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Leandro S. Garcia

Fundação Getulio Vargas - SP, leandro.garcia@gvmail.br

Camila Mariane C. Silva

Universidade de São Paulo - SP, cmcsilva@usp.br

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Companies' Response to Consumerization and their Motivation Factors for Implementation

Leandro S. Garcia
Fundação Getulio Vargas - SP, Brazil
leandro.garcia@gvmail.br

Camila Mariane C. Silva
Universidade de São Paulo - SP, Brazil
cmcsilva@usp.br

Abstract

The use of private-owned technological devices for professional activities is an even frequent and inevitable phenomenon. The variety of gadgets, the lack of control about their getting into the enterprise's network and accessing information stands a growing challenge for Information Technology management and for the entire organization. By using a qualitative approach (content analysis) to examine cases of success in the acceptance of consumerization, this work aims to identify some motivation factors based in real experiences. Based on these factors, an organizational motivation profile classification emerges. Finally, a diagram based on Information System success is proposed intending to call for further research concerning consumerization.

Keywords

Consumerization, IT services management, IS success, Motivation factors, IT successful acceptance, BYOD.

1. Introduction

As Information Technology (IT) devices, mainly mobile technology ones, become cheaper and people seek for more productivity and friendly-user interfaces, employees prefer to use their own equipment in professional tasks instead of the ones that organizations give them. Although the discussion concerning this phenomenon started more than 10 years ago (Moschella, Neal, Opperman & Taylor, 2004), just recently the academy has become more aware of such issue.

There is no precise numbers on how much has the presence of private-owned devices grown in the last few years considering a broad market. Preliminary studies of Gens, Levitas and Segal (2011) and Harris, Ives and Junglas (2012) have presented results of companies in which 40% to 50% of employees frequently use their own equipment in order to job-related activities. Alleged reasons come from obsolete devices provided by the enterprise to an increase in productivity, as the user chooses the technology that he or she is accustomed to.

Consumerization, as it has several unique characteristics – it may or may not be motivated or controlled by the organization, it may or may not require an acceptance effort, it presents a challenge to the IT department with the lack of standards – makes it difficult to identify its

requisites, motivators and impacts by using traditional research models from the Management of Information Systems area. Despite there are professional studies addressing these problems (Moschella et al., 2004; D'Arcy, 2011; Gens et al., 2011; Zumerle, 2012) the need for an academic focus related to consumerization arises (Yun, Kettinger & Lee, 2012).

Considering such scenario, facing this phenomenon and observing the mentioned studies, we question: what factors can motivate the successful acceptance of consumerization concept by organizations-users? And, to verify this research problem, this study aims to identify some motivation factors based in real experiences. The specific objective is to propose a preliminary diagram based on the findings. This diagram would illustrate how the observed factors are related to influence the use of consumerization.

Thus, this study wishes to be one of the first steps toward the construction of a solid understanding concerning consumerization in companies by using data from reports of organizations that considered themselves to have reacted successfully to this phenomenon. We focus on the consequences to the IT department and how it has been involved in that process.

This paper is structured as follows: In section 2 we present a review of the main concepts about success in Information Systems and about Consumerization; in section 3 the applied method and techniques are shown; in section 4 we present and discuss the data analysis and its results; finally, in section 5 we conclude the study, show its limitations and suggest further research.

2. Literature Review

It is still difficult to relate the concept of consumerization with a specific type of technology in IT. The managing efforts and implications are close to an Information Systems (IS) implementation, though. We argue that the formalization of implementation process, the quality requirements (security issues, availability and support), the requirements adequacy and strategic alignment are also important elements to the consumerization implementation success. In this way, two main concepts are used and described in this study: the success of IS implementation and the phenomenon of consumerization.

2.1 Information System Implementation Success

One of the first widely accepted approaches to the measuring of success on IS implementation was proposed by DeLone and McLean (1992), who suggest six variables: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact. The model, which was updated ten years later by the same authors (DeLone & McLean, 2003) to comprise Service Quality and to split conceptually Use and Intention to Use, has been used as main or support construct through diverse themes from the perception of behavioral control (Elie-dit-Cosaque, Pallud & Kalika, 2011) to services in virtual worlds (Zhou, Fang, Vogel, Jin & Zhang, 2012).

Sharma and Yetton (2007) review literature concerning the influence of training in success of systems. They show that, in order to obtain a greater chance of success, it is necessary not only to invest in training but also to address the technical complexity (e.g. very difficult or very easy tasks will not have a significant impact) and the interdependency of activities, if there is not

given the kind of training that most fits each person involved then the influence of only one trained individual shall be irrelevant.

Singh and Sharma (2010) group them in three types of organizations: defenders, prospectors and innovators, when analyzing the main critical success factors for IS success. Authors emphasize the need to focus on distinct factors according to the organizational strategy, thus aligning success in system implementation to the enterprise goals.

The importance of the manager in the success of an IS implementation is highlighted by Cho, Park and Michel (2011), who address the perception of organizational support and system efficiency by using the concept of “transformational leadership”. The transformational leader would be able to stimulate his or her team’s intellectual capacity and motivation, thus positively influencing user’s perceived usefulness and satisfaction with the system.

Petter, DeLone and McLean (2012) claim that by year 2000 there was started a Customer-Focused Era. According to the researchers, traditional IS success measures should be complemented with variables that monitor the effective value provided to the customer – as impacts to the client and social impacts. It is noted that effective use of technology is responsible for 80% of value delivered to the customer, whilst development stage is responsible for only 20% of it (Marchand, Kettinger & Rollins, 2000). Thus IS success measuring needs to be even more focused in how an individual is capable of using the available technology.

There can be seen two main concerns through these researches about IS success: people involved (users, leaders, the way they behave and the way they are trained) and the contribution to the business (organizational impact, strategy style, interdependency of tasks). The protagonist is not efficient technology (Petter, DeLone & McLean, 2012), but the way an individual uses it and the consequences of such interaction to the organization.

2.2 Consumerization

Despite its many specific definitions, it is possible to see consumerization of IT as the use of private-owned technology (being it provided by the organization or acquired by the employee with his/her own resources) for business activities in addition to its uses as a personal device (Harris, Ives & Junglas, 2012). Moschella et al. (2004) tell that the first attempts of using private IT equipment for professional tasks occurred during the 1980’s, without a massive adoption.

However, as today’s mobile devices grow in efficiency and decrease in prices, there is also an increment in user dependence on those gadgets (Gens et al., 2011). The growth of virtual communities (Foster, Francescucci & West, 2010; Verhoef, Reinartz & Krafft, 2010) has also strengthened such dependence, as people feel the need to be permanently connected with each other and to communicate with friends, coworkers and colleagues. This can be considered by some people as changing from “real” life to “virtual” life (Holmes, 2011).

As potential benefits brought by consumerization to professionals and to organizations, it is possible to expect the growth of visibility within increasingly larger virtual communities (D’Arcy, 2011), greater productivity and motivation (Gens et al., 2011) and some cost reduction (Niehaves et al., 2012). However, there are concerns about the presence of private-owned

technology in the business environment. Disadvantages include more security issues (Hitson, 2009) and the workload of the IT technical support department (Gens et al., 2011).

The key point is that enterprises cannot choose not to accept consumerization: it will happen with or without the organization's consent (Moschella et al., 2004; Niehaves, 2011), and it is up to the organization to decide how to address this phenomena or if it will simply be ignored (Harris, Ives & Junglas, 2012). Therefore it is possible to consider that a successful consumerization process adds value both to business and to employees, and an unsuccessful consumerization process has caused negative impacts to organization or no impact at all.

3. Research Method

The main technique for this study is the content analysis. There have been used business cases from enterprises that have considered themselves successful in accepting or reacting to Consumerization and, in a similar sense, to the BYOD – Bring Your Own Device, which occurs specifically when the user brings a device bought by him/herself, and not directly given by the company. In the meantime, a company that provides financial aid for their employees to buy their devices is considered to have a BYOD practice (Ballagas, Rohs, Sheridan & Bochers, 2004).

Contexts related to technical issues, culture and behavior of employees are not mentioned in this study. We just address the aspects from the IT department vision and their managers to achieve the research question.

3.1 Data Collection and Analysis

Eight organizations that have experienced consumerization were selected for this study, in which there were identified two elements: what was the motivator factor for the enterprise to have accepted consumerization, and which implications have been brought to the IT department.

These organizations have been found after research on the Internet, looking for business cases of success in consumerization. As the texts would have been written directly from the view of professionals, content extracted from these documents are expected to reflect the motivations that could drive other organizations to accept the researched phenomenon as well. We selected those cases because they brought the following information: motivation to acceptance of consumerization, consequences of the acceptance and complete information about the acceptance process.

Through a qualitative approach, content has been interpreted assuming declared facts as truth (Bardin, 2011) and presuming that information found in the texts could have been seen under the optics of previous works that have addressed the same problem (Rocha & Deusdará, 2005).

From preliminary conclusions of each case there have been sought repetitions that could highlight a behavior pattern among different enterprises. The identification of statements/terms repetition was done manually by the authors. Then there were suggested interpretations that could explain these patterns and finally there were developed hypotheses that can be improved and tested.

4. Research Development and Discussions

The eight companies selected are listed in Figure 1. The source of the documents consulted is also described.

Case	Organization	Source
1	Allens Linklaters	http://www.info.accellion.com/case-study-allens-linklaters.html?sdet=allens-linklaters
2	Carfax	http://www.itbusinessedge.com/cm/community/features/interviews/blog/employee-owned-pcs-desktop-virtualization-on-carfaxes-roadmap/?cs=40930
3	Citrix	http://www.thinkhdi.com/~media/HDICorp/Files/SupportWorld/2012/MayJune12/SW_MayJune12_Genoway_BYOD.pdf
4	Ford Motor	http://www.forbes.com/sites/sap/2011/12/07/how-ford-motor-deployed-bring-your-own-device-byod/
5	IBM	http://siliconangle.com/blog/2011/10/31/ibm-adopts-byod-trend-with-open-approach-security/
6	King's College	http://www.businesswire.com/news/home/20111130005617/en/King%E2%80%99s-College-London-Revamps-Infrastructure-Deploys-Private
7	Kraft	http://archive.chicagobreakingbusiness.com/2010/05/kraft-tries-bring-your-own-computer-program.html
8	VMWare	http://www.cio.com/article/706274/VMware_Going_All_In_with_BYOD

Figure 1: Companies studied and source of documents

Figure 2 lists the cases that were objects of this study, preliminary findings concerning its motivators and consequences for the IT department. Evidences of these findings in the cases are mentioned as well:

	Motivator factor	Evidence example	Consequences for the IT department	Evidence example
Case 1	Need for granting access to big files while maintaining the security level	"When employees needed to send large legal documents..." "...each option left the firm open to security risks"	Response time improvement	"Accellion is also being used by the firm's IT department to boost support response times".
	Avoiding many IT support requests	"that mobile access had to be intuitive for users (...) minimizing the management required by IT. "	Optimization of the IT department activities	"Hosted on-premise to provide tight security control, with minimal IT support "
Case 2	Support to virtualization	"Virtualization, when we brought it in, it wasn't about server consolidation, it was about moving faster."	Basic IT department help; aid must be requested through tech support	"That said, our internal help desk would help diagnose the issues and direct the employee to the appropriate support resources."
Case 3	Dissatisfaction with IT style	"... employees were voicing a general discontent with the corporate IT	IT department had already some know-how about managing personal devices	"... during mergers and acquisitions (MandA), the IT teams delivered either Citrix

		experience and the image of the anonymous IT professional, hiding behind a ticketing system"		<i>Receiver or XenDesktop to every acquired desktop on the very first day"</i>
			Less dependency on IT support department	<i>"...as it made no sense to offer a BYOD program and then have to task staff with supporting it."</i>
			Management of a specific virtual environment	<i>"All personal devices must connect remotely through Citrix Receiver/Citrix Access Gateway."</i>
Case 4	Imminence of use [of consumerization] mainly driven by a new generation of employees	<i>"Consumerization of IT, as well as the new habits of 20-something Millennial employees."</i>	Management of a user-to-user support virtual environment	<i>"Calls to Ford's help desk about ePOD are referred to a Web site where employees offer each other technical support."</i>
Case 5	Intent of enhancing workers' productivity	<i>"... this has been proven to actually increase productivity by a couple of students at the Academy of Management in Texas."</i>	Greater security risks and need of access management	<i>"Adding more user flexibility will naturally introduce more security risks to IBM's network" "This will be extended in the future with things like biometric identification"</i>
Case 6	Improving mobility of students and employees	<i>"... many staff and students requiring the ability to work in several different locations in a day"</i>	Option for outsourcing	<i>"... saw a significant change in the university's approach to technology, with a move from in-house management and ownership of IT, to outsourcing services."</i>
Case 7	Budget saving	<i>"What's in it for Kraft? Some savings, "though not major numbers."</i>	IT encourages user-to-user support	<i>"... but if you have problems you are on your own to fix it." "It's a different way of receiving support. They are all blogging and asking questions and people are helping them support their issues in a timely fashion"</i>
			Rise of security concerns	<i>"Kraft is giving employees a security software and rigorous guidelines to avoid problems"</i>
Case 8	Fulfilling the demand of employees for	<i>"... was coming from employees claiming</i>	Device management has been kept almost	<i>"From an IT standpoint, there is</i>

	gadget customization	<i>they can be more productive using technology of their choosing."</i>	the same	<i>little difference between a company-owned iPhone and a BYOD iPhone"</i>
			Less IT demands due to user-to-user support	<i>"The self-help took a huge burden off IT"</i>

Figure 2: Analyzed cases, motivation factors and examples of evidences

It is possible to notice that only one company (case 7) has claimed that the main factor for accepting consumerization is trying to save money; it has recognized as well that the impact of these savings would not be significant. Case 1 had a wider issue: sharing huge files and maintaining a satisfactory security level, and decided to use consumerization as a resource to achieve that goal. In a similar way, case 2 was already on a virtualization project and has chosen to use particular-owned devices to support the change. In these three cases consumerization was not the main concern, the contribution to the organization was clearer and the implementation, in its drivers and factors, resembled a traditional system, with the company’s initiative.

Other cases focused in the users’ benefits as their main purpose: productivity improvement, device customization, mobility, service level dissatisfaction and the tendency to use their own apparatus. In case 8, the organization opted to impose the consumerization, yet the request for customizable equipment came from their employees.

Among the IT department implications, two elements emerge: there was focus on decreasing the support demand and the increase of security worries. Cases 3, 4, 7 and 8 pinpointed their incentive to develop user-to-user support. They have had intention to use their employees’ knowledge to solve unexceptional problems and to reduce the workload over the IT support staff. Cases 1, 2 and 6 left the support responsibility to the equipment owners. Case 6 outsourced almost the whole IT department. The increased security risks were recognized by cases 5 and 7.

From these observations it is possible to suggest a classification for the motivator profile for a company accepting consumerization:

- Organizational: consumerization comprehends the organization demand related to its business or to developing projects, typically;
- Personal: consumerization comprehends the employees’ demand, as the booster of productivity or motivation

It is still possible to suppose that the decrease of devices support, as the increase in applications and networks security, will contribute to value creation to users and positive results to the organization from consumerization. Figure 3 illustrates the diagram suggested from the findings.

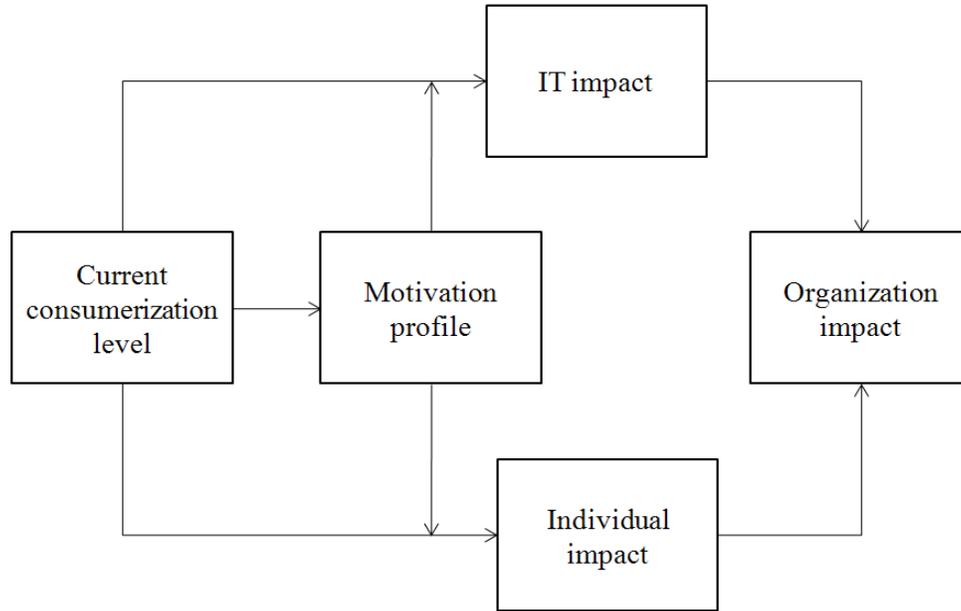


Figure 3: Diagram of motivation to successfully acceptance of consumerization.

The current consumerization level, which may be measured by the amount of users of their own devices for professional activities, will impact both the IT sector and the individuals involved. These impacts will be mediated by the motivation level to institutionalize the consumerization.

They may affect the way IT department leads with the challenge of this acceptance, which comes from an organization decision, as well as the types of benefits and individual requisites that will appear. The elements mentioned will influence the feedback that the organization will receive from the institutionalized consumerization.

The first element of the diagram, the current consumerization level, represents how many people are using their devices to work and the intensity of this use (e.g. e-mail access, systems and application for professional activities). This element does not intent to measure if the organization is controlling or not such use.

The motivation profile is described by two main profiles, in this context. The first is the organization profile which considers the business' needs. These needs could be continuous as the company's strategy or temporary as a project. The second is the personal profile which characterizes individual demands, which could enhance the productivity or just correspond to the tendency of use itself. The organization's goals and actions when accepting consumerization will help decide if employees are going to comply with security policies and participate on user-to-user support communities. This profile will also guide investments for the IT department and even decisions about which devices are going to be accepted and if there will be any outsourced activities.

The impact elements correspond to IT department, Individual (employees and customers) and Organization. The individual and organization elements refer to DeLone and McLean model (1992). There, the authors explain that both are affected by a IS promoting the success. In this

case, by successful implementation we understand consumerization delivering value or otherwise bringing benefits to the company. The IT impact element was added because implications like security assurance, support and equipment management are some of IT department responsibilities. The consumerization affects it in the same way as the other elements. If IT department is not prepared to deal with the acceptance challenges, the success may not be reached easily.

This study aimed to identify some motivation factors based in real experiences to propose a preliminary diagram that could help the phenomenon comprehension. We presented some factors listed in Figure 2 and some consequences to the IT department. The factors may be grouped in the topics: costs and support efforts reduction, productivity enhance, personal demands from employees (new generations, satisfaction increase and personalization).

By the findings, we may suggest suppositions for hypotheses formulation. These hypotheses can be validated in future research. The suppositions are:

- a) Consumerization may alleviate some support efforts and reduce costs in acquisition and maintenance. However, security, network availability and management of thirds gadgets may become critical responsibilities.
- b) New generations of employees are demanding personalized equipment to work and resources to work wherever they want. This trend can modify the way organizations are formed. Thus, consumerization may be incorporated and IT department structure changed.
- c) Consumerization may enhance productivity because it may promote comfort and less time-and-place limits for work activities. On the other hand, the processes and human resources may be difficult to control and monitor.
- d) Without proper management, employees may become frustrated if they realize that their rest and leisure time are diminishing. Even when using their equipment, they may become stressed and demotivated.

5. Conclusions

The consumerization phenomenon was already being dealt with by the market, which offers solutions for negative acceptance implications. Nevertheless, this phenomenon does not only influence costs and security: the business strategy and the people's attitude facing these new paradigms develop a complex environment. IT, business and users have to reach the alignment, thus the relation among them may be balanced and profitable.

This paper presented a preliminary investigation in how organizations are responding to consumerization phenomenon and how IT department may act to maintain their services without affecting its availability. The suggested diagram is rudimental, but it may be used as a first way to understand a consumerization point of view and lead to a research model. The diagram also carries a supposition that still needs to be empirically validated. However, this supposition is shared by researchers and market professionals: at every organization there is a device, at least, that is a particular property.

The study limitations are mainly the lack of more robust techniques, the use of business cases as secondary data and the low amount of cases used in the data analysis process. For future research, the organization analysis of unsuccessful institutionalization of consumerization is a noteworthy opportunity, as well as the use of primary data for conducting solid case studies. Other methods of investigation may be used for studying the successful acceptance and use of the different levels of consumerization.

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