DETERMINANT OF INFORMATION TECHNOLOGY PROJECT SUCCESS: THE MEDIATING EFFECT OF INFORMATION TECHNOLOGY GOVERNANCE IN BANKING INDUSTRY IN INDONESIA

By

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ABSTRAK

Projek Teknologi Maklumat(TM) dianggap berjaya jika ia dapat disiapkan dalam masa yang ditetapkan, memenuhi skop yang ditetapkan, tidak melebihi kos yang dianggarkan, memnuhi kualiti yang ditentukan dan memenuhi harapan pengguna.. Kajian ini mempunyai lima objektif dan ia adalah untuk mengkaji sama ada Kualiti Audit Dalaman dan Kualiti Lembaga Pengarah mempengaruhi kejayaan sesuatu projek; sama ada Kualiti Audit Dalaman dan Kualiti Lembaga Pengarah mempengaruhi Tadbir Urus TM; sama ada Tadbir Urus TM akan membawa kepada Kejayaan Projek TM dan sama ada Tadbir Urus TM boleh menjadi hubungan pengantara di antara Kualiti Audit Dalaman dan Kualiti Lembaga Pengarah kepada Kejayaan Projek TM. Kajian ini menggunakan sampel *purposive* dan soal selidik telah dihantarkan kepada 120 bank komersil yang tersenarai di Bank Indonesia pada 2013. Sejumlah 101 soal selidik telah diterima dan digunakan untuk analisis. Analisis deskriptif yang menggunakan SPSS dan SmartPLS telah digunakan untuk menguji hipotesis..

Kajian ini mendapati terdapat hubungan yang signifikan di antara Kualiti Audit Dalaman dan Tadbir Urus TM dan hubungan yang signifikan di antara Tadbir Urus TM dan Kejayaan Projek TM. Kebebasan Audit Dalaman, komposisi Lembaga Pengarah dan kepakaran Lembaga Pengarah mempunyai hubungan yang signifikan dengan kesemua dimensi Tadbir Urus TM.

Tadbir urus TM adalah satu faktor penting yang mempengaruhi Kejayaan Projek TM. Untuk perhubungan mencelah, Tadbir Urus TM di dapati mempunyai pengaruh mencelah yang lebih besar kepada perhubungan di antara Kualiti Audit Dalaman dan Kejayaan Projek TM berbanding dengan perhubungan diantara Kualiti Lembaga Pengarah dan Kejayaan Projek TM.

Dimensi Bangunkan, Memperoleh dan Pelaksanaan merujuk kepada sama ada bank mempunyai pengalaman untuk membangunkan sistem TM, sama ada sistem TM di uruskan dengan baik dan perolehan sistem TM yang baru dibuat dari masa ke masa. Faktor Tadbir Urus TM ini di dapati mempunyai kesan pencelah lebih besar kepada hubungan Kualiti Audit Dalaman dan Kualiti Lembaga Pengarah kepada Kejayaan Projek TM berbanding tiga lagi dimensi Tadbir Urus TM. Di antara cadangan kajian ini adalah untuk membuat Tadbir Urus TM mandatori bagi Industri bank oleh Otoritas Perkhidmatan Kewangan Indonesia. Badan ini perlu meningkatkan kebebasan Audit Dalaman, komposisi Lembaga Pengarah dan kepakaran Lembaga Pengarah dengan merujuk semula regulasi perbankkan untuk isu ini, kerana sehingga hari ini, tiada kriteria khusus yang wujud untuk mengukur faktor tersebut.

DETERMINANT OF INFORMATION TECHNOLOGY PROJECT SUCCESS: THE MEDIATING EFFECT OF INFORMATION TECHNOLOGY GOVERNANCE IN BANKING INDUSTRY IN INDONESIA

ABSTRACT

Information technology (IT) projects are considered successful if they are able to be completed within the stipulated time, meet the specified scope, do not exceed budget allocated, meet quality specified, and meet users' expectation. There are five objectives of this study and they are to examine whether Internal Audit Quality and Board of Director Quality will have an influence on IT Project Success; whether Internal Audit Quality and Board of Director Quality will influence Information Technology Governance; whether IT Governance will lead to IT Project Success and whether IT Governance mediates the relationship between Internal Audit Quality and Board of Director Quality to IT Project Success. Using purposive sampling, questionnaires were distributed to 120 commercial banks listed in the Bank of Indonesia Directory in 2013 by online survey. Total of 101 usable questionnaires were received and used for data analysis. Descriptive analysis using SPSS and SmartPLS was used to test the hypotheses.

The result shows that there is a significant relationship between Internal Audit Quality and IT Governance and also between IT Governance and IT Project Success. Independence of Internal Audit, composition of Board of Director and expertise of Board of Director were found to have a significant relationship with all dimensions of IT Governance.

IT Governance have been found to be an important factor to influence IT Project Success. IT Governance was also found to have a greater mediating effect on the relationship of Internal Audit Quality to IT Project Success as compared to the relationship of Board of Director Quality to IT Project Success.

Build, Acquire and Implement dimension of IT Governance refers to whether banks have the experience needed to build IT system, whether they managed IT system well and whether they acquire new IT systems from time to time. It was found to have the greatest mediating effect on the relationship of Internal Audit Quality and Board of Director Quality with IT Project Success as compared to the remaining three dimensions of IT Governance. Amongst the recommendation of this study is to make the IT Governance mandatory for the Banking Industry by Indonesian Financial Service Authority. This body should improve independence of the Internal Auditor, composition of Board of Director Quality and expertise of Board of Director by revisiting the Banks' regulation on these issues as to date, there are no specific criteria to measure these factors.

CHAPTER 1

INTRODUCTION

1.0. Introduction

This chapter begins with background information regarding factors that influence information technology (IT) governance and a discussion of how IT governance impacts IT project success. Following that information are the problem identification, research questions, objectives, and the significance of the study. Chapter 1 concludes with a description of the study's overall organization.

1.1. Background of the Study

Bank institutions play a vital role in the economy of a country whose economic strength depends on the banking system for major contributions. Commercial banks can be a major economic contributor, especially when a country's economy depends on bank participation as a main source of financing for economic activities (Raharjo, Hakim, Manurung, & Maulana, 2014).

Banks play crucial roles in the economic development of both a country and its society. In many ways, banks help increase the level of savings and help by facilitating proper circulation of finance, without which the economy would stagnate. Loan facilities offered by banks can help motivate producers to increase production and develop the economy (Ratnawati, Surya, Wijayanto, Sumertajaya, & Sumedi, 2010).

Banks can offer varied and often complex services and, to work more effectively, need to be efficient in their operations. Often, the most advanced IT usage in a country is its banking sector (*The Economist*, 2009). Examples of banking IT projects include: (1) core banking project development, (2) ERP for human resources, (3) ERP for finance and control, (4) credit card systems, (5) regulation of the central bank banking system, (6) data centres, (7) ATM and network development, and (8) branch development.

To build an integrated banking system across branches throughout the country, banks often outsource the development of their IT systems to other service providers. The reasons for outsourcing include not having the in-house expertise to develop an IT system and lacking the necessary resources (Ratnawati et al., 2010). Unfortunately, evidence has shown that not all outsourced IT projects are successful because various obstacles hinder the successful implementation of those IT projects (Schniederjans & Cao, 2006).

Gibbs (1999) found that half of expensive software projects are cancelled before implementation. A Standish Group survey in 2001 found that out of 280,000 application projects surveyed, 23% of their IT projects were cancelled before completion, and 49% exceeded either their budgets or time frame. Gheorghiu (2006) found that, on average, between 70% and 80% of IT projects failed. Heeks (2008) supported this conclusion, finding that only 15% of IT projects were successful, 50% were partially successful and 35% totally failed. Worst of all, these projections often fulfilled fewer functions than they were originally meant to (Tarawneh, Tarawneh, & Alzboun, 2011).

Factors cited as contributing to IT project failure are due to a lack of investment in the technical infrastructure and the dynamic changes in the environment experiences

while constantly updating IT knowledge and infrastructure. According to Mahaney and Lederer (2010), some IT projects require complex new technologies, the use of which has led to the failure of delivered projects to meet user expectations. Service providers often have to grapple with the IT knowledge that is available during a particular period.

Lewis (2003) found that 70% of IT projects failed because they did not meet the project's scope specified. The Standish Group (1994) found that 80% of IT projects failed because the cost of the project exceeded its budget. The Standish Group have indicated that only 16.1% of IT projects were completed on time and within budget, implying that 83.9% of IT projects failed (Frese & Sauter, 2003). Although the Standish Group (2012) revealed that the failure rate of IT projects decreased from 71% in 2004 to 61% in 2012, yet the percentage of the failure rate is still relatively high. The percentage of failures should be minimized to zero without defects.

Table 1.1 shows examples of IT project failures in the banking sector. Overall, IT project failure was due to poor quality levels, being over budget, out of scope, below user expectations, delayed beyond the agreed upon delivery time. These criteria need to be considered as metrics for measuring IT project success in the banking industry.

Table 1.1

Examples of failures in IT projects

No	Bank	IT project	IT project failure	Source
1	Royal Bank of Scotland	ERP upgrade implementation	Quality	http://www.zdnet.com
2	Dunfermline, UK Bank	Banking software implementation	Cost, scope and quality	http://www.zdnet.com/blog/projectfailures/it-failure-contributes-to-uk-bank-collapse/2630
3	Bank of America	Banking system	Quality	http://www.it-cortex.com/Examples_f.htm
4	The Fed, USA	New system in banking	Quality	http://www.it-cortex.com/Examples_f.htm
5	ANZ Bank	Mambo (Me and My Bank Online)	Terminated before implementation	http://www.ecommercereport.com.au/australian-banks-to-write-off-225million-spent-on-failed-paypal-killer-%E2%80%93-project-mambo/
6	Royal Bank of Scotland	Hall of Shame	Quality	http://www.zdnet.com/rbs-gives-more-detail-on-it-failure-train-wreck-7000000143
7	Irish bank AIB	Banking software	Terminated, (Cost €84 million)	http://www.rte.ie/news/2011/0131/aib.html
8	Bank of America (BofA)	Master Net	cost ($20M), schedule, user	http://sunset.usc.edu/classes/cs510_2001/notes/masternet.pdf
9	The National Australia Bank (NAB)	Integrated Systems Implementation (ISI)	Terminated, Cost (AU$307 million)	http://www.zdnet.com/nab-takes-au200-million-writedown-on-failed-erp-project-1139166043/
10	Glasgow Savings Bank	Regional Missouri	Cost (USD 8.091), schedule, user expectation	http://www.fdic.gov/bank/individual/failed/glasgow.html

The impact of IT project failure is substantial for banking operations. The Standish group estimated that such losses approximated 75 billion US dollars in 1998

(Chulkov & Desai, 2005). Cortex (2012) listed the results of several surveys of client satisfaction with IT projects implemented in their companies. As seen in Table 1.2 below, 40% to 70% of the clients rated their IT projects as either unsuccessful or a failure.

Table 1.2
Ratings of IT project success

No	Survey	IT Project	Industry	Respondents of the Study	Key Findings
1	The Robbins-Gioia Survey (2001)	Implementation of an E.R.P. (Enterprise Resource Planning)	Government, information technology, communications, financial, utilities and healthcare	232 including government, IT, communications, financial, utilities, and healthcare.	51 % of the respondents rated the ERP implementation were unsuccessful
2	Conference Board Survey (2001)	ERP implementations	N/A	117 companies participated in the study	40 % of the respondents rated the projects as failing to achieve its objective
3	The KPMG Canada Survey (1997)	All IT project	All industries in Canada	176 companies participated in the study	61% of the respondents rated the IT project as failed.
4	The Chaos Report (1995)	Software project	American companies	365 public listed companies	31.1% of the respondents rated the project as cancelled and and 52.7% of the respondents rated the project to exceed more than 189% of the costs that have been agreed
5	The OASIG survey (1995)	Various IT project	Universities or consultancies in UK	45 experts employed primarily by Universities or consultancies	70 % of the projects failed.

Source: IT Cortex (retrieve on 19 June 2012 from www.it-cortex/Stat_Failure_rate.htm)

IT project failure occurs across the world and in Indonesia as well, although many Indonesia banks are unwilling to publically admit. When interviewed, Arief, Head of Business Analyst and Channel Partner in Sigma Telkom Ltd, an IT outsourcing company for banking, provided several examples. According to him, these included an IT project failure at Bank Arta Graha, which terminated their integrated system project before its implementation due to lack of proper planning and monitoring and Bank Rakyat Indonesia (BRI), which did not complete their IT integrated project for the police department because of lack of monitoring (Arief, 24 June 2013, interview with author.)

Close monitoring is one way to overcome the high failure rate of IT projects. Such monitoring includes introducing the principles of IT governance. IT governance should be an integral part of corporate governance because with good IT governance, IT projects can be successful executed. IT governance is a mechanism considers the leadership of the a company's board of directions and the processes the board puts into place to ensure that the organization's IT project will be implemented successfully and assist the company in achieving its objectives (Abu-Musa, 2009, Bowen, Cheung, & Rohde, 2007).

IT governance can be defined as a structure of relationships that link IT processes, IT resources, and information to organizational strategies and objectives to direct and control the organization. IT governance integrates the best practices of planning and organizing, acquiring and implementing, delivering and supporting, and monitoring information technology performance. This linkage is meant to ensure that the organization's IT resources are used responsibly, its risks are managed appropriately and

its information and related technology are supporting its business objectives (Abu-Musa, 2009).

IT governance distributes IT decision-making rights and responsibilities among organization shareholders. The procedures and mechanisms involved help make and monitor strategic decisions regarding IT (Peterson, 2004). IT governance focuses on the structure of relationships and processes related to developing, directing and controlling IT resources in order to achieve the organization's goals by balancing risk versus return over IT resources and managing IT processes. Effective IT governance assists an organisation in becoming more efficient and effective by deploying secure and reliable information through the application of new technology (Abu-Musa, 2009). Board and executive management play an important role in IT governance framework (De Haes & Van Grembergen, 2004).

1.2. Problem statement

The banking sector plays a critical role in a country's economy. They are needed to process huge amounts of data in daily transactions and to innovate in order to provide efficient services to its customers with zero defects. To do so, the banking sector needs to use IT properly. IT projects in the banking sector can include a centralized online real-time environment (CORE) banking, enterprise resource planning (ERP), human capital information systems (HRIS), an electronic customer relationship management (e-CRM), a management information system (MIS), business intelligence, and decision support systems (DSS).

Many organizations make huge investments in IT to enable them to secure or maintain competitive advantages (Applegate, Austin, & McFarlan, 2003). Figure 1.1 below shows Indonesia's budget trend allocated for IT is increase from 2011 to 2015.

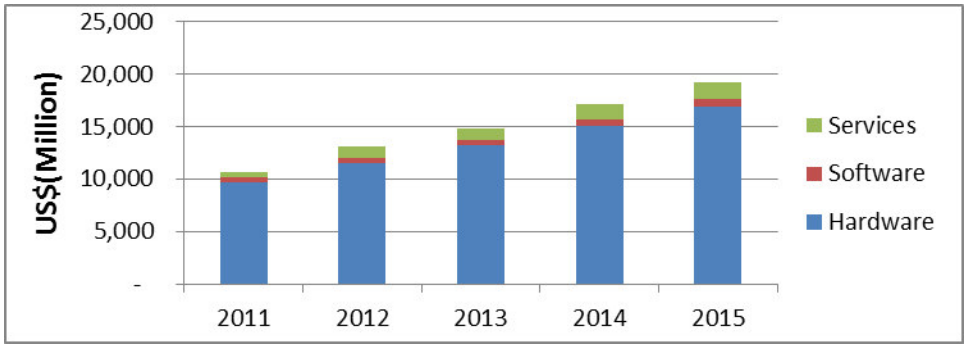

Figure 1.1: Trend for IT budget al.locations

Source: International Data Corporation (2012)

This figure shows an increase of IT budget spending from year to year for the period from 2011 to 2015. When IT project budgets increase, the need for proper management to help reduce the risk of an IT project failure increases too. Due to the growing complexities of transactions, the changing the landscape of the banking sector and limited resources, most IT projects in the banking sector have been outsourced. Taylor (2007) found that only 13% (130 of 1027) of the projects outsourced were seen as successful.

According to the previous studies and the facts mentioned earlier, the majority of the IT projects failed because they were unable to meet one or more of the five basic aspects: (1) expected time, (2 budgeted cost (3) scope of the project, (4) quality as specified, and (5) user's expectations. These five factors are considered as yardsticks to

measure either the success or failure of each IT project. Due to the complexity of the metrics involved in accessing IT project success, the banking sector should use IT project auditors who not only understand IT governance, business processes and project management, but are also needs to be independent and competent.

An Internal auditor has the responsibility to monitor all stages of the IT project implementation. Close monitoring of an IT project helps prevent its failure. Besides following a code of conduct, the internal auditors can assist banking companies in preventing IT project failure by having the sufficient knowledge, skills and experiences to conduct the task. Previous research has shown that a vital role of IT auditors is minimizing the risk of IT project failure (Grabski, Leech, & Lu, 2001). Competent and skilful internal auditors can increase the possibility of IT project success (Jones, Gray, Gold, & Miller, 2010).

Other than internal auditors, The Board of Directors (BOD) also plays a vital role in successfully implementing IT projects. BOD has been assigned the role of developing the business blueprint, business strategy and approving the implementation of information technology projects and their control, with advice from the internal auditors. Normally, the planning and scheduling of IT projects and investment in IT projects are discussed in BOD meetings. The BOD comprises directors who have various expertise in the fields of accounting and financial planning, IT, legal, management and they act to represent interests of the company. BOD quality has been found to be associated positively with firm performance (Hermalin & Weisbach, 2003). A BOD must have the ability to perform risk management to enable them to assess project risk and, in so doing, will increase the possibility of an IT project's success (PwC, 2012). A BOD must monitor

the successful implementation of IT projects and perform an assessment of financial outcomes and a project's risk (KPMG, 2013). The BOD has been found to contribute to IT project's success (Klakegg & Shannon, 2013).

Companies have been advised to employ IT audits and governance to manage projects (Weidenmier & Ramamoorti, 2006; Curtis, Deis, Jenkins, & Bedard, 2009). Good IT governance refers to having a good board of director equipped with IT and financial knowledge and is able to plan well and make good decisions with assistance of an IT auditor to monitor the implementation of the project. Evidence has shown these are necessary because successful IT projects are found to have been implemented by organisations with good IT governance. Examples are the successful implementation of Bank Central Asia's (BCA) Enterprise Resources Planning (ERP), and CIMB Niaga's successful implementation of a dual data centre to service their customers. Both BCA and CIMB Niaga are known for having good IT governance.

Scholars have argued that an effective IT governance provides improvements in reputation, trust, product leadership, and cost reduction (Bowen et al., 2007). For example, IBM has managed to save up to US$12 billion through its implementation of IT projects to reduce its inventory level (IT Governance Institute, 2006). Most previous studies in the Indonesian context have examined corporate scandals and corporate governance of publically listed companies. For example, BNI experiences a loss when assets of Rp. 123.7 trillion were lost from approximate 8 million accounts from which the money was allegedly disbursed through 105 transactions without formal assessments or checks.

However, limited studies exist for the Indonesia banking sector even though numerous reports of IT project failure resulting in huge losses by banks exist. Realising that banks play an important role in the economy and banking is sector employing advanced IT usage, this current study examined this gap in the literature. In addition, this study has also examined whether IT governance of banks could contribute to IT project success. This study as overall sought the answer to the question; "What are the factors that have contributed to IT governance and IT project success in the banking industries of Indonesia?"

1.3. Research Objectives

Specific research objectives of the study are to:

1. Examine the relationship between Internal Audit quality and IT governance;
2. Investigate the relationship between BoD quality and IT governance;
3. Determine the relationship between IT governance and IT Project Success;
4. Investigate the relationship between Internal Audit quality and IT Project Success;
5. Examine the relationship between BOD quality and IT project success;
6. Investigate whether IT governance mediates the relationship of Internal Audit quality and IT Project Success; and
7. Determine whether IT governance mediates the relationship of BOD's quality and IT Project Success.

1.4. Research Questions

Based on those research objectives, there are seven research questions, which are as follows:

1. What is the influence of Internal Audit quality on IT governance?
2. What is the influence of BOD's quality on IT governance?
3. What is the influence of IT governance on IT project success?
4. What is the influence of Internal Audit quality on IT project success?
5. What is the influence of BOD's quality on IT project success?
6. Does IT governance mediate the relationship between Internal Audit quality and IT project success?
7. Does IT governance mediate the relationship between BOD's quality and IT project success?

1.5. Significance of the study

This study addresses the gaps existing in previous findings about IT project practices on the effective implementation of IT governance. Based on those previous findings, many IT project failures have occurred due to a lack of understanding regarding IT governance and best practices. The significance of this current study is discussed in two subsections below.

1.5.1 Theoretical significance

Implementing a sound IT governance strategy is believed to be a key for having successful IT functions in organizations (Brown & Grant, 2005). IT must be well aligned with business processes and business strategies of the company (Henderson & Venkatraman, 1993). Generally, previous studies have discussed good corporate governance and project management; therefore, not many studies have focused on predictors of IT governance and its impacts on IT project successes in the banking sector. The conceptual framework was developed to establish a link between the determinants of IT governance and their effects on IT project success. IT governance has also been seen as an intervening variable to enhance these relationships. Therefore, this study expands upon previous research by integrating the findings of studies related to IT governance and IT project successes. The main contribution herein is the introduction of internal audit quality and BOD quality for assessing IT governance in an effort to predict IT project success in the banking sector. The findings of this study contribute to the empirical evidence linking IT governance and IT project success.

1.5.2. Practical significance

The implementation of IT governance is vital in predicting IT project success in the banking sector. According to Bank Central of Republic Indonesia (BI) regulations, individual units of a bank have the responsibility to assess the worthiness of their corporate governance. Nevertheless, no clear guidelines or concepts exist on how IT governance practices should be implemented in the banking sector. IT governance have become the most critical factor in the success of IT projects and related IT investments.

The current study not only contributes to a deeper understanding of the effectiveness of IT governance on project success for the banking sector but also contributes to policy makers in the banking industry and other financial arenas. This study provides suggestions and recommendations to policy makers in Indonesian banks and financial institutions, including the Indonesia Financial Services Authority (IFSA), and also to Project Management Body of Knowledge (PMBOK). The findings of this study can be useful for the IFSA, especially in helping design the best implementation practices of IT governance.

1.6. Definition of Key Terms

Internal Audit Quality: a function of the objectivity (independence), competence, and work performed (Gramling, Maletta, Schneider, & Church, 2004).

BOD quality: a function of meetings, compositions, and level of expertise. (Bank Central of Republic of Indonesia, 2006)

Information Technology: any form of computer-based information system, including a mainframe as well as microcomputer applications (Abraham, 2012).

IT Governance: the responsibility of executives and the board of directors, comprising leadership, organizational structures, and processes ensuring that the enterprise IT sustains and aligns with, planning, organization, building, acquiring, implementation,

delivery, service, support, monitoring, evaluation and access (ISACA, 2012). IT governance comprises alignment, planning, and organizing; building acquiring and implementation; delivery, service and support; and monitoring, evaluating and access.

Aligning, Planning and Organizing (APO):	the dimension refers to the use of information and technology and how best it can be used in a company to help achieve the company to help achieve the company's goals and objectives. It also highlights the organizational and infrastructural from IT is take in order to achieve the optimal results and to generate the most benefits from the use of IT (ISACA, 2012).
Building, Acquiring and Implementing (BAI):	the dimension covers identifying IT requirements, acquiring the technology, and implementing it within the company's current business processes (ISACA, 2012).
Delivery, Service and Support (DSS):	the dimension focuses on the delivery aspects of the information technology. It covers areas such as the execution of the applications within the IT system and its results as well as the support processes that enable the effective and efficient executive of these IT systems (ISACA, 2012).
Monitor, Evaluate and Assess (MEA):	the dimension deals with a company's strategy in assessing the needs of the company and whether the current IT system still meets the objectives for which it was designed and the controls necessary to comply with regulatory requirements. Monitoring

	also covers the issue of an independent assessment of the effectiveness of IT system in its ability to meet business objectives and the company's control processes by internal and external auditors (ISACA, 2012).
Project:	a temporary endeavour undertaken to create a unique product, service or result. (Schwalbe, 2013)
IT Project:	a temporary endeavour undertaken to create a unique IT product, service or result in the banking sector include centralized online real-time environment (CORE) banking, enterprise resource planning (ERP), human capital information system (HRIS), electronic customer relationship management (e-CRM), management information system (MIS), business intelligence, decision support system (DSS)
IT Project Success:	The ability of an IT project ability to meet al.l five assessment metrics: (1) the expected time, (2) costs budgeted, (3) the scope specified, (4) the quality specified and (5) the user's expectations (Bernroider & Ivanov, 2011)
Time:	target completion date and schedule of tasks
Costs:	budget and resource allocation
Project's Scope:	work that needs to be accomplished to deliver a product, service, or result with the specified features and functions.
Quality:	condition of delivered ends for the purpose.

User's expectations: degree of compliance of the project's usability and the biased view of the end user.

1.7. Organisation of the study

This study is organized into six chapters. Chapter 1 provides a background of the study, the problem statement, research objectives, questions, and significance of the study. Chapter 2 discusses the history of Indonesia Banking, corporate governance, information technology governance, and the type of information technology investment in banking. Chapter 3 reviews the necessity for internal audit quality, board of directors, information technology governance, and information technology project success. The hypotheses development is included at the end of this chapter to strengthen the justification of theoretical framework. Chapter 4 discusses the research methodology used for this study. The research design, research variables, population and samples, instrument design, data collection and data analysis are included. The procedure for data processing and data analysis is in this chapter as well. Chapter 5 presents the respondents' profiles, descriptive analysis of the research data, hypotheses testing, and summary of research findings. Chapter 6 presents discusses the research findings, theoretical and practical implications. Finally, Chapter 7 presents conclusion and recommendations for further research.

CHAPTER 2

BANKING SECTOR IN INDONESIA

2.0 Introduction

Chapter 2 gives an overview of the banking sector in Indonesia, listing the 10 top banks in Indonesia. The amount of IT investments banks have made is substantial as they need to innovate to ensure customer satisfaction with the services provided and that their assets are also safeguarded. Examples of successful and failed IT projects are discussed along with the criteria for measuring IT project success is highlighted in this chapter. In addition, the chapter also discusses the regulatory environment of banks and good corporate governance practices.

2.1. Definition of a Bank

According to Indonesia Financial Service Authority (IFSA, 2014) Law No. 10/1998, banking is a business that gathers funds from a society in the form of savings and distributes the funds to a society in the form of credits and/or others in order to improve people's standard of living. For example, Indonesian banks provide soft loans to the citizens for purchasing houses, vehicles, and property. By owning shelters, citizens gain a feeling of security and satisfaction of being an Indonesian citizen. According to Bank Indonesia, the definition of bank is "an institution of trust that serves as an intermediary and helps to smooth payment systems" Based on the above definitions and understanding, a bank is thus a company engaged in the financial sector, playing a critical part in the national economic development and agenda.

According to Jadhav (2011), a bank essentially performs the following functions:

1. Accepting deposits or other savings instruments of customers or the public by providing bank accounts, current accounts, fixed deposit accounts, and recurring accounts;
2. Providing an effective credit delivery system for loanable transactions and payment transactions like lending money to the public. Provide the facility of transferring of money from one place to another place. For performing this operation, bank issues demand drafts, banker's cheques, money orders etc. for transferring the money. Bank also provides the facility of Telegraphic transfer or tele- cash orders for quick transfer of money;
3. Performing trustworthy services for various purposes;
4. Providing a safe custody facility for the money and valuables of the general public. A bank offers various types of deposit schemes for security of money. For keeping valuables bank provides locker facility. The lockers are small compartments with dual locking systems built into strong cupboards. These are stored in the bank's strong room and are fully secured; and
5. Acting on behalf of the government to accept its tax and non-tax receipts. Most government disbursements like pension payments and tax refunds also take place through banks.

2.2 Background of Banks in Indonesia

A new chapter in the history of Central Bank of Republic of Indonesia (BI) as an independent central bank was initiated when a new Central Bank Act, UU No. 23/1999,

on Bank Indonesia was enacted on May 17, 1999 amended with UU No.3/2004 on January 15, 2004. The Act confers Bank Indonesia's (BI) status and position as an independent state institution and provides for freedom from interference by the Government or any other external parties (BI, 2013).

In Indonesia, the main functional areas are as a collector and distributor of public funds is to support the implementation of national development. This, in turn, hopefully will improve the distribution of development and will result in economic growth and national stability, by improving the living standards of the people. Bank Indonesia recognizes the important functions of a bank, the need for healthy banks, both individually and as a single system, as a prerequisite for a healthy economy. To create a healthy banking system, regulatory and effective bank supervision is required. Banking policies formulated and implemented by Bank Indonesia are part of the effort to create, preserve, and maintain a healthy banking system.

Bank Indonesia is the central bank of the Republic of Indonesia and is a legal entity with the authority to conduct lawful actions. BI as a public entity, has the authority to pass regulations having the force of law that legally bind the public, in accordance with its mandate and authority. As a civil entity, BI can act for (and on behalf of) itself before and outside courts of law. In its capacity as a central bank, BI has one single purpose, namely to achieve and maintain rupiah stability.

Stability of exchange rate comprises two aspects, namely, the stability of the currency for goods and services as well as the stability of the currency of another country. The first aspect is reflected in concern with the inflation rate, while the second aspect is

reflected in the rupiah exchange rate against other currencies. This formulation is intended for the sole purpose of clarifying objectives BI is to achieve, as well as establishing the limits of their responsibilities. Whether the goals for controlling inflation and maintaining exchange rates are achieved by BI can be measured easily (BI, 2013).

The setting of goals is aimed at clarifying BI's objectives and responsibilities. To achieve its objectives, BI conducts monetary policies on a sustained, consistent, and transparent basis, accounting for the general economic policies of the government. To achieve a particular goal, BI has three core tasks commonly known as the "Three Pillars" of BI. These are: (1) prescribe and to implement the monetary policy; (2) regulate and safeguard the smoothness of the payment system; and (3) regulate and supervise banks. The Three Pillars are inter-related and must be integrated to achieve the goals set and maintain the rupiah's stability. The objectives of Indonesian banking system must be implemented continuously and consistently to support the achievement of BI's objectives.

2.3 Types of Bank in Indonesia

According to the Indonesian banking law, Indonesian banking institutions are typically classified into commercial and rural banks. Commercial banks differ from rural banks in the sense that the latter are involved directly in payment systems or have restricted operational areas. A commercial bank performs business activities conventionally and/or based on Sharia principles, with activities providing services in payment transfers (IFSA, 2014).

Since Dec 31st 2013, the functions of BI were transferred to the Indonesia Financial Service Authority, and BI only manages macro prudential functions, which are related with monetary policy. Macro-prudential policies having systemic and cyclical functions are bound to impact macroeconomic variables beyond the financial sector, and interact with other macro policies, especially monetary policy (Caruana, 2011, IMF, 2013). Macro prudential instruments contribute to price and financial stability, especially when dealing with financial shocks, but trade-offs exists between monetary and macro prudential instruments with respect to demand or productivity shocks (Medina & Roldos, 2014).

Indonesia currently has 120 commercial banks that are divided into two categories, namely: (1) state- or government-owned banks and (2) private banks. There are four government owned banks: (1) Bank Mandiri Republik Indonesia (BMRI), (2) Bank Negara Indonesia (BNI), (3) Bank Rakyat Indonesia (BRI), and the (4) Bank Tabungan Negara (BTN). The 116 private banks that currently exist are divided into three categories: (1) regional banks - 26 banks, (2) private commercial banks -79 private commercial banks and (3) Syariah private banks - 11 banks. Figure 2.1 below lists the different categories and classification of banks in Indonesia.

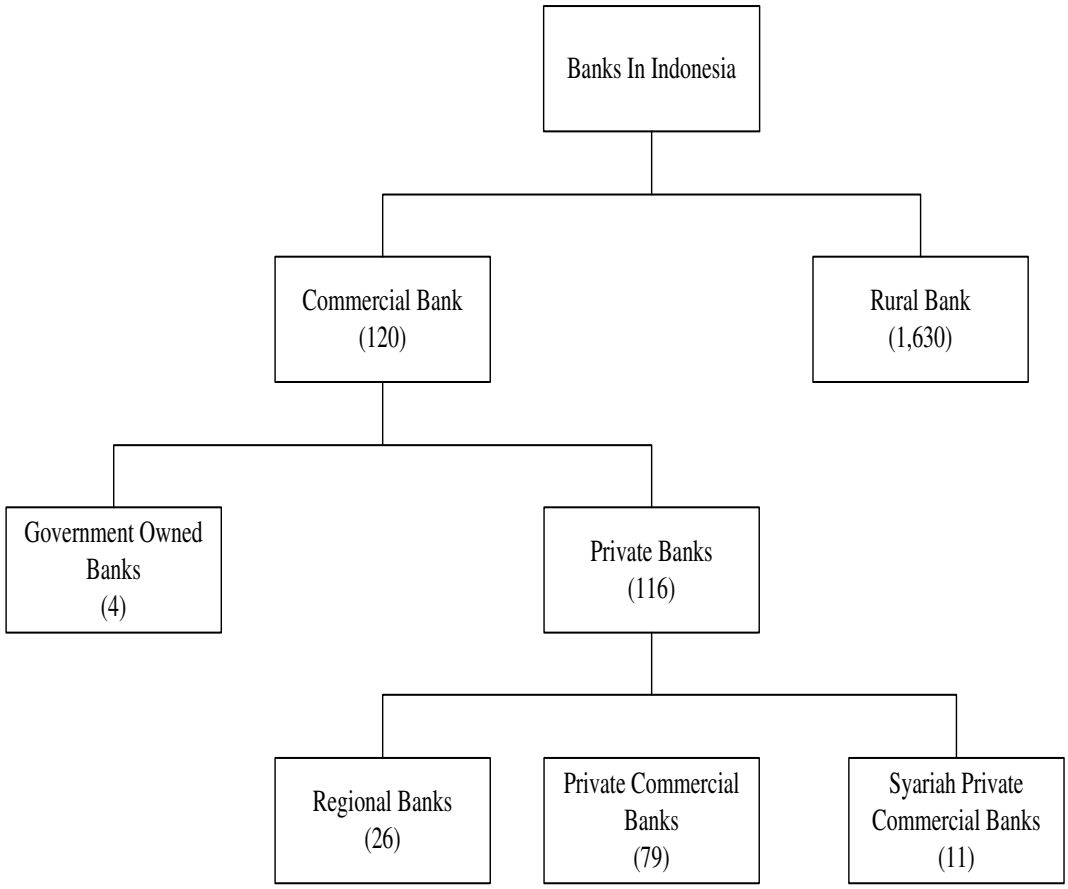

Figure 2.1 Type of Commercial Bank in Indonesia

Source: Bank Indonesia (2013).

In general, the IT investment of banks in Indonesia is enormous. The amount of IT investments of some of the top 10 banks will be discussed in Section 2.4 below to give a sense of understanding of these amounts.

2.4 IT Investments in the top 10 banks of Indonesia

IT plays a critical role in the banking industry. The main bulk of the investment of banks is in IT infrastructures and system applications. A bank requires an IT-based

system that is safe, fast, able to accommodate large amounts of data processing, and stable in its operations. Aside from the fact that banks need to keep up with technology, they should also be able to synergize their services with the needs and demands of customer banking services as part of their business strategy in order to remain relevant in the market. The International Data Corporation (IDC) recently stated that Indonesia was the 19th largest IT spender in the world and that Indonesia's IT spending was the biggest in Southeast Asia (IDC, 2012). However, although Indonesia has increased investments in information technology (IT), the benefits of such spending have not stretched far and wide across her archipelagos. Based on data from IDC, the country spent US$10.9 billion on IT in 2011 and was expected to reach $12.9 billion in 2012, or 18.3% year-over-year growth. Hardware spending in Indonesia reached $11.5 billion in 2011 and was expected to rise to $17.8 billion by 2016. Meanwhile, spending on IT software and services stood at $522 million and $759 million respectively in 2011. The master plan is to plot the route the country must take to become one of the top 10 world economies by 2025. One signpost along the road to such development is improved use of IT, which the government plans to fortify by building the necessary infrastructure.

Table 2.1 shows the total assets of the top ten banks of Indonesia (which include both government and private owned banks) contribute about Rp1.947,58 trillion (as of June 2011) or 63.46% of the total assets of the all banks in Indonesia. There are four government owned banks and six private owned banks in this category. The total assets of the government owned banks are approximately Rp1.086.62 trillion and about Rp1.249.24 trillion from the private sector banks.