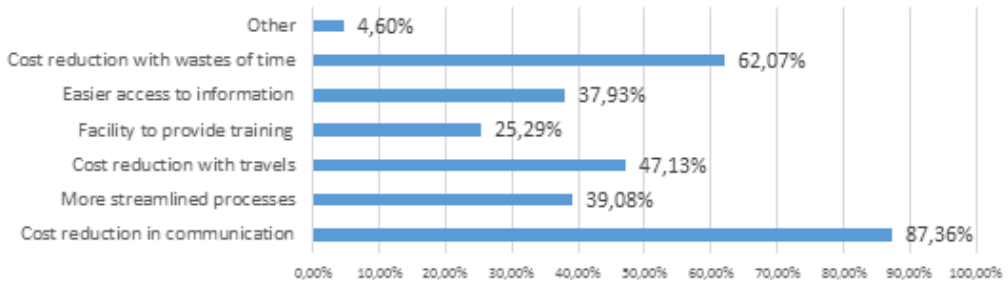


Fig. 5. Gains for the organization.

In table 2, is displayed the evolution of the difficulties that the users had with the system, the comparison is between the starting stage with the deployment of the tool, and the problems at the date of the response. Here the main problem is related with the few users that were connect to the system, this derived by the way witch the system was deployed, by stages.

Table 2. Difficulties in use of the e-collaboration tool Lync.

Difficulty	Initially	Currently	Variation
Users on other systems	24,14%	24,14%	0,00%
Connection failures	13,79%	16,09%	2,30%
Different time zones	10,34%	13,79%	3,45%
Few users connected	62,07%	56,32%	-5,75%
Habituation to the tool	17,24%	5,75%	-11,49%
Training	21,84%	13,79%	-8,05
Interface	10,34%	8,05%	-2,30%
Others	5,75%	8,05%	2,30%

6. Conclusions and final considerations

This study brings together relevant knowledge relating the use and impact of e-collaboration tools on organizations that implement internationalization processes.

The e-collaboration tool Lync, has been well accepted by the users, despite the fact that they were not forced to use it, 71% are using in a daily bases. One of the reasons is the easy to use it, 84% of the users find the interaction with this tool easy, or very easy (see Fig. 2a). Also the reasons that were presented to discard the use, aren't related to the tool itself. For the non-adopters, the two main reasons to take that posture are the lack of appropriate training, and the fact that their regular contacts are logged into similar tools of concurrent systems (see Fig. 2b).

The gains obtained by the use of e-collaboration tools as been measured in two ways, one where the benefit is enjoyed by the user and where the conclusion is that this systems are benefit to the daily tasks, 69% felt that has been some sort of gain in terms of productivity (see Fig. 4). The second is for the organization as a whole, where the results points to the conclusion that the e-collaboration tools have a positive impact on the operational costs and process workflows, 87% referred the reduction of communication costs, 62% pointed to the fact that have less waste of time in their daily tasks, 38% that can access more easily to relevant information to their work, and 47% have responded that had a reduction with travel expenses (see Fig. 5).

The use of Lync also allowed the ProCME group to become more cohesive and united. In fact, in an international company, the physical and psychological distances are a recognized problem. However, these distances can be mitigated through the use of e-collaboration tools. This conclusion is based on the fact that 64% of the users refer that, since they started to use Lync, they feel more close to the organization and other employees (see Fig. 3b).

Through this study, ProCME can take precise steps with the objective to improve the benefits of the use of Lync, namely with an well-directed training, since this is one of the main reasons for non-adoption of the tool, also with a large group referring that they don't see benefits to their work, but none the less they think this is a great tool, it is important to show to this group how they can take advantage of its use, and by this mean bring them to the adopters group.

This study was developed based on the reality of a company and a specific social and economic context. Therefore, the results and conclusions cannot be generalized to other organizations. However, this research gives a positive contribution to understand organizational use of e-collaboration tools as well as how they impact the personal and organizational dynamics.

Concerning future research, it is suggested that this study could be extended to a wider range of organizations, so that the conclusions could be generalized.

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