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IT Investment Portfolio for Mobile Office

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ABSTRACT

The adoption of mobile office is a topic that has been researched for many years due to rapid growth in the use of wireless communication and portable devices. Yet, within the vast territory of studies of the IT investment portfolio for mobile office, there remains a large piece of uncharted terrain. The aim of this article is to empirically examine the IT investment portfolio framework, with an emphasis on mobile office environment. Using a theoretical framework of IT investment portfolio, our hypotheses concerned the effect of IT investment portfolio on the performance of mobile business service, moderated by mobile savvy. To measure mobile office performance and mobile savvy, we conducted the survey with a total of 127 participants.

Keywords

Mobile Office, IT Investment Portfolio, IT Savvy, Mobile Office Performance

INTRODUCTION

There has been a monumental change in the nature of organization and the role of employees, a change that may be indicated by the concept of Mobile or Smart work (Andriessen and Vartiainen, 2006). This change is mainly attributed to the spread of various wireless gadgets, such as smart phones and tablet PCs. In short, a mobile office is defined as: "Mobile Computing-Mediated-Communication (which) can support diverse teams in their sharing of information, coordination of work, and decision making processes (Bhappu and Crews, 2005)." Research on the mobile office is still in its early stage, as the brevity of the bibliography attests. Furthermore, for the most part, recent critical debates about mobile office have tended to center around the question of consumer applications and their behavior (Scornavacca et al., 2005). While the field of the enterprise applications and organizational impact is relatively young, the integration of the two bodies of mobile office and IT investment portfolio is, in fact, almost never seen.

Given the potential significance of the mobility in mobile office and the lack of theoretical and empirical study on the issue, this study investigates the effect of IT investment portfolios on the performance of mobile business service, moderated by IT Savvy. The fundamental approach in this paper is based on the concept of the IT investment portfolio as developed in the works of Weill et al. (2007). In this study, the dependent variable that underlies IT investment portfolio is the performance in mobile work environment. The performance is measured in three categories based on the revised MoBiS-Q, proposed by Giner et al (2010). This study also adopts the concept of IT savvy to explore its moderating role in the relationship of investment portfolios and their performance. We argue that mobile savvy - slightly modified and based on IT savvy - affects the performance of mobile office as a moderating role.

MOBILE OFFICE

The concept of mobile office has been around for more than a decade. It first emerged as a new vision in context of the evolution of the mobile communication channel and data communication channel around (the) year 2000 (Giessmann, 2012). The limited features and functions of the early mobile devices and low wireless network bandwidth restricted the performance of the mobile office at that time (Kristoffersen and Ljungberg, 1999). However, the release of the smart devices including the iPhone and the iPad, gave rise to a 2nd generation of mobile office (Stanoevska-Slaveba, 2004). The 2nd generation mobile business solutions focus on providing integrated benefits with wireless technologies such as 3G, Wi-Fi and Bluetooth. As a consequence, “mobility is defined as an important mobile task characteristic, one that is related to location dependency and time criticality, and which is an essential feature of social and organizational life (Yuan et al., 2010).” “Change of working place towards increased physical separation and the wide adoption of mobile applications are likely to involve fundamental changes of work organization (Wiberg, 2001).”

There have been several academic studies explaining these phenomena in various directions such as, adoption of mobile technology, successful acceptance model, and end-user based approaches (Scornavacca et al., 2005). Nevertheless, on the question of enterprise level, research, in regard to the effect of IT investment, has proliferated in the last ten years. Yet, they remain marginal to the discipline as a whole.

IT INVESTMENT PORTFOLIO AND IT SAVVY

The terms and terminology of IT investment portfolio is virtually identical to portfolios of financial investments used by investors, according to their multiple objectives. During the period of 2000 to 2006, several research projects were conducted on IT portfolios and found that business leaders have four different management objectives for investing in IT (Weill et al., 2006). As shown in figure 1, investment in those four management objectives is fully corresponding to the IT portfolio with four asset classes. Each asset class is associated with different types of business value.

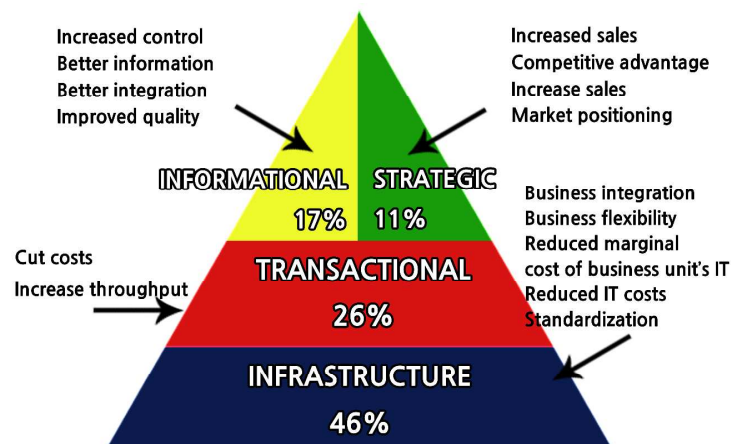


Figure 1: IT Investment Portfolio (Weill & Aral, 2006)

To provide more and better information to manage, monitor and analyze customer needs, proper investments in informational asset class are required. Weill and Aral (2004) observed that firms investing more heavily in informational IT had made better decision about customer needs to accomplish higher quality and larger margins. Investments in strategic IT intend to obtain a competitive advantage in the market place. Investments in this asset are suitable for firms willing to accept high risk for a high return. Firms with successful strategic IT gain two or three years lead on the competitors and therefore, generate more revenues with customized and enhanced products. Investing in the transactional asset aims to reduce cost and increase productivity. IT Infrastructure is the base of the investment portfolio, which supports other applications. Infrastructure investments are mostly aimed at providing an elastic base for future business initiatives or reducing long-term IT costs through consolidation (Weill and Aral, 2006).

It would not be enough to set up the IT portfolio alone to achieve the desired goal. It is also important to possess management capabilities to use IT, for the firm and its employees. Therefore, Weill and Ross (2005) introduced the concept of IT savvy defined as “a characteristic of firms and their managers reflected in the ability to use IT to consistently elevate firm performance.” As shown below in Table 1, their prior research shows that companies with a high degree of IT savvy achieved higher performance from each IT dollar invested, compared to other firms, with a low degree of IT savvy.

Savvy of Company*	Lower Cost of Goods Sold			Profit			Innovation			Market Value		
	Low	Ave.	High	Low	Ave.	High	Low	Ave.	High	Low	Ave.	High
Infrastructure	--**		+	--	-	+	-	-	+	-	+	+
Transactional			+	--		++	-		++	--		++
Informational				-	+	++						
Strategic				--		++	--	+	+	--		++

Table 1: Enterprise-wide IT Savvy impacts Performance (Weill & Aral, 2006)

* 'Ave.' is the average return for all companies surveyed. 'High' implies additional return for the company in the top 5% of IT savvy and 'Low' is in the bottom 5% of IT savvy, ** +(-) = "High Impact" 50% or less of the highest positive(negative) incremental impact for that variable, ++(-) = "Very High Impact" Greater than 50% of the highest positive(negative) incremental impact

RESEARCH MODEL

The foundation of our theoretical framework is comprised of three elements: IT investment portfolio, mobile office performance, and IT Savvy. We propose a research model, as shown in Figure 2, which is intended to identify the effect of IT investment portfolio on the performance of the mobile office, moderated by Mobile Savvy.

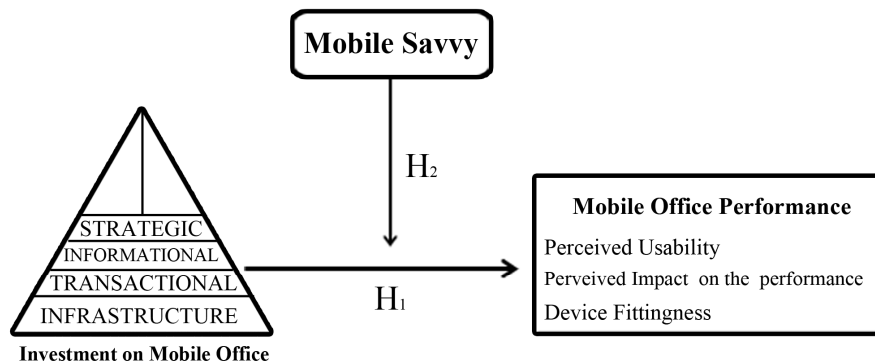


Figure 2: Research model

To our knowledge, conceptual frameworks of investment portfolio and IT savvy have not been applied in the context of mobile office application. Research literatures are commonly focused on the adoption of mobile application or technology itself. According to previous research results, conducted by Weill et al. (2006), investment portfolios of firms are significantly related to their performance. Given previous research results, we posit that

Hypothesis 1: The performance of mobile office will be different with regard to the different distributions of investment portfolios.

Given our earlier discussion about the degree of impact that savvy has (shown in table 1), we expect the firms with a high degree of mobile savvy to generate additional returns on their IT investments. By contrast, the firms with a relatively low degree of mobile savvy will experience lower performance from each IT dollar invested. Therefore,

Hypothesis 2: The Mobile savvy plays a key moderating role in the relationship of investment portfolio and its performance.

RESEARCH METHOD AND DATA COLLECTION

Research method

We used the survey method to test our model. A survey instrument was developed by identifying appropriate measurements based on previous academic researches (Giner et al., 2010; Weill et al., 2007). Some existing scales were modified to make them more suitable in the context of mobile office. Since the target organizations are the companies that have adopted the mobile office application in Korea, the questionnaire was translated into Korean.

Although the performance of mobile office can be measured in several ways, (i.e. Chaang and Yan, 2010; Blumenberg et al., 2009) we used the revised MoBiS-Q proposed by Giner et al. (2010). The MoBiS-Q is first introduced by Markova et al. (2007) and Vuolle et al. (2008) as a tool to measure the performance of mobile business services based on previous academic research. However, the method was slightly modified by Giner et al. (2010). Our questionnaires to measure the performance of mobile office are classified under three categories, as shown below Table 2.

Category	Questionnaires
Perceived Usability of a Mobile Business service	Easy to Learn
	Easy to Become Skillful
	Suitability for Work Tasks While on the Move
	Fast Enough
	Functions are necessary
	Ease of Navigation
Device Fittingness	Ease of Use with a Device
	Screen Size
	Suitability of a Device for working on the Move
	Using a Device with One Hand
	Ease of Use While on the Move
	Ease of Use in a Hurry
Perceived Impact on Mobile Work Productivity	Satisfaction with Efficiency at Work
	Use Improves Fluidity of Work
	Able to Perform Tasks in Less Time than Before
	Able to Complete Tasks More Easily
	Less Time to Go Through Working Phases
	Less Additional Traveling
	Better Access to Information Needed at Work

Table 2: Mobile Business Service Questionnaires (Giner et al., 2008)

We reviewed existing literature as a basis for measuring the degree of mobile savvy (Weill and Aral, 2006). We revised the existing items to evaluate the degree of savvy, along with mobile office. To measure the overall degree of savvy, we asked participants to indicate, on a 5-point scale, the degree according to five mutually reinforcing characteristics: electronic communication, human resource capability, management capability, digital transaction intensity, and internet capability.

Data collection

The survey was administered to employees of IT departments, in Korean companies which have adopted mobile office. Of the 127 questionnaires distributed, 127 questionnaires were returned and 88 questionnaires were completed and usable for data analysis. Table 3 illustrates the profiles of responding companies.

Characteristics	Category	Numbers	Percentage (%)
Number of staff members	Less than fifty	10	11.36
	51 to 100	10	11.36
	101 to 150	31	35.23
	151 or more	37	42.05
Types of industry	Manufacturing and Heavy Industry	4	4.55
	IT Device Manufacturer	15	17.05
	Internet and ICT service Provider	13	13.77
	IT S/W Development and Sales	32	36.36
	Transportation	7	7.95
	Education and Academic-related	4	4.55
	Marketing and Management-related	3	3.41
	Financial Services	4	4.55
	Holding Company	2	2.27
	Energy Industry	2	2.27
	Art and Pop Culture	2	2.27

Table 3: Characteristics of the Company of the Survey Participants

FUTURE PLAN

All of the numerical data collected from the survey has not been subjected to detailed statistical analysis yet. Therefore, appropriate statistical analyses will be performed to verify the hypothesis.

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