Journal of Theoretical and Applied Information Technology
10th March 2014. Vol. 61 No.1

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

ERP PERFORMANCE AS INTERVENING VARIABLE TO FINANCIAL PERFORMANCE FOR ERP IMPLEMENTATION, ADHERENCE TO COSO, AND GCG IMPLEMENTATION

JULISAR

Senior Faculty Member, School of Information System, Bina Nusantara University, Jakarta, Indonesia

E-mail: julisar_s@yahoo.com

ABSTRACT

The objective of this study is to make a conceptual framework for testing the correlation hypothesis of ERP implementation, adherence to COSO, and GCG implementation. Then, the writer will test the effect of ERP implementation, adherence to COSO, and GCG implementation to ERP implementation and its implications to financial performance. This conceptual framework will use ERP performance as intervening variable. This writing is aimed at manufacturing industries in Indonesia which have implemented ERP, guided by COSO, and applied GCG as well. From the previous studies, there are spaces to do a research relating to ERP implementation, adherence to COSO, and GCG implementation to ERP implementation and its implications to financial performance. This research is still a literature study, so that the concept written here is still a conceptual framework which has to be tested empirically.

Keywords: *ERP, COSO, GCG, Financial Performance*

1. INTRODUCTION

Economic activities in Indonesia are supported by a variety of business activities in several sectors. They are (1) the main sector which is industries of raw material producer consisting of agriculture and mines, (2) the second sector which is processing or manufacturing industries, and (3) the third sector which is service industries.

Manufacture, based on Letter of the Head of the Capital Market Supervisory Board No. SE-02/PM/2002, December 27th 2002, is an activity which processes resources into finished products through a manufacturing process. So that, the company's activities classified in the manufacturing industry group have at least three major activities, namely (1) activities to obtain or to keep input or raw materials, (2) processing/manufacturing/assembling the raw materials into finished materials, and (3) activities to store or to market their finished products. In terms of the products, manufacturing activities today include various types of business.

Performance Management System is an enterprise performance measurement conducted as the study on company's strategic objectives in responding to the marketplace needs nationally and internationally. In relation to the Performance Management System, Wibisono (2011) wrote that performance of the company is assessed at three main factors: financial performance (70%), operational performance (15%), and administrative performance (15%).

From Wibisono (2011) it is clear that financial performance has considerable factor as one of the Performance Management System measurement (70%). It is because one of the aspects assessed by the public to make an investment (especially for a company that has sold its shares on the Stock Exchange) is to look at the company's financial performance. A company which has already sold its shares on the Stock Exchange is obliged to publish its financial statements, so that investors or potential investors can find out the company's financial performance and prospects of the company in the future. In other words, the financial statements may be considered by investors or prospective investors to make an investment.

To find out a company's financial performance, it is necessary to do an analysis and interpretation from the financial statements produced by the company. Analysis conducted is based on the financial statements that have been issued by the company. Analysis here is to look at the state of the company, especially the financial situation based on existing data on the financial statements. From the

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

data acquired, then they are processed and analyzed to obtain information from the results of the analysis. The purpose of the financial performance analysis is to take policies, decisions on the operations, and financial activities faced by the company.

Letter of the Head of the Capital Market Supervisory Board No. SE-02/PM/2002, December 27th 2002, for Presentation and Disclosure Guidelines for Issuers'/Public Companies' for Manufacturing Industry Financial Statements, states that the objective of financial statements is to provide information that arise of the financial position, performance, and changes in financial position of an enterprise that is useful for a large number of users in making economic decisions and to demonstrate accountability (stewardship) of the management over the use of resources entrusted to them. The letter states that the Issuer or Public Company Management is responsible for the preparation and presentation of financial statements. Financial statements presented consist of Balance Sheet, Income Statement, Statement of Changes in Equity, Cash Flow Statement, and Notes to the Financial Statements.

ERP Software is the backbone of major companies in this era (Alshawi et al., 2004). Momoh (2010) wrote that the package offered by ERP provides a seamless integration of all business processes in the company, including the integration of the accounting and financial information, human resources information, supply chain information, and customer information.

Stratman (2002) wrote competence of ERP is a portfolio of the managerial, technical, and organizational skills and expertise hypothesized as an antecedent to improve business performance after the implementation of ERP system and the system has been running stable. In ERP software, there are 3 (three) elements which are (1) a single central database as the system foundation, (2) application modules to process transactions and to perform data maintenance in the database, and (3) application modules to generate data thus allowing users to be able to see multiple views of the enterprise's data.

In relation to the importance of internal control whose primary audience is management; internal control viewed as a process; objectives of internal control on the effectiveness and efficiency of the operations, reliability of financial statements, and compliance with laws and regulations forced in any state; focusing on all entities that exist in the company; and who is responsible is the management, this research will use COSO as the internal control measurement in accordance with the principles of administration issued by Wren et.al (2002), in which there are responsibility and control-centered management. In ERP implementation, the primary audience is management because management plays a fairly important role for successful and unsuccessful ERP implementation. ERP implementation depends on full support of the management because it controls over the implementation of ERP which includes planning, organizing, leading, and controlling (Vijayakumar, 2009).

Financial statements are information generated by the operations of the company. From the financial statements, corporate leaders will be able to do the planning, organizing, ordering, coordinating, and supervising. Therefore, information generated according to Hall (2008, pp14) should follow the five characteristics: relevance, timeliness, accuracy, completeness, and summarization. In addition to the five characteristics, to produce the financial statements that can be used for planning, controlling, and/or decision-making, the company must also implement internal control in the company's operations.

To implement internal control within the company applying Information Technology, COSO requires at least 2 (two) types of control: general control and application control. General control is the control covering all aspects of the competerized business process, which are all the company's operations using a computer. Application control is the control covering the use of software applications that exercises control over the transaction processing as well as in terms of data storage.

COSO (2011, i) issued a framework for business activities and operating environments: (1) expectation for governance oversight, (2) globalization of markets and operations, (3) changes in business models, (4) demands and complexities in laws, rules, regulations, and standards, (5) expectations for competencies and accountabilities, (6) use of, and reliance on, evolving technologies, and (7) expectations relating to preventing and detecting corruption.

To achieve the framework's objectives, the company should focus on three separate aspects in internal control in accordance with those written in COSO (2011, 3). They are (1) Operations Objectives – these pertain to effectiveness and efficiency of the entity's operations, including operations and financial performance goals and safeguarding assets against loss; (2) Reporting Objectives – these pertain to the reliability of reporting. They include internal and external financial and non-financial reporting; (3) Compliance Objectives – these pertain to

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

adherence to laws and regulations to which the entity is subject.

Relevant with the compliance objectives issued by COSO no. 3, Grant et.al (2008) wrote that governance implementation in the implementation of Information Technology (IT governance) is absolutely necessary, because IT governance plays an important role to produce financial statements. Moreover, deficiencies in Information Technology control can also eliminate important issues relating to the financial statements produced through Information Technology. To implement the adherence to laws and regulations which are applicable in a state as required by COSO in terms of the internal control, this study will be guided by the Indonesian Good Corporate Governance.

Code of Indonesian Good Corporate Governance (2006) via the Minister for Economic Affairs, Decree No. KEP/49/M.EKON/11/2004, has approved the establishment of the NCGP (National Committee of Governance Policy) consisting of Public Sub-Committees and Corporation Sub-Committees. NCGP provides GCG guidance to all companies in Indonesia, including companies that operate on the basis of sharia, companies whose shares have been listed on the stock exchange, state enterprises, regional companies, companies that raise and manage public funds, and companies whose products or services are widely used by the public, as well as companies that have a broad impact on environmental sustainability.

In the implementation of internal control that has a relationship with corporate governance and the implementation of ERP system, using agency theory, Morris (2011) described that the implementation of ERP system can facilitate monitoring and audit activities to obtain information that can be used by the principal about agent behavior, according to the second proposition written by Eisenhardt (1989): "when the principal has information to verify agent behavior, the agent is more likely to behave in the interest of the principal." The argument of the proposition is if information system can provide information to the principal (shareholders) about the behavior of the agent (management), the agent cannot commit fraud or deceive the principal.

Hadibroto (2004), chairman of the Association of Indonesian Accountants, stated three things that need to do in building public trust: first, increase the effectiveness of corporate governance; second, increase shareholder values and protect other stakeholder interests; third, go back to the basics of professional ethics and standards.

2. LITERATURE REVIEW

2.1 ERP Implementation

It needs a paradigm that ERP implementation is a business project compared to the installation of a new software technology (Presley, 2006, Parr and Shanks, 2000). In the ERP implementation, because it is a business project, it will require the attention of the stakeholders, such as management, information system professionals, line workers, counsultant, and trading partner (Sambamurthy and Kirsch, 2002). Based on Muscatello, et.al (2003), Enterprise Resource Planning (ERP) systems are widely implemented as the backbone of many manufacturing and service firms. They are designed to address the problem of information fragmentation or "island of information" in business organization.

Rainer (2011:292) wrote that ERP systems take a business process view of the overall organization to integrate the planning, management, and use of all of an organization's resources, employing a common software platform and database. Business process according to Rainer (2011:7), a business process is a collection of related activities that produce a product or a service of value to the organization, its business partners, and/or its customers. A process has inputs and outputs, and its activities can be measured.

When a company is going to implement ERP, it is necessary to pay attention to the stages of ERP implementation, because each project in implementing ERP has different phases that will also provide different benefits for each company. It is in accordance with Elragal, et.al (2011): "ERP system implementation projects have got different phases which need to be considered when analyzing the benefits achieved by ERP adopting companies. The concept of business performance can operationalized as financial gains by the organization, operational improvement for the organization or intangible gains for the organization."

Phases in implementing Information Technology, in this case, as they were written by Kwon and Zmud (1987): "that IT implementation follows six-stages or phases as initiation, adoption, adaptation, acceptance, routinization and infusion".

In addition to considering such things, ERP implementation should be flexible so that the implementation of ERP can provide significant benefits for the company as well as the competitive advantage (Gupta, 2006).

For ERP implementation, successful and unsuccessful ERP implementation will demonstrate the performance of ERP. Successful ERP

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

implementation is expected to provide qualified ERP performance. It is relevant to the research done by Elragal, et.al (2011), that ERP implementation should contribute a good ERP performance in order to give benefits in terms of qualified financial performance. Nevertheless, to get qualified ERP performance, it is not only determined by ERP implementation but also influenced by other factors, such as those written by Grabski (2007), it needs complementary controls to control the implementation of ERP.

For companies that implement ERP, ERP is an operational activity for the company, in which according Wibisono (2011), contributing 15%; and according to Ke et.al (2008): "ERP (Enterprise Resource Planning) systems, a type III information system (IS) innovation, have strategic relevance because their integration into core business processes or strategies can directly impact firms' performance." However, as Poston (2001) said, ERP implementations are often performed along with business process reengineering. Some firms wanting to reengineering use ERP as the vehicle to accomplish the business process. While this study focuses on the effect of ERP on firm's performance, the separate effect to reengineering business process cannot be disentangled. An ineffective and unsuccessful process reengineering project could also contribute to lost performance gains including negative financial returns.

To see the explanation given by Grabski et al (2007), figure 2.1 is a model made for successful ERP implementation.

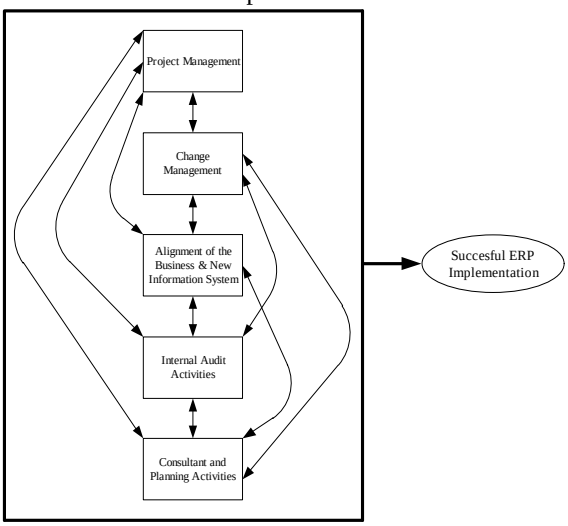

Figure 2.1 Model of Control Factors for Successful ERP Implementation. Source: Grabski et.al (2007)

Critical Success Factors to implement ERP, according to Muscatello (2008), are strategic initiatives, executive commitment, human resources, project management, information technology, business process, training, project support and communications, and software selection and support. Issues related to the implementation are alignments. There are some alignments in relation to the implementation, which are strategic alignment, system and process alignment, and knowledge alignment (Chen, 2001).

Gupta (2000) finds that the keys to successful ERP implementation are relating to securing top management commitment, forming cross-functional task forces to link project management with business units, carrying out an assessment exercise of hardware requirements, making deployment a step-by-step introduction rather than all at once, starting early planning on user training and support, streamlining decision making to move implementation quickly, and being patient, as ERP implementation takes time.

When the company is going to conduct ERP implementation, it needs to consider the correspondence between business model and competitive capabilities, as Beheshti (2006) said: "Such systems must be designed with their impact on the company's business model and competitive capabilities in mind, and their implementation requires the alignment of IT and corporate strategies, and often also entails major changes to organizational structure and culture (Presley, 2006). ERP systems are also dynamic and continuously evolving (Bititci et.al, 2000)."

Besides the correspondence between business model and competitive capabilities, Muscatello (2008) states things need to consider are strategic initiatives, executive commitment, human resources, project management, information technology, business process, training, project support and communication, and software selection and support. In business process activities the firm will focus on identifying and improving the efficiency of critical operations, on restructuring important non-value adding operations, and on eliminating inefficient processes. Reengineering should be undertaken to insure that the strategic objectives mentioned earlier are feasible. The reengineering effort should create a uniform response from all aspects of the business.

In line with the business process specified by Al-Mashari (2002) which is to adopt ERP, companies need business focusing on technology and business process to implement ERP. In addition to focusing on technology and business process, when companies will make ERP implementation, they also need to pay attention to the control at the time of application and organizational changes,

Journal of Theoretical and Applied Information Technology
10th March 2014. Vol. 61 No.1

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

because without control, ERP implementation will be difficult and risky, as examples in Davenport (2000), Grabski, et.al (2007).

In connection with the need of internal control implementation, companies must also have a complementary relationship among the factors associated with operations, such as flexible manufacturing systems, marketing strategies, control systems, information systems, relationships with customers and suppliers. All of those factors are called complementary factors required, so that they fit in each other to form a coherent operational system and to maximize profitability. Then to obtain successful ERP implementation, companies must understand the risks, so that the companies must conduct a control associated with these risks (Grabski et.al, 2007). The risks mentioned are risks due to the absence of correspondence between organizational strategy, organizational structure and process, as well as the selection of ERP applications.

Ho, et.al (2004) argues for ERP implementation with the model in figure 2.2: "that system implementation is a challenging management issue and is no less important than system research and development and a successful implementation will benefit from the application of all three dimensions, and not a single one."

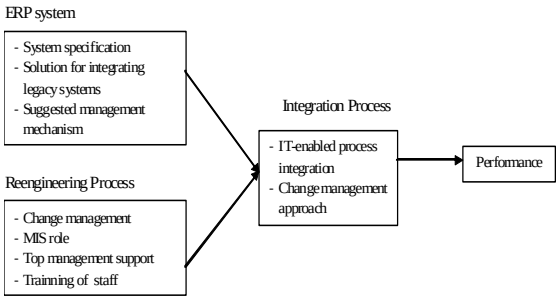

Figure 2.2 Adaptation Framework of ERP
Source: Ho et.al (2004)

In the ERP performance model made by Ho et al. (2004), there is no compelementary control as outlined by Grabski (2007). Therefore in this study, complementary control will be conducted; Good Corporate Governance using Agency Theory, and adherence to COSO using Control Theory. Control theory or cybernetic theory explains about self-regulating systems, both mechanistic and humanistic (Cannon, 1929). Wiener (1948) stated that control theory is generally attributed with establishing as a distinct body of thought. Control theory is widely used in several scientific studies in the area of management, engineering, applied mathematics, economics, and medics. In the context of ERP implementation and to obtain ERP performance, control is necessary in conducting ERP implementation. It is because ERP implementation is significantly different with tradisional implementation system (Grabski, 2007). Control in ERP implementation is something important, as stated by Kirsch, L.J; Sambamurthy, V; Ko, D-G; Purvis, R.L. (2002). Hence for ERP is a project, in this study control theory will be used to obtain the ERP performance. To make a project needs control, so that the project made will be in precise purposes and objectives which have been defined.

Diffusion of Innovations consists of 2 (two) words: diffusion and innovations. Diffusion is the process of an innovation communicated through channels among members within a social system; while innovations are ideas, practices, or objects displayed by an individual or adoptions of other units (Rogers, 2003). Bradford, et.al (2003) uses the Diffusion of Innovations Theory to carry out the development and testing of a model that can support successful ERP implementation.

Information System Success Theory issued by DeLone and McLean (1992) consists of 6 (six) dependent variables to obtain success information system. The 6 (six) dependent variables are system quality, information quality, use, user satisfaction, individual impact, and organizational impact. To determine whether the system made reaches goals or objectives (success), there should be measurements to measure whether the system has reached the target created to provide value to Information System Management and Information System Investment (DeLone et.al, 1992, Figure 2.3). This is to provide a positive impact to the company.

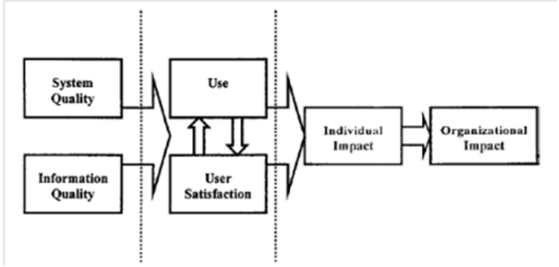

Figure 2.3 D & M Success Model
Source: DeLone, et.al (1992)

The central theme of Structural Theory is that every individual is a member of a social structure, and that structure supports sustainable performance every time (Giddens, 1976, 1979, 1984). In the theory issued by Giddens, there are 2 (two) topics, which are about (1) human behavior that creates

Journal of Theoretical and Applied Information Technology
10th March 2014. Vol. 61 No.1

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

and forms the social structure (agency) and (2) the degree to which a social structure is formed, forcedly formed, and the behavior of an individual, which is said by Giddens the duality of structure and action. Number (2) is the most incisively criticized of Giddens. He strongly criticized the idea of a relationship is always attached to dualism as a basic sociological analysis in many theories.

According to Giddens, social analysis should emphasize on aspect of duality (circumstances or special natures as an individual or characteristics that distinguish her/him from other people, such as character or personality), not on dualism (a notion in this life that there are reciprocal conflicts or two-faced states). It means that the relationship between actors (agents) and structure cannot be denied. However, the issue is how the actors (agents) and the structure can be interconnected to social behavior? Are actors (agents) and the structure associated by putting forward differences (tension or conflict) or duality (reciprocal)? Social sciences, according to Giddens, have been dominated by Vis a Vis dualism. Actors and structure should be reciprocal or rely on each other. This is the duality meant to lie on the structure which demands the actors as a means (medium and resources) and becomes social practice guidelines in various places.

To Giddens, actors (agents) are concrete people who are in continuous activities; while structure is rules and resources formed of (and form to) social practices looping. Duality of actors (agents) and structure is the result and, at the same time, a means of social practices. By this sense, structuration theory is formed. Structuration theory presupposes an ongoing process and allows looping to form social behavior.

There are 3 (three) main things that commonly occur in structure as explained in Gidden's structuration theory. They are (1) designation structure or signification, relating to symbolic schemata, meaning, addressing, and discourse; (2) domination structure which involves the mastery of political and economic context; (3) justification or legitimation structure relating to normative rules in legal system.

2.2 Adherence to COSO

COSO (2011) issued a framework that shows the relationship between the goals (objectives), the components of internal control, and the structural form of the organization. In Figure 2.4, there are 3 (three) objective categories of internal control implementation in the form of a column; 5 (five) components of internal control in the form of lines; and the forms of organizational structure including entities, divisions, subsidiaries, operating units or functions of which are business process, such as sales, purchasing, production and marketing. Considering those things, internal control implementation is absolutely necessary, is presented in three dimensions in a cube.

Research has been carried out for successful implementation of information system project (Cafasso, 1984; Ives et.al, 1984, Jiang and Klein, 1999; Jiang et al 1996; McFarlan, 1981), but the research conducted still has risks of failure in the implementation. Therefore, to support successful ERP implementation, one must understand the risks, so that by knowing the risks it will be conducted control over them.

Figure 2.4 The COSO Framework
Source: COSO (2011)

A process consists of ongoing tasks and activities. It is a means to an end, not an end in itself (COSO, 2011, 1). Business process, which are conducted within or across operating units or functional areas, are managed through the fundamental management activities of planning, executing, and checking. Internal control is integrated with these processes. Internal control is most effective when it is embedded in the entity's infrastructure and its ongoing activities (COSO, 2011, 2).

The implementation of internal control is in accordance with the development of Management Theory issued by Henry Fayol (1841-1925) which is included in the Stream of Management for Classic Organizational Theory (1900-1940), who argued about Administrative Theory which consists of planning, organizing, command, coordination, and control. The administrative theory was then developed by Wren et.al (2002) to be 10 (ten) principles. They are in table 2.2.

Journal of Theoretical and Applied Information Technology
10th March 2014. Vol. 61 No.1

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Table 2.2 Administrative Principles

Fayol's Administrative Theory Developed to be 10 Principles by Wren
1. Unity of Command
2. Hierarchical transmission of orders ("chain-of-command")
3. Separation of Powers – authority, subordination, responsibility and control
4. Centralization
5. Order
6. Discipline
7. Planning
8. Organization Chart
9. Meetings and reports
10. Accounting

Source: Wren, et.al (2002)

From Fayol's Management Theory which was developed to be 10 (ten) principles by Wren, this study will use those ten Wren's administrative principles. One part of the principles is Separation of Power – authority, subordination, responsibility, and control which is an elaboration of internal control.

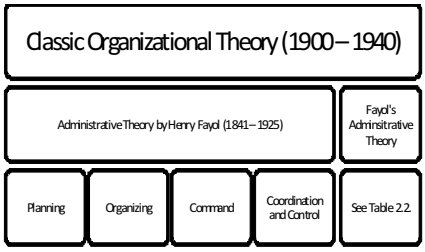

Figure 2.5 Digram of the Classic Organizational Theory (data processed)

For internal control implementation in the company, there are some internal controls can be implemented by the company after conforming them to the company's needs. In relation to internal control, Morris (2011) stated internal control is considered an "internal issues" and public companies were not required to disclose information about internal control procedures. Carton (2010) argued in relation to the ERP and internal control, which is one of these essential dichotomies in the planning and management of routine activities is the trade-off between control and flexibility. With the ERP systems, the interdependence between control and other structuring attributes (such as formalization, centralization, specialization) is configured in the software. In Figure 2.6, Noovre (2006) describes how to do an assessment to internal control.

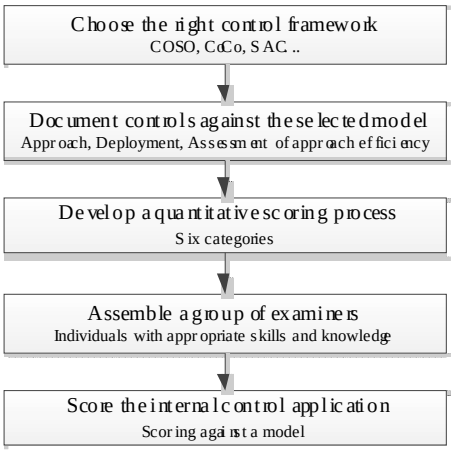

Figure 2.6 Quantitative assessment of Internal Control Source: Noorvee (2006)

Relating to financial statements, which function for planning, control, and/or decision-making should avoid the risks of both long-term (strategic), medium term (tactical), and short-term (operational) planning, the implementation of internal control can avoid risk management. This risk management is known as Enterprise Risk Management (ERM). This is in line with Drew et.al (2006) that provides the understanding of Enterprise Risk Management (ERM), which refers to the existence of a comprehensive approach to risk management within a company. Risk management has received attention from COSO that develops an internal control framework.

2.3 GCG Implementation

Corporate Governance is a term used in formulating governance for the company. Basically, corporate governance is rules, principles, or practices that set the direction of the company. NCGP (2006) provides a definition of Good Corporate Governance through an opening speech by Dr. Boediono (Coordinating Minister for Economic Affairs of the Republic of Indonesia) is one of the pillars of the market economy system. It is closely associated with the trust of the company applying it and the business climate in one country.

Corporate governance is sometimes viewed as a business culture fostering economic growth by building up confidence of investors (The HIH Royal Commision Report, 2003). Risks that occur directly or indirectly may be associated with the performance of the company, because these risks

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

affect corporate policies and regulations. Paper written by Poletti-Hughes suggested that corporate governance practices for the company and the country in which these two things provide value for the company. Risks can be managed by giving better attention to the implementation of internal control and corporate governance structure (governance structure) to provide value for the company. (Bhimani, 2009).

Associated with the implementation of internal control, a study conducted by Uhlaner (2007) for private firms, that the implementation of corporate governance should be implemented in all companies, especially companies that are included in public company. It is as has been outlined by NCGP which provides GCG guidance to all companies in Indonesia, including companies that operate on the basis of sharia, companies whose shares has been listed on the stock exchange, state enterprises, regional companies, companies that raise and manage public funds, and companies whose products or services are widely used by the community, as well as companies that have a broad impact on environmental sustainability. Figure 2.7 is a picture given by Uhlaner (2007) for corporate governance in private firms.

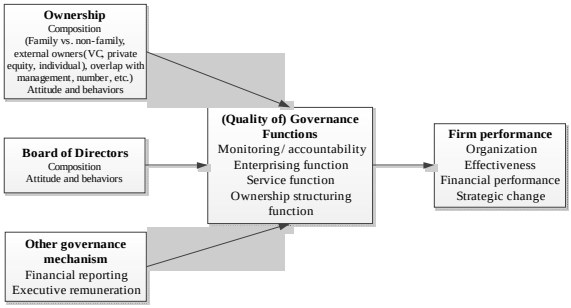

Figure 2.7 Framework for the Special Issue on Governance in the Privately-held Firm
Source: Uhlaner (2007)

Agency theory is a theory that examines the relationship between Principal and Agent (Jensen and Meckling, 1976). It describes the relationship of cooperation based on managerial behavior, agency costs, and capital structure. In this case, Jensen and Meckling stated that the relationship between the Principal and the Agent is based on contract in which the Principal binds the Agent to conduct activities on behalf of the Principal and giving authorities to do the work and make certain decisions. Eisenhardt (1989) states, similar to Jesen and Meckling in relation to the Principal and Agent, the Principal will issue a supervision fee while the Agent must pay the royalty fee which is an economic bonding cost. This is to reduce the possibility of the Principal disadvantaged by the Agent or otherwise.

Within these conditions, the two sides, the Principal and Agent, have different motivations and agents do not always act as expected by the the Principal (Shapiro, 2005). Jensen (1983) divides agency theory into two major parts (1) the positivist agency theory and (2) the principal-agency theory. Both of the theories use the same unit of analysis, which is the contract between the Principal and the Agent. The difference is the positivist agency theory focuses on the relationship between owners and managers generally in public organizations; while the principal-agency theory can be used more widely in the relationship of Principal and Agent, such as the relationship between employers and employees, sellers and buyers. Einsenhardt (1989) adds that both theories are complementary, and assumptions used in the two theories are same in the uncertainty of the results, the possibility of risks and information. In the application, agency theory has been widely used by researchers in various disciplines, such as accounting, marketing, political science, and organizational behavior.

Contract based on agency theory, according to Shapiro (2005), includes two things: (1) the agency problem arising from the difference of interest between the principal and the agent in the condition of asymmetric information, (2) the risk problem, which reflects different behavior between each party to the risks that must be borne.

The problem magnitude lies on the ability of the principal in monitoring the agent's activities. The problem arises because of the adverse selection and moral hazard which result in the difference of interest between the two sides that leads to the difference between expected performance and actual performance. To the principal primary goal is to maximize profits through cooperation undertaken, whereas to the agent the main concern is to maximize compensation obtained. In this case the agent cooperates with the compensation she/he earns, so it may arise, of which is called shirk costs, costs that arise because the agent does not work as expected.

Relating to the implementation of Good Corporate Governance in the company, agency theory describes the relationship between the principal (top management) and the agent (functional area manager). In this case, sometimes the desire of top management is in contradiction with the state of the functional area, so it needs to be bridged with GCG implementation. Thus, inequality between the different interests can be

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

overcome. In line with the principle, Kamus (2008, a, pp19) wrote that the basis for determining the measurement of performance is the principal's relationship with the agent (principal-agent concept). According to the concept, owners of the company or the shareholders are the principal (Top Management positions: Chief Executive Officer, Chief Finance Officer, Chief Operating Officer), those who have real wealth of the company. Without the principal, company is none. The agent or agency is a party designated by the principal to run the company.

In this study, for the principal categories (Top Management), will be added Chief Information Officer; for the agent categories are Finance Manager, Accounting Manager, Human Resource Manager, Marketing Manager, Production and Operations Manager, and Internal Auditor. However, in this study categorized as the agent are Finance Manager, Accounting Manager and Internal Auditor.

2.4 ERP Performance

In connection with Performance Management System, Wibisono (2011) assessed the performance of the company from three main factors: Financial performance (70%), Operational (15%) and Administrative (15%). Resulting financial performance may provide an overview of the state of the company as a whole and is a very important study for the sake of maintaining the sustainability of the company. Kamus Besar Bahasa Indonesia (KBBI) (2010-2011) defines performance as a noun (n = noun) which has meaning: (1) something achieved, (2) demonstrated achievement, (3) ability to work (tt equipment).

Performance Assessment according to Mulyadi (1997, pp 419) is a periodical determination of operational effectiveness of an organization, part of the organization and its employees by objectives, standards, and criteria set previously. In ERP implementation, one needs to know the resulting performance by implementing the ERP. To this, Elragal, et.al (2011) said: "The concept of business performance can be generalized as financial gains by the orgnizaiton, operational improvements for the organization of intangible gains for the organization."

Some researchers suggested that the implementation of ERP should provide a significant impact on operational performance (Cottelleer & Bendoly, 2006; Cottelleer, 2006; Gattiker & Goodhue, 2004, 2005). Relating to the advice given, Madapusi (2012) wrote the ERP System Implementations result in improvements in operational performance. Therefore, in ERP implementation it needs to measure the performance of ERP. Things measured are information availability, information quality, standardization, inventory management, on-time delivery.

Financial performance is the overall picture of financial activities in the company that gives information about the value of the company. For a public company, financial performance generated will provide information about share price. The higher share price is the higher of the shareholders' wealth; the higher shareholder value, the higher value of the company. Only in deviant conditions, the two are not aligned (Djohanputro, 2008, a, pp20-21).

2.5 Financial Performance

Financial Performance determines specific measurements that could measure the success of a company in generating profits (Sucipto, 2003). Financial performance is calculated by using financial ratios. The ratios are the results of a comparison between numbers of one financial figure and other financial figures. The figures contain in the financial statements consisting of balance sheet, profit / loss, cash flows, and changes in equity positions. There are several categories of the ratio that can be used as a measurement of financial performance: profitability, liquidity, solvency, turn-over, efficiency, and effectiveness (Djohanputro, 2008, a, pp23-34).

2.5.1 Profitability ratio

This ratio shows company's ability in generating profits. Profitability ratio consists of Gross Profit Margin which shows the company's ability; Operating Profit Margin which shows the company's ability in generating operations profit from sales; Net Profit Margin which shows the percentage of net profit value, which is profit to be the shareholders' rights, compared to net sales acquired by the company; Return on Equity which shows the amount of profits from the company and becomes the shareholders' rights as compensation depositing a number of equity; the higher of the ratio, the higher of the shareholders' wealth; Return on Assets which shows how much the operating profit generated from the total asset under management. The higher of the ratio is the better of the ability of management to generate additional wealth to enjoy by the investors. Investors are shareholders, bondholders, and creditors.

Journal of Theoretical and Applied Information Technology
10th March 2014. Vol. 61 No.1

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

2.5.2 Liquidity Ratio

This ratio indicates company's ability to meet the payment obligations to third parties in a timely manner. The higher availability of short-term assets is the better of company's ability to meet its obligations. Liquidity ratio consists of (1) Current Ratio, which indicates the availability of current assets to tackle current liabilities of the company. Current assets are all wealth that is easy to become cash in a short time, less than one year. Current liabilities are all liabilities of the company maturing less than one year; (2) Quick Ratio or Acid Test Ratio, which shows company's ability to meet short-term obligations, or its current liabilities, with the assets of the company that is ready to pay; (3) Ratio of Operating Cash Flow to Current Liabilities, which demonstrates company's ability to generate cash from normal business operations to meet its current liabilities.

2.5.3 Turnover Ratio

This ratio shows management's ability in using its managed wealth to produce income. Turn over ratio consists of Asset Turn-over, Fixed Asset Turn-over, Net Working Capital Turn-over, Account Receivable Turn-over, Inventory Turn-over, Account Payable Turn-over, Operating Cycle, Cash Convertion Cycle.

2.5.4 Solvency Ratio

This ratio shows companies' ability in fulfilling obligations in the form of payments of long-term interest and principal loan. Solvency ratio consists of (1) Leverage Ratio or Gearing Ratio, consisting of the ratio of long-term loan, the ratio of long-term loan to equity, the ratio of long-term loan to total assets; (2) Interest Coverage Ratio; (3) Fixed Charge Coverage Ratio; (4) Cash Fixed Charge Coverage Ratio.

Modern companies, which their operational activities use Information Technology called Enterprise System or better known as Enterprise Resource Planning, requires internal control to protect the confidentiality, integrity, and availability of all information produced by the company. The information produced can be used by top management for planning, organizing, comand, coordination, and control. Activities of planning, organizing, command, coordination, and control impact the company in supporting the company's activities and performance of the company (Sutton (2006; Mathrani, 2009; Davenport, 2000; Hedman & Borell, 2002; Markus & Tanis, 2000; Stoel, 2011; the ISO / IEC, 2005; ITGI, 2005).

Galbraith (1974) wrote that Organizational Information Processing Theory explains the reasons in every execution in the company giving uncertain results. This is because the system is a set of objects or elements in iteraction to achieve a specific goal. An example is a system will change or process energy, information, or material into a product or output that can be used by the system itself or outside the system (environment) or both. Therefore, within a system, the results given may be different from one part and other parts.

From research conducted by Hunton et.al (2003) in 63 companies by a comparison between the companies that implement ERP and do not implement ERP, it is found that there are differences in financial performance for companies that implement ERP and do not implement ERP. Companies that implement ERP have better financial performance than companies that do not implement ERP.

Challenges faced by the company are the company should be able to implement internal control specifically for ERP implementation of which should also measure the performance of ERP. Yet, in the implementation of ERP and to get qualified ERP performance, the company also dealing with laws and rules as expressed by Garber (2010), Hare (2011).

3. DISCUSSION

Based on the literature review, then model of this study is as following.

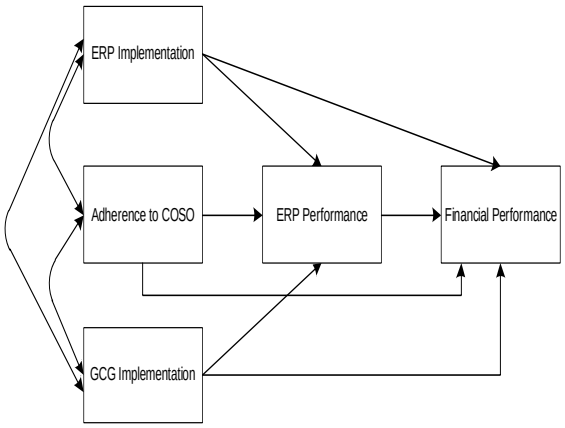

Figure 3.1 Model of the Study

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

3.1 Correlation between ERP Implementation, Adherence to COSO, and GCG Implementation

ERP (Enterprise Resource Planning) is a software that integrates planning, management, and the use all available resources within the company. It contains a series of applications that automate routine works of the company in back-end categories (such as finance, inventory management, scheduling, and other back-end activities) that help the company handle the jobs in functional areas (Turban, 2010; 379).

The main objective of ERP implementation is to conduct the integration in all functional areas exist in the company and to allow information to flow seamlessly in all functional areas (Rainer, 2011). Nevertheless, in practices there are companies succed and fail in ERP implementation and there is a notion that if a company has implemented ERP, there is no problem in the company.

Structuration theory (Giddens, 1976) suggests that each individual is a member of a social structure and the structure supports sustainable performance at all times. Therefore, successful and unsuccessful ERP implementation depends on the individual in the structure. Hence it needs control in accordance with Complementary Control Procedures (Grabski et.al, 2007), that is adherence to complementary control procedures. This is for conducting internal control (internal control) in ERP implementation. In addition to adherence to complementary control procedures, successful ERP implementation must consider the determinant factors of successful ERP implementation. Those are strategic initiative, commitmen executive, human resources, project management, information technology, business process, training, project support and communications, and software selection and support (Muscatello, 2008).

In line with the Structuration Theory (Giddens, 1976) and Complementary Control Procedures (Grabski et.al, 2007), COSO (2011) requires the existence of internal control which is defined: "Internal control is a process, effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (1) effectiveness and efficiency of operations (2) reliability of reporting; and (3) compliance with applicable laws and regulations."

To implement the objectives outlined by COSO, then every company must implement laws and regulations prevailing. In this case NCGP (2006) issued a policy that every company in Indonesia, including companies that operate on the basis of sharia, companies whose shares have been listed on the stock exchange, state enterprises, regional companies, companies that raise and manage public funds, and companies whose products or services are widely used by the public, as well as companies that have a broad impact on environmental sustainability must implement GCG (Good Corporate Governance).

3.2 Effects of ERP Implementation, Adherence to COSO, and GCG Implementation on ERP Performance

3.2.1 ERP implementation – ERP performance

In ERP implementation, it needs to know the operations performance produced by the ERP implementation. Elragal, et.al (2011) stated: "The concept of business performance can be generalized as financial gains by the organization, operational improvements for the organization of intangible gains for the organization." Some researchers suggested the implementation of ERP should provide a significant impact on operational performance (Cottelleer & Bendoly, 2006; Cottelleer, 2006; Gattiker & Goodhue, 2004, 2005). To obtain a qualified ERP performance that affects the financial (operations) performance, during the implementation process, it needs attention from management and performance measurement to be achieved should be set (Nicolau, 2004b).

3.2.2 Adherence to COSO – ERP performance

For companies in the modern era which the operation activities use information technology, the implementation of internal control is something very important. With a good internal control, it will produce a good performance management system. For companies applying information technology, they will utilize COSO as a standard implementation of internal control which has management as primary audience, internal control seen as a process, and internal control objectives which are effective and efficient operations, reliability of financial statements, adherence to laws and regulations, focus to all corporate entities, responsibility of the management

3.2.3 GCG Implementation – ERP Performance

Code of Indonesian Good Corporate Governance (2006) via the Minister for Economic Affairs, Decree No. KEP/49/M.EKON/11/2004, has approved the establishment of the NCGP (National Committee of Governance Policy) consisting of Public Sub-Committees and

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Corporation Sub-Committees. NCGP provides GCG guidance to all companies in Indonesia, including companies that operate on the basis of sharia, companies whose shares have been listed on the stock exchange, state enterprises, regional companies, companies that raise and manage public funds, and companies whose products or services are widely used by the public, as well as companies that have a broad impact on environmental sustainability.

Financial statements produced by the company applying Information Technology, in this case is the ERP, then ERP performance is important. The ERP therefore should show good performance. Thus, it may give information needed by the company through the financial statements produced that will be used to measure financial performance.

Financial statements produced by functional area (accounting and finance), which would result in financial statements that would ultimately show company's performance in this regard is financial performance, should have a high level of accuracy, which can be reliable and of a good quality (Morris, 2011). Due to financial statements, Top Management (Chief Financial Officer, Chief Information Officer, Chief Executive Officer, and others) will perform the functions of Administrative Theory in the Classic Organizational Theory Stream of Management as proposed by Henry Fayol (1841 - 1925) which are planning, organizing, command, coordination, and control.

Nevertheless, in its implementation in functional area, the Functional Area Manager could commit cheating, fraud to Top Management or otherwise, as Classic Organizational Theory issued by Henry Fayol, one of the functions of top management is command, so there are possibilities, Top Management gives orders to the Functional Area Manager to commit fraud by manipulating existing operations in the functional area. This can lead to performance in the functional area (ERP performance) does not reflect real situation which will have implications to financial statements. At the same time, financial statements will be used to measure financial performance. If financial performance does not reflect real situation, Top Management will be wrong in performing one of the managerial functions such as planning, organizing, command, coordination, and control.

3.3. Implications of ERP Implementation to Financial Performance

ERP (Enterprise Resource Planning) is a system integrating all functional areas (research and development, production, marketing, finance and human resources) that exist in the company to a systematic system and managerial approach. Besides, the implementation of ERP is also the core strategy to Information Technology-based companies, providing value for the company, and is a key role in competitive advantage. One of the reasons for implementing ERP is to improve company performance and deliver value to the company in terms of information flow, integration in all management functions, accuracy in the completion of reports and procurement of information (Su, et.al, 2013).

Research conducted by Hunton, et.al (2003) found that companies that implement ERP give the same results in financial performance, while companies that do not implement ERP show poor financial performance. Results of the research conducted by Poston, et.al (2000, 2001) gave mixed results as well as the controversy that there was no difference in financial performance between companies that implement ERP and companies that do not implement ERP. Companies that implement ERP did not show better results than before implementing ERP, while companies that do not implement ERP gave increased performance.

3.4 Implications of Adherence to COSO to Financial Pperformance

Financial statements produced by the company can be used to calculate financial performance. Financial performance is calculated by using financial ratios. Financial ratios are the result of a comparison between numbers of one financial figure and other financial figures. The figures contain in the financial statements consisting of balance sheet, profit / loss, cash flows, and changes in equity positions. Relating to financial statements, which function for planning, control, and/or decision-making should avoid the risks of both long-term (strategic), medium term (tactical), and short-term (operational) planning, the implementation of internal control can avoid risk management.

COSO is a private-sector initiative begun in 1985 to address fundamental causes if financial scandals. Reliability of financial reporting is one of the three objectives of the internal control process in the COSO framework (Altamuro, et.al, 2010). In connection to COSO and financial performance derived from financial statements written by Altamuro (2010), that financial statements are the responsibility of management, prepared and enforced with adequate internal control structure, and constructed with procedures for the preparation of financial statements and should be subject to and

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

obedient to laws and regulations. Financial statements should provide an assessment of the effectiveness of internal control structure, and the company must obey the laws and regulations prevailing in any state to ensure guarantee on the financial statements at the end of the period. The financial statements which have been prepared should be audited by independent public accountant. The statements include validation with the assertion from management including in the management report. In addition, annual financial statements must be audited by independent public accountant.

3.5 Implications of GCG Implementation to Financial Performance

Abdo, et.al (2007) wrote that good corporate governance can be a tool to attract investors' attention to invest their money in the company. Well implementation of Good Corporate Governance is connected with well company's performance compared to the company that has poor good corporate governance.

Research conducted by Shleifer and Vishny (1997) presented a study that effective corporate governance reduces control rights of the shareholders and creditors confer on managers, increases managers' chances to invest in net present value project; and the implementation of good corporate governance increases a market premium as well.

Good financial performance will increase value of the company, that is to increase investor confidence (Fama and French, 1993) and better protection to shareholders relating to rising assessment of the assets of the company (La Porta; Lopez-de-Silanes, Shleifer and Vishny, 2003)

3.6 Implications of ERP Performance to Financial Performance

ERP implementation will affect financial performance. With qualified ERP performance, identified by Nicolau (2004b), financial performance gives improving results (having competitive position or processing more efficient or effective) compared to companies having poor ERP performance.

4. CONCLUSION

Based on the literature sources mentioned, it has been developed a conceptual model which describes the correlation between ERP implementation, adherence to COSO, and GCG implementation with financial performance using ERP performance as intervening variable. This model is expected to be able to describe the relationship between the variables exist.

This research should be conducted in manufacturing industries regarding that ERP implemention was initially carried out in manufacturing industries. Manufacturing industries implement COSO, that is, as a form of internal control compliance. Moreover, intenal control is a basis of the preparation to financial statements. Financial statements issued, then, will be used for measuring financial performance. One condition required by COSO is that a company implementing COSO should obey the law and regulations in the country. In relation to the company, obedience to law and regulations prevailing is in accordance to GCG.

REFERENCES:

[1] Abdo, A; Fisher, G.. "The impact of reported corporate governance disclosure on the financial performance of companies listed on the JSE". *Investment Analysts Journal*. No. 66. (2007). Pp 43-56.

[2] Al-Mashari, M.. "Enterprise resource planning (ERP) systems: a research agenda". *Industrial Management and Data Systems*. Vol. 102. No. 3. (2002). Pp. 165-170

[3] Alshawi,S; Themistocleus, M and Almadani, R.. "Integrating diverse ERP systems: a case study". *The Journal of Enterprise Information Management*. Vol. 44 No. 6. (2004). Pp.454-462.

[4] Altamuro, Jennifer; Beatty, Anne. (2010). "How does internal control regulation affect financial reporting?" *Journal of Accounting and Economics*. Vol. 49. Pp58-74.

[5] Beheshti, HM.. "What managers should know about ERP / ERP II". *Management Research News*. Vol. 29. No. 4. (2006). Pp. 184-193.

[6] Bhimani, Alnoor.. "Risk Management, corporate governance and management accounting: Emerging interdependencies". *Management Accounting Research*. Vol. 20. (2009). Pp2-5.

[7] Bititci, US, Turner, T. And Begemann, C.. "Dynamics of performance measurement systems". *International Journal of Operations & Production Management*. Vol. 20. No. 6. (2000). Pp. 692-704

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

[8] Bradford, Marianne; Juan Florin.. "Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning system". *International Journal of Accounting Information Systems*. Vol. 4. (2003). Pp.205-225.

[9] Cafasso, R.. "How to control risk and effectively reduce the chance of failure". *Management Review*. Vol. 73. No. 6. (1984). Pp.50-4

[10] Cannon, W.B.. "Organization for physiological homeostasis". *Physiological Review*. Vol. 9. (1929). Pp.399-431.

[11] Carton, F; Adam, F.. "Towards a Model for Determining the Scope of ICT Integration in the Enterprise: the Case of Enterprise Resource Planning (ERP) Systems". *The Electronic Journal Information Systems Evaluation*. Vol. 13. Issue 1. (2010). Pp. 17-26.

[12] Chen. I.J.. "Planning for ERP systems: Analysis and future trend". *Business Process Management Journal*. Vol. 5. No. 7. (2001). Pp. 374-386.

[13] Committee of Sponsoring Organizations of the Treadway Commision (COSO). (1994). Internal Control – Integrated Framework. The Committee of Sponsoring Organizations of the Treadway Commission. New York. NY.

[14] COSO (Committee of Sponsoring Organizations of the Treadway Commision). (2011). Internal Control – Integrated Framework. www.ic.coso.org

[15] Cottelleer, M.J (2006). "An empirical study of operational performance convergence following enterprise systems deployment. *Production and Operations Management.*Vol. 15. No. 1. (2006). Pp. 74-87.

[16] Cottelleer, M.J ; Bendoly. E.. Order lead time improvement following enterprise information technology implementation: An empirical study. MIS Quaterly. Vol. 30. No. 3. (2006). Pp643-660.

[17] Davenport, T.H.. "Transforming the Practice of Management with Enterprise Systems. In Mission Critical". *Harvard Business School Press*. Boston MA. (2000). Pp.203-235.

[18] DeLone, W.H and McLean ER.. Information Systems success: The quest for dependent variable. *Information Systems Research*. Vol. 3. No. 1. (1992). Pp.60-95

[19] Djohanputro, Bramantyo. (2008, a). Manajemen Keuangan Korporat. Penerbit PPM. Jakarta.

[20] Djohanputro, Bramantyo. (2008, b). Manajemen Resiko Korporat. Penerbit PPM. Jakarta.

[21] Drew, Stephen A; Patricia C. Kelley; Terry Kendrick. "CLASS: Five elements of corporate governance to manage strategic risk". *Business Horizons*. Vol. 49. (2006). Pp 127-138.

[22] Eisenhardt, Kathleen, M.. "Agency Theory: An Assessment and review", *The Academy of Management Review*. Vol. 14. No. 1. (1989). Pp. 57-74.

[23] Elragal, Ahmed A; Ayman M. Al-Serafi.. "The Effect of ERP System Implementation on Business Performance: An Exploratory Case-Study". *IBIMA Publishing*. Vol. 2011. Article ID 670212. (2011). Pp. 1-20.

[24] Fama, EF; French, K.. "Common risk factors in the return on stocks and bonds". *Journal of Financial Economics*. Vol. 33. (1993). Pp. 3-56.

[25] Galbraith, Jay, R.. "Organization Design: an Information Processing View". *Interfaces*. Vol. 4. No.3. (1974). Pp.28-36.

[26] Garber, Mike.. "A Higher Level of Governance – Monitoring IT Internal Control". *ISACA Journa*l. Vol. 6. (2010). Pp. 1-5.

[27] Gattiker. T.F; Goodhue, D.L. Understanding the local-level costs and benefits of ERP through organizational information processing theory. *Information and Management*. Vol. 41. No. 4. (2004). Pp. 431-443.

[28] Giddens, A.. *New rules of sociological method: A positive critique of interpretative sociologies*. (1976). London: Hutchinson.

[29] Giddens. A.. *Central problem in social theory: Action, structure, and contradiction in social analysis.* (1979). London. Macmillan.

[30] Giddens, A.. *The Constitution of Society: Outline of the Theory of Structuration. Cambridge*: (1984). Policy Press.

[31] Grabski, Severin. V; Stewart A. Leech. "Complementary controls and ERP implementation success". *International Journal of Accounting Information Systems*. Vol. 8. (2007). Pp.17-39.

[32] Grant, Gerry. H; Karen C. Miller; Fatima Alali.. "The effect of IT controls on financial reporting". *Managerial Auditing Journa*l. Vol. 23. No. 8. (2008). Pp. 803-823.

[33] Gupta, Atul.. "Enterprise resource planning: the emerging organizational value system". *Industrial Management & Data System*. Vol. 100. No. 1. (2000). Pp. 114-118.

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

[34] Gupta, Mahesh; Kohli, Amarpreet.. "Enterprise resource planning systems and its implications for operations function". *Technovation*. Vol. 26. (2006).Pp. 687-696.

[35] Hadibroto, Ahmadi.. "*Membangun Kembali Kepercayaan Publik*". (2004). Media Akuntansi.

[36] Hall, James A.. "*Accounting Information System*". Sixth edition. International Student Edition. (2008). South Western. Cengage Learning. ISBN – 13: 978-0-324-56093-0; ISBN – 10: 0-324-56093-1

[37] Hare, Jeffrey T.. "Risk Management When Implementing ERP System". *ISACA Journal*. Vol. 1. (2011). Pp. 1-5.

[38] Hedman. J; Borell, A.. "The Impact of Enterprise Resource Planning Systems on Organizational Effetiveness: An Artificial Evaluation". In F.F-H. Nah (Ed). *Enterprise Resource Planning Solutions & Management*. Hershey. London. IRM Press. (2002). Pp.125-142.

[39] Ho, Chin Fu; Wen-Hshiung Wu; Yi-Ming Tai.. "Strategies for the adaptation of ERP systems". *Industrial Management & Data Systems*. Vol. 104. No. 3. (2004). Pp234-251.

[40] Hunton, James E; Barbara Linppincott; Jacquiline L. Reck.. "Enterprise resource planning systems: comparing firm performance of adopters and nonadopters". *International Journal of Accounting Information Systems*. Vol. 4. (2003). Pp. 165-184.

[41] ISO/IEC (International Organization for Standardization / International Electrotechnical Commission. ISO/IEC 27002 standard; information technology – security techniques – code of practice for information security management. Geneva. Switzerland; 2005.

[42] ITGI (IT Governance Institute). COBIT 4th edition. December 2005. http://www.isaca.org

[43] Indeje, Wanyama G; Qin Zheng.. "Organizational Culture and Information Systems Implementation: A Structuration Theory Perspective". Sprouts: Working Papers on Information Systems. Vol. 10. No. 27. (2010). Pp. 1-14.

[44] Ives, B; Margrethe H. Olson.. "User involvement and MIS success: a review of research". *Management Science*. Vol. 30. N0. 5. (1984). Pp. 19-29.

[45] Jack, L; Ahmed Kholeif. "Enterprise Resource Planning and a contest to limit the role of management accountants: A Strong structuration perspective". *Accounting Forum*. Vol. 32. (2008). Pp.30-45.

[46] Jensen, M.C.. Organization theory and methodology. Accounting Review. Vol. 58. (1983). Pp. 319-339.

[47]. Jensen, M; Meckling, W.. "Theory of the firm: Managerial behavior, agency cost, and ownership structure". *Journal of Financial Economics*. Vol. 3. (1976). Pp. 305-360.

[48] Jiang, James J; Gary Klein.. "Risks to different aspects of system success". *Information & Management*. Vol. 36. No. 5. (1999). Pp. 263-272.

[49] Jiang, James J; Gary Klein; Joseph Balloun.. "Ranking of system implementation success factors". *Project Management Journal*. Vol. 27. No.4. (1996). Pp. 50-55.

[50] Kamus Besar Bahasa Indonesia (2010-2011). http://pusatbahasa.kemdiknas.go.id/kbbi/

[51]. Ke, Weiling; Kwok Kee Wei.. "Organizational culture and leadership in ERP implementation". *Decision Support System*. Vol. 45. (2008). Pp. 208-218.

[52] KNKG (Komite Nasional Kebijakan Governance). (2006). Pedoman Umum Good Corporate Governance Indonesia.

[53] Kwon. T; Zmud R.. "Unifying the Fragmented Models of Information Systems Implementation, in Boland, Hirschheim (Eds)". *Critical Issues in Information Systems Research*. (1995). Wiley. New York.

[54] La Porta, R; Lopez-de-SilanesF, Shleifer, A and Vishny, R.. "Investor protection and corporate valuation". *Journal of Finance*. Vol. 57. (2002). Pp. 1147-1170.

[55] Ma, Junhai; Chunyong Ma.. Factor analysis based on the COSO framework and the Government Audit Performance of Control Theory. *Procedia Engineering*. Vol. 15. (2011). Pp 5584-5589.

[56] Madapusi, Arun; Derrick D'Souza.. The influence of ERP system implementation on the operational performance of an organization. *International Journal of Information Management.* Vol. 32. (2012). Pp. 24-34.

[57] McFarlan.. "Portfolio approach to information systems". *Harvard Business Review*. Vol. 59. No. 5. (1981) Pp. 142-150.

[58] Mathrani, Sanjay; Rashid, Muhammad A; Vichland, Dennis.. "Enterprise Systems in Small and Medium-Sized Enterprises". *IGI Global*. (2009). Pp170-183.

[59] Markus, M; Tanis, C. "The Enterprise Systems Experience – From Adoption to Success. In.

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

R.W. Zmud (Ed). In Framing The Domains of IT Research Glimpsing the Future Through the Past". *Cincinnati: Pinnaflex Education Resources, Cincinnati*. USA. .(2000). Pp. 173-207.

[60] Momoh, A; Roy, R; Shehab, E.. "Challenges in enterprise resource planning implementation: state-of-the art". *Business Process Management Journal*. Vol. 16 No. 4. (2010). Pp 537-565.

[61] Morris, John. J.. "The Impact of Enterprise Resource Planning (ERP Systems on the Effectiveness of Internal Controls over Financial Reporting". *Journal of Information Systems*. Vol. 25. No.1. (2011). Pp. 129-157.

[62] Mulyadi. "*Akuntansi Manajemen: Konsep, manfaat dan rekayasa"*. Edisi kedua. (1997). Bagian Penerbitan Sekolah tinggi Ilmu Ekonomi YKPN. Yogyakarta.

[63] Muscatallo, Joseph. R; Small, Michael. H; Chen, Injazz. J.. "Implementing enterprise resource planning (ERP) systems in small and midsized manufacturing firms". *International Journals of Operations and Production Management.* Vol. 23. No. 8. (2003). Pp. 850-871.

[64] Muscatello, Joseph. R; Chen, Injazz. J. "Enterprise Resource Planning (ERP) Implementations: Theory and Practice". *International Journal of Enterprise Information Systems*. Vol. 4. Issue 1. (2008). Pp. 63-77. IGI Global

[65] Nicolau, Andreas I.. "Firm Performance Effects in Relation to the Implementation and Use of Enterprise Resource Planning Systems". *Journal of Information Systems*. Vol. 18. No. 2. (2004a). Pp. 79-105.

[66] Nicolau, Andreas I.. "Quality of post-implementation review for enterprise resource planning systems". *International Journal of Accounting Information System*. Vol. 5. (2004b). Pp. 25-49.

[67] Noorvee, L.. "Evaluation of the Effectiveness of Internal Control over Financial Reporting". (2006). Thesis supervised by Toomas Haldma, Ph.D, Prof. and Andres Juhkam, MA.

[68] Parr, A; Shanks, G.."A model of ERP project implementation". *Journal of Information Technology*. Vol. 15. No. 4. (2000). Pp 301-320.

[69] Poston, Robin and Grabski, Severin. "Financial Impacts of Enterprise Resource Planning Implementations". *International Journal of Accounting Information Systems*. Vol. 2. (2001). Pp. 271-294.

[70] Poston, Robin and Grabski, Severin. "*The impact of enterprise resource planning systems on firm performance"*. International conference on information systems proceedings of the twenty-first International Conference on Inforamtion Systems, Brisbane, Queensland, Australia. (2000). Pp479-493.

[71] Presley, A.. "ERP investment analysis using the strategic alignment model". *Management Research News*. Vol. 29. No. 5. (2006). Pp. 17-49.

[72] Rainer, R. Kelly; Casey G. Cegielski. "*Introduction to Information Systems, Enabling and Transforming Business"*. Third Edition. International Student Version. (2011). John Wiley & Sons, Inc. ISBN: 978-0-470-55310-7

[73] Rogers, Everett. M.. "*Diffusion of innovations*" (5rd ed). (2003). New York. Free Press.

[74] Sambamurthy. V; Kirsch L.J.. "An integrative framework of the information systems development process". *Decis Sci*. Vol. 31. No. 2. (2002). Pp. 391-411.

[75] Shapiro, S.P.. "Agency Theory". *Annual Review of Sociology*. Vol. 31. (2005). Pp 263-284.

[76] Shleifer, A and Vishny, R.. "A survey of corporate governance". *Journal of Finance*. Vol. 52. (1997). Pp 737-783.

[77] Stoel, Dale M; Muhanna, Waleed A. "IT internal control weaknesses and firm performance: An organizational liability lens". *International Journal of Accounting Information System*. Vol. 12. (2011). Pp.280-304.

[78] Stratman, Jeff. K; Aleda V. Roth. "Enterprise Resource Planning (ERP) Competence Construct: Two-Stage Multi-Item Development and Validation". *Decision Sciences*. Vol. 33. No. 4. (2002). Pp. 601-628.

[79] Su, Nai-Hui; Chang, Justine, S; and Chen, Kun-Li.. "*The impact of Enterprise Resource Planning Implementation on Firm's Long-term Operating and Market Performance*. Proceeding Business and Information. (2013). C965-C992.

[80] Sucipto.. Penilaian Kinerja Keuangan. Jurusan Akuntansi Fakultas Ekonomi, Universitas Sumatra Utara. (2003). *USU Digital Library*.

[81] Surat Edaran Ketua Badan Pengawas Pasar Modal Nomor SE-02/PM/2002 Tanggal 27 Desember 2002. Pedoman Penyajian dan

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Pengungkapan Laporan Keuangan Emiten atau Perusahaan Publik; Industri Manufaktur.

[82] Sutton, Steve. G.. Enterprise Systems and the re-shaping of accounting systems: A call for research. International Journal of Accounting Information System. Vol. 7. (2006). Pp. 1-6.

[83] The HIH Royal Commision.. "The Failure of HIH Insurance". Vol. 1, (2003) A corporate collapse and its lessons, Commonwealth of Australia.

[84] Turban, Efraim; Linda Volonino.. *Information Technology for Management: Transforming Organization in the Digital Economy*. 7th Edition. (2010) John Wiley & Sons, Inc. ISBN 978-0-470-40032-6.

[85] Uhlaner, L; Mike Wright; Morten Huse.. "Private Firms and Corporate Governance: An Integrated Economic and Management Perspective". *Small Business Economics*. Vol. 29. (2007). Pp.225-241.

[86] Vijayakumar, Uma. "Top Management Control Functions for Information Systems in Small and Medium Enterprise". *Informatica Economică.* Vol. 13. No. 4. . (2009). Pp.109-113.

[87] Wibisono, Dermawan.. "*Manajemen Kinerja Korporasi & Organisasi: Panduan Penyusunan Indikator"*. (2011). Penerbit Erlangga. Jakarta. ISBN: 978-979-099-249-8

[88] Wiener, N.. *Cybernetics: Control and communication in the animal and the machine*. (1948). Cambridge. MA: MIT Press.

[89] Wren, Daniel, A; Arthur G. Bedelan; John D. Breeze.. "The Foundation of Henry Fayol's Administrative Theory". *Management Decision*. Vol. 40. No. 9. (2002). Pp.906-918.

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Table 2.1 Results of Previous Studies for ERP (Enterprise Resource Planning) Implementation

Theory	Researchers	Results
Control Theory (Canon, 1929)	Kirsch et. al (2002)	The researchers conducted a study to test the relationship between control and information system development project from the point of view of IS professional (IS project leader) with the client, in this case is superior in the company in hierarchical arrangement. Information system project, in this case is ERP implementation, is a project (Presley, 2006; Parr and Shanks, 2000). Results showed: 1. It needs control in the implementation of a project, so empirical research is necessary to prove the usability of the use of self-and-clean control modes. 2. Behavior of the client (superior) who has little knowledge about the development of information system development (ISD), then key factors are needed to exercise control over the development process system by using type of control mode. Type of control mode applied in the implementation of ERP has not been done in the research. Therefore, this study will conduct the type of control mode that will be implemented.
Diffusion of Innovations Theory (Rogers, 2003), Information Systems Success Theory (DeLone et.al, 1992)	Bradford et. al (2003)	The researchers conducted the study to test successful ERP implementation system. The results showed that the degree of consensus in organizational objectives and competitive pressure have a significant effect on the performance of ERP. On the other hand, the complexity of the system, training, competitive pressure, and top management support have a significant connection to the the satisfaction on the level of functional managers to use the new system. In strategic level, it provides a significant support for the performance of ERP implementation; the issues of implementation have connection to user satisfaction. As a fact, user satisfaction correlates with the support of top management and affects the performance produced. The study is in line with the research conducted by DeLone et.al (2003). However, how much the influence is, as far as the journal study has been done, there is no research has been conducted relating to it. Therefore, this study will conduct some empirical tests about the correlation magnitude between top management support with user satisfaction in the context of ERP implementation.
Structuration Theory (Giddens, 1976).	Indeje et.al. (2010)	The researchers conducted the study to identify factors within the organization that affect efforts in the implementation of Integrated Financial Management Information System (IFMIS).

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Theory	Researchers	Results
		Based on the premise that structure and culture in the organization will give effect to the implementation efforts on a project, the result of the research is organizational culture impact the financial information system development and implementation. Empirical tests have not been done on Indeje, et.al's research (2010); it is still a concept. Therefore, in this study, it will be conducted empirical tests.
Structuration Theory (Giddens, 1976)	Jack, et.al (2008)	The researchers conducted this study on a case study in the European Union and the Egyptian government towards the implementation of ERP and within limited context of the role of management accountants. Results showed: (1) ERP Implementation in developing countries such as Egypt is a neglected area of research in the accounting. Thus implementing ERP in developing countries will face its own difficulties. (2) ERP system, as one of developing technology, is mostly used in Anglo-American countries. This suggests that ERP system is not an easy thing to be applied in developing countries. (3) ERP system that has been introduced since the 1990s to replace the in-house-developed legacy systems, gives another problem in terms of integration. Although the intervention to the European Union in its decision to adopt ERP in IMC (Industrial Modernisation Center) is limited in all departments of IMC following their branches makes the IMC adopt ERP, unlike prior research, this intervention failed. (4) In the case of IMC, ERP system does not bring changes to accounting system usability. In contrast, it is used to manage performance-based budgeting and stability. Research was conducted in the European Union and Egyptian Government, while ERP implementation has been up to other countries and ERP has been used in almost all industries. Therefore, in this study, the research will be done in manufacturing industries that have implemented GCG issued by NCGP to the State of Indonesia and that involves COSO as internal control.

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Table 2.3Results of the Previous Research for Adherence to COSO (Committee of Sponsoring Organization of the Treadway Commission)

Theory	Researchers	Results
Control Theory (Canon, 1929), COSO, 2011	Ma et.al (2011)	The researchers conducted a study to analyze performance audit of the government by referring to COSO framework. The result is that the ability of the audit and management give a significant improvement to the effectiveness of the audit process. Then the process of economic development in the region also gives a significant role in improving audit work. Therefore, it is very important to every institution, business supervision agencies to provide guidance and prevention before problems occur. Area in development of the economy and its construction has to be something important to implement internal audit control audit.
Agency Theory (Jensen dan Meckling, 1976)	Morris (2011)	The researcher conducted the study to review the ERP system to the effectiveness of internal control and its implications to financial statements. Results of the research conducted in the period 1994-2003 by referring to SOX Section 404, by means of regression analysis, showed that companies implementing ERP and internal control have a low impact on internal control weaknesses compared to companies implementing ERP but do not have control tools in it.

Table 2.4 Results of the Previous Research for ERP (Enterprise Resource Planning) Performance

Theory	Researchers	Results
General System Theory as the root of Organizational Information Processing Theory (OIPT) (Galbraith, 1974)	Madapusi, et.al (2012)	The researchers conducted the study to examine the effect of ERP implementation on operational performance within the company. The results showed that the performance of each module of ERP implementation affects operational performance. In addition, the resulting performance is different in every module of ERP implementation in overall operational performance measurement. Research to be carried out is how far the performance of ERP influences ERP implementation which has implications to financial performance.