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Mobility and Communication Overload in Financial Market Professionals: The more the better?

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ABSTRACT

The organizational environment is increasingly embedded with technologies, and mobile technologies, positioned in this environment, are ones that transform the landscape of managers, bringing facilities and challenges at the same time. The intense integration of their activities with mobile technologies brings high connectivity and availability. The device is presented as an open door through which professionals are always available to contact, regardless of their choice. This study sought to understand the communication overload through mobile technologies within the professional's tasks. Through a study with 11 financial market professionals, it was possible to deepen in some aspects, with the instant notifications being the most talked about, not only in the professional but also on a personal level. There was also emphasis on the impacts of the fact about being constantly connected, and that technology ends up to deliver own ways of managing the issues that it has itself raised.

KEY-WORDS: Tecnologias móveis. Sobrecarga de comunicação. Profissionais financeiros.

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A Mobilidade e a Sobrecarga de Comunicação nos Profissionais do Mercado Financeiro: Quanto mais, melhor?

RESUMO

O ambiente organizacional está cada vez mais embebido em tecnologias, e as tecnologias móveis, posicionadas nesse ambiente, são tecnologias que transformam o cenário dos gestores, trazendo facilidades e desafios ao mesmo tempo. A intensa integração de suas atividades com as tecnologias móveis apresenta alta conectividade e disponibilidade. O dispositivo apresenta-se como uma porta aberta, pela qual os profissionais estão sempre disponíveis para contato, queiram ou não. Neste estudo, procurou-se compreender a sobrecarga de comunicação através das tecnologias móveis nas tarefas profissionais. Por meio de um estudo com 11 profissionais do mercado financeiro, foi possível aprofundar alguns seus aspectos, sendo o de notificações instantâneas o mais comentado, não apenas no âmbito profissional mas também no âmbito pessoal. Também houve destaque para os impactos do fato de se estar sempre conectado, e de que a própria tecnologia entrega formas de gerenciar as questões por ela mesma criadas.

PALAVRAS-CHAVE: Tecnologias móveis. Sobrecarga de comunicação. Profissionais financeiros.

1 INTRODUCTION

Despite of the several names (ubiquitous computing, Weiser, 1991; pervasive computing, Ark & Selker, 1999; mobile technologies, Saccol & Reinhard, 2007), the centrality of the idea of these concepts - different but with the same essence - is to highlight the fact that technology is present in a mass scale on the lives of individuals and organizations. It is already reality the fact that we coexist with more mobile devices than people on the planet (Forbes, 2013). With more and more connectivity, there are new opportunities to communicate and interact.

This setup definitely blurs the boundaries, allowing a new relationship with time, with the space and with different territories (, 2007). The events are international, regardless of where they occur, they may be broadcast live from anywhere for a device that fits in the palm of your hand. New forms of work individually or in teams, brought about by the *internet* and even more by the mobile device change quite the organizational environment and its operation: naturally, this technological recovery starts to be present at all levels of the organization (Sorensen, 2010).

Always being Connected also allows the involvement with others or with different activities, in spaces of time that were not used before. At the same time, it makes individuals always available to be contacted (Bittman, Brown & Wajcman, 2009). With this, it is practically instantaneous to take knowledge about anything new. The advantage of having information is something very volatile (2010): an example is the oscillation or correction in stock prices, affected by the intensity of information that are easily passed.

Researching on such themes can add to understanding of how professionals in the field of finance see this phenomenon of high availability. After all, in this context it is inserted the stock market revenues (Folha de São Paulo, 2013), and, in an attempt to retain their customers, operators in the financial market started to offer a wider range of products aimed at the various profiles.

The financial professional is, therefore, one that provides financial services of any nature. Being added to the increase of the variety of services and, especially, different products to offer (Hadar, Sood & Fox, 2013), it is

remarkable the significantly large and growing scope of the profession. Furthermore, the information, raw material in this market, has been changed increasingly in *commodity* due to temporal symmetry caused by the *internet* (Póvoa, 2010). All of this requires that the profile of the professional operating in this area change from the reactive to proactive and be also multidisciplinary (IBCPF, 2013), because, besides needing to know the various investment products, must also manage the different customer profiles and keep up-to-date in a dynamic market.

Thus, to operate in the area, this professional faces several challenges, given the significant expansion of the scope of use of mobile technologies, being important to understand more about this process (Dourish, 2004). In the light of the numerous features of these technologies, it is realized that the boundaries between working hours and hours of leisure activities are less clear and enmeshed in the same screen. Always connected, professionals can be accessed by anyone in their network of contacts at any time, regardless of their choice. Thus, the objective in this article is to analyze how professionals perceive and deal with the overload of communication made available by mobile devices. For this reason, were observed and interviewed 11 professionals in the financial market.

In the literature review, the main aspects of the research were deepened, ending with the dimension of the communication overload. The method is shown in subsequent section, and finally it is presented the results and the conclusions.

2 LITERATURE REVIEW

Due to the intense use of resources of mobile technology present in the organizational environment, it is important to understand how these devices are used and how they impact the day to day of professionals (Pica, Sorensen & Allen, 2004). After all, these same technologies, responsible for delivering more possibilities, bring the positive and negative impacts, conceptually inseparable (Jarvenpaa & Lang, 2005). In this way, in order to cultivate success in interaction with mobile technologies, it is necessary to reflex on the context of use.

2.1 THE MANAGERS ENVIRONMENT THE MOBILE TECHNOLOGIES

Mobile technologies are portable devices for information technology, which can therefore be taken to anywhere, thus creating virtual environments in real world environments (Pica et al., 2004; Saccol & Reinhard, 2007).

However, the concept of mobility can go beyond a characteristic of technology and be discussed in a way that respects the independence of the limits of borders, and not just the geographical ones. Kakihara and Sorensen (2001) argument that the "mobile being" is connected in a more relevant manner to the interaction between people, suggesting the expansion of the concept of mobility through the dimensions of space, time and context. After all, these dimensions were heavily modified due to use of these technologies (Kakihara and Sorensen, 2001).

Allowing interaction with a virtual environment, mobile devices bring in-built various multimedia resources, which may act as radio, television, newspaper and GPS, all at the same time (Schroeder, 2010; Zhong, 2013). With this, they bring greater ease of access to anyone, anytime and anywhere, generating social change and modification in the form of operating (Pica et al., 2004; Schroeder, 2010). Therefore, this glance about the technologies that not only move, but also transform due to allowing mobility, is the aspect of interest of this study.

The vision of information as important tools of the "manager", along with the notion of time as a "perishable and evanescent" resource was already highlighted by Drucker (1970). In turn, Mintzberg (1984) demonstrated that managers would be subject to increasing pressures, given their various responsibilities (or roles), at the same time that would be exposed to an increasing complexity inside and outside of organizations.

However, significant innovations such as the *internet* and the mobile technologies, which modify the way organizations - and their managers - operate, contribute to the increase of such complexity significantly, since it brings with it a number of challenges unique and quite particular (Ladd, Datta, Sarker & Yu, 2010). When allowing that they be distributed in different locations and that the processes can be executed and coordinated regardless of the borders of time and distance, the technology can no longer be

separated from the management of the organization, since it is already enmeshed in the environment, characterizing it as an ecosystem of digital business (Bharadwaj, Sawy, Pavlou & Venkatraman, 2013)

In addition, bringing these technologies as drivers of a more intense pace of the quotidian of this manager may not be adequate, but the possibility of using in parallel spaces to take advantage of the time in cars, cafes and airports can increase the feeling of lack of time (Bittman et al., 2009) and anxiety by constant connection (Mazmanian, Orlikowski & Yates, 2005), for example. In this way, the manager, at the same time that may have the need to use mobile technologies because they are means of immediate interaction, meeting a demand of practice at that time, may also be exposed to situations of pressure by the constant connection and interaction between his or her several roles.

Simply measuring the time of use may not capture its relationship with the expected results (DeLone & McLean, 2003). High level of use of a smartphone, for example, may be due to checking *e-mails*, messages to relatives or updating social networks; or all these activities in parallel, each with different energy levels of the user. Thus, the devices allow the managers to be increasingly multitasking, mixing the various aspects of the lives of individuals. In order to better understand what this use means, the next section develops the concept and details how its elements will be worked out in this study.

2.2 OVERLOAD ON THE USE OF TECHNOLOGY

All these challenges are part of the transformation of the organizational environment produced by mobile technologies. With the increase of the insertion of these technologies in the scenario of businesses, to support the work of their professionals, it is important to understand how these technologies participate of the routine of the professionals (Pica et al., 2004). They are responsible for delivering more possibilities, bringing impacts of different natures, which are not liable to separate in reality (Jarvenpaa & Lang, 2005). The possibility of being constantly connected generates a cycle of expectations that can become coercive social norms (Mazmanian et al.,

2005) and even lead to frequent impulses and creating bonds with vicious technology in use (Jarvenpaa & Lang, 2005).

To work with the intensive integration of mobile technologies in conjunction with the professionals, we started from the concept of overloading of the use of technology, Karr-Wisniewski and Lu (2010). This overload refers to the increase in the use of technology beyond the level of production - what would cause a fall in the technology curve versus productivity. The authors conducted a study in which addresses the use of technology within organizations and whose main objective is to analyze the overload of technology (*technology overload*) to which professionals are exposed (Eppler & Mengis, 2004; Karr-Wisniewski & Lu, 2010).

Studies concerned with this overload are focused in clarifying causes, consequences and solutions to situations in which there is a lot of information being received (Eppler & Mengis, 2004) including on the "fingertips" (Davenport & Beck, 2002). The mobile context is formed by situations like these, in which the new technologies of information, while providing convenient access to information, facilitates the receipt of the same, important or not, requested or not (Bawden & Robinson, 2009).

The authors proposed a theoretical construct composed of three dimensions: resource overload, information overload and overload of communication (Karr-Wisniewski & Lu, 2010). The goal in this article is therefore to investigate the overload of communication, since it works with the high connectivity and the availability to which the professionals are exposed, throwing a more reflective look about the role of mobile technologies in the context of the managers.

2.2.1 Overload of communication

A sobrecarga de comunicação (*communication overload*) addresses the excess of communication that comes from others and that generates an

interruption in the activity. According to the law of Yerkes and Dodson (1908, cited by Karr-Wisniewski & Lu, 2010) the *performance* of individuals tends to grow with distractions by increasing the focus on the first task, but only up to a certain point. Cohen (1980) completes reporting that many times the effects on performance can be verified only after the end of the provocateur fact - in this case, the interruption - and that the distractions can lead to negative impacts such as reduced productivity due to cognitive effort to resume activity.

The interruption may have other points of departure, in addition to any other person. This discussion can be extended to bring elements of the technology itself as influencers in the relationship between individuals and their working environment (Pica et al., 2004).

The professionals, especially those that deal with so intense information, are inserted in a working environment with different means of communication, such as *e-mail*, instant messaging, communication via VOIP, access to a compute (*desktop* or *notebook*), in addition to a mobile device, with more many other options. With this scenario, there is a concern that the proliferation of communication can take to a fragmented working routine, with frequent interruptions between the tasks (Bittman et al., 2009). Sandi and Saccol (2010) also bring the discussion concerning the interruption. In research with sales professionals, the authors demonstrated a sense of common difficulty of resumption of concentration after an interruption (such as phone calls and SMS) (Sandi & Saccol, 2010).

The interruption has as one of the starting points the constant availability that the mobile device provides. Yun, Kettinger and Lee (2012) describe this scenario by means of figure of speech of the door of an office: when, it demonstrates that there is availability for interaction with other members. The mobile device, by means of its resources, caused the door to be permanently open, or at any time it is possible to be questioned, either through a link message, *e-mail*, or any other form of communication (Yun et al., 2012).

It is stood out, so, a double point of the device: to enable mobility, by giving the individual the freedom to move and, as a bridge, to bring what is far more distant to be more present (Pica et al., 2004), ends up bringing

the counterpart of an instant availability to any request for interaction, be it appropriate or not (Sorensen, 2010).

The balance between the two sides of this bridge is dynamic, as it involves several aspects. Not only motivations of those who want to contact and who is contacted regardless of the request, but also points from the technology itself. Sorensen (2010) argues that mobile technology needs to be within this analysis, because its resources may allow greater harmony in the interaction of constant availability. After all, it is the technology itself that is mediating these interactions. The author characterizes this mediation as a symmetrical and asymmetrical.

The symmetry of the relation implies that the technology will not provide any kind of difference between the parties. Thus, a message such as SMS, for example, in suitable conditions of connection and operation, will always get to its recipient, often in fraction of seconds. But it will not be possible to say whether that message is desired, appropriate for that moment or any other form of interception in its flow, by any of the parties. Characteristics of asymmetry, in turn, will determine that mobile technology will deliver resources whose rules allow to transform this interaction. Features such as filters and contact lists with specific rules can determine from a different touch until the blockade of receipt of contacts. Thus, individuals can better manage the interactions mediated by technology mobile (Sorensen, 2010).

Orlikowski (2007) shows in his studies that bearers of *BlackBerry* from an investment company reported the need to remain aware of what was happening through the checklist contained in their *e-mails*, at any time of day or night. Like, among the group in question, it was known that all had the gadget, there was an expectation of constant monitoring, elevating the level of expectation of response, also steadily. Through this movement, the action of people in relation to the equipment and its use is transformed from its interaction, transforming something, in case the reading of *e-mails*, from sporadic to frequent and expected by peers in the work environment (Mazmanian, Orlikowski & Yates, 2006).

The construction of the expectation of response is, therefore, an important factor. Through it, you may realize that an uncommon action can

be incorporated in a natural way, and even become widespread. Thus, the use of this artifact, which until then was not part of reality, is to be transformed into a recognized style (e.g.: "chronic user") (Orlikowski, 2007) and that changes even the way to see the others (since from this user it is expected always a ready response).

Thus, several issues are involved in this scenario, regarding the use of mobile technology. The multitasking characteristic of mobile devices comes not only from the high amount of resources delivered by technology available in the palm of your hand. There are different possibilities, which depend or not on the user, on mobile devices. You can stop an activity actively or passively, with the same device. The tools of *push notifications* shall arise on the info screen, whether they are desirable or not (Eppler & Mengis, 2004; Bawden & Robinson, 2009). Given a changing environment and ever more demanding (2010), professionals need to deal with the various issues arising from mobile technology.

The several possibilities, and the different reflections about their positive and negative aspects, are related to what was previously exposed. It is believed that studying the overload of communication may help to read the environment, allowing critical perspectives in relation to mobile technologies.

3 METHOD

For being a study that sought perceptions about the environment of the problematic exposed, as to the method, this research is characterized as qualitative. To achieve the proposed objective, data were collected by means of direct observation and semi-structured interviews in depth (Malhotra, 2012; Yin, 2010) along with the financial market professionals certified by the Brazilian Association of entities of the Capital and Financial Markets (Anbima), being these the units of analysis. According to the suggested by Büscher and Urry (2009), to aggregate in the data analysis, it was kept a field diary, which helped in the memory of the research. Thus, the study's findings can be established in a more accurate way, enabling approach of a greater number of aspects in the analysis of the data (Yin, 2010), given the combination of more than one data source, which substantially increases the

quality of the collection, allowing the convergence of different data for analysis of the same facts.

In the total, 11 professionals participated in the survey, all with at least one of the certifications offered by Anbima; seven of them have additionally the certification of the Brazilian Institute of certification of Financial Professionals (IBCPF), called certification of financial professional, commonly called the CFP. The IBCPF's certification made it possible to find these professionals through the website of the institution, also important to address professionals who not only sell the products available, as well as act as counselors. The remaining four professionals were located through the website of the Securities Commission (CVM), the Anbima and professional contacts, always respecting the profile defined *a priori*.

The data collection was started by sociodemographic data, followed by the questioning about the use of technology and by direct observation. In the end, there was a call for an interview whose structured guide is given in Table 1.1.

In relation to the sociodemographic data, whenever possible, we sought to identify, instead of asking, the answers to the questions. Also we tried to get the interviewee about the use of mobile technologies, which was essential for participant.

Direct observation followed a protocol previously defined and occurred before the interview, allowing further development of other aspects observed throughout the session. To observe how the mobile technology is being used in the work environment, it was asked to participants to accompany them during a period of time (between half shift and a shift, i.e., from two to four hours).

After the direct observation, the interviews were carried out. They were recorded and their goal was to verify how the respondent deals with those aspects of the overload of communication and how this manifests in their reality. The guide of the interviews was developed based on the literature highlighted. The questions were performed according to the aspect that most stood out, so the researcher sought to be more focused on addressing the entire contents rather than in respecting the order of the guide developed, since the interviews were semi-structured.

Dimension	Aspect	Question
Overload of Communication	Constant Connection	What is your opinion about the constant connection (for example, *e-mail* is always available) offered by the mobile IT? (Sorensen, 2010; Yun et al., 2012)
	Constant connection	If you have to do without *internet* on your mobile device, do you feel more or less productive? Why? (Sorensen, 2010)
	Instant notifications	Do you believe that it is important, in some way, to filter the communication you receive through your mobile device (lock features, various tones)? Why? (Sorensen, 2010)
	Instant notifications	When you receive an alert, on your mobile device, of occupational origin, do you believe that it is important to respond at the same time? Could you explain? (Mazmanian et al.; 2006)
	Instant notifications	Do you believe that the instant notifications on your device mobile are important? How do they affect your concentration? (Sandi & Saccol, 2010; Yun et al., 2012)

Chart 1: Semi-structured Interviews guide

Source: Elaborated by the authors

After the completion of the interviews and direct observations, the data were transcribed by one of the authors in the text editor Word. Care was taken to perform the transcription near the date of completion of the observation and interview, feature that allowed, during this process, recall and familiarize with the data. The transcript was performed individually (by a professional), resulting in the final 11 complete transcripts.

The data were analyzed on the basis of the aspects proposed in the study. In general, the overload of communication addressed the availability and the constant connection that the mobile device brings, being the focus that communication that begins by a third party, and not by the individual. The objective of the analysis of the data was unable to capture, through data that were available (interviews and direct observation), what was really expressed, even if indirectly (Freitas & Moscarola, 2002). During the reading, some related words were written down - for appearing so often or by comparison with the appearance of the dimension in question. With these annotations, we proceeded to the lexical navigation, so it was possible to have a general idea of all the texts together and we sought to identify the contexts of these words selected. This process was followed by the analysis of the content of the texts, through rounds of careful reading in order to be aware of what has been said and observed and enrich the interpretation (Freitas & Moscarola, 2002).

4 RESULTS

The following section presents the results of this study. First, environment and the professionals who participated in this research are detailed, focusing on the types of organizations visited and the profile of the 11 participants. Next, the results about the overload of communication are presented.

4.1 THE ENVIRONMENT OF THE FINANCIAL MARKET PROFESSIONALS

Eleven financial market professionals participated in the survey. The organizations visited and its encoding used were: two bank agencies and a bank headquarters [BAN]; four brokerage firms of securities [COR]; an Estate administration office [ESC]; and a broker of credit [CCR], totaling nine organizations. One of the interviewees is an independent consultant [CSI], therefore does not belong to any particular organization.

A large part of the participants (nine out of 11) are 30 years or more, and these three are more than 40 years; thus, it is a group that witnessed the growing integration of mobile technologies in the financial market. The other two participants were aged 22 and 29 years old. Out of the 11 professionals, only two are women. You can, therefore, conclude that the professionals are in their most experienced, because seven have operated for nine years or more in the financial market; among these, five have been working for 10 years or more. But this experience is not reflected in stability in the same organization: a large part of the professionals (8 of 11) has been working for two years or less, and two of these have been working less than a year in the organization in which they were when conducting the research.

All professionals have one or more Anbima's certifications. Four participants also have additional certifications to the ones related: three from CVM and the certification PQO (Program of Operational Qualification), from Bovespa.

All professionals were asked previously about their professional tasks, their positions and on the use of mobile technology, the latter being a decisive

question for participation. In this way, all of them reported using some resource of mobile technology for carrying out their tasks.

Eight of the 11 participants use personal mobile technology for their professional tasks. Only three participants have device provided by the company, but they also utilize their private devices.

The analysis in relation to 11 participants happened homogeneously. It could be highlighted individuals' particularities; however, this is not the main objective of the study. What we looked for is how these participants, who herein represent a financial professional inserted into a reality of change - particularly in relation to new technologies present, also, in the financial market, perceive and deal with the challenges of communications overload highlighted in the literature. In chart 2, it is summarized the aspects worked.

Overload	Aspect
Communication overload	Constant connection and Instant Notifications

Chart 2: Aspects of communication overload

Source: Elaborated by the authors

4.2 COMMUNICATION OVERLOAD

The financial professional deals with information so intense, dealing with devices of several kinds at the same time. This diversification in the form of communication may be causing disruption and fragmentation of work, which can affect such things as the concentration (Mazmanian et al., 2006; Sandi & Saccol, 2010).

In addition, understanding how individuals deal with a device that brings together different aspects (personal and professional) has been gaining importance for organizations, especially due to the potential of influence on satisfaction with the work, on the stress, among other aspects that may influence the professionals (Yun et al., 2012).

The overload of communication sought to address the reaction and perception of the respondents in relation to the several options of availability and communication - from others - that the mobile device brings to their

everyday life. One of the most commented aspects (eight of 11 respondents) were the feelings of urgency and the expectation of rapid response that this technology has brought:

> [ESC] *"No one has more patience to wait the guy respond 10 minutes later, it has to be immediately everything [...] The banks themselves today they come in my WhatsApp to offer me something. I even have to limit. Moved from e-mail to 'Ah, you were not there, I called'. It is possible, the guy was there using WhatsApp. So, dude, I'm busy, it seems that no longer has the person cannot say that he or she is available. [...] This is something curious... I don't know who came first, the egg or chicken, but people say they are victims of it, but they promote it, understand?"*

> [CSI] *It used to be connected to a person's house, if the person is not in, okay another time I call back. Today if you call and the person does not answer, you send a message, WhatsApp, viber... invent anything to find you and you have to answer quickly. This is also for our professional life, to personal life, your wife, your husband will call you and if you do not respond is because something happened, and then you are charged, you must respond fast, if you leave the room and forgot the cell phone you have to come back soon because I will have 20 needs that call. [...] The guys don't want to wait, don't want to know if it is 08 pm, if my schedule of formal work has already finished [quotation marks with his hands]. The guys want me to answer at midnight because I have cell phone to answer."*

> [COR04] "*Then of course, there is the issue of urgency, this sense of urgency because.... The mobile technology ended up turning the situations extremely... everything is urgent, everything is possible when it comes to mobility. Then it sometimes ends up hindering, not everything is so urgent, it sometimes can be solved in its normal time, as if we did not have the mobile technology. [...] we end up creating a feeling of anxiety for everyone, I believe, that ah, that business today everything has to be automated response, you already know if the person has already received, if you have read, if you have not read, not necessarily the person read but has already received, so I think that several emergency situations have leveraged, anxiety, solution, which are sometimes good sometimes not so much."*

As well as in the research of Mazmanian et al. (2006) with professionals of an office of investments, you will notice that most of the interviewees (8 of 11) believe that there is a large and growing expectation of response in relation to third parties. With the several forms of contact that the device offers, the respondents reported that people expect a reply, and fast. The environment reported by these authors presents itself here as well, since there is no formal rule that requires the constant monitoring: there is a social pressure - represented here not only by job-related factors, as well as personal aspects - which creates expectations of immediate response through technology (Mazmanian et al., 2006). And this question is so present that technology itself has increasingly more elements that make people more

accessible (Yun et al., 2012). Thus, in relation to the aspect of constant connection, the features that let you know when a message has been received, and even the day and time that it was read, leave the relationship of communications transparent and influence the expectations of others, as well as intensify that feeling that was classified as "urgency", showing that, for these people, being constantly connected through mobile technologies, enhanced communications.

Yun et al. (2012) bring also a figure of speech to express this aspect: the door, in the office, determined an availability, i.e., demonstrated when it was possible or not to enter the room without needing to be announced or without prior scheduling. With the mobile device, this door has become permanently open, allowing access at any time of day or night without any notice, simply "enter", via a link, text message, or any other available resource. There is this perception of being always available among the interviewees (9 of 11):

> [BAN01] *"Kind every time someone can come talk to you, it is as if you had you're always there, do you understand? And it sometimes seems that, as they can ask me and I reply, they end up asking me again if it happens again. And I say 'Hey, I have already spoken so and so and so', but they go there and make me practically the same question. This is really bad."*

> [COR04] "*but I think that it potentiated with which everyone had access to a lot of things, wherever you are [...] necessary and sometimes unnecessary, it is anticipated much that could have its more appropriate moment. [...] The issue of mobility is that the connection, it is faster, is that issue of urgency, then today regardless of where I am, literally, everyone can keep in touch with any person wherever he or she is."*

These interviewees (9 of 11) also addressed this constant connection your device allows regarding the effects which ultimately lead to:

> [BAN02] *"I think that it does not interfere, but I end up doing many things due to being connected. To have this personal contact with people on the basis of being on your cell phone. Because, you know? there are co-workers who live near my home, so I do not to go talk to them personally and I do this in my house with the phone."*

> [CSI] *"On the constant connection, I do not think very cool, not really. I don't know, I think it was more interesting before, when there was not cell phone, it was letter, go horseback riding, there a romance. Today always connected, it is kind of complicated. We lost a little of that obligation of having to go out with a friend to talk, go to a bar, today thou do this, but... many things are skipped because you're there plugged directly in person, and with a group of friends, right? [...] Today everything is done through cell phone, instant everything, I think it took a bit, I don't know, the relationship of people."*

> [CCR] "*I think negative the fact of always being connected. In general, I think that people do not have a clear sense of the need that they really have to be updating the Facebook profile or looking at what is happening on Instagram or seeing all conversations in all groups of WhatsApp. I think that people have difficulty giving up addition to interact with people or spend a weekend at the beach without looking at the phone. I, perhaps because I am a little older, I can leave your cell phone on the corner the whole weekend if I want to. But I see people also in my age, older than me, who cannot, and I find that a little sad, I don't know, I think that lack a bit of vision, of perception for people, because you have to be able to live off-line, in my opinion.*"

> [ESC] "*I think that people have to take a social care, so, that thing, he is in the restaurant and the guy is seeing the pictures that the So-and-so has posted. My, it is not the time, did you get it? And people also complain that everybody does it and encourage it, and do it. If the restaurant, you look at the table beside you, 3, 4, 5 people at the same time dealing with the smartphone. So... Now, I think this depends on each one of use, too. I think it is important to get connected in messages that are around you, type, the person who is there, talking with you, they are looking at you, and you're looking at cell phone, I think that is a sign of lack of respect, something like this, I think it is essential.*"

In spite of being asked about the effects of this connection in relation to their professional tasks, the interviewees naturally reported on their personal relationship with technology, addressing its effects on their perceptions in relation to the social aspects. Their examples bring a load of negative perception of the social relationship between people, demonstrating that the mobile technology for them inevitably involves the personal life. To contain a variety of functions inherent, the device ends up causing a mix between personal life and professional life, being difficult to regard this technology as a unique tool, or unique tool of social contact. Mazmanian et al. (2006) reported that the device does not make clear when it is time to work and when it is time to leisure, making each individual needed to manage this separation, especially in professions with autonomous characteristics, such as the financial professionals surveyed. The "Line" that separates the personal life and professional life becomes increasingly diffuse, originating at the mobile technologies, bringing interaction between both of them the whole time. One of the aspects of this diffuse relationship is the fact of always being connected to the work, which was also the aspect of discussion of the interviewees (7 of 11):

> [BAN02] "*I try to untie it. Otherwise, as we do not have a fixed schedule, sometimes... at the beginning, at the beginning, I was working at home, but now I have tried to disassociate because otherwise I did not weekend anymore, I could not rest, I only thought about working. Then when I get*

home, I dismiss any connection with it, the e-mails I leave to look at the other day when I arrive at work; I don't look at home. But it is still connected, still receiving e-mails, in the application that everyone has, I keep talking with my co-workers, with my supervisor, she sends reports to us, but I try not to look, I try to leave for the other day."

[BAN03] "*I think sometimes it is a habit. It is the alert that in general makes an alert, then I look, right? If I'm watching TV with my son and then the phone sparked, it vibrated, I look. Sometimes it is helpful to remember that I have a meeting the next day, many times I set the warning to the previous night so I get ready or something. Now, regarding to continuity, it depends on what is to continue. Theoretically, if the thing is important, you continued in your head, because you kept thinking about it. With respect to doing something with regard to alerts, sometimes, the meeting the following day is very important, the guy takes the night to prepare."*

[COR01] "*Oh no, no doubt, to reply to e-mail from the quota holders is always at night, in general. Then I take work home. Ah, it is not good, it is not the best way, but that is what we are to be able to respond to demand, then there's no way. Today, unfortunately, the fax goes by email. So there is no way. But I do not think that is very good, not, honestly."*

[ESC] "*For a long time I could not put this barrier, and I was invaded day and night. And I am talking as well, to be exchanging e-mail 1h in the morning, and the guy responding, and you speak, jeez, I wanted to sleep, but I know, I sent an email now and he will respond within two minutes and will ask for something else and I'll have to respond to new... They were conversations by e-mail which did not end. And sometimes I could even have done over the phone, but I did not, and it was all there, registered, and the guy did the follow-up: 'Oh, and that thing that you promised me at 2am in the morning that day, where is it?'... It was too bad for me. Really bad."*

Through its features and characteristics, the mobile device makes that borders that separate the different moments of the day of the professional be less defined, or even no longer perceived, causing fusion between personal life and work life. Yun et al. (2012) emphasize these aspects reinforcing that individuals may be faced with conflicts when their work environment invades their space of personal life, as well as when personal elements appear during the working day.

According to Sorensen (2010), there is no guarantee of harmony in the use of mobile technologies as forms of interaction, since there are impositions inherent to these technologies. In the case of this study, the appearance of instant notifications can be seen as something that mobile technology requires, and it is up to the user to manage the harmony of its use. There are substantial conflicts in this relationship, since the device allows the freedom to be anywhere, at the same time that get you stuck there, allowing availability for immediate interactions (Sorensen, 2010). The

professionals reported that the instant notifications influence their professional tasks, especially their concentration:

> [ESC] *"Yes, I started to limit the notifications, was a sea of notifications. Basically, when you download an application, you do not see that you have notification, until the day that application that has nothing to do with photography I don't know what notifies you that you have a promotion or whatever that you speak 'Boy, what is this? I have never asked it here'. Then I started to limit the notifications, to have the most relevant ones."*

> [COR01] *"Yes, here at the office, everyone blocks. We've even talked this at a meeting, your phone always in silent mode, and notification of application we block here at the Notification Center. Then we do not keep looking at it all the time. And e-mail we are also restricted to look twice a day, to be able to focus on."*

> [COR05] *"Normally the cell phone is on the table, but if I have some activity that I have to concentrate more normally, I put it inside the backpack. Because otherwise it flashes there and you are already distracted. think that is a shill. I usually put it away, the times that I see that I'm using too much, I usually put it inside the backpack. So it is harder to have access to it. Or inside the drawer [laughter]".*

Respondents reported that the notifications for that application disturbed their routine, since they allow an easy access at any time, which corroborates the research of Sandi and Saccol (2010), who also identified the perception of difficulty in the retaking of concentration after the interruption caused by a mobile device.

Still, in this study, the main element raised by interviewees who portrays this conflict is the *WhatsApp*. For its unanimous citation (all professionals reported to it), it was decided to deepen the analysis from that specific application.

Before you explore it, it is important to highlight that this is not the application itself, but of the resources that it allows the user. Having in mind the idea that technology is constantly evolving and improving, there is the possibility that, over time, new features and functionality are integrated or aggregated and result in new types of interactions, including conflicting interactions. At the reality inserted, this application provides several features in one, because it adds several features inherent to mobile devices, such as free messages directly to a particular cell phone; message delivery confirmation; possibility to know when the other is online at that moment; conversations in groups; notifications to each new message; Sending photos, videos and voice messages instantly, among others.

One of the professionals [ESC] managed to summarize objectively this scenario, by stating that "*You see, this is very dynamic, a year ago, two, nobody had WhatsApp groups"*. Thus, when mentioned the application *WhatsApp*, the reader needs to realize that it is not only the application itself, but rather the possibilities that this brings to the reality in which the study is inserted.

The application *WhatsApp* was mentioned by all (11 of 11) respondents. During the interviews and observations, it was also possible to observe that all had the application and used it frequently, during their professional tasks and during the interviews. This application carries a heavy load, despite of also being used to work. During the realization of professional tasks, it is seen with negative adjectives such as "disturb" or "takes away the concentration":

> [BAN02] *"It takes, takes away the concentration. social networks, this function of WhatsApp anytime calling, takes away my concentration. Ah, I usually respond, I usually look, there's no way, I cannot... I usually look. It is, I try to deal with my work easier, I can manage my schedules, I can, but even though it gets in my way because it takes away my attention. I could be doing things of my job and I am looking at the phone, right? I am doing other things, so I think it distracts me a little."*
>
> [COR05] "*Yes, my WhatsApp is always on the mute, but it keeps appearing class, anyway. But it does not vibrate or make a noise. But, even so, I think that it calls. But... it is more a question, more for personal use. Not for professional use. That is why I take it off because what is blinking there is not so relevant. It disrupts my concentration.*
>
> [COR06] "*The most I turn off, the push, right? the majority is off, mainly from the WhatsApp. Ah, because precisely during the work it starts to get beeping, beeping, beeping... has no way. I turn off and I look at it later. Because here at the table, you're with the information there, with the computer turned on, you receive e-mail, then what is important, what is relevant for work is coming in from there, right? And then to professional purposes it has no sense to let it on. Yeah, it's with me but so, here on the table it is... It is not off, but it in the quiet, well, and if you need to, if the phone rings, everyone needs to leave the table to answer, cannot answer the phone on the operating table."*

According to Sorensen (2010), at the time in which technology plays a priority role in the interaction between people, as a mediator in this process, the balance between user and technology can be affected if it didn't offer means to control this communication. In this study, the application in question is intrusive because it is "beeping", as reported earlier by one of the respondents [COR06], and eventually draws the attention and takes the

concentration away at times considered inappropriate. This interaction is classified as symmetrical, since the request for communication came from a third party and arrived at their destination regardless of prioritization (Sorensen, 2010). In other words, it was sent a message that arrived to the professional although it was not appropriate for that moment.

However, it is identified that the application itself has features that bring asymmetry and, consequently, the possibility of prioritization: the sender chooses when it is best to come into contact, and the receiving party may choose, in this case, whether or not will be notified about; also being able to choose when to access that content (Sorensen, 2010). The interviewees demonstrate knowledge of these tools and use them, allowing them to manage these interactions, revealing that it is up to each user to know and to make the best use of these resources:

> [BAN03] "*(...) But I think that it is up to the person to disable them. I do not think that is the fault of the device again. I think that either the guy has very short arm and does not know to disable it and then he or she needs an assistance from the company to help him to handle it, or the guy has to take the initiative. The guy I work with leaves the WhatsApp making noise with a group of friends, for me, is a guy to set our minds to see if he fits in the company. I, my WhatsApp does not let me know nothing about the groups, personal thing, only family and work. Everything that is personal is on mute, mute, mute, I read when I want to, it does not motivate me to use.* "

> [ESC] "*This thing of ring too, the WhatsApp has several groups, I began to take away, to differentiate the ring from groups to people's ring, because usually when it is a person the subject tends to be... It is not from the group, it is customized, so it tends to be more important to you, and I stopped with the notifications of groups for each message that comes in Then, when I am available, I go there and I see 'Ah, you have 80 messages of this group, beauty', I go there, I look*"

> [CSI] "*In fact what happens, already mixing the personal side, but... All my groups of WhatsApp, I don't know if you have any or not, it does not stop, right? 40 notifications in two minutes the guys do. This is silenced. Neither appears in my notification area, i.e., I will see it at midday, when I stop, I will open the group to see what they have. They do not wake and do not come at the desktop, so as not to generate my interest if someone sends directly to me, because we use a lot the WhatsApp to work, this guy is going to come in my working area, in my notification in the cell phone.*"

The professionals stated, therefore, that the application in question ended up causing an environment which clashes and annoys in a way, especially by their resources group, which do not bring relevant aspects at that time immediately. However, the application itself has features that allow you to support the management of these interactions, asymmetrically

(Sorensen, 2010). Thus, it was noted that it is up to the user to have knowledge and learn to manage the different demands in the most appropriate way not only for himself, but also for his working environment. In Chart 3, we present the issues addressed.

Aspect	Keywords	Data	Literature
Constant Connection	The mobile technology has brought a greater **sense of urgency**	*[CSI] Today it is not called and not answered, you send a message, WhatsApp, viber... They invent anything to find you, they have to find you and you have to answer quickly.* *[ESC] "No one has more patience to wait the guy respond 10 minutes later, it has to be immediately everything*	There is an expectation of immediate response through technology (Mazmanian et al., 2006)
	The mobile technology causes a constant availability	*[BAN01] "Kind every time someone can come talk to you, it is as if you had you're always there, do you understand?* *[COR04] But I think that it potentiated with which everyone had access to a lot of things, wherever you are. [...] necessary sometimes unnecessary, it is anticipated much that could have its more adequate time.*	he constant connection requires an availability also constant (Yun et al., 2012)
Instant notifications	The mobile technology has brought aspects of conflicts when mediating interactions	*[ESC] Yes, I started to limit the notifications, it was a sea of notifications.* *[BAN02] takes away the concentration. social networks, this function of WhatsApp anytime calling, takes away my concentration.*	Users may have perceptions of difficulties related with the flow of interactions (Sandi & Saccol, 2010; Sorensen, 2010)
	The mobile technology provides resources of asymmetry that allows the user to manage	*[BAN03] (...) but I think that it is up to the person to disable them. I do not think that is the fault of the device again.* *Neither appears in my notification area, i.e., I will see it at midday, when I stop, I will open the group to see what they have. They do not wake and come to the working area, so not to the arise my interest.*	he technology, as a mediator of communication, need to deliver forms of control to the user (Sorensen, 2010)

Chart 3: Development of the aspects of overload of communication

Source: Research data

Following are the final considerations of the study.

5 CONCLUSIONS

In this study, we attempted to present a discussion about the overload of communication to which individuals are exposed, bringing this discussion to the field of mobile technologies. To this end, the participants

were 11 financial market professionals, users of mobile technology and involved in tasks related to the financial nature of its activity.

The objectives of the study could be achieved. Professionals surveyed have the perception that there is an overload of communication. The first point raised was the sense of urgency that ease of communication through mobile technology allows. The respondents believe that the communication speed is quite fast, which makes the answers be collected in a space of time ever smaller. This question corroborates Mazmanian et al. (2006), once that the professionals demonstrate a growing expectation for rapid response on the part of their social life, both professional and personal.

The ease of communication happens especially due to the fact that individuals are constantly connected, which allows to be available for others, at any time (Yun et al., 2012). The interviewed professionals showed that perception of being always available and highlighted weaknesses arising from this constant connection. The main emphasis was in relation to their perception of the social interaction with people, that would not be the same anymore. Despite of having been asked about the professional activities, respondents ended up reporting personal points. According to Mazmanian et al. (2006), the device makes it difficult the separation of moments of work and leisure, or social, a fact also noticed in the reports of the interviewees for this study. The device carries personal aspects and professional at the same time, thus the interviewees tend to perceive the effects of the overload of communication not only for the job, but also inevitably to their life as a whole.

Another point raised was the issue of instant notifications. The professionals reported that they perceive the influence of this feature of mobile technology throughout their working day, especially in relation to their concentration on tasks. As it can be observed in the survey, the financial professionals are involved with a routine of concentration and study reports, observation of the behavior of markets and reading. It was noticed in the reports that the notifications that flash on the screen draw the attention of the professional at that moment, which can cause loss of concentration in the initial activity. When stating that the professionals surveyed perceive the negative influence of these notifications during the performance of their

professional tasks, these accounts corroborate the research of Sandi and Saccol (2010).

According to Sorensen (2010), once the technology assumes primary role to mediate the communication, we cannot guarantee the harmony of the relationship user-technology, precisely because of specific impositions that this ends up causing. The professionals interviewed reported their perception that this application, allowing interaction especially between more than one person at the same time (the so-called groups of the WhatsApp) end up bringing a large amount of interaction that is not always convenient at that moment

The application itself, and the mobile device, in turn, bring lock features that allow the prioritization and the customization of these notifications, in addition to the choice of those who will or will not be displayed with or without noise, among other features, bringing asymmetry and possibility of choice for these professionals (Sorensen, 2010). Respondents reported using these resources and that, thank to these possibilities, there is a more balanced coexistence, and the application is used, also, during the professional activities; however, it is up to the user to manage it and set it in a way that best suits him or her.

The overhead of communication discussed the participation of the mobile device as a mediator of communication, and all the implications that can be derived. The constant availability that the device brings, allowing that people be always accessible, provokes a sense of urgency and brings sometimes the expectation of immediate response, regardless of day or time (Mazmanian et al., 2006). With this, conflicts might be observed that the device has brought, for causing distraction, loss of concentration and also a high volume of communication, at the level deemed excessive in the perception of professionals. However, it was also highlighted that the device delivers the user ways to manage these interactions, allowing asymmetry and collaborating for greater harmony between the device and the professionals (Sorensen, 2010).

Here are some of the limitations of survey: It was not possible to get the same amount of time with all participants, having this interval varied between two and six hours. In relation to the analysis of the data, there was

no analysis that would verify specific sociodemographic characteristics (due to factors such as homogenous age range, gender predominantly male, time to market in the range of eight years, among others) in relation to overloads studied here. A survey with a larger amount of professionals may allow to study groups in relation to the different characteristics and bring glances more specific to the theme.

The selection of a specific market (financial) may not reveal other aspects that eventually would also be relevant to better understanding on the subject. Therefore, it is suggested future research that can demonstrate the same points herein treated through the perspective of professionals from other sectors, since its features can add more elements of analysis. An example would be software developers, given the nature of analytical tasks, requiring concentration and attention. Still, being the subjects of research dynamics, other prospects can be aggregated to talk about the overload of communication, along the development of other studies.

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