



JISTEM: Journal of Information Systems and
Technology Management

E-ISSN: 1807-1775

tecsi@usp.br

Universidade de São Paulo
Brasil

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JISTEM: Journal of Information Systems and Technology Management, vol. 10, núm. 1, enero-abril,
2013, pp. 5-19

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São Paulo, Brasil

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E-MAIL USAGE PRACTICES IN AN ORGANIZATIONAL CONTEXT: A STUDY WITH PORTUGUESE WORKERS

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ABSTRACT

Nowadays, e-mail is one of the most used information and communication technologies by organizations; it can streamline processes and transactions, facilitate information exchange, increase the quality, speed and productivity of the employees and strengthen relationships with stakeholders. This paper empirically examines the use of e-mail in an organizational context, using a sample of the Portuguese population with an active e-mail account assigned by the employer. The results show that most users have what is considered appropriate behavior; however, some situations that may indicate problems for organizations were also identified.

Keywords: E-Mail, Users, Behaviors

1. INTRODUCTION

The world we live in is marked by globalization and by the pressures of an increasingly informed and demanding society. To survive in this extremely hectic

Manuscript first received/*Recebido em* 27/12/2011 Manuscript accepted/*Aprovado em*: 15/08/2012

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world, marked by uncertainty and by contingency, organizations are required to implement a permanent modernization process, which can enable them to increase productivity and improve the quality of their products and / or services.

In the last decade, the three traditional primary production factors that defined the productive potential of the economic system - land, labor and capital - were displaced by information. It is information that helps to create markets for new products, establishes shopping trends, identifies needs, suggests different approaches to advertising and creates new jobs (Holtz, 1999). Nowadays, the key resource that an organization cannot live without is organized, relevant and easy to access information, in order to meet the ongoing demands of the market, of the public and of employees and, thus, the very success of organizations.

Information and communication technologies (ICTs) play an important role in the mentioned modernization process that organizations must develop, and are critical in managing information and communication. A good example of these ICTs is the e-mail system, a communication tool that allows information flow and sharing, in large quantities and simultaneously to multiple recipients, regardless of where they are, almost instantaneously at reduced costs. When e-mail is provided to employees by the organization, it is assumed as a working tool and should be only used for the work related tasks and activities that are set by those employees (Instituto de Tecnologias de Informação na Justiça [ITIJ], 2008).

E-mail success and popularity has led to a large daily traffic of messages sent and received (Whittaker & Sidner, 1996). Consequently, the widespread use of this communication tool can be a daily problem for all the people who, in their professional or personal life, use it, given the large volume of information exchanged and that they need to manage.

In addition to the increasing number of messages that are exchanged daily, e-mail can be a vehicle for malicious content or for directing users to fraudulent and unsafe websites. In organizations this problem is reflected not only in computer network security and, therefore, the security of its data, but also in the time that employees spend with e-mail, including the management of incoming and outgoing messages (writing new messages, reading, replying, forwarding, archiving, deleting / removing, organizing messages into folders, printing, etc.) (Mano & Mesch, 2010).

E-mail has been the topic of several studies and compared with other types of communication, e.g. face-to-face, in what regards its social and communication aspects (Whittaker & Sidner, 1996). However, there still is a need to better understand the practice of e-mailing, so that organizations can really benefit from the use their employees make of this tool. As stated by Weber (2004), we still lack a deeper understanding of the impact of e-mail on our lives.

Fallows (2002) studied the use of e-mail in a professional context, by applying a questionnaire to a sample of about 2,500 Internet American users. The main objective of the present paper is to apply and update the study by Fallows (2002) to the Portuguese reality. As in Fallows' research, our aim is to study, in a work context, peoples' use of e-mail, what its perceived advantages and problems are, how e-mail is affecting peoples' work processes, and what its impact on productivity is. Moreover, it is also expected to understand how organizations can act so that this particular ICT can reach its full potential.

2. LITERATURE REVIEW

Nowadays, it is common for people and organizations to work in different geographic locations, communicating via electronic media for producing projects, generating innovation, tackling complex organizational problems, proposing new organizational strategies, creating new services, and even managing projects and organizations (Rego, 2007). This author argues that electronic communication contributes to the increase of communications, as it allows sharing great volumes of information with customers, suppliers and employees very quickly. Rego (2007) also states that many of those communications would never exist if it were not for the development of electronic media.

Because information is vital to improving organizational performance both academics and managers entered the world of "the information revolution" (Freeman & Louca, 1999). Among other themes, they are interested in how employees contribute to organizational success through the interpretation and use of information to improve skills and organizational performance, and how information strengthens the connection between firm and employee performance (Landauer, 1995).

In the communication between organizations, employees plays a vital role in the business success, as much more than only an information system, it represents the fundamental process of exchanging ideas, experiences, influences, projects and knowledge that support teamwork and employee participation (Sousa, 2005). With the current level of business complexity and market unpredictability, there is a great difficulty in processing and providing relevant and organized information, quickly and efficiently. Therefore, organizations are demanding, urgently, good applications for information and communication strategic management.

The need for efficient and low cost communication mechanisms, to share information and knowledge (Figallo & Rhine, 2002; Weick, 1995), generates greater interaction through electronic means (Gupta, Karimi, & Somers, 2000), which may improve management processes by improving inter-departmental communication (Lucas, 1998; Olson & Lucas, 1982). Studies of communication through e-mail has raised interest and questions about the adequacy and effectiveness of electronic messages for information management; yet, little is known about the effects of e-mail on work performance (Mano & Mesch, 2010).

E-mail is an important form of communication when it comes to covering large geographical areas with minimal growth in physical space, since it enables the virtual implementation of certain operations; moreover, it enables greater electronic interaction among employees (Gupta et al, 2000). For some (e.g. Romm & Pliskin, 1999), the properties associated with e-mail (low cost, rapid communication and ease of use) and its "technological neutrality" minimize potential distortions of communication, related with differences in profession, gender or race of the agents involved in that communication. However, other studies question the appropriateness and effectiveness of electronic messages, and questions are raised about the impact of e-mail on the well-being of the employees, due to the need to manage greater loads of information (Hogg, 2000; Sproull & Kiesler, 1991), stress and job dissatisfaction (Ingham, 2003; Lewis, 1999).

It is clear that information and knowledge are difficult to manage and organize (Storey & Quintas, 2001), and instant forms of spreading information, such as e-mail, may have both functional and dysfunctional effects on the performance and well-being of employees (Taylor, Fieldman, & Altman, 2008). Thus, the characteristics of the receivers may hinder an improved performance, since some may not be sufficiently "engaged" or "experts" to require a constant flow of information. However, for others, a slow flow of information may increase the stress at work, especially when the tasks performed require the participation of others or cannot be completed until a reply is obtained (Belloti, Ducheneaut, Howard, Smith, & Grinter, 2005).

The efforts of organizations to provide to employees technological tools that increase work efficiency are not new. The growing needs for communication imply a higher level of and a more intense exchange of knowledge, which also implies a higher level of and a more intense information exchange (Mano & Mesch, 2010). The process of information exchange has been facilitated by the use of e-mail. The quick access to new and up-to-date news, procedures, tools and notifications, contributes to a greater reliance on e-mail. The easy access to the information flow enabled by e-mail has led to consider it as an important tool to increase work performance. Both academics and professionals have studied whether these tools are free from risk or, at least, do not generate "collateral damages" (Jackson, Dawson, & Wilson, 2003).

3. METHODOLOGY

The study's population consists of the Portuguese working population that uses e-mail at work and has assigned an email account by the employer. Since the population under study is not registered, a non-probabilistic accidental sampling procedure was employed. Responses were registered until what was considered an acceptable sample size for data analysis. An online questionnaire was implemented to characterize e-mail practices in the work context. The questionnaire was online between September and November 2009, and was publicized via e-mail.

In order to compare our results with Fallows' (2002) research, the questionnaire, divided into 3 sections, was mostly composed of questions developed in that study:

- Section I - Use of E-Mail - sought to gather information on management practices and use of e-mail. The first question in this section was a filter question, to ensure that only respondents with an e-mail account provided by the employer replied to the questionnaire. After the screening questions, nine single choice questions about e-mail management were introduced. In the questions about the use of email, a set of unordered statements was used in order to assess aspects related to: e-mail organization, private use of e-mail, security and privacy, and e-mail utilization behaviors.

- Section II - Comments or Suggestions - had only an open question, not mandatory, which allowed respondents to make suggestions, explanations or other comments they deemed pertinent.

- The last section of the questionnaire gathered up respondents and organizations' characterization data, in order to evaluate the individual characteristics and organizational features of the target population.

4. ANALYSIS OF THE RESULTS

In this section we present and discuss the results obtained in the study. We begin with a brief characterization of the respondents, after which we analyze how they manage and use e-mail in a work context.

4.1 Sample description

A total of 1,305 respondents completed the questionnaire, of which 76 were excluded, 54 because they declared not to have an e-mail account assigned by the organization and the others for not confirming the existence of e-mail in their organization. Thus, 1,229 respondents were analyzed, mostly women from 30 to 49 years old. As can be seen in Table I, the majority of the respondents have a university degree (diploma or bachelor degree) and most work for organizations with 250 employees or more.

With regard to age, the distribution of our respondents is similar to that of the Fallows' study, since most respondents also belong to the age group from 30 to 49 years old. The sample is also comparable in qualifications – in both cases most respondents have a university degree. So, it can be said that although ours was not a statistically representative sample of the population, the study's respondents are suitable study elements of the population: they have an age distribution similar to that of the employed population in Portugal (Instituto Nacional de Estatística [INE], 2011), and a level of education higher than the average of the Portuguese population, indicating a higher sensitivity and preparation to answer questions related to the use of e-mail.

TABLE I. SAMPLE DESCRIPTION

		Count	%
Gender	Man	422	34.3
	Woman	807	65.7
Age	16 - 29 years old	206	16.8
	30 - 49 years old	903	73.5
	50 - 64 years old	118	9.6
	More than 64 years old	2	0.2
	University degree	645	52.5
Qualifications	High School	283	23.0
	Post-Graduation	267	21.7
	Other	34	2.8
Number of employees in the organization	Less than 10	59	4,8
	10 to 49	263	20,9
	50 to 249	401	32,0
	250 or more	469	37,3
	Don't know	37	3,0

4.2 E-mail management

Regarding the number of messages received, sent and read daily (Table II), it is worth noting that the number of incoming messages exceeds the number of messages sent and read. The justification for this difference may be related to the fact that some of the messages received are spam, so they need not to be read or answered. In the study by Fallows (2002) this phenomenon was also revealed, that is, also in the U.S. in 2002 the number of messages received exceeded the number of messages sent.

TABLE II. E-MAIL RECEIVED, SENT AND READ

Usually...		Count	%
	Less than 10	246	20.0
Messages received	10 to 20	697	56.7
per day	21 to 50	209	17.0
	More than 50	77	6.3
	Less than 10	814	66.2
Messages sent	10 to 20	328	26.7
per day	21 to 50	68	5.5
	More than 50	19	1.5
	Less than 10	599	48.7
Messages read	10 to 20	395	32.1
per day	21 to 50	181	14.7
	More than 50	54	4.4

In relation to time consumed with e-mail daily, 54.2% of respondents spend approximately 15 minutes per day with e-mail, 30.7% approximately 1 hour, 7.2% approximately 2 hours, and 7.9% over 2 hours. In the study by Fallows (2002), 50% of American workers reported spending less than 1 hour daily with e-mail and 23% only 15 minutes. Comparing these figures with those of our study, we can say that, on average, Portuguese respondents spend less time than Americans with e-mail. This difference can be explained by the fact that the levels of digital literacy are different in the two countries – it is normal that in countries like the United States, where there is a higher percentage of "knowledge workers", the time devoted to e-mail is higher than in other countries.

The number of messages in the "Inbox" folder, the oldest message in that folder and the number of folders defined by the user in the e-mail software were also reported by respondents (Table III).

TABLE III. NUMBER AND AGE OF MESSAGES AND NUMBER OF FOLDERS

		Count	%
Number of messages in the Inbox folder	Less than 10	213	17.3
	10 to 50	303	24.7
	51 to 100	134	10.9
	More than 100	579	47.1
Number of e-mail folders	Less than 5	289	23.5
	5 to 20	772	62.9
	21 to 50	111	9.0
	More than 50	57	4.6
Oldest message in the Inbox	1 month	465	37.8
	6 month	171	13.9
	More than 6 months	202	16.4
	Since the beginning	391	31.8

The data show that 47.1% of respondents have more than 100 messages in the "Inbox" folder, a situation which reveals that most respondents do not have habits and / or knowledge for managing and archiving e-mail messages. This conclusion is supported by the fact that, as previously mentioned, 76.7% of respondents receive only up to 20 e-mail messages per day (see Table II). According to Whittaker & Sidner (1996), one of the major problems in the management of e-mail messages lies in knowing which of the existing folders is most suitable for storing a message, or, failing that, how to label a new folder to store it, so to make the process to access previously saved messages easy, fast and intuitive. This problem may actually be the reason why the respondents do not "clean up" their inbox.

Most participants in this study (62.9%) have created between 5 and 20 folders in their e-mail software. These numbers seem to conflict with the fact that most of the respondents have more than 50 messages in the "Inbox". That is, the creation of multiple folders should allow easy filing of messages, thereby avoiding its accumulation in the inbox. This contradiction may be explained by the fact that the "classification" of many messages can be difficult to the point that respondents do not move them to their specific folders, which later might hinder a prompt location of the message.

With regard to the oldest e-mail message in the "Inbox", 37.8% of respondents have messages in that folder received in the previous month. According to Whittaker & Sidner (1996), a technique used to keep the e-mail organized is to keep the inbox empty. From the results we can confirm that the behavior of respondents, in this respect, is divided: approximately 32% admit not to "cleaning" the inbox, and approximately 38% report that the messages in their inbox are only a month old or less.

These data seem to confirm the difficulty, mentioned above, of message classification, since it can be concluded that a significant proportion of respondents, those who have messages in the "Inbox" "since they have e-mail", never totally organize this folder. Nevertheless, most respondents state that they do create folders to store or archive messages. These results indicate a problem that may have two sources: either the messages are not possible to be classified, or there are obvious difficulties in

the management of e-mail by the respondents. Whatever the explanation, the potential of e-mail is limited by these users' practices and organizations should consider solutions for enabling a better management of e-mail by its employees.

The time required to reply to e-mail messages was another question to respondents. To reply on the same day is the option for 56.6% of respondents; 38.6% declared to reply after 1 to 2 days, 4.1% after 3 to 7 days. The answers replying after more than 7 days and not replying via e-mail have residual values – 0.3% each.

The behavior of most respondents agrees with what is referred by Whittaker & Sidner (1996) as a good strategy for managing e-mail, since replying on the same day, when a message is received, avoids duplication of efforts in reading the message and thinking about the response. In this respect American workers are quicker to respond, as Fallows (2002) found that 44% reply immediately and 38% by the end of the day. Another interesting difference lies in the 3% of American workers who never reply to e-mail messages (in our study, only 0.3%). These differences may be explained, as already noted, by the highest percentage of "*knowledge workers*" in the U.S.

The number of times that respondents check their e-mail during the day was another question to participants. The data show that most respondents, 52.0%, check e-mail 2 to 6 times a day (see Figure 1).

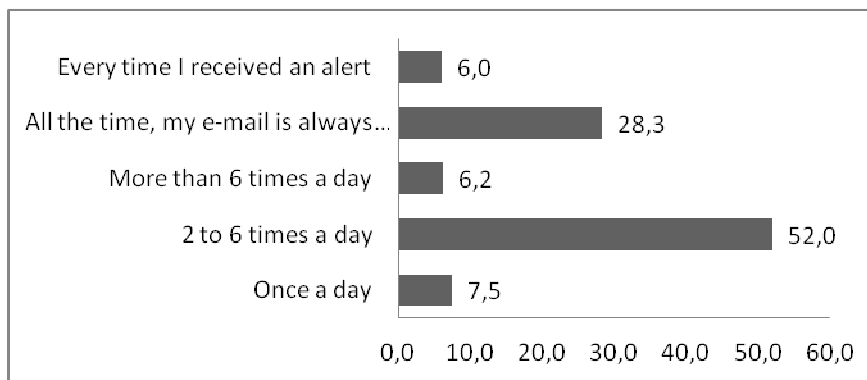


Figure 1. Daily frequency of e-mail checking

Fallows (2002) found that most American workers (88%) check their e-mail at least once a day, and most of them (70%) check it several times a day. Despite the differences in values, we can consider that the verification of e-mail, for Portuguese workers, is not a priority in relation to other activities, since most respondents check the e-mail only 1 to 6 times per day. Still, we highlight the 28.3% of respondents who have the e-mail software always open and the 6.0% who check the mail every time they receive an alert – behaviors criticized as not being the most appropriate (Robbins, 2004). In fact, depending on the responsibilities they have on the organization, this course of action can be viewed as a disruption and hence a loss of productive time.

4.3 E-mail users' behavior

This section presents the results of 25 questions that sought to characterize the behaviors of the respondents regarding the use of organizational e-mail. The statements, as already mentioned, were presented in a non-organized manner and intended to assess behaviors related to: organization practices (7), private use (7), security and privacy (4) and usage behavior (7).

When analyzing the results of the statements related to e-mail organization (Table IV), we can say that respondents have some habits of organizing and managing e-mail

messages, as they do an immediate initial message screening, reading the subject and / or deleting the messages, and a subsequent storage in specific folders. However, some difficulties in classifying messages and their storage into specific folders can also be noted. This conclusion is supported by the answers of the majority of respondents to questions 11, 12 and 22.

TABLE IV. E-MAIL ORGANIZATION PRACTICES

Statements		No	Sometimes	Yes
2. As I'm receiving and sending messages I organize them into categories and put them in different folders.	Count	272	174	783
	%	22.1	14.2	63.7
3. When downloading email messages I just delete the ones that are not important.	Count	41	84	1104
	%	3.3	6.8	89.8
11. I've had to rewrite a message because I could not find it in my mailbox.	Count	530	73	626
	%	43.1	5.9	50.9
12. I've had to ask the sender of a message to send it again because I was not able to find it in my mailbox.	Count	474	83	672
	%	38.6	6.8	54.7
13. When I read a message I immediately manage it (read, reply, forward, file, delete).	Count	70	459	700
	%	5.7	37.3	57.0
17. When I receive several messages at the same time, I order their reading according to a specific criterion.	Count	126	110	993
	%	10.3	9.0	80.8
22. I have difficulty finding in my mailbox the messages I need.	Count	639	560	30
	%	52.0	45.6	2.4

Table V presents the results for the statements related to the private use of organizational e-mail. These results show that respondents use their work e-mail account for purposes that are not exclusively related to their professional activities: the majority discloses the e-mail address provided by the employer for non-professional matters (54.1%), exchanges e-mails containing private or family issues (53.3%) and a significant percentage (59.7%) sometimes forwards entertainment messages to colleagues or friends. While these situations per se do not reveal any inappropriate or excessive use of e-mail, and other data in Table V show some cautiousness on the part of users, they call into question the security of organizations' e-mail systems and may contribute to lower employees' productivity.

TABLE V. PRIVATE USE OF WORK E-MAIL

Statements		No	Sometimes	Yes
4. I give my e-mail address only for business purposes	Count	665	75	489
	%	54.1	6.1	39.8
8. I've been warned or reproached at work because of my e-mail use.	Count	1211	7	11
	%	98.5	0.6	0.9
9. I've been involved in disciplinary or judicial process because of my e-mail use.	Count	1223	4	2
	%	99.5	0.3	0.2
18 I forward e-mail messages that promise luck, wealth or other benefits to those who do not break the chain.	Count	1131	74	24
	%	92.0	6.0	2.0
19. I forward e-mail messages seeking philanthropic support with the intention of helping people.	Count	896	230	103
	%	72.9	18.7	8.4
20. I forward e-mail messages containing jokes, texts, images, videos or PowerPoint presentations, of varied content to colleagues and friends.	Count	349	734	146
	%	28.4	59.7	11.9
23. I exchange e-mail messages about private or family issues.	Count	384	190	655
	%	31.2	15.5	53.3

Comparing these results with the study by Fallows (2002) some noteworthy differences can be found: 53% of the American workers indicated that almost all incoming messages were work related and 58% declared that almost all posts they do are work related. These data reveals safer behaviors on the part of American workers, perhaps because of their greater knowledge on the use and management of e-mail in a work context.

In Table VI we can see the distribution of opinions on the statements related to e-mail security and privacy. The results indicate a slightly dissonant behavior: the majority of respondents do not send e-mail messages with important information, which shows some concern with sensitive data and prevents organizations from being exposed to avoidable risks. However, most respondents do not backup their e-mail folders. While performing backups does not mean full warranty of information, the truth of the matter is that the lack of backups of important information is a major cause of information loss inside organizations.

TABLE VI. E-MAIL SECURITY AND PRIVACY PRACTICES

Statements		No	Sometimes	Yes
1. Most messages I receive daily are "spam".	Count	353	755	121
	%	28.7	61.4	9.8
5. I send e-mail messages containing sensitive or confidential information.	Count	1046	95	88
	%	85.1	7.7	7.2
7. I do backups of my email messages.	Count	861	136	232
	%	70.1	11.1	18.9
21. I know that the organization I work for supervises / monitors the e-mail accounts of its employees.	Count	939	47	243
	%	76.4	3.8	19.8

Still on the theme of security and privacy, it is worth noting that the majority of respondents had no knowledge about enforcement or monitoring actions on their e-mail accounts implemented by their organizations. Equally significant is the fact that most respondents "sometimes" receive "spam" messages, which show some weaknesses in the organizations' e-mail security systems, namely the absence of an adequate system for filtering external e-mail messages.

Table VII summarizes the results concerning the statements related to e-mail usage behaviors.

TABLE VII. E-MAIL USAGE BEHAVIORS

Statements		No	Sometimes	Yes
6. I send messages of courtesy.	Count	107	192	930
	%	8.7	15.6	75.7
10. I already forwarded e-mail messages addressed specifically to me, to other colleagues in order for them to answer or satisfy the request.	Count	387	95	747
	%	31.5	7.7	60.8
14. When I receive a message, I read the subject and only if it interests me I read it all.	Count	390	663	257
	%	25.1	53.9	20.9
15. When I receive a message that requires my answer, I often send an immediate reply saying that the message was received and will be dealt with as soon as possible.	Count	363	225	641
	%	29.5	18.3	52.2
16. When I receive a new e-mail message, I stop what I'm doing to deal with the new message.	Count	746	455	28
	%	60.7	37.0	2.3
24. I exchange informal e-mail messages with colleagues and friends with stories, news or gossip about my organization.	Count	525	138	566
	%	42.7	11.2	46.1
25. I check my e-mail out of work and out of office hours	Count	187	144	898
	%	15.2	11.7	73.1

The analysis of the results in the previous table allows us to identify some problematic behaviors (Weber, 2004):

- The majority of respondents send courtesy messages and, when they receive messages that require an answer, they have a habit of immediately replying to acknowledge message reception and inform about a reply as soon as possible. Weber (2004) recognizes these behaviors as indicative of a lack of knowledge about the costs associated with sending and receiving e-mail messages, and of an impulsive attitude that disregards reading, understanding and developing appropriate answers to e-mails, in favor of speed of response. This type of messages, in a context of a large influx of information, can become excessive and disruptive.

- There is a high percentage of respondents who admitted checking e-mail out of work. With some exceptions, this behavior can also be considered problematic and is defined by Weber (2004) as "an obsessive feeling with e-mail", that happens when users are no longer able to "turn off" from the e-mail and live dependent on it. However, this behavior may be acceptable, depending on the users' function and position in the organization.

- Although there are very different answers, most respondents exchange informal e-mail messages with colleagues and friends with stories, news or gossip about the

organization. This is a somewhat controversial topic because, although this exchange of information could be both personal and work related, it is always informal messages that are exchanged with some personal interest in mind or to meet the needs of social coexistence. These behaviors can either help or hinder the organization's goals; hence, they cannot neglect this informal communication among its employees. This negative feature of e-mail is also mentioned in Fallows' (2002) research.

It should also be noted that the majority of respondents says that when they receive a new e-mail message they do not interrupt what they are doing to deal with it. This behavior is regarded as a good e-mail usage practice (Robbins, 2004), in that, with few exceptions, the e-mail management should not be a priority over other work-related tasks.

5. CONCLUSIONS

There are not many known studies and theories on e-mail management and usage in the work context. In functional terms, the benefits of this communication tool rise from the fact that it allows for distance information exchange. The speed, low cost, simplicity, convenience, organization, usability and ability to attach information and share it simultaneously with different people are known advantages of electronic mail (Greenberg & Baron, 1997; Monteiro, 1997; Rego, 2007; Silva, 2008; Turban, McLean, & Wetherbe, 2004; Vaz, 2006).

The study's results presented on this paper allow highlighting various aspects of the way e-mail is used in the work context. Electronic mail is as important as any other means of communication such as fax, paper mail, phone, etc., consequently the same attention should be given to it. Therefore, users must read it regularly and decide what to do with the messages (delete, archive and / or reply).

Most respondents demonstrate behaviors considered as the most appropriate for the proper management of e-mail: delete unimportant posts immediately after downloading them; order the reading of messages according to some criteria; after reading decide immediately what to do with the messages; respond to requests by e-mail on the same day; and organize incoming read messages by categories, moving them into different folders.

However, respondents also demonstrate difficulty organizing their work e-mail messages. Most respondents declared that they do not backup e-mail messages and, although they created 5 to 20 folders to store e-mail messages, they sometimes find it difficult to locate the messages they need. Most participants assume that they already had to rewrite or ask the sender to forward messages because they could not find a specific post in the mailbox. Therefore, it can be concluded that most users have difficulty finding or accessing their e-mail messages.

Given the data in the present research, it appears that respondents have the knowledge to work with e-mail but, in what respects messages organization and filing, they still reveal some weaknesses. This fact might be justified, either because users do not apply the best message management practices (deleting important messages or filing them in non-retrieval locations), or because they do not back up e-mail information and end up losing it. Moreover, the majority of participants admit having more than 50

messages in the "Inbox", which confirms the conclusion that respondents have some difficulty classifying messages and / or store them in the right folders.

Time spent with e-mail can influence either positively or negatively the organization's results. On the one hand, e-mail decreases the time required for information flow; on the other hand, e-mail also increases the volume of available information that has to be considered by the organization's employees. In our study most respondents declared to spend only about 15 minutes a day dealing with e-mail. This fact, coupled with the circumstance that only a small percentage of respondents spends more than an hour a day handling e-mail, seems to indicate that, in most cases, the time used with e-mail does not constitute a threat to the completion of other work tasks. This conclusion is corroborated by the evidence that the majority of respondents declare not to interrupt other activities to deal with new incoming messages, and check the e-mail only 1 to 6 times a day.

In what regards sending and receiving messages containing confidential information or legal or contractual implications, most respondents demonstrate behaviors considered as the most suitable: they do not automatically redirect chain e-mail messages, do not send e-mail messages containing sensitive or confidential information; and do not forward philanthropic request messages. However, most admit that sometimes they forward messages containing jokes, images, video or graphical presentations of varied content, to colleagues or friends, and most admit that they disclose their work e-mail address for private purposes and that they exchange e-mail messages containing private issues.

To know e-mail users' behavior is important both to achieve excellent results in organizations (as stated by Weber, 2004), and to identify external threats. It is therefore crucial that all parties involved, organizations and employees alike, are aware of the risks they face when using this communication tool. The appropriate e-mail usage practices should be explicitly defined, otherwise the organization's results might be negatively and definitively affected.

The results of this study indicate – in line with the conclusions of Fallows (2002) – that despite the management and use of e-mail in the work context do not seem to constitute a threat to the productivity, security and privacy of organizations, in most cases there is room for improvement and for actions that might enhance the usefulness of this tool. Specifically, most users have some difficulty organizing the information received through this medium and a significant proportion of them still has behaviors that may put at risk the organization's safety and privacy. These problems must be taken into account by organizations because without any intervention and with the anticipated increase in the use of e-mail in work contexts, they can become a real threat for many organizations.

It is noteworthy that the population studied in the present study is represented by a non-probabilistic sample and, therefore, the conclusions drawn should be interpreted with some care and restrictions. Future research should try to identify the determinants of appropriate behaviors in what concerns the use and management of e-mail in the work context. For organizations to be able to define actions to improve the use of e-mail by their employees is important to understand what characteristics and attitudes of employees enhance the suitable use of this communication tool.

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