AN INVESTIGATION TOWARD MOBIL MANAGEMENT NEEDS OF SME OWNERS

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ABSTRACT

Due to the rigors of current economic environment, the small and middle enterprise (hereafter referred as SME) owners are harder and harder to handle their business. Because of their time and energy are not enough. Almost 90% of Taiwanese SME owners play multiple roles in their companies, such as salesman, human resources manager, and even accountant. Therefore, useful and powerful application program of smartphone for them to communicate and control the inner of company is becoming their desire. In other words, they need a mobile manage tool. This paper proposes a suitable smartphone application program for SME owners to manage their business. Mixed approach is adopted to collect relative literature, data, and analyze data. First of all, the qualitative method is adopted for reviewing the relative literature, such as the current and exist state of SBM in Taiwan, and the professional fields of ERP, HRM and PM are included as well. Secondly, the quantitative method is followed for establishing the questionnaire to understand their using behavior of smartphone. Finally, the qualitative method is adopted again for gathering the opinions of SME owners regarding the requirement of using smartphone on relative management issues. After the findings, the framework of "Smartphone PM Calendar" is designed. This framework may be adopted by hardware and software manufacture of smartphone to catch the business opportunities and contribute to the Taiwanese SME owners. The framework implies as well that the software engineers of smartphone should have some ERP, HRM and PM professionals for developing the application program.

Keyword: SME (Small and Middle Enterprise), Mobil Management, Smartphone, PM (Project Management), ERP (Enterprise Resources Plan), HRM (Human Resources Management)

INTRODUCTION

The mall and middle enterprise (hereafter referred as SME) has been an upward trend in the decades in Taiwan. According to statistics (http://www.wikipedia.com), the existing SMEs are around 1024000, which is accounting for 97.81% of the total enterprises in Taiwan. The total employment is 719.7 million people, which is accounting for 78.43 % of total employed population in Taiwan. In other words, there are average 21 Taiwanese own an SME, and there are average 7 employees in a SME. This implies that many SME owners are chancellor and janitors, which means they do everything by themselves. Therefore, the SMEs owners play several roles while operating an SME. In particular, most of SME owners are also super salesmen which caused them are usually not in office. It can be imagined that the owners should feel deeply troubled on horizontal communication and controlling the progress of business cases and projects. In this circumstance, it will become the owners' desire for communicating with internal supervisors or colleagues and conveying tasks

ubiquitously. Therefore, it is interesting and contributive to investigate the mobile need of SMEs owners for managing company. By understanding their needs, the development of appropriate mobile application is valuable.

LITERATURE REVIEW

Definition of SME

SMEs are relatively small scale enterprises, the number of people employed and turnover are not big, and the consisting of funds provided by a single individual or a small number of people; therefore, the most SMEs are directly managed by owners and less susceptible to external interference. The SMEs actually existed long and exist everywhere in daily life, for example, the alley grocery which is operated jointly by a couple. But the really concept began in the late 1980s "small business", and literature began the term-SME (Huang, 2003).

However, the definitions of SME are different in different countries. In this study, based on the release of the Ministry of Economic Affairs of the Republic of China SMEs (http://big5.chinataiwan.org/twzlk/twjj/gk/200712/t20071213_501119.htm), the definition of SME is recognized as:

1. The paid-in capital is under NT $ 8,000 million in manufacturing, construction, mining and quarrying, and the regular employees are under 200.
2. Less than NT $ 100 million turnover in the previous year in agriculture, forestry, fishery and animal husbandry, electricity, gas and water, and other services business, and the regular employees are fewer than 50.

The definition of SME is also inconsistent in EU countries, for example, the numbers of staff are 250 people or less may be called as SME in Germany provides, and the numbers of staff should be 100 people or less may be viewed as SME in Belgium. Now in EU regulation, 10 employees or less means micro-enterprises, less than 50 employees recognized as small businesses, and less than 250 employees may be called as medium-sized enterprises (SME). Taking the above viewpoints, the SME size in EU may be explained as the companies owned 50 to 250 employees (http://wiki.mbalib.com).

Characteristics of SME in Taiwan

Due to the implement of policy of "developing countries capital to moderate the private capital" in early Taiwan, the development of large enterprises in the public sector were encouraged; on the one hand, at the same time, the development of large-scale private capital were limited. Therefore, the rise of civil SMEs was created. Taiwanese government encouraged SMEs, such as establishing the Bank of China (Taiwan) to help SMEs solve funds, setting up specialized agencies to provide information and technology, and taking the initiative counseling for upgrading management standards and industrial technology. Therefore, Taiwan's economic could take off from the beginning of the 60s and has been rapid and stable development in the subsequent decades. These are mostly SMEs credit. Moreover, SMEs sales were accounted approximately 1/3 of the total sales in Taiwan in 1997, and the business tax was accounted for 44% of Taiwan total business tax. SMEs are veritable "big profits" in Taiwan (http://www.brain.com.tw).

Also worth mentioning, SMEs and large enterprises formed a very close relationship for decades. Firstly, they both complement each other! Large enterprises play as a leader and skeleton, SMEs work as the base and the main body. Secondly, they both

interdependent! Large enterprises dominate the direction of economic development, and control the upstream products; SMEs fill the vacancy in the development of large enterprises, and are parts suppliers as large enterprises as well as consumers of large enterprises (Mawr, 2012).

However, perhaps the SMEs size is small and works with a single business model, the decision-making of Taiwan SME often causes the following blind spots.
1. Excessive underestimated topic.
2. Believing optimistically the understanding of society and considerate.
3. The managers emphasized too much on "quickly solve the challenges of the production and sales".

Therefore, the SMEs owners should give up the habit of relying on personal rich experience as a basis of decision-making, and should learn to collect and master the message associated with the decision-making. This concept also means controlling the timing; predictably, mobility management becomes must-do homework of SMEs owners.

For business, it can be seen as the manifestation of mobile management enterprise as long as the use of mobility management activities, such as communicating with colleagues through mobile email, accepting product information via SMS message or warning alert, or sending orders via smartphone. Mobile enterprise applications are not only for customer-side, but also for business to business, and internal staff. Therefore, in order to design suitable and actual application program of smartphone, the internal mobile management needs for the SMEs owners in different industries must be investigated.

ERP (Enterprise Resources Plan)
In different socio-economic stage, people have different understanding of the enterprise resources. Modern scholars believe that enterprise resource is a collection of the various factors during the process of providing products or to achieve business objectives. Maybe a broader viewpoint can be taken to understand the enterprise resource here. All the material and non-material support which can be translated to help and take of advantage-are Enterprise Resource.

Usually, the enterprise resources can be divided into external resources and internal resources. Enterprise's internal resources can be divided into: human resources, property resources, information resources, technical resources, management resources, controllable market resources, the internal environmental resources; and external resources can be divided into: industry resources, industrial resources, market resources, external environment resources. Because this study based on internal management needs, only focuses on internal resources. The SMEs owners are usually more concerned with the internal resources, which may be roughly divided into two categories: one part is human resources, and the other part is time and space resources. The two parts are also the base for composing the framework.

Project Management
Famous theories of quality control Juran (1999) once defined the project management: it must be scheduled the process while trying to solve the problem. The PMBOK Guide defined project management as "an application of knowledge, skills, tools and techniques and project activities to meet project requirements". Project management

always includes 5 elements (Figure 1) and is achieved through the application and integration of the 42 project management processes which are in accordance with 5 logical groups- initiating, planning, executing, monitoring and controlling, and closing (PMI, 2008).
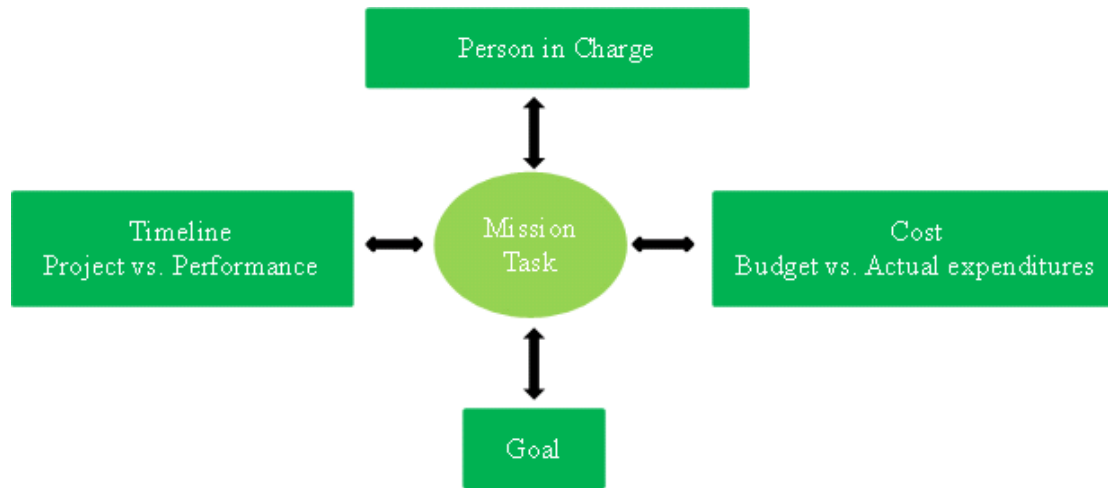

Figure 1   5 Elements of a Project

A project is "temporary work in order to produce a unique product, service or result" ((PMI, 2008, p. 5); therefore, the project completed only just once, as long as it is repetitive work, it is not project. A project should have a clear start and end points (the Time limit), budget (Cost control), clear definition of work Scope (or amount) and requirement of Performance, called **PCTS** targets. PCTS are the critical conditions related with the success of a project, which includes effectiveness (performance), cost, time and scope. For the relationship between the 4 conditions with the following formula: $C = F (P, T, S)$ (Heagney, 2012). The value of any 3 variables can be specified, but the value of the remaining one should be left by the project manager (or SMEs owners) to decide.

Figure 2 Relations between PCTS

METHODOLOGY

The mixed method is adopted by this study, which means both methods of the quantitative and qualitative are used to collect and analyze data. The purpose of adopting mixed method is to take multi-model viewpoint to investigate the phenomena; therefore, in the several stages of investigation, qualitative and quantitative are used interchangeably to explore the nature of the event. The advantages of mixed method are, fist, to avoid the blind spot of described incident of a single method, and to explore the unique qualities which belong to a particular event;

second, to convert perceived qualitative data through the quantitative skills into objective statistical analysis (Zhuyin, 2007).

Table 1 Schedule of Data Collection

Steps	Time Required	Method	Operation Description
Literature Review	3 Months	Literature Analysis (Qualitative)	Retrieve Relevant Literature
Execution	2 Months	Survey (Quantitative) Focus Group Interviews (Qualitative)	1. Planning questionnaire and its reliability and validity according to the results of the literature analysis. 2. Selecting survey respondents (Rotarians as the main object).
Assessment Feedback	1 Month	Questionnaire statistical analysis	1. Analyzing questionnaire survey results. 2. Integrating the document analysis and survey results.
Categorizing	1 Month	Transcript、Triangulation	Searching and understanding of SMEs owners and their management needs.
Coding	1 Month		Selecting focus group interviews respondents (Technology owners as the main object).
Analyzing	1 Month		Viewing the respondents' reply.
Assessment Feedback	2 Months	Writing comprehensive results, conclusions, and providing appropriate recommendations diagram.	

This study concerned about the internal and external validity, reliability and objectivity while quantitative method is adopted; this study also emphasis on trustworthiness, portability, and verifiability while qualitative method is adopted (Lincoln & Guba, 1998). Besides, the phenomena of managing a business or an organization have always been diverse and complicated; therefore, the methodology used in this study based on academic criteria with an objective manner, which means this study takes an efficient level action to investigate mobile management needs of SMEs owners, and to conduct a comprehensive description toward this phenomenon (Tumer, 1986).

STUDY RESULTS

Data Analysis of Quantitative

There were 30 formal questionnaires; the actual and valid collection is 25, and surveyed in mid-April 2012. All the samples are SMEs owners regardless of their occupational categories, and not limited to have purchased smartphones, to not purchased smartphones, and have been so used and unused smartphones, but covered all the smartphone consumer groups.

From the result of the questionnaire, it can be found that currently more than half of SMEs owners have two or more mobile phones which are used to mostly for sending text messages, assigning subordinates matters, and occasionally downloading leisure software. In this result, the SMEs owners display their expectation that the future smartphones can be capable of secretary function, with custom software for remote monitoring of the business, and communicating with assigned and responsible colleagues at any time.

Data Analysis of Qualitative

In this part, the method of specific sampling is adopted. The objects of study respondents are SMEs owners with a technology background, because they are more often had the opportunity to use the mobile product to manage companies. Therefore, they can provide the actual demands to improve the mobile application services and technical for SMEs owners. The respondents are SMEs owners or key management personnel with a technology background, but not limited to holders with smartphones, as well not limited to holders with a particular brand of smartphones.

The interview result has been recorded and made into a transcript. The content of the transcript is the mobile management needs of the SMEs owners in technology industry. The content was classified as three categories of demands which are distinguished with different colors. Under the three major demands, there are several secondary demands. Table 2 is the result of transcript which has been already classified and coded.

Table 2 Focused Interviewing record classification table

Representative color	Categories	Sub-categories
Orange	Software program	How to find persons in charge
		For more information on the progress of work
		For more information on a chain with a key of details
		For comprehensive understanding horizontally and vertically of the company at the same time regarding the implementation of the project
Red	Hardware device	Too much communication device and software
		Not willing with a phone, tablet, and laptop at the same time
Green	Others	Vision aging need to rely on the appropriate hardware (screen)
		Using habit and behavior
		Battery charge and environmental issues

From the Table 2, currently the SMEs owners are plagued most with, first, carrying around with a laptop (including tablet) and mobile phones at the same time; second, discomfort reading screen (maybe due to the most of SMEs owners has more than 45 years old, and began presbyopia phenomenon); third, finding difficultly in-charge colleagues or waiting long for in-reply to project progress.

CONCLUSIONS AND SUGGESTIONS

Conclusions

From the result, it is not difficult to find that most of the SMEs owners concerned about controlling comprehensive status of their companies, and relative personnel and things regarding particular projects. In other words, SMEs owners need to know both the scheduled and actual rates of progress. In order to reduce the cost of waste and to prevent any deviation from the target, SMEs owners hope that they can take measures to correct it while the comparison of the two rates is slightly drop.

Based on the above reasons, the needs of mobile management for SMEs owners could be expressed like-implementing projects by handling and using with the management knowledge, technology, and mobile tools, which also includes the skills of managing people skills. Therefore, the mobile needs of SMEs owners should also include human resource management; in other words, they concerned about the question "How do I know where the person in charge of the case is". Regarding the administrative work, budget, schedule, and logistics included as well must be integrated into the mobile management needs. So, the mobile demands of the SMEs owners include "transaction-oriented" and "human-oriented".

It is the era of substantial application of mobile communication technology; the SMEs owners inevitably hope to take this application as a tool to control the progress of company projects, furthermore, to allocate human resources. In other words, the SMEs owners also want to be able to use mobile communications applications to make the best use of the company's human resources. No matter the time or manpower, both are the enterprise resources, which must to be managed; SMEs owners expect to control nothing more than the two major resources on cost savings, and try to make benefit for the company (Ortiz, 2008).

After all, the smartphone's screen size is limited, and not big enough for formal project management job, which should present 5 process groups and PCTS targets; as a matter of course, not big enough to render a chain process in each project. Therefore, for satisfying mobile management needs of SMEs owners, this study intends to propose Campbell and Collins (2010)'s concept of the one-page project report and to develop the smartphone application program.

The one-page project report is presented by the use of symbols and colors, and presented with drawing a visual, easy-to-understand chart to describe the status of the project at some time-point. Meanwhile, the one-page project report can link all important parts of the project together, which include persons in charge of each part of the project, due dates, and task missions (Campbell and Collins, 2010). Anyone can identify the person in charge of the project by adopting the one-page project report; besides, through the combination of chart and color, the SMEs owners can clearly see who is responsible for what, progress drops, how much budget executed, and so on. The following is example of one-page project report.

Table 3 One-page Project Winding Table (Sample)

Project Leader:Name			Project: Title		Date:		Project Goal: Description											
Achieved Goals/Main Task			**Project Completion Date**												**Responsible Person**			
	#	Task	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	A-Dennis	B-Wayne	C-Kruse	D-Dave
●	1	signing contract	●	●										●	A			
●	2	site demolition	●	●										●	A	B		
	3	system software design	●	●	●	●								●		B	A	B
	4	computer HW specifications	●	●	●	●								●			A	
	5	workstation design		●	●	●	●	●							B	C		A
●	6	parking planning & surrounding landscape					●	●	●	●					A			B
●	7	Ground & foundation		●	●	●	●								A			
●	8	Girder & pillar				●	●	●							A			
●	10	roof					●	●	●						A			
●	11	mail floor completed						●	●	●	●				A	C		B
●	12	appearance & glass works								●	●					B	A	C
	13	Computer HD installation								●	●				B	A		D
●	14	material shelf installation								●	●				B	A	D	B
●	15	automatic crane installed									●	●	●		D	A	B	B
		Number of people involved in the project	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	A-Dennis	B-Wayne	C-Kruse	D-Dave
		Main / Due-date / Cost / Goal / Summary and Outlook													Person in Charge	Person in Charge	Person in Charge	Person in Charge

Funds — Expense — Others

Budget ▮ Actual Expense ▮

Project will be completed on time. Details need to be amended.
Project unspent balances can be written off cost overruns.
We have confidence that existing problems will be resolved, on-time to start.
Personnel's training is completed, and looks fully operational start

Translated by researcher from Campbell and Collins (2010).

There are five main parts must be read from the one-page report, which are:

1. Mission: HOW

The mission is the center of a project, which will be achieved the goal through completing it. They are the switch handle of a project, and also the exact matters which should be completed, in other words, mission is the work itself.

2. Goal: WHAT and WHY

The goal is a vision, is a project of the places you want to go to. Goals may be wide or be exact and locked.

3. Time Line: WHEN

A project should measure when things should be completed and the actual completion time. Timeline itself is elastic, for example, if a project is expanded, the time line and budget should also be extended and expanded.

4. Budget: HOW MUCH

The project budget may be as the actual expenditures as possible; meanwhile, it can also be hidden, for example, the use of internal staff costs. In addition, because the cost of calculation is complicated, each project must have the participation of professional accountants.
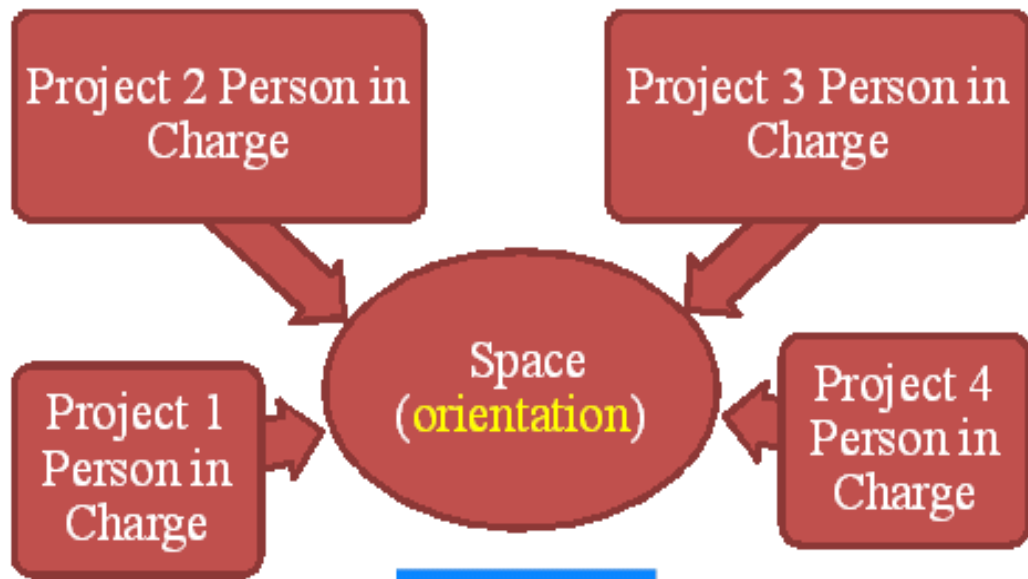
5. Person in charge: WHO

A one-page project report allows managers know the persons in charge of the tasks, who can be adequate to the tasks and doing good things, and who should offer assistance.

Suggestions

It can be tell from the results and conclusions, perhaps the organizational culture dictates, most of Taiwan's SMEs owners attend to do everything personally. Moreover, most of the time, the SMEs owners also contact customers by themselves for understanding the case, and even take cases by themselves; therefore they are often not in the office. One can well imagine how anxious they will be if they can't contact with the person in charge or cannot fully understand or control the progress. Plus not find the people to understand the progress or to assign work matters, their anxiety can be imagined.

Consideration of their anxiety, it is important and valuable to improve the internal control for the SMEs owners and reduce their trepidation. Therefore, this study suggests the best use of mobile communicative devices and drafts a conceptual framework (Figure 3) for relative manufacturers to their research and development of new smartphone programs. This framework can not only contribute to the SMEs owners, but also to smartphone engineers for seeking business opportunities.
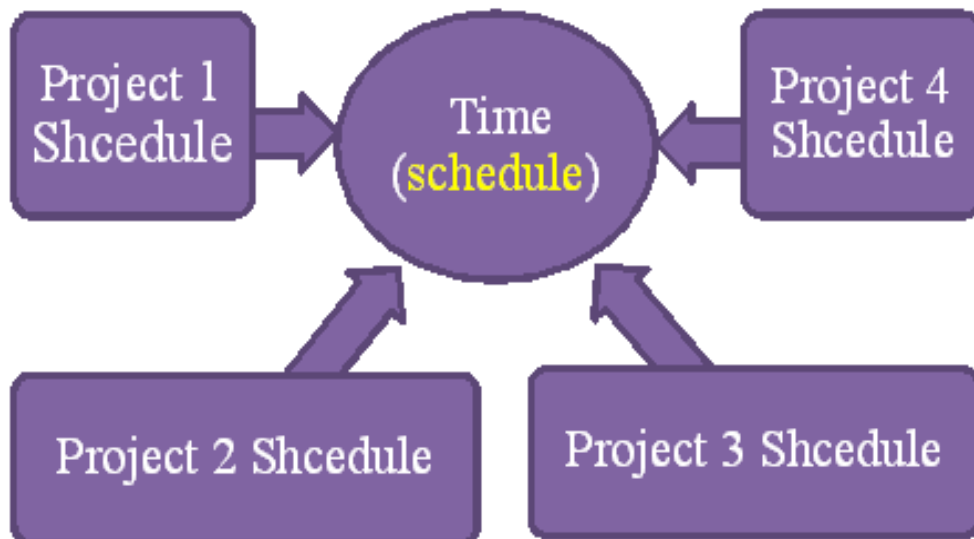
Figure 3 A Concept-oriented Framework

This framework is concept-oriented for designing smartphone program which presents a one-page project in the screen (see Table 3). At first glance it seems similar to smartphone calendar, but actually this is a calendar combines project management schedules, and includes process groups and PCTS goals with the subsidiary of prompt, alert and tracking functions. After all, project management is not only exclusive time only.

After interviewing with SMEs owners, it is the hope that the "one-page PM calendar for smartphone" with "integration features" should be welcome by Taiwanese SMEs owners. Therefore, this study would like to provide a recommendation to programmers while designing application program of smartphone: as a programmer better be aware of the connotation and use about the project management, and better understand the pressure and anxiety of SMEs owners while running business. Because caring is the only way of designing programs. In order to design a highly-thinking smartphone program by SMEs owner with compassion, besides, the programmers must also study the ERP (enterprise resource planning), HRM (Human Resource Management), PM (project management) and other fields of non-programming expertise. After all, technology has always been to meet the needs of humanity.

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