Driving Factors, Enablers & Inhibitors of IT Value Delivery & Risk Management in IT Governance

Arrianto Mukti Wibowo, Budi Yuwono

IT Governance Lab, Faculty of Computer Science
University of Indonesia, Depok, Jawa Barat 16424, Indonesia
E-mail: *amwibowo@cs.ui.ac.id, yuwono@cs.ui.ac.id*

Abstract

IT governance is the authority and decision making structure of organization leaders & managers to optimize & control the use of IT resources from planning, implementation & monitoring/evaluation to reach organization's objective, by using certain mechanisms. Good IT governance ensures that IT is delivering the desired value for the organization while minimizing the inherent risk of IT. In this paper we elicit and discuss what drives organizations to improve their governance over IT, what factors enables good IT governance and what are the inhibitors of good IT governance. This paper is drawn from eighteen IT governance qualitative studies at large organizations with additional findings taken from our experience as strategic IS/IT consultants. The findings from this research are important for policy makers to revise or devise new policies to enable better delivery of IT value and mitigating IT failures, and may serve as a stepping stone to further research.

Keywords: *IT governance, strategic IT drivers, enabler & inhibitors of IT governance.*

1. Defining IT Governance

As there has been some misunderstanding and different perceptions of IT Governance, we shall attempt to first define it. The first mention of IT Governance was actually coined by Henderson & Venkatraman (1993), in their seminal paper in IBM Systems Journal. They define what was called 'I/T Governance' as selection and use of mechanisms to obtain and deploy competencies.

Still in the same journal, Luftman (1993), defines 'I/T Governance' as the extent of ownership of organization's technology (e.g. end user executive, steering committee) or the possibility of technology alliances (e.g. partnership, outsourcing) or both. However, later on Luftman redefined his definition of IT Governance to 'the degree to which the authority for making IT decisions is defined and shared among management, and the processes managers in both IT and business organizations apply in setting IT priorities and the allocation of IT resources' (Luftman, 1996).

Brown & Magill (1994) defines IT Governance as a concept that describes the locus of responsibility for IT functions. Robert W. Zmud and V. Sambamurthy in their 1999 research on multiple contingencies that influence IT decision making, refers IT Governance to the patterns of authority for key IT activities (Sambamurthy & Zmud, 1999). Shortly afterwards, they propose another perspective similar to Brown & Magill (1994). They defined IT Governance as the locus of enterprise decision-making authority for core IT activities (Sambamurthy & Zmud, 2000).

According to IT Governance Institute *Board Briefing on IT Governance, 2nd ed*, the organization that published the COBIT standard, IT Governance is the responsibility of the board of

Directors and executive management. IT Governance is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategy and objectives. Critical to the success of these structures and processes are effective communication among all parties based on constructive relationships, a common language and a shared commitment to addressing the issues (ITGI, 2003).

Included in the same document are the IT Governance focus areas, which consist of: stakeholder value drivers; strategic alignment; value delivery; resource management; risk management; and last but not least, performance management.
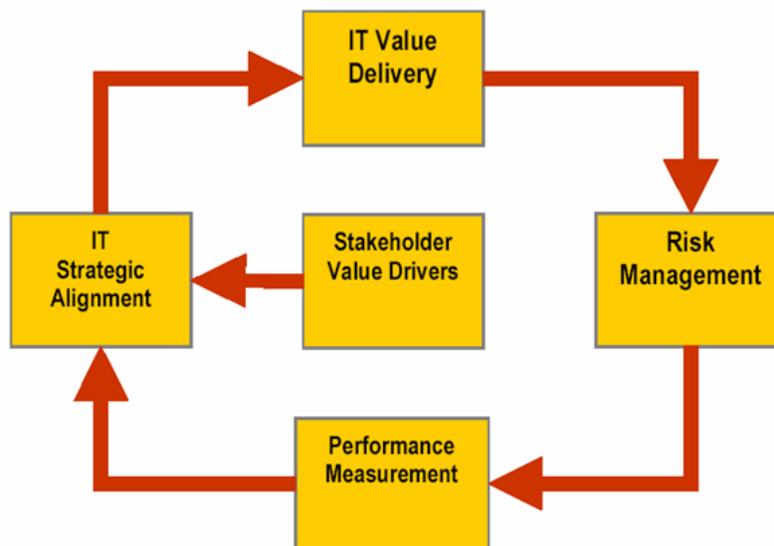

Figure 1. IT Governance Focus Area (ITGI, 2003)

Schwarz & Hirschheim (2003) defined IT governance as the IT related structures or architectures (and associated authority pattern) implemented to successfully accomplish (IT imperative) activities in response to an enterprise's environmental and strategic imperatives. In defining governance this way, they included three essential elements to governance:

1. Strategic and environmental imperatives that define a necessary response from IT.

2. Structures designed to support the response.

3. An imperative for IT to be successful in this design.

Peter Weill & Jeanne Ross defined IT Governance as specifying the decision right and accountability framework to encourage desirable behavior in the use of IT (Weill & Ross, 2004, 2005). It seems that their definition is somehow similar to the definitions of Sambamurthy & Zmud (1999, 2000). Weill & Ross's (2004, 2005) definitions seems also be embraced by Saha (2005).

Peterson (2001) also has somewhat similar definition as above. He defined IT Governance as the formal allocation of IT decision-making authority. However in 2004, Peterson reformulated and enhanced his definition. He defined IT Governance as the system by which an organization's IT portfolio is directed and controlled. It also describes the distribution of IT decision making rights and responsibilities among different stakeholders in the organization, and the rules and procedures for making and monitoring decisions on strategic IT resources (Peterson, 2004b).

During an interview in *Information Management*, Wim Van Grembergen, stated that IT Governance is the organizational capacity exercised by the Board, Executive management and IT management to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT (Van Grembergen, 2004).

While agreeing with ITGI's definition, Rau (2004) also explained that IT Governance is about the way senior managers interact and communicate with IT leaders to ensure that technology investments enable the achievement of business strategy in an effective and efficient manner.

Standards Australia (2005) has devised their own standard for 'Corporate Governance of Information & Communication Technology', known as AS 8015 - 2005. It defines Corporate Governance of ICT as 'the system by which the current and future use of ICT is directed and controlled. It involves evaluating and directing the plans for the use of ICT to support the organization and monitoring this use to achieve plans. It includes the strategy and policies for using ICT within an organization'.

2. Background, Problem & Objective

At the beginning, we start our research by choosing several IT Governance frameworks (ITGI, 2003; De Haes & Van Grembergen, 2006; Standards Australia, 2005; Weil & Ross, 2004). We inductively use the existing theories as the baseline to do case studies. We tried to find patterns through the inductive method by observing aspects of real social life. We hope that we can find patterns that may point to a more general or universal principles. Glaser & Strauss (1967) invented the term *grounded theory* in reference to this method.

De Haes & Van Grembergen (2006) had previously conducted several case studies on best practice IT Governance at six (6) Belgian organizations. It also includes their previous major in depth case study at KBC, one of the large banks in Belgium (De Haes & Van Grembergen, 2005). They started their case study with several propositions. First, organizations are using a mix of structures, processes and relational mechanisms to build up an IT governance framework. Second, the chosen mix of structures, processes and relational mechanisms is dependent upon multiple contingencies. Lastly, a well balanced mix of structures, processes and relational mechanisms will enable better IT governance outcomes. Findings of from these six case studies indicated that those propositions are supported.

It is interesting during the study, we noticed that it *seems* organization develop more complex and fine tuned process, structures, decision making mechanisms and communication mechanisms for IT Governance when they are in a free market environment which forces them to become more effective & efficient in governing their IT.

In addition, it became more interesting as we noticed that although both ITGI and AS-8015 mention pressures that drives IT Governance (i.e. 'stakeholder value driver'; 'business pressures' and 'business needs'), we were unable to find any scientific research paper that gathered empirical evidence of what the drivers are. Moreover, Schwarz & Hirschheim (2003) also mention that one element of IT governance is the IT response to strategic and environmental imperatives.

Then, we also noticed that some organization, knowingly that they had to carry out certain best practice process, can not perform that process, because of certain *inhibitors*. In other cases, we found the opposite. We found several factors that actually help or *enable* the organization to implement good IT Governance.

As we continued, it appears that our research is also quite different to Luftman, Pap & Brier's (1999) research on enablers & inhibitors of business IT alignment. Their research is primarily a quantitative study, ours is more of a qualitative study. Comparing the results of our research to

Luftman, Pap & Brier's (1999), ours give more understanding of the situation and social context for each of the cases.

To recap, our research objectives are:

1. What drives organizations to strive for better governance of IT?
2. What factors enable good IT Governance practices? What are some best practice IT Governance mechanisms?
3. What are the inhibiting factors of good IT Governance in those organizations? Are there any weak practices of IT Governance mechanisms inhibiting the IT value delivery & IT risk management?

3. Research Framework

To construct our research framework, we shall start by constructing the variables of our interest. First, because of their similarities, we combine the 'stakeholder value drivers' from the ITGI (2003) IT Governance focus area with AS-8015's 'business pressures' and 'business needs' (Standards Australia, 2005), into a new dimension we call 'Drivers for IT Governance'. It demonstrates what are the things that force or push the organization to implement good IT governance.

Although during the course of the research we've collected data for IT Governance patterns (i.e. structures, process, relational mechanisms, decision making structures, etc.), in our research it is an *intermediary step* to elicit, extract or identify parts of the governing mechanisms that might have problems or might contain or influenced by certain enabling factors. Readers are referred to Van Grembergen & DeHaes (2008) which has summed their research on IT Governance patterns. While some best practice IT Governance mechanisms *will* be shown, along with some weak practices, not all will be shown in this paper. Our focus is on novel, less obvious and significant best practice IT Governance mechanisms.

When we operationalize the above concept into interview questions (in local language), it seems it is not as easy as it sounds. For example, when we ask what relational mechanisms are used in the organizations (we give some examples and explanation), it is quite easy for the respondent to name some of the mechanisms (business-IT *liaison*, IT steering committee, job rotation between IT-business, corporate portal, etc.). However, it *seems* that they were not seeing any problems with the current relational mechanisms in their organizations. Therefore, we need to 'twist' the question so we can elicit more clearly the inhibitors and enablers of good IT Governance.

A way to do that is to take a look at the outcomes of having good IT Governance. According to *Board Briefing on IT Governance, 2nd ed* (ITGI, 2003), the outcomes are IT value delivery and risk management. But if we ask directly without rephrasing – for example – what are the inhibitors at your organization in delivering IT value, it seems that the questions still too abstract to some of our respondents. Therefore, we need to operationalize the questions further. We argue to give the respondents a simplification of IT value delivery, we give 'successful completion of an IT project' as the example in our question. Therefore, we asked the respondents to simply tell us what are the inhibiting things of successful completion of IT projects. We did the same to elicit enablers of successful IT projects, and also to elicit why an IT failure (in relation to IT risk management) might happen or be prevented.

To make a clearer picture, we sketched a cause effect from all of the contributing factors (causes, enablers, inhibitors) down to the outcomes of IT Governance. It sketches the causes, which are the 'best practice' IT Governance mechanisms is currently working in place, some weak practices and what are the enablers and inhibitors of good IT Governance.

However, it must be emphasized that in some cases the boundaries might be unclear amongst currently working IT governance mechanisms, enablers and inhibitors of IT governance. From a

practical point of view, the boundaries are not important, since business only need to know how to make my IT governance better by eliminating inhibitors, implementing best practice IT governance mechanisms, and instilling the enabling factors of good IT Governance. Therefore, in our discussion, we may discuss enabling factors of IT Governance right along with IT Governance best practices. In other words, classification is not a major issue in this paper.
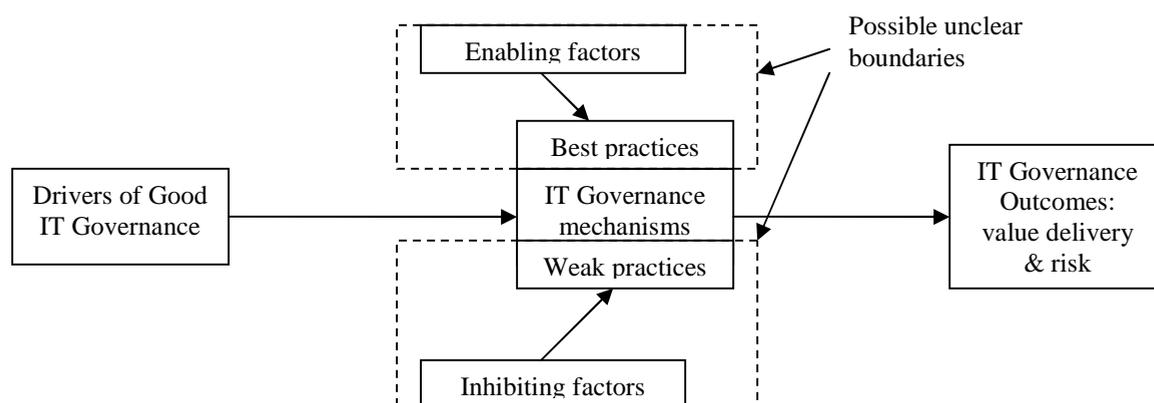
Figure 2. Research Framework

4. Methodology

This paper is based on the eighteen of cases at several large Indonesian organizations, led by the authors under IT Governance Lab, Faculty of Computer Science, University of Indonesia. It was an explorative and qualitative research, because we want to find new ideas in the IT Governance family of theories. Those grounded research were mainly conducted during January to December 2007. In addition, we would also like to include our observation as strategic IT consultants at large organizations using the framework of ethnographic research, since we immersed ourselves in the daily operation of the organizations we studied, and sought to place the phenomena studied in their social and cultural context (Lewis, 1985).

The samples were drawn from a carefully constructed sampling frame. The sampling frame includes organizations which are:

a. State Owned Enterprises (SOEs), because they have the obligation to comply with Good Corporate Governance mandated by the Ministry of SOE. Secondly, SOEs are interesting because they are experiencing liberalization & privatization with government slowly relinquishing part of its shares to public or foreign investors. This in turn will require more rigor governance for transparency of majority shareholder and the executives to protect the interest of minority shareholder and the public.

b. Banks, because the have the obligation to obey strict and detailed central bank rules and regulations, and they have relied completely on IT for their daily operations.

c. Some of the government agencies which we believe should have a high intensity of IT use.

d. Publicly owned companies, because they have to obey strict information disclosure regulations from Securities Exchange Authority.

e. Highly regulated industries, such as airlines companies.

f. Privately owned companies in a competitive market.

After using the sampling frame, we use convenient sampling to reach to our respondents. Convenient sampling allows us to use our existing contacts, relations, connections or ties with the organizations. Some of our samples are actually also our consulting clients. It allows better in-depth discussion.

The case studies research design was carefully designed by the author. The case study research observation guide and the interview guide were developed based on the aforementioned research framework in local language. The research assistants then collected data, and were allowed to modify the interview guide during the interview to suit the situation. The respondents in those case studies are mainly the IT managers, and in some cases we had access to the other functional managers or business unit managers. The interviews were recorded and transcript. The transcripts are then analyzed with a qualitative data analysis software, using axial coding (Neuman, 2003) prepared by both the author and the research assistants. The author then reviewed and qualitatively analyzed the data with the research assistants.

5. Discussion

5.1. Analysis of Drivers of Good IT Governance

We believe that IT Governance will only be an urgent issue in an organization, and will drive the organization to govern its IT better, if the organization receive enough pressures. Some of pressures we identified includes:

1. Competition and free market which drives the organizations to keep effective and efficient (cases at liberated SOEs, banks, private companies, and telcos). These organizations must use IT as a source of competitive advantage, therefore comes the need to governing IT properly.

2. Pressures from shareholders and directors regarding the accountability of huge IT investments (case: banks, SOE, and government agencies). Specificly, the Parliament, which approves national annual budget, is scrutinizing risky IT investment in many government agencies which may lead to corruption.

3. Strict regulation in some industries, either by the government (such in banking sector by the central bank) or international association (airline industry), require certain IT compliance.

4. Specific regulation which necessitate or compel the organization to run its business. For example: SOEs, government agencies. In Indonesia, many public service, are also provided through SOEs. In one of our case study, an insurance SOE, has the mandate from the government to provide coverage for travel accidents by law. Failure in providing such coverage, may actually results in incompliance to law. However, providing travel insurance for millions of mandatory insurance holder can not be done properly without a well managed IT.

5. Regulations which forces organization to put Good Corporate Governance (GCG) in practice (cases at SOEs and banking). The Ministry of State Owned Enterprises had issued the Ministry Decree no KEP-117/M-MBU/2002 on GCG Practices at SOEs, and the House of Parliament had issued the Act no.19/2003 on laws governing SOE which also includes GCG. Some of the state owned enterprise *interpret that their IT Governance initiative is part of the mandatory Good Corporate Governance requirement for SOEs*. Correspondingly, in the banking sector, the central bank had also issued regulations on banking GCG. In addition, the new Corporation Act no.40/2007, also includes several strict GCG principles in it, that might be percieved by some as another driver for Good IT Governance.

6. Accountability and transparancy of publicly listed company by Securities Exchange Agency (*Badan Pengawasan Penanaman Modal dan Lembaga Keuangan*). The agency had issued Kep-45/PM/2004 no.IX.I.6 that requires the Board of Directors and Board of Commissioner

not to publish false information and also disclose material information. Consequently, the information technology to produce financial report must also be governed appropriately, with proper internal controls. Apparently, the influence of Securities Exchange Agency is strongly noted in many of our case studies.

7. Pressures from public and stakeholders for government agency accountability & transparency in the context of government reformation. As the country is heading towards better freedom of press, democratization, stronger public participation, and corruption eradication, it is immenent for government agencies to reform themselves. Information technology is seen as a tool to enable better governance, and also as a tool for better public service. Therefore the use of IT in the context of government reformation is seen crucial.

8. Pressures from the directors, managers or users within the organization to IT unit to deliver accurate & reliable information (cases at government agencies). In one of the organizations that we studied, each division (working unit) has its own information systems. The systems worked well serving each division. However, when the director wants to get certain information, the director would get different results from each division. Even worse, each division's information systems are not talking to each other. Getting accurate & reliable information was hard, so the director installed a special unit to manage information. We argue here that the decision to restructure the IT governance mechanisms is driven by the need to get accurate & reliable reports.

9. Pressures from business partner which provides specific rules for the use of IT, for example cases at banks with credit card brand and payment service companies. Credit card brands are especially strict on dealing with transaction problems which relates to IT risks. Airline companies are also facing the same issue when it comes to cooperating with other airlines or a global airline network.

10. Merger & acquisitions which forces the integration of different legacy systems (case at a bank). It is impossible to successfully manage the integration of different legacy systems without propper IT Governance, from the board level down to the service management and service delivery at the implementation level. The merger case of Great West Life Insurance presented by Saull (2000) is somewhat similar to one of our case study.

11. Implementation of a single core system or an ERP system (SOE, banking), which forces the organization to handle the implementation more carefully. Improper implementation will cause significant risk to the organization.

12. While considered an event that happened many years ago, it is interesting to note that one respondent mentioned that one of the drivers of having a better IT Governance is the Y2K (case of a government agency and a private company).

Although at this stage we have not empirically prove through statistics, however it seems to us that competition and pressures from free market provide the major urgency and drive for better IT Governance. If we assume that this hypothesis is true, then it has its implications. It means that if regulators want to push IT Governance in organizations, it is much better to *condition the environment* of the organizations themselves. This approach is much better compared to creating 'IT Governance' regulations.

In addition, while having a 'government endorsed' IT Governance reference model is good, we think that being too prescriptive on how to implement IT Governance may hamper organization performance, since IT Governance is organization specific.

In the context of government agencies, it might be less effective to have IT Governance regulations, but after analyzing the data, we think that it is much better to strengthen components of democracy, such as freedom of press, corruption eradication, public service reform, civic rights

awareness, national competitiveness and freedom to obtain public information. Therefore, the need of IT Governance should not be artificial, but it should be driven by real and important causes.

5.2. Analysis of IT Governance Enablers & Best Practices

In this section, we shall discuss the enablers and best practice IT Governance. We found that some of the IT Governance enablers are:

1. IT awareness, understanding and support from top management (at private organizations, banks, SOEs). This awareness and understanding is the basis of good IT leadership from top management.

2. The use of objective and performance based management systems such as Balanced Scorecard, which is then cascaded into IT BSC (cases at SOE, banks and private companies). In these cases, the IT BSC or IT Strategy Maps were developed as part of a corporate wide BSC/Strategy Maps initiative.

3. Strong awareness of risk management (SOE, banking, private companies). This awareness of risk management is translated in some organizations by having a risk committee on their Board of Commissioner[1]. The awareness of the banking industry to risk as second to nature, as Indonesia had terrible experience during 1998 the monetary crisis. The strong awareness of risk management is deeply rooted to many parts of the organization, including the IT unit, which enables the IT unit to become more receptive to new ideas, practices and technologies that helps them to manage risk better.

4. Multi level authority in the use of certain budgets depending on the value of the project at all kinds of organizations. When the value gets to a certain limit, the budget has to be approved by a higher authority and may require more rigorous bidding. However, by determining the right degree of authority of middle managers, we believe that it may speed up procurement of urgent IT needs.

5. The existence of investment committee and audit committee at the Board of Commissioner at SOEs and banks. While in a certain views see that these committees as bottleneck, we understand that its function is to strengthen internal control and mitigate possible risk of large investments made by the organization. Based on our observation, those committees also exercise control over significant IT investments and IT audit program. It is worth noting that the position of this investment committee at the Board of Commissioner level reflects some changes in the new Corporation Act no.40/2007, where now the Board of Commissioner may also held accountable for act of the company if they do not perform their monitoring functions over Board of Directors.

6. The availability of contingency budget, which is quite important to cope with immediate problems. In contrast, some organizations, especially government agencies, nowadays do not possess contingency budget anymore due to alleged corruption issues. However, based on our case study in a bank and also our experience as consultants, we strongly believe there is a need for it.

7. Since budgeting for subsequent fiscal year starts early on the running fiscal year, often there is more than a year time span from budgeting to realization. However, sometime it is very difficult for IT managers to deal with uncertainty (which is common). Therefore it is natural to have budget change management process or budget adjustment process during the running fiscal year. We see that changes in IT project budget are possible in many organizations. The

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[1] According to the Corporation Act no.40/2007, Indonesia embraces double chamber corporate governance, where a board of commissioner supervises and monitors the activity of the board of directors as the executives that plans and operates the company.

difference is that, in some organizations such as government agencies, the budget change process is of very difficult due to long and inefficient bureaucracy.

8. Besides budget change management, sometimes organization units are allowed to adjust their key performance indicators (KPI) as to make the KPI more realistic and achievable. (case at banks and SOEs). Having an unrealistic KPI may lead to false performance reporting at the end of the year and may also make the IT unit loose priority.

9. Existence of a Project Management Office (PMO). In many organizations such as banks and telcos, the PMO that acts as a monitoring unit of *all* internal projects from proposals to execution to benefit realization management. Some are specific Information Technology PMO, which works tightly with a corporate-wide Change Management Office (CMO) to prevent units to step on to each others' toe. In this case, the CMO reports directly to the Board of Directors, and is at the same organization level as the IT unit.

10. The basic assumption that organization design can serve as an infrastructure to execute a strategy. In these organizations (cases at SOE, banks and private companies), even the IT unit is carefully thought, the interrelationships amongst different units to IT is well designed, and they are working in place. One bank has a novel design to have a human resource (HR) manager *within* the IT unit, which manages IT unit's competence needs. Of course it must coordinate with the corporate HR unit.

11. Reaching a consensus for decision through informal discussion. One perspective may see this as a breach of GCG rule. But apparently, from a case study in large private financial company, it seems it is quite important when a communication bottleneck happens between business & IT. Interpersonal skills are also seen important to influence certain IT decisions.

12. Commitment and policy to make knowledge available to every staff in the organizations using any means, from a simple knowledge sharing session at a private company to the use of high-end knowledge management systems at banks.

Additionally, some best practices were also identified during our research and are elaborated below:

13. The mandatory of benefit management process of every investment in the form of business case before implementation (case study at a bank and a government agency). The business cases are not confined to financial calculations only, but also give much wider perspective from non-financial issues. In a government agency, they even derive their investment prioritization based on a modified version of information economics (Parker, Benson & Trainor, 1988) tailored for non-profit organization.

14. In addition, we also found in many organizations that the prioritization of IT investments was discussed among all business units, IT unit and top management. The climate of transparency may actually strengthen trust among those parties, which is the basis of the new paradigm of IT Governance (Peterson, 2004).

15. Risk assessment during feasibility study and project monitoring, in other words, during the whole project life cycle.

16. The use of charge backs of IT service and cost at several SOEs and banks. In some cases it is linked to service level agreement (SLA) between IT and business units, similar to the one described by Weill & Ross (2004). In a bank, the accounting calculation can go down to cost per transaction, and gets quite complex when applied to the charge backs. In other financial company, business unit became more sensible in their additional IT hardware request after charge back mechanism was introduced. Based on our experience, we argue that IT charge backs is only applicable in organizations where IT use is already well accepted and has become a necessity for the business users. Applying chargebacks in an organization where IT use is still in immature will discourage further use of IT.

17. To measure perceived IT service quality, the IT unit conducts a user satisfaction survey (case at a private company).

18. While user acceptance test (UAT) were quite common, pre-implementation independent audit was considered important by a private financial company. The new systems will not go live before all the bugs were fixed and the auditor issues a clearance.

19. IT liason to business was found in one case study at a large multi-division bank, similar to the description of Peterson (2004). Its function is to facilitate the IT need of a particular business unit. However IT liaison to business is deemed unnecessary by another private financial company, because the quite narrow core business to serve.

20. One interesting practice that we saw several SOEs is the transfer of several business unit managers to IT unit, to lead their ERP implementation *and* operations. In a particular SOE, they even restructure the sub-units *within* the IT unit to reflect the ERP modules names. Furthermore, they installed the former functional unit manager to lead part of the ERP implementation and operations. They become accountable to the success of the ERP implementation project, not the technical staffs. For example, the finance & accounting manager was transferred to the IT unit, and was then positioned to manage financials module of the ERP.

Note that the use of 'best practice' term must be used carefully, that the so called 'best practice IT Governance mechanisms' may or may not work in other organizations, since IT Governance is unique.

5.3. Analysis of IT Governance Inhibitors

We shall now discuss the inhibitors and weak practices of IT Governance. Discussions on inhibitors are also motivated by paper of Saha (2005) on IT governance related problems found in his research, among them are slow mechanisms to make IT decisions and IT resources are frittered away in fire-fighting.

We found that some of the IT Governance inhibitors are:

1. Lack of IT leadership (case at a government agency). In another government agency, IT leadership really depends on who is currently heading the organization. The lack of leadership may translate to fewer resource and commitment for IT project & initiatives.

2. Incapability of procurement unit to properly procure high-tech IT products that require special technical knowledge. Sometimes, the rules and regulations that used to procure IT products or service are generic, not optimized for IT procurement. The Government Regulation no.80/2003 about Procurement for Government Agencies was originally designed for civil construction procurement which is incompatible with the nature of IT product and service. Due to complicated rules of Government Regulation no.80/2003, the Ministry of SOEs in 2008 issued an order that all SOEs are not obliged to the Government Regulation no.80/2003 and allowed them to setup their own procurement rules conforming the GCG principles.

3. No formal process to prioritize IT investments. This problem is found in many government agencies. The process was found to be unstructured, and made worse with the fact in some organizations, the IT investment decisions (and their priorities) were not discussed amongst organization units with IT in a formal process.

4. In addition to the problem mentioned above, when there is a budget cut from Ministry of Finance, it does not mean the government agencies can re-prioritize their IT investment and drop low priority projects. They simply still have to execute all proposed projects *with* a lower budget.

5. Justification of investments, including IT investments, uses only capital budgeting approach such as NPV, ROI and IRR (case at several SOEs and a bank). Some IT investments such as the deployment of national wide area network project, does not easily lend itself to financial investment calculation justification.

6. Data ownership at business unit, not at corporate level (case at government agencies). The implication is that integration is not easy, since each business unit mad it hard for the IT unit to conduct data integration projects. According to one of respondent, the habit of keeping data to oneself is because the business managers prefer to report the latest data directly and personally to the top management.

7. Apart from inappropriate data ownership problem, another problem is that every business unit are allowed to propose its own IT projects independently, although technically they should be a one integrated systems for the whole organization. We think that apart from lack of leadership, the practice to get incentives from projects is also causing this problem. The larger the value of the IT projects, the larger the chance the business unit will get project incentives. The implication of this weak practice is very apparent, as in one ministry they can have so many overlapping systems in many of its business units with no means to integrating the data accurately. It is worth noting that in some government organization, this practice is fading away because of better GCG program.

8. Quite similar thing but for a different reason happens at a SOE. At an SOE, each business unit was allowed to procure their own applications without the knowledge of the IT unit, to allow faster delivery time without the bottleneck of the IT unit. What happened was that the IT unit lost track of the IT inventories and made them harder to manage the IT assets/resources in the organization.

9. Rules that mandate that a project must be executed within one year, and must be bid again next year although the nature of the project should be a long term relationship (case at government agencies). Examples include wide area network procurement and also long term IT maintenance procurement. What happened is that during several months, the vendor is working for 'free' without contract, only based on good faith and trust. It must be noted that multiyear projects are possible since 2005, but the approval for multiyear projects are considered difficult to get from Ministry of Finance.

10. Mandatory closing of projects in December every year, and therefore projects are forced to finish before the end of the year. One of the implications is that the testing was not conducted properly and thoroughly (case at SOE and government agency). In spite of this, in other SOE, it is possible to carry over the project to next year. But there is a tendency of the IT manager and the vendor to formally close the project without caring too much of the quality, since the IT manager's will not get the end of year bonus and the vendor will not get paid on time if the project is not formally closed.

Furthermore, some weak practices were also identified during our research:

11. No formal IT planning, in some cases lack of standard and planning for integration architecture (case at government agencies and SOE). These made the IT unit operate based only on ad-hoc user request and many data replications.

12. Improper testing, such as incomplete *user acceptance test* (UAT), can also be caused by business units rushing the IT unit to implement the new systems. In another case, UAT was simply signed-off by the user without the user testing the new systems because lack of competence to conduct the test comprehensively (case at private company).

13. Lack of post-implementation review causing organizations unable to learn from their own experiences (case at SOEs, banks and government agencies).

14. Inappropriate incentive mechanism. During an implementation of ERP systems in a SOE, the IT staffs were paid incentives on top of their usual salary, based on number of months of the ERP project implementation. What happened was that the rate of completion actually slows down, because the IT staffs tends to delay the delivery of the ERP systems.

15. Lack KPI sharing between IT unit and business unit during the roll-out of new information systems (case at a bank). The business unit was not given enough accountability for the success of the roll-out, burden in many ways were taken by the IT unit.

16. Inappropriate assignment of business unit staff when asked to attend an IT coordination meeting (case at a SOE). We think that this is caused by lack of attention and perceived lower priority of IT issues by the business unit managers.

17. Mismatched training needs requirement of IT unit with the corporate training program. This happens in several government agencies, because the IT unit and the corporate training centre plans their annual program independently and rarely there are talks to discuss IT training needs. However, in one agency, they argue that the corporate training centre provides only common trainings across the organizations. Therefore, facilitating specific IT trainings is not their responsibility.

18. Lack of skilled IT human resource (case at a government agency). It might be caused by wrong recruitment process, low appreciation of technical staff skill that translates to low salary, and problematical career track for IT track as a specialist in the organization.

19. Users not IT literate (at government agencies).

20. Communication problem due to language barrier between business & IT, a case we believe is quite common, and even was found in a private company.

6. Conclusion & Further Research

This paper uncovered practices from several grounded research at eighteen large organizations that includes banks, state owned enterprises (SOEs), government agencies, private companies and also publicly listed companies. This research is quite special in the sense it provides a frank and candid in-depth evaluation of inhibitors and weak practices of IT Governance, not just good IT Governance.

It seems to us that political, social and economic changes in Indonesia during the last 10 years had its impact – albeit indirect – to good IT Governance. The change towards free market, government reform, supremacy of law, transparency and accountability issue, seems to drive and propel the need for IT Governance.

We are seeing the transition toward better governance of organizations (be it public-sector or private), therefore in many instances, we may still see weak practices along with some best practices in an organizations, especially at government agencies. However, some of the inhibitors are actually newly strict but imperfect regulations causing ambiguities. For example, at a SOE and some government agencies, the procurement unit being too prudent in selecting vendor, causing delays in procurement. From a transparency and accountability perspective, prudent practice in vendor selection supports the good governance policy. But by adhering to the strict procurement regulations, it sometimes sacrifices the time required to complete the actual implementation project.

At SOEs, which are transforming from a rather monopolistic market into a liberalized market, we can still see remains of clumsiness, which hampers their capability to perform effectively and efficiently. Banks due to their long history of dependency on IT we believe had the best IT Governance found in our research. Many of the best practices we found are also inline with Val IT Framework (ITGI, 2006) principles, although not any of our respondents claimed that they are using Val IT Framework.

We have not studied the contingencies of IT Governance (Sambamurthy & Zmud, 1999; Peterson, 2004) yet. We believe it is interesting to carry on the research using correlational statistics, what contingent factors can contribute to certain IT Governance practice or even their inhibitors and/or enablers. Even a simpler descriptive quantitative research to find the chronicness of certain problems or inhibitors might be very useful for policy makers and organizations.

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8. Reference

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