An evaluation of project management tools and techniques in Vietnam

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CHRONICLE	ABSTRACT
	Project management tools and techniques provide the efficiency and effectiveness in managing and handling the projects. Many tools and techniques have been discovered and applied widely for a long period of time among project managers around the world with great contributions to the success of projects. Vietnam is a developing country and has become an attractive hub for national and international business opportunities. Consequently, there has been an increasing development and expansion of business projects in Vietnam. The purpose of this study is to analyze the use of project management tools and techniques in Vietnam. More specifically, this study aims at investigating: 1) the awareness of business people related to projects, 2) the application of project management tools and techniques within the organization and 3) the challenging obstacles that have prevented organizations in using the tools and techniques. The mixed-method methodology is employed to collect and analyze the data. This study uses interview and questionnaire techniques to collect the data for the study. Several companies in different industries in Vietnam participated in collection of the data. The findings of the study indicate lack of in-depth understanding and recognition of project and project management tools and techniques in Vietnamese businesses. The term "project" has not yet become popular in Vietnam. Hence, companies in Vietnam have been facing many obstacles with the application of project management tools and techniques affected on the performance of the projects. The study suggests that the definition and recognition of Project Management should go beyond the current assumption of the Vietnamese business people. Better exercises and practices of the concept of Project Management can benefit the local and international companies. Achieving higher awareness of projects and project management tools can significantly improve economic success of Vietnam.

1. Introduction

1.1 Background

There has been a movement within the organizational environment: moving from "managing projects" to "management by projects" (Melton, 2011). Therefore, the term "Project Management" (PM) has been popularized among several different industries (Fortune et al., 2011) especially in developed countries. Project Management has performed as a distinct management concept, especially in developing countries (Ofori, 2013; Dey, 2001; Hydari, 2012; Larson & Gray, 2011).

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The term of Project Management hence is an important term in business process and together with that, it also comes along with specific supporting tools and techniques. Vietnam has some misconception in term of Project Management (PM) and Project Management tools and techniques (PTTs). Generally, the term "Project Management" in Vietnam has created the awareness specifically in engineering or construction sector. However, "Project Management" should be understood and applied widely within various business sectors as a temporary organization in the firms (Konstantinou & Müller, 2016; Ling, & Bui, 2009).

The purpose of this study is to understand better about the usage of Project Management tools and techniques in operational Vietnamese organizations. In addition, the authors also focus on analyzing why companies do and do not operate their temporary organization as a project. Moreover, once the tools and techniques have been implemented, the analysis about the obstacles or challenges should be conducted in this research when firms execute their project management. Through this research, the authors hope that it can contribute to the general acknowledgement of Project Management in the business environment of Vietnam.

1.2 Problem discussion

In developing countries, managing projects often face extreme and complex problems; however, those concerning issues are still happening and not yet sorted (Duy Nguyen et al., 2004; Yanwen, 2012). In Vietnam, one of the developing countries, projects appear in many industries and especially, in construction and infrastructure. Moreover, there are projects and mega projects that suffer losses or cost and time overruns that impact negatively on the general economic circumstances as well as the societal goodwill. However, there are still a big gap and missing theories document about the use of Project management practices such as tools and techniques that are closely related to the reduction of project failure, leaving no evidence on the use of PTTs in Vietnam.

1.3 Research aims and questions

The circumstance and practices of PM and PTTs in Vietnam are not well documented by empirical studies or research papers. The authors therefore desire to accomplish this research that could slowly build up the theory aspect in Vietnam. For that reason, the following research questions have been established to achieve the project's aims:

- What are the PM tools and techniques used in Vietnamese organizations?
- What are the challenges in adopting and/or using PM tools and techniques in Vietnamese organizations?

More specifically this study aims at achieving the following objectives:

- To critically analyse the level of usage about Project Management term in Vietnamese business environment.
- To learn about the application of Project management tools and techniques in Vietnam
- To identify if there is any obstacles or challenges when applying or adopting those tools and techniques

In order to discover the answer for the research questions, the researchers decided to collect the primary data through with both quantitative and qualitative data collection methods.

2. Preliminary Review of the Literature

A project is a temporary organisation that is organised within the limited project constraints as time, cost and resources (PMBOK, 2017). More importantly, a project must be unique and not a routine operation. Project management is defined as "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements" (PMBOK, 2017).

2.1 Project Management Tools and Techniques

Frame (2014) and Carstens et al. (2013) discussed specifically about Project Management tools and techniques. There are many tools and techniques or in other words, they are processes or mechanics they serve the project team needs. Different project management tools/ techniques or practices have different approach to support the project performance (Carstens et al., 2013). The development and efficiency provided from Project Management tools and techniques have participated in the organizational project management and Project Team excellence (Melton, 2011).

2.2 Definition of terms

Work Breakdown Structure (WBS) and Product Breakdown Structure (PBS)

A Work Breakdown Structure is a diagram or a list that describes deliverable-oriented breakdown of the project's work into smaller activities or group of activities (Norman et al., 2011). Similarly, Product Breakdown Structure details the products or deliverables that the project has to produce accordingly to its requirements (Shaltry, 2008; Indelicato, 2010). Depending on the nature of projects, WBS or PBS will be selected appropriately.

Feasibility Study (FS)

Feasibility study is basically an analysis of how successful or feasible a project plan when it turns into real life (Gardiner, 2005). Specifically, it studies about many influencing factors that are in accordance with the success rate of the projects. FS does not require professional PM background to build up, staff or individual with business background can exercise and practice FS accordingly to their knowledge and research (Mukherjee & Roy, 2017).

Stakeholder Power Interest Matrix (SPIM)

Stakeholder Power/ Interest Grid/Matrix is a tool that allows project team to categorize stakeholders with a certain level of power and interest (APM, 2017).

Risk Register (RR)

Risk Register is also referred as Risk Log. It is a detailed and advanced document that is created at the beginning of the project to identify, analyse the project's risks and prepare a proper risk response plan and so on. Risk register will perform specifically the risk of the projects and it is a helpful reference for the project team to address problems and react precisely when they rise. Risk register involves largely on the success of risk management (Ling & Tran, 2012; Teller et al., 2014). Meanwhile, in developing countries, the awareness and consideration with the nature of risk is relatively low; hence, it prevents project to achieve success.

PI Matrix

Probability-Impact (PI) Matrix is a tool that allows project team to prioritize and evaluate their risks (Raydugin, 2013). From PI Matrix, the project team can identify the importance level of the risks and also the level as high, low or medium impact of risk on their project. Using PI matrix, it supports the project team in planning and creating their risk response plan in order to manage their project's risks properly and allow a smooth sailing for the project.

Gantt Chart (GC)

Gantt Chart is a collection of horizontal lines that demonstrate the amount of work or activities should be done or done within a certain period of time; moreover, Gantt chart also performs the millstones of the project's process which is the important stage that has to be done crucially to review the previous steps and plan continuously for the next activities. It also describes the achievement at some points of the project (Kirk, 2012).

The role and importance of Project Management tools and techniques

Every project strives to be successful. However, there should be a distinction between project success criteria and factor (Murphy & Ledwith, 2007). A success criterion is defined as the measures by which success or failure of a project will be judged. Success factor is defined as the "inputs" to the management system that leads directly or indirectly to the success of the project (Cooke-Davies, 2002).

Table 1
Review of success criteria and success factor adapted from (Murphy & Ledwith, 2007)

Author	Success criteria	Success factors
Fortune and White (2006)	Not addressed	Top management support Clear and realistic objectives Efficient plan Performance monitoring Communications Resources
Crawford et al. (2006)	Not addressed	Relationship management Resource management Time management Cost management Risk management
Westerveld (2003)	Budget, schedule quality appreciation by: client, project personnel, users, contracting partners and stakeholders	Leadership and team Policy and strategy Resources Stakeholder management Schedule Risks
White and Fortune (2002)	Complete within schedule Complete within budget Meet Clients requirements	Clear goals/objectives Realistic schedule Top management support Adequate resources Effective risk management Clear communication channels
Cooke-Davies (2002)	Not addressed	Risk management Responsibilities plan Scope change control process Line of sight feedback Learning from experience
Belassi and Tukel (1996)	Cost Time Quality Client satisfaction	Clear goals/ objectives Top management support Scheduling Sufficient resources Planning and control Monitoring and feedback Client consultation

To determine the project success, criteria and factors become more complex when the traditional elements of the project constraint: time, cost and quality are no longer sufficient (Belassi & Tukel, 1996). From Table 1, there was a common point in the success factor table between that "Risk Management" impact greatly on the success of project (White & Fortune, 2002; Westerveld, 2003; Chua et al., 2003; Crawford et al., 2006). There is no research that could prove the most effective or perfect tools in leveraging risks, however, Chapman (1998), Thamhain (2013) and Patil et al. (2012) agreed that the use of risk management tool with proper application based on organizational structure, project size and relevant impacting factors may reduce the uncertainty or negative impact of risks on project performance. Therefore, without the support of project tools in analysing the risks, project is challenged to obtain its desired objectives.

In fact, planning does not provide 100 percentages in project success, however, poor planning may lead project to failure (Andersen et al., 2009). Without effective PM practices, comprising the project's target and benchmarking the desired values could not be easily obtained (Long et al., 2004; Dang et al.,

2012). In 1997, Toney and Powers clarified that standardized process within the mean of approaches and procedures is a success factor. Then, Thamhain (1998) studied the use of project management tools and techniques. They concluded that project management tools and techniques contribute conditionally; depending on the integration of project managers into their projects as well as the acceptance and learning pace of the project team. Thamhain (1998) and Raz and Michael (2001) have shown that the use of risk management tools contributed with a higher level of performance for projects in Israeli high-tech industries. In 2002, White and Fortune explored the relationship between "the tools and techniques usage" and "project outcomes ad project success". By using specific tools and techniques, it supported the core project's success criteria "on time, to budget and to specification" to be clearer and more achievable. Ahmed and Hassan (2003) argued that applying appropriately the management practices can ensure the quality performance; and together with the better the implementation, the higher the improvements of business results. A proper implementation of project management processes has been proven specifically in innovation management as a key critical success factor. Chemuturi (2013) argued that project may find difficulties or unable to achieve the targets without the application of PM tools and techniques. The use of those PM practices may allow the PM team to keep the project on track, maintain the project constraints and deliver customer's needs precisely.

In sum, an appropriate application of PTTs contributes greatly to improve the success factor of projects.

2.3 Possible challenges and obstacles that organizations may face when applying Project Management tools and techniques

2.3.1 Governance

Governance is closely related to the decision-making process (Garland, 2009). It is one of the crucial elements that affect the application of tools and techniques when managing projects. For that reason, the management team is responsible to choose an appropriate collection of tools and techniques. Therefore, there will be an arising concern that project's governance will be one of the obstacles when the management team do not have the knowledge or the expertise in applying and using project management tools and techniques. Loo (2002) emphasized that an organization without a PM "champion" principles is seen as a bottleneck in completing project successfully or attaining success. Therefore, the project governance and the individuals involved in it play a crucial role in the process of applying PTTs. On the other hand, corruption is one of the challenges to accomplish good governance (Pillay, 2004; Mungiu-Pippidi, 2015). Unfortunately, it has been mentioned as one of the concerning obstacles in Vietnamese business environment that may strongly affect to the decision making process of projects (Nguyen & van Dijk, 2012; Wischermann, 2011).

2.3.2 Adoption process

The adoption process can be different depending on the size, culture, organizational structure of the organization itself and also the project. Therefore, the adoption process could be varied or standardized in relationship with the requirements of the tools and techniques or the mentioned above elements. The absence of knowledge related to PM is a concern in Vietnam (Tam & Hadikusumo, 2016; Nguyen et al., 2016). Therefore, to adopt PTTs properly in Vietnam, the adoption process would be one of the challenges to criticize.

2.3.3 Technology & Knowledge

When applying a new terminology, technology and knowledge will be a big concern. The reason is that they are closely related to the quality and also the effectiveness of the project's outcomes or specifically, it could also impact the project's performance because of effective/ineffective application (PMBOK, 2017). The outstanding concern about Vietnam is the knowledge foundation about true meaning of PM. Shortage in professional skills, skilful PM labour force, and experienced PM expertise

limits the technology and knowledge flow in Vietnam. Lack of essential knowledge and technology is one of the reasons for project failure (Desouza & Evaristo, 2004).

2.3.4 Stakeholders

Different stakeholders share different interests. Thus, stakeholder management will also be a challenge when organization has to adopt new tools and techniques (Ponnappa, 2014). To manage and balance the differences between the stakeholder's references, background to convince them about the effectiveness or advancement of a new terminology. That would be also a big concern that the project management team has to pay attention to solve.

2.3.5 General view about the use of Project Management tools and techniques in Vietnam

Vietnam is an attractive destination to Official Development Assistance (ODA) and Foreign Direct Investment (FDI) fund (Thi & Swierczek, 2010). In recent years, Vietnam experiences a dynamic growth that has boosted the national economy and development (Dang et al., 2012). It is the fact that many of the projects have to stop working or suffer incompletion or become useless despite a huge investment due to corruption or bad management. Government-funded projects that faced delays or inefficiency may suffer a huge decrease in citizens trust level (Le-Hoai et al., 2008). Especially, Transparency International (2016) ranked Vietnam as the 113th corrupted country.

Consequently, projects delay and budget overruns have become common problems in Vietnam (Long et al., 2004). There are several reasons cleared out as the causes for the poor performance of projects in Vietnam such as inadequate designs, corrupted contractors, poor estimation and change management, external environment issues and more importantly, improper use of techniques and tools have been highlighted (Long et al., 2004). Hence, applying project management processes or procedures may face obstacles; especially, in developing countries where project management awareness is still limited. There are several concerning problems identified within project environment in developing countries (e.g. Yanwen, 2012; Dvir et al., 2003):

- Wrongly identifying or preparing procedures
- Inappropriate analysis with the national agencies or operating ministries
- Insufficient feasibilities studies and technical appraisal to provide essential information needed
- Unclear objectives and project's outputs

Nguyen (2007) also mentioned that developing countries face challenges to create an effective and smooth sailing transfer in project management technology and especially, it has been a big concern in Vietnam. Vietnam shares a desire in accelerating the effectiveness of their projects in all industries; however, it is being suffered from many problems related to project management tools, techniques and methodologies. Furthermore, the project management in term of risk, quality, cost, time, resources, risk, integration, scope, communication and procurement also faces obstacles. However, the most discussed was poor management (Nguyen et al., 2004; Nguyen, 2007). More importantly, (Nguyen, 2007) highlighted that the low level of professional training and together with the out-of-date current methodologies in managing projects have become the core problems to deal with if the country wants to step forwards a modern project management environment. Nguyen (2007) discussed that there is an urgent need in Vietnam as well as in emerging and developing countries about the improvement of all facets in project management operations. Nguyen (2007) suggested that the enhancement could be achieved through the proper implementation of project management in several aspects. To sum up the preliminary preview of literature, there are several tools of PM used to identify the importance and also the impact on project performance in Vietnam. It was also highlighted that a proper implementation of PTTs could bring positive results for the project outcomes and acts as a success factor. Nonetheless, there are also concerning obstacles, which that threat the advancement of PM in some particular aspects. Vietnam, a developing country, has been suffering an absence of modern PM studies, research and

knowledge foundation to produce efficiency in projects. Especially, when the economy is being in-vested by many international projects, the challenges in PM have been enlarged with many problems.

3. Methodology, Research Design and Strategies

The research was conducted in two main phases. The first phase was conducted by interviews with different companies in Vietnam. The second phase was to launch a survey to enrich the information that the researchers needed. This can be considered as a mixed method (Saunders et al., 2016). The two main phrases will result in the collection of primary data. However, this research essentially required the secondary research data as well in order to enhance the quality and precision of the collected pri-mary data (Saunders et al., 2016). This secondary data were not be mainly used throughout the analysis and discussion section but they were be used as an effectively supportive tool for the collected data. The interviewees were carefully selected from five different Vietnamese firms conducted with struc-tured questionnaires providing qualitative data. This way, data could be assessed to be more reliable and more precise due to the individual face-to-face interview and their positions in management level giving a good quality source of data. 51 other respondents who were involved in the online survey from BOS were selectively picked from Vietnamese business students and staff. A wider range in numbers of respondents offers a better accuracy to the quantitative data and helps structuring the visible graphs as well as figures for analysis.

Table 2
Profile of the interviewees

Company	Industry	Org. Structure		Type of project			Respondent's position	Educational level
		Joint Venture	National	Occasional	Half-Half	Full-term		
Sunrise	*Tourism*	(VN-JP)				√	Department Manager	International Master degree
SG3	Sanitary ware			√			Director	National Bachelor
SG3	Sanitary ware		National	√			General Manager	National Bachelor
VNUS	Education	(VN-US)		√			Marketing Manager	National Bachelor
Vin-Vin	Real estate		National		√		Branch Manager	National Bachelor
Talent	Human resource		National		√		Manager	International Master degree

Table 2 illustrates the position and education background of the interviewees. The interviews were carried out between May and June 2017 and all companies were small and medium (SME) size, and the respondents were from Ho Chi Minh City; which is the biggest city in the country and also an economic hub of Vietnam.

3   Analysis

4.1 People awareness about PM tools & techniques in Vietnam

To analyze the use of PTTs, it would be relevant to study about the awareness of people about PTTs. The reason is that once people know about PTTs, then they would learn about to use it. The data was collected from staff in several companies; however, their titles were not "Project Officer" or "Project Team Member". They were just staff in different company's departments involved in firm projects. The survey as stated above, collected in different business sectors, not "fully-organized" in project environment companies. Therefore, they were not "professional-trained" project staff; this is the reason why the researchers studied first about their awareness of PTTs.

Table 3
Number of projects that respondents have got involved in

No. of involved projects	Percentage (%)
1-5	62.70
5-10	23.60
10-15	7.80
15 and above	5.90

As shown from Table 3, the majority among 51 respondents were involved in a small number of projects where more than half of them were accounted for 62.7% participated in 1 to 5 projects during their working life.

Table 4
The acknowledgement about specific PTTs

Tool's name	Percentage (%)		
	Yes	No	Maybe
Work Breakdown Structure	49	42.80	8.20
Product Breakdown Structure	37.50	52.10	10.40
Probability Impact Matrix	34	51.10	14.90
Feasibility Study	34.80	58.70	6.50
Stakeholder Power/ Interest Matrix	40	44.40	15.60
Risk Register	49	42.80	8.20
Gantt Chart	55.30	38.30	6.40
Other	5	62.50	32.50

Next, the acknowledgement about specific PTTs has been identified from Table 4. Overall, it could be discussed that the awareness of "specific names" of Project Management tools and techniques was low (Table 4). Overall, it would be unreasonable to argue that Vietnamese companies are not using tools at all to manage their project. There are tools being used; however, they could be in a different concept or design in which the next part is going to be investigated.

4.2 The use of PM tools and techniques in Vietnam

Table 6 and Table 7 summarize the use of SDCA and also specific PTTs in each interviewed company. When asked whether or not tools and techniques are being used to manage projects in Vietnam, 72.5% of the respondents indicated that they had implemented tools and techniques in their past projects. It is noticeable that "PTTs" were not asked in this question, it was just the general term of tools and techniques. However, this indicator is in contrast with the acknowledgement of the specific PTTs in Table 4. This could be explained that they use tools and techniques, but they are not real "Project Management tools and techniques". This could be the specifically designed tools or applications provided from the company. As a result, it was proven with a significant response with 80.4% rate in Table 5. Company's customized application helps them manage their tasks and projects easily because it provides crucial data and sharing information based on the history record or customer satisfaction. The senior and junior levels that participated in interview and survey questionnaire shared their similarity in the use of tailor made application. They found the essential usefulness needed that enhances their working speed and productivity.

Table 5
Specific tools apart from PTTs

Specific tool	Percentage (%)
Specifically designed company's application	80.40
Other tool	19.60

Table 6
The use of specifically designed company's application and other specific tools from the management level

Company	SDCA	WBS	PBS	PIM	FS	SPIM	RR	GC
Sunrise	Yes	Yes			Yes	Yes		Yes
SG3 (1)	Yes	Yes						Yes
SG3 (2)	Yes	Yes						Yes
VNUS	No	Yes					Yes	Yes
Vinvin	Yes	Yes			Yes			Yes
Talent	Yes	Yes			Yes			Yes

*SDCA: Specifically designed company's application; WBS: Work Breakdown Structure; PBS: Product Breakdown Structure; PIM: Probability/ Impact Matrix; FS: Feasibility Study; SPIM: Stakeholder Power/ Interest Matrix; RR: Risk Register; GC: Gantt Chart

From the management point of view, 5 out of 6 have agreed on the importance of SDCA in managing their company's projects. To discover whether there is a difference or similarity between manager and staff and Table 7 demonstrates data in the use of specific tools in junior level.

Table 7
The use of specific tool

Tool's name	Percentage (%)		
	Yes	No	Not sure
Work Breakdown Structure	48	37.50	14.50
Product Breakdown Structure	31.30	47.90	20.80
Probability Impact Matrix	30	48.70	21.30
Feasibility Study	32.60	39.10	28.30
Stakeholder Power/ Interest Matrix	28	45.70	26.30
Risk Register	36	44.90	19.10
Gantt Chart	44.70	34.00	21.30
Other	5	64.30	30.80

Table 8
Frequency of usage in each tool (%)

Tools	Rarely (0-20%)	Occasionally (20-40%)	Sometimes (40-60%)	Usually (60-80%)	Always (80-100%)
Work Breakdown Structure	46.80	6.40	17	17	12.80
Product Breakdown Structure	57.80	13.30	13.30	8.90	6.70
Probability Impact Matrix	55.30	19.10	17	8.50	0
Feasibility Study	50	15.20	17.40	13.1	4.30
Stakeholder Power/ Interest Matrix	55.60	13.30	20	8.90	2.20
Risk Register	44.90	18.40	22.40	12.30	2
Gantt Chart	38.80	19.10	12.80	10.60	18.70
Other	75	11.10	8.30	0	5.60

More specifically, Work Breakdown Structure and Gantt chart also performed a high frequency of usage among the other tools. However, from a general point of view, the majority of results show that PTTs were rarely applied in their project.

4.3 The role and importance of PM tools and techniques in Vietnam

Several attributes related to the importance of applying PTTS were asked in Table 9, relevance with the explanation from the "Use" and "Acknowledgement" about PTTs were clearly shown. Respondents preferred the ease of use from PTTs, therefore, Gantt chart is the most favorable among other tools.

Table 9
The importance of each attribute in using and applying PTTs (%)

Importance Level	Easy to use and apply	Low cost	Not require professional training	Improve the effectiveness of the project	Well-known
Not important	2.10	8	9.80	0	12.50
Slightly important	2	24	21.60	2	31.30
Quite important	30.60	46	45.10	20.40	27.00
Very important	42.90	18	13.70	26.50	22.90
Extremely important	22.40	4	9.80	51.10	6.30

Table 10
The importance of factors that impacts respondent's likelihood to use the PTTs (%)

	Not important	Slightly important	Quite important	Very important	Extremely important
Many professional organizations recommend	4	22	46	24	4
Enhance the productivity and effectiveness of the project	3.90	9.80	17.60	21.60	47.10
Save time and cost, resource	3.90	3.90	23.50	37.30	31.40
Becoming more professional in your field	2	6.10	44.90	38.80	8.20
Have been applied worldwide and positive results have been shown	6	16	38	22	18

Table 11
Summary of factor(s) impact

Company	Factor(s) impact the willingness in applying PTT
Sunrise	Effectiveness, demand, save time and cost
SG3 (1)	Effectiveness
SG3 (2)	Company's demand, save time and cost
VNUS	Result performance
Vinvin	Convenience, productivity and reduction in workload
Talent	Effectiveness

"Effectiveness" from the application of PTTs will persuade the management level to adapt the new features. 3 out of 6 managers agreed on the "Effectiveness" factor. If the tool will "Save time and cost" for the project, 2 managers will take them into consideration of application. "Even well-known tools that has been applied worldwide by many different companies, it may not work here (in Vietnam), so let's say the already proven effectiveness in Vietnam will impact greatly on my willingness to use tools" discussed by the Talent Company manager.

4.4 Obstacles and challenges in adopting and/ or using PM tools and techniques in Vietnam

There are difficulties that organizations are being dealt with when using PTTs. The reason is that 76.5% of respondents said "Yes" as they have experienced difficulties when using tools and techniques in managing their projects. This significant figure could possibly be one of the most relevant explanations for the reason why Vietnamese firms hesitate in executing PTTs.

Table 12
The challenges of effective implementation of PTTs

Company	Challenges
Sunrise	Communication, Technology and Knowledge management
SG3 (1)	Communication, Governance, Generations
SG3 (2)	Decision making process – Governance, communication
VNUS	Communication, logical order of tasks, stakeholders
Vinvin	Effective communication, staff experience
Talent	Communication, experience and knowledge, stakeholders

All of the managers considered "Communication" as one of the main preventions of project success. "Usually I think it is hard to convince the stakeholders to use tools according to my experience" Talent Company.

Table 13
Critical challenging aspects in applying PTTs

Challenges	Percentage (%)
Governance	17.80
Adoption Process	27.80
Technology and Knowledge	40
Stakeholder	13.30
Other	1.10

What stands out from the results given in Table 13 is that "Technology and Knowledge" represents 40% of the response rate. The causes of this have been the subject of the unbalance labor skill specifically in term of implementing new international tools. There would be a huge gap for Vietnamese staff to catch up with the modern trends of PTTs. In addition, this barrier will be very concerning when integrated into national companies. Then, almost one third of the respondents said that "Adoption process" had challenged them in applying PTTs. Indeed, this obstacle is closely related to the previous one. When the essential knowledge required is low, the process in accommodating new practices will be more problematic. Low technology, lack of expertise, pilot projects in testing PTTs effectiveness in Vietnam and unfamiliarity with professional PTTs are potential risks that threatening companies to

implement PTTs. On the other hand, the complicated "Governance" in Vietnam, which still has many occurring problems, challenges the project team in persuading the crucial "Stakeholder" to make decision on PTTs adoption.

5. Discussion, Conclusion and Recommendations

5.1 Discussion

5.1.1 Discussion from survey results

{Research question 1: What PM tools and techniques are used in Vietnamese organizations?}

There is a strong relationship between the "Frequency of usage", the "Acknowledgement" and the "Use" of specific tools. The percentage supports each other consistently; especially in term of "Gantt chart". It shows that Gantt chart always has a high ranking in all of them; therefore, this could be understood that Gantt chart is one of the most popular tools that has been used in Vietnam. The representation of Work Breakdown Structure also highlighted the use of PTTs in Vietnam. It is possibly clarified due to the design, the ease in using of Gantt chart that delivers the essential and basic information of project to the users (Nurre & Weir, 2017). In addition, another reason is that among the respondents, their companies are not fully organized in a project environment, therefore, they think simply in managing their projects. Thus, they only need a simple and basic tool that provide them enough of their essential information.

Moreover, another reason is that the tools that were asked in an "Academic" names or in its professional term, which may lead to difficulty to understand. However, once the concept was explained, people found them closely related to what they were using and applying. For instance, once the researchers explained the concept and definition of "Work Breakdown Structure" or "Product Breakdown Structure", the respondents realized that they were using the same concept within their project. However, they did not call them "academically" as "Work Breakdown Structure", they just simply named it as checklist or "Working tasks". This could be explained because they were not professionally trained as a project staff to be well-acknowledged about PTTs. Hence, they discovered the tools by themselves with the same concept of the professional ones to make ease in managing and controlling their project.

An explanation could be argued as companies in Vietnam rarely applied proper professional PTTs into their projects, therefore, they would hesitate when implementing something new into their organizations. *Staff found their comfort zone in managing their workflow through the support of "Specifically designer's company application".* Additionally, the outcome would be challenging to access or estimate nationally because of many differences in technology, knowledge transfer process and expertise. In other words, when it comes to professional training, companies would hardly find standardized expertise to provide training for their staff and hence, international expert or expatriate will be taken into consideration. Then, another hesitation created in company budget.

Critically discussed, the term "low cost" here does not mean that the tools should be inexpensive. It should be understood as saving money or budget friendly in applying PTTs because companies always compromise with cost efficiency strategy. Therefore, a reasonable price that delivers expected project's outcomes to the company would be highly preferred to be applied.

Moreover, the survey also included an open-ended question asking about their opinions in "advantages" and "encouragement" in applying and using PTTs. There is a different explanation in words, however, the general ideas said that they prefer tools that "effective, convenient, ease in using and managing, save time and cost". So from those answers, the trend in using PTTs could be slightly analyzed. Vietnamese people prefer a simple tool that is easy to use and apply. The majority of staff among companies

are not professionally trained project staff and hence, they need an efficient tool, simple, not too sophisticated and minimum required in training. This could be discussed at the current circumstance in Vietnam only when the real term of "Project Management" has not truly understood.

5.1.2   Discussion from interview results

{Research question 1: What PM tools and techniques are used in Vietnamese organizations?}
From the result of the survey, it has shown that Gantt chart is the most widely known tool within the project environment. More specifically, *all of the interviewees said that they could not manage their project properly without the "concept of Gantt chart"*. The author states it as "the concept of Gantt chart" because people are using exactly the same concept of Gantt chart that contains specific tasks, period of time needed to be done that task, milestone. However, the managers did not call them "academically" as a Gantt chart. They have their own language to name it such as: "timeline, "working tasks" or "checklist". Only a manager from Sunrise Company totally acknowledged, understood and applied "Gantt chart" on his management by MS Project. The use of the Gantt chart was familiar and regularly was applied in his working routine. With 10 years' academic education aboard he has obtained the knowledge of the "Gantt chart" academically as well as carried it out in some parts of his career. He assessed that it would be challenging to apply the PTTs into Vietnamese firms due to the increasing concern in time, costs and other resources. It was clarified that the proper training would be essentially required for lack-of-skilled staff in Project management aspect. This could be linked with the outstanding obstacle that is "Technology and knowledge" with 40% response rate illustrated in Table 13. In general, academic and professional terms of PM have an impact regarding to organizational knowledge outcome. Accounted for it is an unbalance in knowledge base related to PM intelligence. In order to harmonize and accelerate the knowledge outcomes of PM, three learning processes need to be progressed and experienced: experience accumulation, knowledge articulation and knowledge codification (Prencipe & Tell, 2001).

Interestingly, in 2002, White and Fortune captured the "real world" experiences of project management practices in the UK. They launched a nation-wide survey to Project Managers with 23.7% response rate. The result came up with a presentation of Gantt chart as the most favorable aids (Fortune & White, 2002). Moreover, the research also clarified that most of their respondents used only a small number of project management practices such as tools, methods or techniques. Another research came from Doskočil (2016) stated that Gantt chart had been used the most in Czech Republic companies. This consequence is such an ideal connection with the majority of the author interviewing result, which has been discussed precisely above. The early invention could be a reasonable explanation for the application of Gantt chart in the main stream of management. No matter what is the company background or nationality, when they find convenience, then they implement and practice Gantt chart. However, arguments are still being raised when several topics discuss that Gantt chart is not suitable or applicable for complex or mega projects (Abbasi & Al-Mharmah, 2000; Radwan, 2000; Li & Zhang, 2012) in which the workload is massive. Meanwhile, this study contains no interview with big size thing such as mega projects; so the result appears in contrast with some papers. There are several opinions about the use of PTTs from other managers that were participated in the interview. What the respondents from management level are doing totally fits the academic definition of "Project" but it is not called as "A project" in Vietnam. They communicate it as "A plan" or "Working plan" as translated from Vietnamese language. They all assume that "Project" should be applied for a bigger size of work such as building a house or shopping mall (construction related). Hence, the management will deal with a "written plan", "working plan" or "communication plan" that includes essential steps or basics information collected from company's history records. This misconception could be attributed to the low level of using PTTs in Vietnam. According to Ofori (2013) Vietnam is not alone in this misconception about "Project". Ghana, one of the developing countries, also has experienced and witnessed the nation's infrastructure industries fulfilled with projects (Ofori, 2013). Automatically, the concept also limited in that small aspect. However, with the increasing development of business environment, the country has responded positively to accept the multi-faceted nature of PM and PTTs approaches to

achieve business advancement. Hopefully, this trend should be followed in Vietnam to gain more benefits. On the other hand, the use of "specifically designed application" has a significant result from the questionnaire and so does the interviews. *All of the participated managers said that they enjoy using the company's tool or application*. It provides convenience in finding necessary information and more importantly, because it is tailor made, it satisfies all the needs and demands in the workplace. Moreover, there is confidential information that could only be shared through company's database but could not be done by some of the PTTs such as VIP customer's information or special requirements in some cases. The manager from Vinvin Company shared that she had not experienced difficulties in managing her "plan". And she found that the ongoing managing tool is efficient, effective and risk-free so she did not think of any new tool to replace it. Similarly, other managers have the same ideas when they were asked about the experience in using their current tools. "In my company, we use our experience and history records to manage our project, and it is efficient enough for us, we believe" said the Director from SG3 company. Exceptionally, the manager from Sunrise Company who usually works with international partners and branches had a different opinion. As an internationally trained manager, he stated that company's application is helpful; however, together with the support from PTTs, manager could boost the productivity and could achieve higher than expected outcomes. The customized tool is a must but PTTs were essential to reach the peak of fruitful result and performance. Hence, there is a contradiction in mindset between nationally and internationally trained manager in thinking about and using PTTs. Overall, authentic Vietnamese business people are not well aware of PTTs because they have been provided enough tools in completing their jobs at a certain point of regular level. Especially, the manager from Talent Company has been working with many Project Managers in different industries, she reflected that the overall performance of PM in Vietnam "staff just simple calls it (project) as tasks, they have their task or group task and just do without any planning or support from tool because they think it is just a task so they only look at the body of the process but if the boss says this is a project, they will do it another way. They will start from the beginning; they will study about the market and evaluate the outcome accordingly to the boss's orders. I believe that managers should clearly distinguish and characterize a project… So the Project people in Vietnam could better understand it". In short, PTTs have not achieved a popular usage among Vietnamese companies. Representing as a developing country that still has many concerning problems in all aspects. The term of "Project Management" is not new in Vietnam, however, to truly apply and understand an in depth meaning of PM and its practices requires a tremendously huge amount of time, investment and effort. Being young, a bit slow in pace and lack of experience in the race of globalization could be a reasonable explanation for the passive adaption in PM. Vietnam endeavors in achieving economic advancement and therefore, sooner or later, PM and its tools, techniques will have a chance to support the Vietnamese business and also the national economy. Maybe in the future, the term would be more highly acknowledged and mastered academically and critically. Consequently, the trend in using PTTs might be different and the importance of PTTs might improve significantly.

5.1.3 Combined discussion from interview and survey result

{Research Questions 2: What are the challenges and obstacles in adopting and/or using PM tools and techniques in Vietnamese organizations?}

"Effective communication leads to effective performance" said the manager from Sunrise Company. However, *inadequate communication is one of the main blockages of project management smooth flow*. The majority of interviewees really appreciate sufficient communication process as well as networking to maintain the goodwill of their business. Ineffective communication could be explained by the dissimilarity in educational background, working experience and understanding level. Besides, applying PTTs challenges project executive in distributing sufficiently and adequately the related essential information of all the staff. Thus, misunderstanding and miscommunication could not be avoided. 54% of respondents from a research conducted in Ghana also agreed that "Effective communication" (Table 6) in projects plays a critical success factor (Ofori, 2013). More importantly, according to Bakar et al. (2017) review, (Pinto & Slevin, 1988; Pinto & Slevin, 1989; Belassi & Tukel, 1996; Hyväri, 2006;

Andersen et al., 2006), all of them highlighted the involvement of "Communication" as one of the project's critical success factors. From the management level point of view in Vietnam, lacking of effective communication may be one of the main causes for poor PM performance. The dearth of project critical success factor has been clarified for the general case of ineffective project performance, failure to achieve project outcomes in Vietnam.

Table 14

Project success factor in Ghana Source: Adapted from Ofori (2013)

Factor	Frequency	Percentage (%)
Effective communication, coordination and commitment	54	34.60
Top management support	31	19.90
Effective planning	25	16
Experienced and competent personnel	22	14.10
Teamwork	14	9
Good leadership	10	6.40

This obstacle also interprets better for the biggest challenge; namely "Technology and Knowledge" from Table 14. According to the manager from SG3 Company, she debated "Only senior people prefer tools to administer their project, junior people just simply need an order from the management level". Critically, *the unbalance in "Technology and Knowledge" among organizational structure and individuals is the core consideration to apply strategically new tools and techniques.*

Until recently, PM has not been upgraded to achieve an academic professional level. Business people who have to deal with "Projects" had to learn from their own experiences or making mistake, suffering loss or inefficiency. "We (the management level) always have a daily meeting together, discuss and figure out the strategy to manage our plan –"project", we use our own experience to analyze the problem and solve it" said the Director from SG3 Company. Additionally, the Talent Company manger highlighted that "In Vietnam, I think, I takes a really long to train people to use that (PTTs) purposefully. Project members like to do what they think, what they remember form their experience" Hence, there is clearly an absence of true understanding and practice about PM professional skills that leads to the wrong identification in managing and establishing PM strategy. In order to ensure the successful project performance, both the project management level and staff must have the requisite understanding of PM, which will firstly, sharing and clarifying the expected outcomes of projects. After that, when the agreement among parties have been established, it creates the ease in communicating and tracking the project's process and leads to a more effective working environment. Staff will be motivated when they receive clear instruction and requirement from the senior level. Consequently, a better flow of "Knowledge and Information" among different layers of the project will be built. PM is such a legitimate approach in business administration. Over the world, it is has performed as a crucial tool for the realization of business objectives across several different industries. The term Project Management should be judged as an important approach to lead not only Vietnamese but also developing countries business operations to the success door of project.

5.2 Conclusions

The conclusion on the use of PM tools and techniques and concerning obstacles in Vietnam will be summarized together in this part. The overall desire of the research is to study about the use of Project Management tools and techniques. To accomplish this, several objectives must be implemented. First of all, due to the low level of information on what kind of PTTs are being used in Vietnam, it is critical to analyze the level of usage about Project Management term in Vietnamese business environment. The second objective is about exploring the application of PTTs in Vietnam. And the final objective is about identifying the obstacles that has interfered organizations in implementing PTTs. To provide essential and supporting evidence for the above objectives, both primary data and secondary data have been collected, interpreted, analyzed and discussed. Primary data provided by the result received from the researcher's interview and questionnaire survey with a total of 57 participants. Meanwhile, secondary

data was gathered through many trustworthy sources such as journal articles, reports and so on. After a journey of analyzing and combining information to justify the research questions; there is a brief summary below that is closely associated with the research questions and objectives.

In terms of PTTs that have been used in Vietnam, Gantt chart has performed as the most widely applied over there. People acknowledge the importance of time, the essential tasks should be considered and the amount of time to invest in; hence, they have been practicing "the concept of" Gantt chart and Gantt chart regularly. Similarly, Work Breakdown Structure also has the same situation in the implementation process and application. Likewise, it represented as a well-known tool and concept to adapt in Vietnamese business. However, organizations also face difficulties in applying and using PTTs. The management level found challenges in communication process in implementing adequately PTTs to the staff level. Meanwhile, "Technology and Knowledge" stands out as the most critical barrier interrupted company's staff to acknowledge PTTs. Another discovery was found about the real understanding of PM in Vietnam. Even though the country is executing many advance strategies to accomplish promising economic growth. The country is an attractive destination for international investors and consequently, "Projects" will greatly contribute and penetrate greatly in several industries. However, it could be a slight misconception in the real meaning of "Project Management" that acted as one of the preventions in effective project result. The definition and acknowledgement of Project Management should go further beyond the current assumption that limited only in "infrastructure" industry only. The concept of Project Management could be better performed and brought more benefits to the country if it had been exercised in a better level. Achieving that level may create more significant economic success for the country.

This research studied the use of Project Management tools and techniques in different business sectors. Therefore, it has contributed a better overview about the "Project Management" picture in Vietnam. Moreover, it is a new discovery about the understanding and also awareness of business people about Project Management practices. People will have a better acknowledgement about the term "Project" that could have been appeared in every single corner of business, not only in infrastructure or construction industry. Reading this paper may provide readers a better point of view about a more precise definition of Project Management and its tools, techniques. Together with that, there are also benefits provided from applying PTTs that companies could enjoy. Moreover, it also reflected the different Vietnamese points of view about PM that have been observed as an understatement. For that reason, projects in Vietnam are still unable to overcome their hardship. Several recommendations have been contributed to support the PM circumstance in Vietnam.

5.3 Recommendations for further research

There are several suggestions for future research in developing the understanding and concept of Project Management in Vietnam. From the government side especially related departments or institutions, they should improve and spread out the true definition of "Project Management, to help people perceive better about its definition and the benefits it could have while using and applying it appropriately. Especially in departments running huge projects should study better about the advantage provided from PTTs. It is understandable that the country is still facing many problems in completing project successfully; however, step by step from the simple thing could help less or more. For companies, organizations or enterprises, they should star changing their concept and mindset about "Project Management" and then learn it and realize the assistance it could support working process. Once again, there has been a movement within the organizational environment: moving from "managing projects" to "management by projects" (Melton, 2011). The management level could be amazed when their workload could flow beautifully with the help of "Project Management" and its tools, techniques. The trial may require so much time, efforts and resources but the result may pay off. Companies worldwide are also getting familiar with Project Management and positive results have been shown. Different organizational structure could have different taste and implementation in PM and PTTs, after all, the final result may satisfy their expectations. In short, examining further and applying better the PTTs could enhance positively several aspects of achievement. The author suggest future researchers to expand the topic to a wider

collection of industries as well as the size of participants to collect data. Studying about neighboring countries and region would be also recommended.

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