

# The Management of Staffs' Capabilities on Information Technology toward Project Oriented, and Teamwork to Project Cost Reduction

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## Abstract

From the concept of using information technology (IT) is benefit to management. This study explores this assumption in term of whether capability of the IT staffs, project oriented can support teamwork oriented, and reduce cost of the project. A model was instructed to explain the relationship between IT staffs capabilities, project oriented, teamwork oriented, and project cost reduction. The results indicate that the capability of the IT staffs have a direct significant positive influence on both project oriented and teamwork oriented. Project oriented has also a significant positive affect to teamwork oriented, and consequently affect to overall project cost reduction.

**Keywords:** Project Management, Information Technology, Cost Reduction

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## การจัดการด้านศักยภาพของบุคลากรเทคโนโลยีสารสนเทศ มุ่งเน้นโครงการและทีมงานเพื่อลดต้นทุนของโครงการ

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### บทคัดย่อ

จากแนวคิดด้านการใช้งานเทคโนโลยีสารสนเทศจะเป็นประโยชน์ต่อการจัดการ งานวิจัยนี้เป็นการศึกษาโดยมีสมมติฐานว่า ความสามารถของพนักงานฝ่ายเทคโนโลยีสารสนเทศ และการมุ่งเน้นการบริหารโครงการ สามารถสนับสนุนการปฏิบัติงานเป็นทีม และลดต้นทุนของการบริหารโครงการแบบจำลองได้อธิบายความสัมพันธ์ระหว่างความสามารถของบุคลากรด้านเทคโนโลยีสารสนเทศ การบริหารโครงการเป็นฐาน การทำงานเป็นทีม และการลดค่าใช้จ่าย ผลการวิจัย พบว่า ความสามารถของบุคลากรด้านเทคโนโลยีสารสนเทศมีอิทธิพลเชิงบวกอย่างมีนัยสำคัญต่อการมุ่งเน้นโครงการ และการมุ่งเน้นการทำงานเป็นทีม การมุ่งเน้นโครงการยังส่งผลเชิงบวกต่อการทำงานเป็นทีม และนำไปสู่การลดต้นทุนรวมทั้งหมดของโครงการในที่สุด

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## Introduction

The information technology (IT) has been an important factor for companies to compete in most industries (Mehta, Hall, & Byrd, 2014). Since it has increased the speed of acquiring the information for decision making. Not only the company that need IT to support the management in making decision, but also specific projects that need IT for their operation. The project management has been an interesting issue for scholars in considering the capabilities of management in operating the project to achieving its goals (Haverila & Fehr, 2016). Currently, the information technology has played as key role for every sector including the project management. The development of project management has been closely related to the evolution of information technology infrastructure. Those evolutions are not limited to IT system within the workplace, but extended to cloud computing, mobile hardware, and integrated software that are applied for communicating, storage the data, and then retrieving for making decision and management of the particular projects. It is obviously found that the information of many complex projects is process digitally for its stored and generated to the users within the project. Many projects today are complicated from their capital intensive, long term operation, high technology, and collaborative across various firms. Then, large data sets, and efficiency interaction of the users in exchange of information support the basic of data analytics and visualization, that consequently has an impact on better decision making within the project operation. However, the flow of data to create efficiency of the project operation has completed through management of any functions within the project. The questions are that the capabilities of project IT staffs will support the work quality which consequently affects to cost reduction or not. Currently, the rapid change of technology has increased the utilizing of IT for implementing the project management (Rokooei, 2015). It is interesting to find out that the data set can also be used by the coordination among the teamwork within the project. The other crucial of managing the project is the cost reduction along the operation period. Although there are many research focus on project management, but mostly concentrate on performance or income of the project. In addition, many scholars had been focused on IT infrastructure (Gardner, Boyer, & Gray, 2015; Mirchandani & Lederer, 2014; Peterson & Patrick, 2016; Sarenchek & Bigham, 2011). Although some study indicates that project management practice were found influence to the success of both project and investment (Badewi, 2016).

The studies to date have been unable to address the capabilities of the IT staffs that monitor those infrastructure and project cost reduction. Therefore, the purpose of this study is derived from the research gap that was found from the review of other studies. It is to articulate the IT staffs capabilities that may has an impact on overall project cost reduction via project oriented and work quality. The project oriented refers to the management that focuses on supporting the infrastructure and equipment of the project, and continuous support the project team members.

## Review of Literature

### IT capabilities, IT infrastructure, and Resource-Based View

In considering the importance of information technology (IT) infrastructure at the macro level, some evidence found the macro result of the causal relationships of the information and communication technologies infrastructure that link with economic growth and financial development (Pradhan, Arvin, & Norman, 2015). This indicates that the use of information technology in any organization of every economic sector will enhance development of efficiency for overall work, and consequently support higher output. On the contrary, some study found a natural resistance to change that is the most important issue for implement the IT practice particularly in public sector that has formal and bureaucratic process (Esteves & Alves, 2013). However, the investment on IT infrastructure has been increased from the large organizations to small firms (Mirchandani & Lederer, 2014). The IT has been an important criticism of all level from the management of countries to the specific projects. According to the management of project, IT infrastructure has obviously found crucial to influence on management efficiency. IT infrastructure is composed of information systems, and information technology that come from hardware and software that are connected by organizational system (Zardini, Rossignoli, & Ricciardi). The complex of data infrastructure creates difficulties for internal users to assess and apply to employee work. The complex data can be delivered by complex projects, this is the study of some companies like Airbus, CERN, and Crossrail (Whyte, Stasis, & Lindkvist, 2016). This evidence support the policy of improving the IT infrastructure of many organizations and projects. Although IT is important to project success which can be measure in various methods, however, the investment in IT may require an investment of approximately 10.5% from overall budget for some firms (Thompson, Ekman, Selby,

& Whitaker, 2014). In considering IT capability, some investments in information technology do not affect directly to firms IT capabilities, but it has an impact on the dynamic capability with partners (Chang, Chen, & Huang, 2015). The other study mention the dynamic capability to technology adoption can improve firm's performance (Arifin & Frmanzah, 2015). From some study on how IT support firms in developing organizational capabilities, the empirical result found that IT can create higher level of organizational capabilities, or marketing capabilities (Luo, Fan, & Zhang, 2012; Trainor, Rapp, Beitelspacher, & Schillewaert, 2011; Wang, Hu, & Hu, 2013). Not only an internal capabilities that firms may derived from IT, but also technology transfer that IT may support the linkage with other firms (Leischnig, Geigenmueller, & Lohmann, 2014). The information capability yield the direct effects quality of information used by firms depend on the quality of the information being employed (Zárraga-Rodríguez & Álvarez, 2014). Consequently, there is some evidence indicates that the information capabilities has an impact on performance outcomes (Youn, Yang, Kim, & Hong, 2014). For the investigation of how IT can develop innovation or other firms' capabilities, the resource-based view of firms was used to figure out the result (Seddon, 2014; Tarafdar & Gordon, 2007). In considering the information system of any organization, the Resources-Based View (RBV) was used as mainstream theories to summarize the conclusion. Since the RBV indicates the firms' valuable resources that create competitive advantage which consequently support the achievement. Some study indicated that it is necessary to develop management system of IT infrastructure to overcome the inefficiency using the internal information system of an organization (Michele & Daniela, 2011). The RBV is one of the influential strategic management theory that is widely apply to the management of projects to examines how the limited resources can be used at the right place for making the competitive advantage in term of low cost. This is supported by many studies on the concept of resources based view that indicate the use of information technology, and capabilities in firms or projects for implementation strategy including the strategy of making low cost, and firms performances (Almarri & Gardiner, 2014; Ruivo, Oliveira, & Neto, 2015; Wu & Chiu, 2015). Some scholar found that information technology system perform as key role for Integrated Management System (IMS) within the context of resource-based and contingency perspective in manufacturing firms (Savino & Batbaatar, 2015). Similarly, some study that indicate the important of applying resource-based

view for firm operation management and gain performance (Hitt, Carnes, & Xu, 2016). However, the study on IT mostly focus on how IT can support other capabilities, rarely found focus on IT staffs capabilities that are the monitoring of an IT within an organization. The IT staffs are the persons that support overall IT resources that will be used by every function within the organizations or any particular project. In case of interruption of the IT process, this may consequently interrupt, delay, or terminate other activities. The interruption or IT process down may be occurred as contemporary even. The important is that IT staffs have to overcome those shortcomings promptly. Therefore, the project managers can apply software as multiple mechanisms to achieving multiple objectives of their projects (McBride, 2008).

### **Project Oriented**

The project oriented refers to the management teams that concentrate on support the project operation. The role of top management is concerned with identifying policy that will affect every function in an organization. The policy is a frame of each function to operate according to what had been identified to make an organization achieve its goals. In some circumstances, management support can help firms compete with their rival effectively particularly for the green supply chain environment (Dai, Montabon, & Cantor, 2015). Project performances are affected by dynamic capability created by the top management. In considering technology that have been supported by the top management, the technology driven strategy by those management is found positively affect to technology capabilities, and information technology capabilities (Hao & Song, 2016). The technology capabilities including information technology capabilities will support firms or project capabilities. Consequently, project capabilities are developed and mobilized to interact with various and exploitative situation of an organization (Davies & Brady, 2016). The other evidence is that top management support and organizational culture have an impact on effective knowledge sharing to the software process improvement (Lee, Shiue, & Chen, 2016). This study considers project oriented in term of management support to project for its equipment, and working team. Then, one of our questions is do the managements support have an impact on Teamwork Oriented which consequently affect project cost reduction.

### Teamwork Oriented

In the last decades the study in the working as a team has been increased gradually. Many studies focus on the role of personality in teams, and level of analysis were found both team and individual level (Livi, Alessandri, Caprara, & Pierro, 2015). Teamwork is associated with personal and interpersonal skills that create highly valued for the professional and the success of an organization or projects (Carmenado, Rodríguez, & Gajardo, 2012; Yang, Huang, & Wu, 2011). In addition, some scholar found how team can perform to reach their goals was positively relation with member engagement, and emotion associate negatively with member dedication (Montgomery, Spănu, Băban, & Panagopoulou, 2015). One of the interesting study is concerning to an integrated experiment for identification of best decision styles and teamworks, that found improvement in system performance can be achieved by using the best team arrangement (Azadeh, Mokhtari, Sharahi, & Zarrin, 2015). Since this study is rarely found in term of its focuses on improvement in system, while the others focus on personality and group members. The other study indicated that teamwork between humans and computer agents has become increasingly prevalent, but the result found the most significant factor affecting the decision making depend on members successful in previous interaction with other team members (van Wissen, Gal, Kamphorst, & Dignum, 2012). Team can be identified as social systems of two or more embedded organizational member that collaborate on a common team goals and objectives. The efficiency of team depend on the members' abilities to work in a directly interactive mode to support the common output (Hoegl, 2005). In addition, the team member can use the information from the organization IT system to communicate and make decision effectively. Therefore, the project information system plays as an important role for extensive projects in term of possibility to share data among the team (Kostalova, Tetreva, & Svedik, 2015). The members within particular project may use the information from center sources to make decision in congruent between many functions. That circumstance is knowledge sharing among any functions of the project. Some studies reported the effect of IT on knowledge sharing, exchange, and combination under the circumstances of project uncertainty (Rokooei, 2015). Therefore, knowledge sharing by IT may support team member in term of cooperation between different functions. For example, some project of a construction industry, Building Information Modeling (BIM) is a comprehensive

collaborative process that support integrated team (Rokooei, 2015). In addition, some study that focused on the IT and knowledge management practice that may affect project success, and found the relationship and team size have a moderating effect on the knowledge management and success (Mehta et al., 2014). Some model in IT can provide more efficient method to integrate, manage and visualize information, and save time for the project management team (Yang, Chen, & Wang, 2012). On the other hand, the remarkable result of some study indicates the success or failure of IT project should consider the communication within the organization that may come from the organizational culture of particular company (Tohidi, 2011). From the above literature, IT can be determined to be an important function that support Teamwork Oriented of any functions within the projects. Furthermore, it can help quick response to the situation that can increase performance of the project management.

### Project Cost Reduction

The important objectives of managing the project are to achieving the success on time, and more importantly is to have a lowest cost to earn high benefit. However, the overrun in project cost around the world are commonplace (Smith, 2014). Many projects are complicated by various functions to serve the overall operations of the projects. Those functions need to be integrated with other functions. The crucial is that uncertainty of cost items is an important aspect of the projects that are complexity (Khodakarami & Abdi, 2014). Then, there is some endeavor in calculated and control cost of the projects by applying the activity based costing to summarize cost of the project (Gurcanli, Bilir, & Sevim, 2015). Moreover, some project cost are occurred from project dispute resolutions, and they are the hiddent transaction cost (Lu, Zhang, & Pan, 2015). In some industry like construction, the projects also suffer from cost overrun, and may be finally abandon (Shehu, Endut, Akintoye, & Holt, 2014). Cost overrun has created severe problems over many project, and there are some attempts to fill a gap in estimation cost across industries that may has an impact on cost reduction (Doloi, 2011). Any activities within the complexity projects may connect to cost (Christoph & Konrad, 2014). However, the cost reduction may be occurred from information technology that support the integration of works from many function. Unfortunately, there are rarely studies present the impact of IT on cost reduction of any project. Then, this study will

focus on the IT capabilities, management support, Teamwork Oriented, and project cost reduction. The factors mention above were instructed to be framework for this study.

## Research Methodology

This study is focused on the importance of IT staffs capability that may influence to work quality, project oriented, and teamwork oriented which finally affect to project cost reduction. A four stages conceptual model is derived from a review of other research theme. First, IT staff capabilities were reviewed to understand how they affect to other variables. Second, project oriented and teamwork capability were reviewed if they have relationship with other variables that will be used for construct the model. Finally, project costing was studied to confirm as a dependent variable in the model. Therefore, there are covariance structures that need to be analyzed in the model, project oriented and teamwork oriented. The Structural Equation Model was applied as a part of quantitative analysis. The research methodology is organized as mentioned below.

### Sample and Data Collection

This study employ source of data from the various project operated in Bangkok and vicinity. The populations were the medium and large firm with total asset more than 50 million THB listed on the Department of Business Development of Ministry of Commerce of Thailand. There are 23 groups of sub industries, from the areas of food and beverage, garments, wood products and publishing, oil products, automobile, machinery and technology equipment, and, services business. This study focuses on chief information officer and information team of those firms that include 6,065 persons. Since the SEM(Structural Equation Model) was employed to discover the empirical results, the minimum sample size should be at least five times the number of observed variables, however the more acceptable sample size would be a 20:1 ratio (20 time 11 observe variables = 220) (Hair, Black, Babin, & Anderson, 2009). For the assurance of SEM requirements, the selected total numbers of investigated subjects of this research are 300. The questionnaires was instrument used for collecting data, and instructed from review of others studies. The questions focus on four aspects, which were paraphrased to account for the variables shown in the framework. First, IT staffs capabilities that are the firms that focus on their IT staffs capability in maintaining the system, and also focus on

process of recruit staffs. Second, project oriented that is the management focuses on supporting the working team closely and continuously. In addition, the management also provides the appropriate tool and equipment for project management. Third, Teamwork Oriented includes the management that focuses on effectively coordination and good teamwork, and information between team members to support other members. Finally, cost reduction includes cost reduction human resource, materials, paper work, and transportation and communication.

### Measurement

The variable of this study was IT staffs capabilities that were measured as independent variable, and cost reduction measured as dependent variable. The project oriented and teamwork oriented are mediators between IT staffs capabilities and cost reduction. The initial stage in the analysis involved a validation and reliability of the measurement. To achieve the robust test of reliability of the variable used in the model, this study applied Cronbach's alpha for assessing the results. The testing results found all variables have the value of Cronbach's alpha higher than 0.8, indicated all variables achieve appropriate reliability score. To achieve the requirement of the construct model that need normal distribution of all variables, the Kurtosis was applied to confirm normality of the data, and the appropriate value should be between -2 to +2. The maximum Kurtosis is 0.150 whereas minimum value is -0.602 indicate that every variable has a normal distribution. In addition, the condition of Multiple Regression requires non relationship between variables, then, we tested the multicollinearity to examine the value of Variance Inflation Factor (VIF) that must less than 10, or the value of Tolerance should be more than 0.1. The result indicates that all factor within the model present no multicollinearity between variables.

Table 1: Variable Dimension

Variable Name	Variable Label	Question Word	Mean	Std. Dev.	Cronbach's Alpha
IT staffs capability 1	ISC1	This firm focuses on IT staffs capability in maintenance the system.	5.21	1.11	.898
IT staffs capability 2	ISC2	This firm focuses on recruit IT staffs.	5.49	1.26	.902
project oriented 1	PO1	This firm focuses on supporting the tools or equipment for project management	4.90	1.33	.896
project oriented 2	PO2	The management focuses on supporting the working team and closely and continuously.	4.75	1.23	.903
teamwork oriented 1	TWQ1	This firm focuses on working team in term of coordination and good team work.	5.39	1.15	.890
teamwork oriented 2	TWQ2	This firm focuses on information sharing between team and supports another's.	5.47	1.22	.892
teamwork oriented 3	TWQ3	This firm focuses on team responsibility, and congruent	5.46	1.16	.892
cost reduction 1	CR1	The achievement of IT has affect to the cost reduction in human resource.	4.87	1.18	.900
cost reduction 2	CR2	The achievement of IT has affect to the cost reduction in materials.	4.66	1.22	.900
cost reduction 3	CR3	The achievement of IT has affect to the cost reduction in paper works.	5.06	1.15	.896
cost reduction 4	CR4	The achievement of IT has affect to the cost reduction in transportation and communication	5.17	1.17	.895

To ensure that observe variables are validity of the group of latent variable in the structural equation model, the two examining techniques were tested, convergence validity, and discriminant validity. In determine the convergence validity of the constructs, this study tested and refined using confirmatory factor analysis to summarize the measurement model, including the IT staffs capability, project oriented, teamwork oriented, and cost reduction. The convergence validity is measured by factor loading which should be higher than 0.60. The standardized factor loading values are range from .64-.93, indicating satisfactory convergence validity. To assess the discriminant validity of the multi-item measurement, the purpose is to investigate the correlation of the latent variable between each group. The correlation indicates the high relation of the variable between each group, low relationship of those variables from different group of latent variable.

**Table 2:** Pearson Correlation for Discriminant Validity Testing

	ISC1	ISC2	PO1	PO2	TWQ1	TWQ2	TWQ3	CR1	CR2	CR3	CR4
ISC1	1										
ISC2	<b>0.52</b>	1									
PO1	0.44	0.51	1								
PO2	0.41	0.38	<b>0.53</b>	1							
TWQ1	0.59	0.48	0.57	0.44	1						
TWQ2	0.57	0.45	0.56	0.44	<b>0.85</b>	1					
TWQ3	0.59	0.39	0.54	0.44	<b>0.78</b>	<b>0.82</b>	1				
CR1	0.31	0.33	0.37	0.26	0.39	0.35	0.36	1			
CR2	0.29	0.26	0.36	0.35	0.41	0.37	0.40	<b>0.64</b>	1		
CR3	0.37	0.33	0.45	0.33	0.45	0.40	0.44	<b>0.65</b>	<b>0.59</b>	1	
CR4	0.45	0.35	0.46	0.35	0.48	0.38	0.47	<b>0.63</b>	<b>0.59</b>	<b>0.79</b>	1

To test the appropriate number of the subjects used in this study, this study used  $[p*(p+1)]/2$ , to figure out the total number of indicators that can be used in the model, where p is total number of indicator, and the maximum result of the overall observe

variable and latent variable from the total of 354 subjects found that the maximum p is 26, while indicators in the model are only 11. After the testing of validity was completed, the structural equation model was constructed for achieving the result upon the hypotheses.

## Analysis and Results

### The Measure of Model Fit

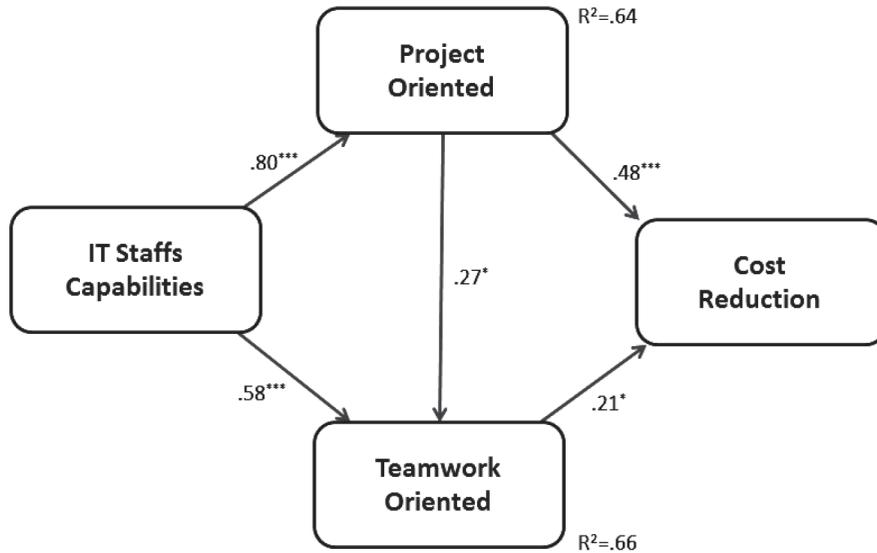
The result of the measurement model indicated the Normed Chi-Squared fit index derived from Chi-Square/degrees of freedom is 1.05 (p-value=.377), indicating a good fit model. The value of Goodness of Fit, and The Adjusted Goodness of Fit is .983, and .966 respectively. The Root Means Square Error of Approximation is .000. The NFI and Comparative Fit Index value equal .986, and 1.000. All of the data mentioned above indicate a good fit for this specific model.

**Table 3:** Assessing the Model Fit Indicators

Chi-square/Degree of freedom (CMIN/df)	.884
Goodness of Fit Index (GFI)	.983
Adjusted Goodness of Fit Index (AGFI)	.966
The Root Means Square Error of Approximation (RMSEA)	.000
Normed Fit Index (NFI)	.986
Comparative Fit Index (CFI)	1.000

**Finding**

Independent Variable                      Mediator Variable                      Dependent Variable



\*p-value<.05, \*\*\*p-value<.001

**Figure 2** Research Model Results

**Table 4:** Regression Weights between Latent Variable in the Model

	Regression Weights
IT staffs capabilities --> project oriented	.80***
IT staffs capabilities --> teamwork oriented	.58***
project oriented --> teamwork oriented	.27*
project oriented --> cost reduction	.48***
teamwork oriented --> cost reduction	.21**

**Table 5:** Standardize Direct and Indirect Effect

	Direct Effect			Indirect Effect			Total Effect		
	ISC	PO	TWQ	ISC	PO	TWQ	ISC	PO	TWQ
project oriented	.80						.80		
teamwork oriented	.58	.27		.21			.79	.27	
cost reduction		.48	.21	.55	.05		.55	.53	.21

According to standardize direct effect, found as following: IT staffs' capabilities affected to project oriented and teamwork oriented for .80, .58, Project oriented affected to teamwork oriented and cost reduction for .27, .48, and teamwork oriented affected to cost reduction for .21 respectively. However, in considering standardize indirect effect of the latent variable, the result found that IT staffs' capabilities also affected to teamwork oriented and cost reduction .21 and .55.

## Discussion

### Conclusion

The result of the model summarized above indicates that IT staffs capabilities has an impact on project oriented, and teamwork oriented. The IT staffs capabilities include the managements that focus on IT staffs capabilities in operating and maintainance of the project IT system. The project oriented is concerned with the managements that focus on supporting IT infrastructure for project operation, and follow up for improving the project operation. Teamwork oriented is the teamwork that share information and have a good coordination. The cost reductions are composed of direct affect to reduction of cost concerning to cost in human resource practice, material acquire, paper and office supplies, and traveling and communication of the project. The results from the structural equation models suggest that management that focus on IT staffs capabilities affect to supporting IT infrasturcture, and information sharing of the staffs. In addition, managements that focus on supporting IT infrastructure also have direct affect to teamwork oriented. Consequently, the project oriented affect to the reduction of cost occuring in the project. Those cost are human resources, material, and supplies, and cost of travelling and communication. The important reason is that the IT acts as a communication tool for the project. The managements that focus on supporting the IT infrastructure, then, can support the both internal and external communication. In considering internal communication of the project, any IT infrastructure can support promptly communication between any functions, persons, and information sharing for decision making and operations. Thus, the IT infrastructure can mitigate all expenses and time occuring in the entire operation process of the project. Also information sharing and coordination among employees in any functions of the project can support the performance of both

decision making and operation at specific tasks, with consequently reduce over expenses and costs occurring in entire process within the project.

### **Managerial Implications**

The result of this study provides project management teams toward project cost reduction via the IT staffs capabilities and IT infrastructure. The model is intended as a management conceptual tool to help management teams in their understanding of how they can identify the policy of supporting IT staffs capabilities and IT infrastructure to encourage project cost reduction. In addition, teamwork is crucial for applying the IT infrastructure derived from the management to gain a benefit from cost reduction of many functions within the project. This is supported by some study indicated that productivity of teamworks are derived from information technology (Tohidi & Tarokh, 2006). The management then, should be aware of creating the coordination within team, and among teams in the project. However, the importance of IT staffs and IT infrastructure are some parts that support the project cost reduction. The assimilation of managerial decision with other factors that can cause expense and cost are also important to be considered. Every activities along the entire process of the project are account for costs and expenses. The IT is the tool that can support promptly decision making at any functions within the process of operations. The information technology has affirmative effect on decision making and success in business activities (Dastan, Çiçek, & Naralan, 2011). Consequently, the management can revise the strategy of encouraging their employees collaboration by using IT. Not only collaborations would be occurred, but conflicts will be reduced from the promptly and accurately information provided by the IT staffs.

### **Limitation of the Study**

It should be recognized some limitation of this study relating to the subjects used, the limitation of the variables, and the simplicity of the framework. First, the subjects of this study are various projects in Thailand, and did not being classified by their size that may cause some difference in the result. Anyone from other countries who will use this result should be aware of some difference between subjects from the original results. Second, this study focuses on limited factors concerning to IT staffs capabilities,

project oriented, and teamwork oriented. In considering as holistic aspect, the cost of the project may come from other factors such as management system, policy, leadership, and others. Then, to consider the cost of the projects that have completed by IT performance, the result may found difference. Third, the cost reduction was not considered in term of financial area, since the confidential of particular projects occurred. Finally, the model is simplicity to narrow but depth to gain understanding of the practitioners, other elements and linkages were omitted. Since this study was aimed at usefulness for project management, not for scholars who are interested in new theory.

### **Future Research**

Other scholars who are interested in conducting their studies on project cost reduction should focus on the following aspect: First, the model can be extended from IT alone to other factors in an organization. Second, the study of specific project by focus on the information from actual expenses should be conducted. The result will ensure this study about the proving of cost reduction. Third, the comparative study of the projects between different countries should be considered. For example, the projects from countries within CLMV group (Cambodia, Lao, Myanmar, and Vietnam) can be studied, and transfer the knowledge from this study that were conducted in Thailand to those countries. The comparison study may encourage the new ideas for new conceptual framework of the projects in Southeast Asia that are emerging market, and determined to be high economic growth in the near future.

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