How does mobile business create value for firms?

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Abstract— Mobile business is expected to create a large spectrum of business opportunities. There are many studies analyzing the contribution of IT to firm performance and whether IT is capable of creating value. One process-level model of IT business value, defined as the contribution of IT to firm performance, focuses on how IT impacts critical business activities within the firm's value system (in the context of the firm's value chain). Building on these concepts, we argue that the m-business value corresponds to the impact of m-business usage on firm performance, which is estimated through the perceived impact on the three major groups of activities on the value chain: (i) downstream dimension; (ii) upstream dimension; and, (iii) internal operations. We claim that mbusiness leverages the potential of the unique features of mobile technologies to improve business performance. This paper is exploratory and aims at answering the following research questions: (i) How does m-business create value to firms? and (ii) Which are the components of the construct mbusiness value for firms? Interviews were conducted with experts to explore the construct of m-business value and its components. The interviews' results show that m-business does have impacts on the organizational downstream and internal dimensions. However, its impacts on upstream dimensions are not clear yet. We discuss the implications of these findings for future research and the limitations of the current study.

Keywords- mobile business, business value, IT value, business process

I. INTRODUCTION

The advent of wireless computing technology and the continuously improving versatility of mobile devices not only create a unique channel for marketing but also pave the way for new business opportunities. In spite of the fact that there are some restrictions regarding the price, availability, and standards and security, mobile technologies have been widely adopted. Technological developments advancements in mobile communications enable new ways of doing business [3] often referred to as "mobile business" or "mobile commerce" and this has led to an increased interest in the usage of mobile business applications in firms [4].

One of the most distinguishing characteristics of mobile business is mobility, as it represents its main advantage upon which mobile businesses can create their value propositions of (i) ubiquity, allowing easier real time access to information; (ii) convenience, through devices that store data and have Internet, intranet or extranet connections; (iii) instant connectivity through easy and quick connection to the France Bélanger ACIS Dept., Virginia Tech Blacksburg, USA belanger@vt.edu

Internet, intranet, other mobile devices and databases; (iv) personalization for individual consumers; and (v) localization of products and services, which involves knowing where the user is located at any given time and providing matching services [5, 6]. With these unique features, "*m-business as a transformational force is here to stay. In the next few years, m-business will emerge as a powerful new approach for conducting business*" [7, page 25]. These advantages may only contribute to business value if they result in some business process improvement [8]. Furthermore, if organizations would be able to leverage mobile technologies for process improvements, they could benefit from improved productivity and decision making, lowered operational costs, increased customer satisfaction and improved decision making [4].

Although mobile business has gained much attention in the past decade, being a key priority for some organizations, its actual development and application have not yet fully met market expectations, namely the achievement of mass adoption. It is not yet clear how mobility can impact businesses and what the implications of mobile technology usage on the organizational environment are [4]. Most research on mobile commerce and mobile business focus on consumer adoption issues [9 - 14] describing the relevant factors to be considered when analyzing m-business adoption. There has also been extensive research focusing on identifying a framework to guide the m-business research [11, 15, 16]. Other studies analyze m-business from an organizational perspective [4, 8, 17 - 21]. The main results of these studies identify a broad set of characteristics as important factors to effectively conduct m-business initiatives. However, there is presently no unified view of how this can affect or change the way companies can leverage the potential value of this technology. There is also a lack of empirical research on how to develop a successful m-business strategy [13, 22].

Global leaders in mobile technology and m-business are not necessarily the richest economies or the leaders on fixed line communications or Internet adoption [23]. Portugal, for example, has less than one third of the incomes of countries like Japan, Switzerland and the United States and lower penetration on fixed line telephony and Internet usage, but is far ahead in terms of mobile penetration [23]. This fact provides an interesting opportunity to launch the present research in Portugal, leveraging on the Portuguese high mobile penetration rates.

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Research in this area has been conducted from different fields of knowledge, such as information systems, network engineering, marketing and strategy. The present research reviews the literature on mobile business and on Information Technology (IT) and e-business value and claims that the phenomenon of mobile business from an organizational perspective deserves a closer look in order to identify which factors determine mobile business value. Such results will support managers on their decisions about mobile business initiatives.

This study is therefore guided by the following research questions: (i) How does m-business create value to firms? (ii) Which are the components of m-business value for firms? Based on the literature review on IT business value and mobile business we develop the concept of mobile business value and its components. Data is collected through expert interviews to explore the mobile business concept and components.

This paper is organized as follows: Section II presents the literature review in terms of mobile business concepts, Section III presents the conceptual model, Section IV discusses the research design, Section V provides an analysis of the data collected and, finally, Section VI presents the concluding remarks.

II. LITERATURE REVIEW

A. Mobile Business

The Internet-enabled mobile technologies have rapidly achieved worldwide diffusion, due to personalized products and services and sophisticated technologies, but academic research on Internet-enabled mobile technology has seen only modest progress [24].

Balasubramanian et al. [15] have developed a detailed concept for m-commerce defining it as any phenomenon that exhibits all of the following characteristics: (i) "It involves communication, either one-way or interactive (...)";(ii) "At least one of the parties engaged in the communication must be mobile (...)"; (iii) "The ability to communicate must possess the potential to be continuously maintained for at least one of the parties during a substantial physical movement from one location to another"; (iv) "The communication signals between parties must be primarily carried by electromagnetic waves (...)"; (v) "If humans are communicating, at least one seeks to benefit economically from the communication, either in the short or the long run".

This last characteristic of m-commerce focuses on the fact that the ultimate objective of e-commerce is economic in nature. For example, this concept can include GPS monitoring and routing of truck fleets, which may not be directly linked to transactions between parties but are important from a business perspective. Therefore this m-commerce characteristic suggests that the "term m-commerce is being treated here as substantially equivalent to the term m-business" [15, page 350]. But this matter of m-commerce and m-business definitions has not yet achieved a consensus. Some authors do not distinguish between the two, while

others define mobile business as the application of mobile technologies to improve or extend business processes and open new market segments, while m-commerce is mainly related to handling transactions on the mobile space [8].

Although many of the existing e-business applications can move on to the mobile environment, m-business also involves new applications and functionalities that are unique to the mobile infrastructure features and can leverage those features. Another definition of m-business is that m-business refers not only to m-commerce applications (the front-line operations) but also supporting applications that are necessary to keep the business relationships and to sell products, services and information through mobile devices [25]. Thus, for those authors, the mobile business concept includes the m-commerce operations and all operations and management processes beyond it.

In this research, we adopt a broad definition of mbusiness to include the commercial transactions and related interactive business processes that may occur before and after actual commercial transactions, utilizing handheld mobile devices and wireless communications networks to conduct those transactions (based on the definition suggested by [26]).

M-business applications have two major characteristics: mobility (which implies portability) and broad reach [22]. They have been first offered to and adopted at the individual level, mainly for personal use but they have also been adopted at the organization level. As m-business applications have shown potential significant impact through generating enormous business value, improving operational efficiency, as well as flexibility, and the ability to handle situations in current operations. This allows users to have access to critical information from anywhere at any time, resulting in greater abilities to seize business opportunities [20]. The applications of m-business for organizations can be grouped into the following four categories: (i) mobile financial applications (e.g., mobile banking, mobile brokerage, mobile money transfer, mobile micro-payments); (ii) mobile advertising (using demographic information collected by wireless service providers and information on the current location of users, very targeted advertising can be done, informing the users about various on-going specials in restaurants, malls and shops in surrounding areas), (iii) mobile inventory management (which involves location tracking of goods, services and even people), (iv) proactive service management (collecting pertinent information about current or near-future user needs and providing services to user proactively as, for example, collecting information about the aging components of an automobile, whole that information could be collected and used by car dealers for ordering components) [27].

B. IT Business Value

In order to analyze the business value of the mobile business applications, we first discuss IT value in general.

There are many studies analyzing the contribution of IT to firm performance and whether IT is capable of creating value [1]. Some focus on financial data [28, 29] while others focus on the managers' perception of IT impacts on the value

chain activities [1, 2, 30, 31]. In the present study, we are interested on a process-oriented approach for the m-business definition. This approach encompasses that key business processes must be identified and the linkages and contributions of IT to those processes should be defined – a key factor in the achievement of IT business value is IT's relationship with process innovations [1]. Such an approach has the following benefits: (i) as it is based on a processoriented view, it enhances the validity of the business value assessment since the analysis is performed on the same level as the technology is being used, identifying the value adding mechanisms of IT, and (ii) "the approach offers considerable insight into the processes by which value is created" [1, page3].

Tallon et al. [2] argue that the usage of IT in the company's value chain activities enhances the value-creating potential of an organization. However, the IT value creation has been a controversial field of discussion, and in 1988 it was labeled the "productive paradox" [32] when empirical evidence showed that an organization could have high levels of investment in IT without any productivity gains. Two possible explanations are that there were variations in the methods and measures observed in the various studies "productive paradox" related to the and the complementarities in business value measurement were ignored, leading to the underestimation of the IT impact [33].

A theoretical model to measure the potential impact of IT on firms is proposed by Mahamood [30]. This model suggests that IT helps organizations in the improvement of their value chain according to the following dimensions: (i) downstream dimensions (as for example, developing products more suited for market demand or enhancing customer's services); (ii) internal dimensions within the organization (as for example, improving internal process efficiency); and (iii) upstream dimensions (as for example, improving interorganizational efficiency and coordination with partners). The IT business value is further decomposed into (i) downstream dimensions (sales support, customer services, and market expansions); (ii) internal dimensions within the organization (internal process, internal operation and staff productivity); (iii) upstream dimensions (coordination with suppliers and business partners).

Tallon et al. [2] also suggest a process-level model of IT business value, which focuses on how IT affects critical business activities and involves process-oriented measures of IT business value. That model incorporates organizations' goals for IT (operational focus, dual focus, unfocused and market focus) and management practices as key determinants of realized IT payoffs and presents a set of process-level measures for assessing IT business value. "IT creates value for the organization by improving individual business processes, or interprocess linkages, or both. Consequently, the greater the impact of IT on individual business processes and on interprocess linkages, the greater will be the contribution of IT to firm performance." [2, page 149].

Mooney et al. [1] also developed a conceptual framework of IT business value based on a process-oriented view. The proposed framework identifies the following three effects that IT can have on business processes: (i) Automational effects (correspond to the efficiency perspective of value derived from the IT as substitute of labor), (ii) Informational effects (derived from the IT ability to collect, store, process and disseminate information) and (iii) Transformational effects (value creation from IT's ability to facilitate and support process innovation and transformation).

Zhu et al. [31] also used the process oriented view to analyze e-business value creation. According these authors, with richer information about downstream markets, ebusiness can enhance a firm's responsiveness to market changes and support firms on their sales channels expansions and in improving their customer's relationships. Within the organization, e-business can improve staff productivity and operational efficiency when complementary resources exist. Upstream, the broad interactivity and connectivity of the Internet can facilitate the firm's coordination with business partners and reduce transaction costs.

The process-oriented view could also be applicable to analyze m-business, as m-business may have impacts on all three categories of the value chain processes, the benefits of using mobile business are difficult to quantify in isolation, and the unit of analysis to identify value should be the business process [21].

C. Mobile Business Value

To define mobile business value and how it may impact an organization's key activities, it is important to assess which mobile business unique features distinguish this innovation from the previous ones. The most important characteristic of mobile business is mobility, which is its main distinctive advantage upon which mobile applications can build their value proposition. Mobile business also has several unique benefits, such as (i) ubiquity; (ii) convenience; (iii) instant connectivity; (iv) personalization; and (v) localization [5, 6]. Mobile technologies may affect professional and personal activities, as they enhance flexibility on the spatial dimension alone (for example, watch the news on the move), on the time dimension alone (for example, check the movie available at the cinema) and spatial and time dimensions simultaneously (for example, check on the status of a delivery truck) [15]. However, IT and business managers have doubts if the business value of mobile technology is as substantial as suppliers claim it is [34]. The time-space matrix developed by Balasubramanian et al. [15] demonstrates how the fundamental benefits of mobile technologies are greatly clarified when the shifts in activities due to the application of such technologies are simultaneously mapped along the dimensions of time and space:

- The extent to which the application is location sensitive (for example getting a GPS coordinate);
- The extent to which the application is time critical (e.g., selling or buying stocks);
- The extent to which the application is controlled by the information receiver or by the provider.

It can be defined that, in general, an activity is completely spatially and temporally flexible when it can occur anywhere and anytime. Therefore, business strategy for mobile business must consider the power of timely and relevant information, the enhancements provided by the Internet, and the consumer location information to reach consumers at the point where and when they are ready to do business [35]. As the effects of m-business can be analyzed in time and space, given that both are valuable and often rare resources, a good way to differentiate current mobile applications is to examine their location ubiquity and time criticality [15]. Time dimension indicates the value of timely service (time criticality or urgency) of an application and the space dimension reflects the value of location flexibility of the service.

Organizations entering the mobile space are driven by the same goal: "leveraging this channel to create customer value and they are thus asking for proof that the introduction of mobile services will add value to their businesses, and respectively to consumers" [36, page 47]. In light of this, what is unique about the mobile business when comparing to the physical marketplaces and the fixed electronic channels is the time and location flexibility and the potential of personalization.

Fig.1 summarizes the relationship between the discussed key characteristics of mobile technologies that support the value creation of m-business and their possible impact on firm performance.

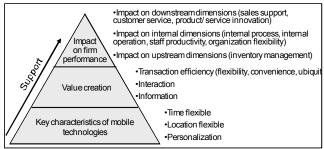


Figure 1. Mobile Business value hierarchy: from mobile technology characteristics to firm performance (adapted from [37] to m-business)

Mobile business value means the value arising from mobility, i.e., the possibility to use electronic business "on the move". Therefore, the key value proposition of mobility is the creation of choice for users (customers, employees and suppliers), which could be expressed in terms of flexibility, convenience and ubiquity, taking into account why and when those features are valuable to customers.

Anckar and D'Incau [36] identified five different settings in which it is possible to create mobile value:

- 1) Time-critical needs and arrangements, where immediacy and urgency are essential, and typically arise from alerts and reminders;
- Spontaneous needs and decisions that are generally related to products and services for which a purchase decision is straightforward;
- 3) Entertainment needs, as the easy access to entertainment is always appealing to customers;

- 4) Efficiency needs and ambitions, as mobile devices are developed to increase productivity given their mobility. In one hand, consumers look for more efficient ways to do simple activities and on the other hand, worker productivity increase is one of the main benefits derived from mobile business;
- 5) Mobility-related needs refer to the potential for launching services that are valuable only through a mobile device, only when people are "on the move".

M-business is going to get a dominant channel position in products or services where the use of mobile applications offers customers mobile value through the combination of mobility and computing, ideally offering mobile value on several of the proposed dimensions [36]. In order to realize the full potential of m-business for value creation, it must be embedded into the organizational information systems and databases. Additionally, the value of mobility is dependent on the cost of coordination of the actors who are difficult to locate. It is also related to the costs of available substitutes for mobile technology in a business process [21].

Heijden and Valiente [21] present an exploratory study in which the linkages between mobile technologies and business process improvement are explored and the findings suggest that business processes could benefit from mobile technology if coordination is required between the business process actors who are difficult to locate.

III. CONCEPTUAL MODEL FOR ANALYZING M-BUSINESS VALUE

By synthesizing the extensive literature on IT business value and the literature on mobile business, this paper aims at proposing a more precise definition of mobile business value for firms, which in itself is a significant step in clarifying the mobile business value measurement issue.

In order to define the construct mobile business value, we first reviewed the existing literature on IT and e-business value and on mobile business. Based on that the findings, we developed a definition for mobile business value and extracted the dimensions and factors that may compose the mobile business value construct. Then we developed a comprehensive framework for mobile business value (Fig. 2).

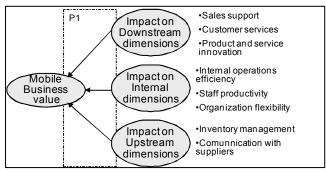


Figure 2. Conceptual model for analyzing m-business value

In this paper we claim that mobile business value corresponds to the impact of m-business usage on firm

performance, which is measured by the three major organizational value chain activities: (i) downstream dimension (sales, customer service, product and service innovation); (ii) upstream dimension (inventory management) and (iii) internal operations (operations efficiency, employee productivity, organization flexibility). Based on the value hierarchy presented in Fig.1, we propose that m-business leverages the potential of mobile technologies' unique features to improve business performance.

Organizations use mobile business with the main purpose of improving their performance. As shown in Fig.1, the key unique characteristics of mobile business allow organizations to improve their transaction efficiency, interaction and information, which may have significant impact on downstream dimension, internal dimension and upstream dimension. Based on the review of the existing literature on IT value, e-business value and m-business, several impacts of m-business on the downstream dimension (sales area widened and customer satisfaction increased [4]; increased convenience to customers and communication with clients facilitation [17]); customer service improvement [1], internal dimension (ability to manage internal operations more efficiently thru speeding up processing, reducing bottlenecks, reducing errors and to compress business processes, improve organization flexibility and decision making [1, 4], improve staff productivity [4], facilitate communication among employees and increase organization profitability [17]); and upstream dimension (inventory costs decrease and procurement costs decrease [4], facilitation of communication with suppliers [17] and improve coordination with suppliers [1]). Prior studies on mobile business plus the existing literature on IT and e-business value allow us to present the following proposition:

P1: Mobile business value is a second order construct that is composed of the following dimensions: impact of mobile business on downstream dimension, impact of mobile business on internal dimension and impact of mobile business on upstream dimension.

IV. RESEARCH DESIGN

Since the context of mobile business is still new and this research is exploratory in nature, we use expert interviews to explore and validate the mobile business value construct definition and its components. In prior research, executives' perceptions regarding IT business value have been used to assess the actual impact of IT on the value chain activities in a process-oriented approach [2].

The criteria for selecting the experts to participate in the present study include: experts from companies with known mobile business implementations from different industries (or with different kinds of m-business applications so it is possible to cover a wider array of possible m-business impacts), or from companies that provide mobile business services and applications, and academics with research in business value or mobile business. After extensive research, the subjects selected for interview are key informants who have participated on well known mobile business projects from five large Portuguese companies (from the banking, telecommunication, distribution and utility sectors). When it was possible, two persons were interviewed from the same company for triangulation purposes. Additionally, we also interviewed an academic mobile business expert based in Brazil plus one expert based in London from one of the biggest multinational technology companies, who has been developing mobile applications. Nine interviews were performed until we gathered the relevant information to understand and describe the important factors about mobile business value and achieved the saturation point on having new mobile business impacts being pointed out [38].

The interviews were conducted based on a protocol designed accordingly to Yin's [39] suggestions to increase the reliability of the data collection. Face validity was performed by three specialists before conducting the interviews who analyzed the data collection plans regarding both the content of the data and the procedures to be followed [39]. The constructs upon which the interview protocol was developed are presented in Table 1.

V. DATA ANALYSIS AND RESULTS

The nine experts (most of them responsible for the mobile business initiatives in the company, plus one academic and one mobile applications developer) were interviewed to explore the construct mobile business value for firms and to validate the sub-constructs of impact on downstream dimensions, impact on internal dimensions and impact on upstream dimension in terms of the components of each of those sub-constructs. These data are meant to provide preliminary evidence regarding the validity and applicability of the conceptual model proposed in section III (Fig. 2).

Based on the review of the literature and the expected dimensions, an interview protocol was developed consisting of a set of semi-structured interview questions. The protocol was pre-tested and validated with research colleagues. The interviews themselves were conducted in-depth, recorded and transcribed. In some cases, notes were taken to make the interviewees more comfortable. For each component of the downstream, internal, and upstream dimensions of the mobile business value second order construct, the interviewees were asked about the extent to which the mobile business applications have impact in terms of each component in their organizations. For example, questions included "To what extent do m-business initiatives facilitate communication with your clients?" or "What impact does mbusiness have on staff productivity? Can you give any examples?" The transcribed data was analyzed based on the techniques of content analysis proposed by [40]: We first coded the raw data from the interviews by transforming the text accordingly to specific rules of clipping, clustering and enumerating so that we achieved a representation of the content. We then analyzed all the interviews according to a grid of categories taking into account the frequency of subjects taken from a set of speeches considered to be segmented and comparable.

A. Impact on Downstream Dimensions

Regarding mobile business impacts on downstream dimensions, all interviewees agreed that mobile business applications could have a positive impact on this organizational dimension. In fact, m-business could increase sales as mobile sales forces could be equipped with mobile business applications. One interviewee also commented that sales volume from their mobile portal has a significant impact on their revenues. Further on, the same person, pointed out that as they sell in the mobile web portal the same products and services they offer on their web portal, they can now reach a different set of clients that do not use their computer but use their cell phone to buy, widening the organizational sales. Experts comments indicated that innovation of product and services, improved customer services, increased customer satisfaction and convenience are positive impacts that m-business usage may offer to the organization. The fact that today customers are often equipped with mobile phones also facilitates contacts with them, which are more frequent and more personal. One of the experts reinforce this finding revealing that when a client sends a SMS to inquire about his or her account balance, the organization sends a SMS back with the account balance together with publicity for their services. Per day, they could reach around 4000 to 5000 people using the service.

Evidence from the interviews clearly supports that mobile business value includes impacts on downstream dimensions.

B. Impact on Internal Dimensions

As for the impact of mobile business on internal dimensions, the experts agreed on most of its determinants. However, the majority of the interviewees did not agree on the fact that m-business applications could reduce the number of employees, and were uncertain about the impact that it may have on organizational profitability. One of the experts argue that on the one hand, it could increase the income or it could decrease costs, but on the other hand, the initial investment on the necessary infrastructure, the fact the technology is easily outdated, and the that communication costs make unclear the relationship between m-business and increased profitability. However, another one commented that m-business initiatives accounted for an increase of 3% on their company's operating profit, and in particular, their project for equipping store employees with mobile devices and applications is the one with the best financial results of the past few years (when comparing to other IT initiatives).

All the experts acknowledge that m-business applications are useful for managing internal operations. In fact, it could have a positive impact on making internal operations more efficient (for example with notifications and alerts, or helping on locating problems more easily) and on increasing staff productivity (mainly for mobile field and sales forces). Experts' comments also indicate that m-business does play an important role in facilitating communication among employees. However, they mentioned that it is important not to forget the work overload and the stress of being always connected. They do recognize that it is an easy way to disseminate information among mobile workers and that it allows workers to have more flexibility at work, which is related to their increased motivation.

Administrative workload may also decrease with mbusiness applications usage. One expert addresses the concern that while the administrative workload may decrease in the back-office, it is really transferred to the field people who now have to perform some of the administrative tasks on the mobile device. Others pointed out that this is part of business processes being compressed, as they are more automatized, more simple and more agile. M-business also plays an important role on improving decision making. All the interviewed experts agreed that m-business usage could make information "runs" more easily, specially when urgent and critical decisions need to be taken and the decider is in another location. One of them also stated that receiving key business indicators, management information and KPI's on mobile devices improves decision making.

Thus, the evidence collected from the experts interviews clearly supports that mobile business value includes the impact on internal dimensions.

C. Impact on Upstream Dimensions

The experts' comments reveal that it is not yet clear how m-business applications could impact the upstream dimensions. However, one of the experts suggested that with the usage of m-business, the inventory levels are now more appropriate to the company needs, more controlled and with fewer losses. The only impact upon which the majority of the interviewed experts agreed on was the improved communication with suppliers and partners, mainly in the service sector where the team contacts the clients more often.

The reduction of inventory and procurement costs were not identified by the experts as impacts that m-business may have. The RFID technology was mentioned as important in this area, but mainly regarding the increased control and management of inventory.

Therefore, the evidence collected from the expert interviews provides unclear support for mobile business value to include the impacts on upstream dimensions.

D. Other Impacts

After all questions on the dimensions were answered, participants were asked if there was any other impact that should be included. Three experts identified the following impacts for the internal dimension: (i) better information quality (since information could be collected in the field in real time), which could improve decision making and organizational control; (ii) improved employee learning (since it is possible to have mobile employees informed and trained remotely); (iii) increased employee performance (many resources can be directly delivery to the employee in the field); (iv) innovation incentive; and, (v) facilitate inventory management (with the RFID usage, for example).

Our findings do not completely support Proposition 1 since experts' comments indicate that m-business could impact firms' performance through downstream and internal organizational activities, but not through upstream activities. Table 1 summarizes the findings presented in this section.

	Components ^a	Source	Evidence from interviews
Impact on downstream dimensions	Sales increasing	[37, 30]	Yes
	Sales area widened	[37, 30,4]	Yes
	Product and service innovation improved	[1]	Yes
	Customer service improved	[37, 30]	Yes
	Customer satisfaction increased	[4, 1]	Yes
	Convenience to customers increased	[17]	Yes
	Communication with customers enhaced	[17]	Yes
Impact on internal dimensions	Internal operations more efficient (ex. speed up processing, reduce bottlenecks, reduce errors, notification)	[37, 30,1,4, 24]	Yes
	Staff productivity increased	[4, 34]	Yes
	Facilitate communication among employees	[17,34]	Yes
	Compression of business process increased	[4, 1]	Yes
	Organization flexibility improved	[24]	Yes
	Reduce administration workload by elimination of manual routine	[34]	Yes
	Increased Control	[24]	Yes
	Decision making improved	[4, 1]	Yes
	Organization profitability increased	[17]	Unclear
	Increase staff motivation	[34]	Yes
	Reduction of number of employees	[34]	No
Impact on upstream dimensions	Inventory costs decreased	[1]	No
	Coordination with suppliers improved	[37, 1, 30]	No
	Procurement costs decreased	[4]	No
	Facilitate communication with suppliers	[17]	Yes

 TABLE I.
 CONSTRUCTS AND COMPONENTS

a. Those components were identified based on the IT business value, e-business value and mobile business researches

VI. CONCLUDING REMARKS

The purpose of this paper is to explore mobile business value from an organizational point of view. Based on the IT value concept developed by Mooney et al. [1], we proposed a definition and identified potential components for mobile business value. Preliminary evidence for the validity of the conceptual model was obtained through expert interviews.

The research findings allow us to validate the mobile business value definition. They suggest that mobile business value is a second order construct composed of the impacts of mobile business on downstream dimensions and the impacts of mobile business on internal dimensions. Future work should empirically validate this hypothesis. Unlike e-business where the B2B is one of its most successful applications, the internal dimension applications and the sales and marketing related activities seem to have more importance for mobile business.

The results of our study provide several theoretical and practical contributions. First, managers can access a list of potential impacts that mobile business usage may have in the organization. They can also see how mobile business value can be evaluated. The findings of this research can also support managers in their decisions about mobile business initiatives. Another implication of this research is for academics, as we propose a definition and determinants for mobile business value.

Despite its practical and theoretical contributions, this paper has some limitations. First, it is exploratory in nature and further studies are needed in order to validate its findings. It is also limited with respect to the generalizability of the findings given the small sample of interviewees.

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