Adoption of COBIT 5 and ITIL in Small and Medium Size Enterprises in China

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Abstract

This thesis investigates the adoption of COBIT 5 and ITIL used as the frameworks for IT governance (ITG) in Chinese Small and Medium Size Enterprises (SMEs). With the implementation of IT governance, the IT will be fully used to promote the core business of the enterprise and the risk and investments of IT will be balanced.

To achieve the purpose of this thesis, questionnaire and mail survey are sued as the method for the research. We received 140 responds from the Chinese SMEs and these data are used to analysis and the results are used to answer the research questions.

As a result shows that, ITIL is more adopted by Chinese SMEs since its solution gets from the best practice and easier to apply than COBIT. In addition, we generate some suggestion for Chinese SMEs and we hope these suggestions may improve the IT governance work in those companies.
Nowadays in China, most of the companies are small and medium enterprise (SMEs), the competition between them is increasingly intense. Here, IT is used as an efficient tool to promote the core business and increase the profits. But the governance of IT is usually ignored by the board of directors and this will lead the result that the IT works not good as it is expected.

For the large enterprises, there are many mature frameworks designed to be applied to governance the IT such as COBIT and ITIL. COBIT can be considered as a cycle of the relationship that derived between IT processes, IT resources and business requirements. But we found that only COBIT is not enough to fulfill the requirement of Business/IT alignment. COBIT is only providing the way to governance but not the measure the IS of the enterprise.

ITIL (Information Technology Infrastructure Library) introduces a guidance of best practice process of IT alignment and management, it becoming a de-facto standard for IT management in the organization. Moreover, ITIL provides a complete fundamental framework for IT governance and IT service life cycle which helps an organization improve its performance.

However, SMEs are quite different form the large companies in some aspect, due to the limitation of people and material resources, the whole COBIT and ITIL seems too complex for a small-scale and medium-size enterprise to follow, so our idea here is through the survey to see the adoption of COBIT and ITIL in SMEs in China so that to generate some tips for them to use the IT governance frameworks.

Through the data we collected from the questionnaire we send by mail survey, we get the adoption of COBIT 5 and ITIL used as the IT governance frameworks in Chinese SMEs, also, through the literature review of the situation the Chinese SMEs are facing when we implement the IT governance work, we generate some suggestion for them.

**Keywords:** COBIT, ITIL, IT Governance, Small and Medium Enterprises, China
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<td>BIA</td>
<td>Business and IT alignment</td>
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<tr>
<td>CSI</td>
<td>Continual Service Improvement</td>
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<td>COBIT</td>
<td>Control Objectives for Information and related Technologies</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>IS</td>
<td>Information system</td>
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I Introduction

Business and IT (Information Technology) alignment is considered as one of the top issues of management in IS (information system) of the enterprise. But alignment is described as an object which can never be completely achieved and it needs to be adjusted within the organization frequently (Baker and Jones, 2008). To maximize alignment enablers and minimize inhibitors, various frameworks are developed for IT Governance (ITG) which is an important concept for IT organizations in the enterprises.

Although there are many guide and frameworks for ITG, but most of these frameworks are too big for the Small Medium Enterprise(SMEs) which are usually recognize with different factors from those large companies such as number of staff, annual budget, amount of hardware and software for IT and the number of customers (Sharifi et al., 2009). These factors decided that the SMEs are not able to accept so many changes accrued by different frameworks; they are also doing not need those giant frameworks that only make bureaucracy in their organizations and may cause losing their core tasks (Masarat Ayat, Maslin Masrom and Shamsul Sahibuddin, 2011).

In this thesis, we want to look at if COBIT 5 and ITIL are used as the frameworks for IT governance in Chinese SMEs. Also, through our research, we want to generate some tips for them when they implement IT governance.

1.1 Background

Business competition is forcing enterprises to become agile, in order to be more competitive information technology (IT) plays an increase important role in improving operational process and guiding managerial decision making. Effective IT management and governance are particularly critical for small and medium enterprise.

Many scholars argue that a SME can be viewed through the lens of a large firm (Ballantine et al., 1998). SMEs are often centralized structures and to employ generalists rather than specialists, and this results in a lack of IT/IS knowledge and technical skills. Second, SMEs lack the financial resources to spend on IT infrastructure and to train their IT users (Alireza Montazemi, 2006). We cannot be denied that a large enterprise has enough human and material resources to adopt the mature IT governance framework, because those organizations are able to make the appropriate adjustments and choose it wisely when they have noticed
some part of the framework is improper. “Organizational theories and practices, such as bureaucratic structure and organizational behavior applicable to large organizations, may not be valid in small ones” (Riemenschneider et al., 2003). Most of the frameworks are nature which is more suitable for large-scale enterprise because they have a complete system and higher corporate maturity, so more in line with the framework. The mechanisms of IT governance are applied much more extensively in large enterprises than in SMEs (Huang et al., 2010).

But what about the small-scale enterprise? Due to the complexity and practicability of the framework, for example COBIT and ITIL, small-scale enterprise is hardly reached the condition to adopt those frameworks. However, to some extent, not the entire framework is suitable for small-scale enterprise, but some modules and strategies of those frameworks are no doubt helpful and have a positive impact on the small-scale enterprise. If the small-scale enterprise is able to choose the specific module or strategy wisely based on those mature framework and situation they are facing, then combine and reorganize those suitable module and strategy into a framework that will be a contribution for the small size enterprise. In this situation, generate the common ground and feature of the small-scale enterprise is important, and according to those features that have been found to dig out suitable modules from frameworks is also crucial.

1.2 Knowledge Gap

The starting pointing of this paper is Business/IT alignment (BIA), alignment is concerned as a key of business executives said by Jerry Luftman and Tom Brier in 1999, they said strategic alignment is an ongoing process and there is no single strategy or single combination of activities that will enable a firm to achieve and sustain alignment (Jerry and Tom, 1999), need the communication between the business and IT strategy to development and sustain the alignment, such a dynamic and complex process.

So that IT governance here is used as an important tool to develop and sustain the business and IT alignment, it’s a kind of guide and framework to increase the efficiency of communication within all the departments with IT in the enterprise. The aims of IT governance are to balance the risks and benefits bring from the information technology; optimize the process of the core business so that achieves the business goal.

But most of the mature frameworks applied by the large companies, known as the COBIT 5 and ITIL are not suitable for the small and medium size enterprise or even is the barrier to the business development because these frameworks require
a lot of money and employee and related knowledge to implement and maintain the framework running.

After reading and search the literature about IT governance, most studies about IT governance is focus on how to obtain the value of IT governance and IT investigation and few study about the adoption of IT governance framework, also we found that there are not many articles writing about the IT governance in Chinese SMEs. The situation in China is that more than 90% of the Chinese companies are SMEs, so we decide to do this research to investigate the IT governance in Chinese SMEs, how they process the governance work and whether COBIT 5 and ITIL, these two most popular frameworks, applied in Chinese SMEs.

1.3 Purpose and research questions

Due to the specific characteristics of the SMEs like the enterprise culture, centralization structure, quick communication and at the same time they have their own roundedness like limited number of employees and not enough budget to invest, if they want to keep high performance of their IT so as to support their core business, the IT governance must adapt these particularity of SEMs.

We are aiming to do a questionnaire and through the result to see that if IT governance plays an important role in Chinese SMEs’ enterprise governance, if COBIT 5 and ITIL used as the framework for IT governance, and we want to know what is the inhibitor for process the IT governance work in these SMEs. As the result of this research, we want to generate some suggestions for these companies when they implement IT governance.

Research Questions:

RQ1: Is IT governance playing an important role in Chinese SMEs enterprise governance?

RQ2: Is COBIT5 and ITIL used as a framework in Chinese SMEs?

RQ3: When implemented IT governance, what benefit of Chinese SMEs want to obtain most?
1.4 Delimitations

This thesis is focus on the IT governance frameworks like COBIT 5 and ITIL so as to find if COBIT5 and ITIL are used as a framework in Chinese SMEs. It’s different from the empirical findings; we want to describe the current situation of using COBIT and ITIL in Chinese SMEs. Also the outcome of the thesis is not expected cover all aspect of the IT governance but more like the importance of have IT governance in the enterprises.
2 Theoretical background

In almost all industries, developments like new technologies, acquisitions, entrepreneurial initiatives and strategic alliances makes the business environment more dynamic, also the environment of SMEs is totally different from that of the large companies, so that it concept of information technology governance (ITG) need to be re-consideration, and people more concern with the IT and Business alignment, but traditional alignment is lack of the efficient to help organization obtain high performance. Although this kind of issue has been enough attention, however the understanding and the empirical study of this field are still at the basic dimension. In this chapter, we are going to explain what is Business and IT alignment and classify the different type of them, what is ITG, why ITG is needed for enterprise. Also, we will explain the difference between the SMEs and the large companies, the characteristic of them, especially the SMEs in China.

2.1 Business and IT alignment

In late 1970s, researches notice that the key factor to achieve success by a mature company in the dynamic business environment is an effective and efficient information technology, which can support the business strategy and process. The alignment between business and information technology is became a prominent area of concern. Since then, the importance of alignment has been well known and documented.

View of business and technology alignment defines at which degree the information technology mission, objectives, and plans, support and are supported by the business mission, objectives, and plans (Carvalho, Sousa, 2008).

Furthermore, it involves “fit” and “integration” among business strategy, IT strategy, business infrastructure, and IT infrastructure (Henderson, Venkatraman, 1993). However, a relevant “problem” (Pereira, Sousa, 2003) is the understanding of what business and information systems alignment is how to obtain and maintain it. Traditional approaches mainly focus on how organizations can achieve alignment, but with less contribution on how to detect and correct misalignment. A general definition of alignment has been generated as “the degree to which the needs, demands, goals, objectives, and/or structure of one component are consistent with the needs, demands, goals, objectives, and/or structure of another component” (Nadler and Tushman, 1980).
During the last decade, several studies addressing with information technology alignment were proposed by researchers, practitioners and companies, but most of them are still at the entry level. They demonstrated through case studies, surveys and empirical approaches that the business and Information Technology performance are tightly coupled (Chan, 2007; Kearns and Lederer, 2003) and enterprises cannot be competitive if their business and IT strategies are not aligned. Until 1999, the Strategic Alignment Model (Fig.1) generates by Henderson and Venkatraman is widely used as the base of Business/IT Alignment theories. The Strategic Alignment Model consists of four quadrants that consist of three components each. All of the components working together determine the degree of alignment. At least, as important are the linkages between the quadrants. The first linkage is the question of strategic fit. This is the vertical linkage and refers to the use of a strategy to determine the infrastructure of the business. The second linkage is functional integration. This (horizontal) linkage is most directly linked to the alignment of business and IT.

**Strategic Alignment Model (Venkatraman ea)**

![Strategic Alignment Model Diagram](image)

Figure 1: Two perspective of Alignment (Henderson and Venkatraman, 1999)

According to several different research and studies, the researchers generate two primary perspectives on alignment: Alignment as an end state and alignment as a process:

- When alignment is viewed as a process, though, alignment is described as a goal that can never be completely achieved, and one that necessitates frequent adjustments within the organization to move towards alignment (Baets, 1992, Broadbent and Weill, 1993, Chan and Reich, 2007, Henderson and Venkatraman, 1993, Powell, 1992).
Theoretical background

Figure 2: General business and IT Alignment process (Deb and Jerry, 2005)

- When alignment treated as an end state, factor models can be developed that describe the antecedents of alignment and the outcomes of that alignment. (Brown and Magill, 1994, Chan and Reich, 2007, Chan et al., 2006, Reich and Benbasat, 2000).

As these two perspectives of Business and IT alignment, we can see that this kind of alignment is indeed exist and the achieving step by step. Nevertheless, because the business environment is dynamic, alignment is also a dynamic process that helps an organization to be more competitively.

Five type of Alignment

The first descriptions of alignment in literature are about aligning organization resources and organizational strategy. This type of alignment has been referred to as business alignment (Sabherwal et al., 2001), it was built upon the idea that the structure and resource of the organization should associate with the strategic mission of the organization, which is “structure follows strategy”.

As information system studies become more widely accepted within business disciplines, the concept of business alignment was implemented within the IT apartment to describe the second type of alignment. Researchers conjectured that if the alignment between organizational resources and organizational strategy yielded performance benefits, the alignment between IT resource and IT strategy
should also obtain benefits. This type of alignment is called IT alignment (Sabherwal et al., 2001). To be clear, the logic of this type of alignment is that as the IT strategy developed, IT resource deployment is guided by IT strategy, and then the organization is well-positioned to execute its IT strategy.

The third type of alignment is called contextual alignment (Sabherwal et al., 2001). This type of alignment describes as the organizational resources should try to align with their competitive context which is included the industry context, cultural factors and financial situation.

Structural alignment is the fourth type of alignment, it mainly of congruence between organizational resources and IT resource (Sabherwal et al., 2001). It investigated both in strategic management (Brown and Eisenhardt, 1997, Henderson and Venkatraman, 1993) as well as in IS (Ein-Dor and Segev, 1982, Jelinek and Schoonhoven, 1990) and performance benefits have been observed.

When organization managers and IT managers ensure the specific strategic alignment by defining an IT strategy that is consistent with the organization strategy, so that the potential to maximize the improvement of organizational performance. Strategic alignment enables high performance by optimizing resource, process and inputs to minimise waste and misdirection of effort and resources to unintended or unspecified purposes.

Because the key success factor for a successful company in a dynamic business environment is effective and efficient IT supporting business strategic and process, “IT and Business alignment” as No.1 issue concerned by the public in information management field, furthermore, as the increasingly number of the frameworks for IT and business alignment, researchers notice that IT governance is an important part in this field.

2.2 IT Governance

Information and technology governance (ITG) is a subset discipline of corporate governance first appeared in 1993. The focus of ITG is on information and technology (IT) and its performance and risk management. What is ITG and why we need ITG soon became a hotspot for researchers.

Simply, IT governance is putting structure around how the enterprises align their IT strategy with their business strategy, ensure that the whole company stays on track to achieve their business goals and IT goals, and at the same time, ITG need to perform the measurement of IT performance. Effective IT governance aligns
IT investments that make the IT decisions, and assigns accountability for the outcomes (Weill and Ross, 2004). A framework in the area that has had a great deal of impact is COBIT (Control Objectives for Information and related Technology). According to COBIT, ITG need to ensure that all the stakeholders’ interests should be taken into consideration when decide the IT strategy. An IT governance framework should answer a few key questions, such as how the IT department is functioning overall, what key metrics management needs and what return IT is giving back to the business from the investment it’s making.

**Definition of Information Technology Governance (ITG)**

IT Governance is a part of Corporate Governance; corporate governance is definite as “Corporate governance refers to the process and structure for overseeing the direction and management of an organization so that it carries out its mandate and objectives effectively.”(Office of the Auditor General of Canada, Dec 2000) The other parts of corporate governance are HR Governance, Finance Governance and Marketing Governance.

IT Governance here deals primarily with the IT related staff, connected the business strategy and goals with the IT management.

The definition of ITG is quite different form the different organization. In Richard Brisebois’s “What is IT Governance?”, he list various definitions of IT Governance as below:

*Source: Richard Brisebois, “What is IT Governance”*

- The structure, oversight and management processes which ensure the delivery of the expected benefits of IT in a controlled way to help enhance the long term sustainable success of the enterprise.
Theoretical background

- IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organisational structures and processes that ensure that the organisation’s IT sustains and extends the organization’s strategies and objectives.

- A structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise’s goals by adding value while balancing risk versus return over IT and its processes.

- Specifying the decision rights and accountability framework to encourage desirable behaviours in the use of IT.

- Governance is not about what decisions get made – that is management – but it is about who makes the decisions and how they are made.

- IT governance is the term used to describe how those persons entrusted with governance of an entity will consider IT in their supervision, monitoring, control and direction of the entity.

- How IT is applied will have an immense impact on whether the entity will attain its vision, mission or strategic goals.

All the different definitions of IT governance come from the different situations which the enterprises are facing. From all these definitions, we can see that ITG is used as a strategic tool to keep the IT related work on track with the business goals and strategic objective.

**Why IT governance is need?**

IT governance matters because it influences the benefits received from IT investments. (Weill, 2004) IT governance is necessary because that it is used to ensure the investments in IT generate the value as that planed in the IT strategy also IT governance can manage the IT process so as to control the risks in IT. IT now has become an important issue for a successful company, an effective IT department can promote the core business of the enterprise, like Richard, Greg and Ziad said “This change process bring from IT, commonly referred to as “business transformation,” is now the prime enabler of new business models both in the private and public sectors”. On the other hand, in the research of Weill they define IT governance as specifying the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT (Weill, 2004).
Business transformation can promote the business, but at the same time, change will bring some potential risks, so how to balance the risk and rewards becomes a problem for these companies. IT governance is here to solve the problem.

With good IT governance, an enterprise can:

*Source: James Yung, 2007*

- Providing strategic direction.
- Ensuring that objectives are achieved.
- Ascertaining that risks are managed appropriately.
- Varying that the enterprise’s resources are used responsibly.

**Five Domains in ITG**

In 2005, IT Governance Institute launched a model for IT governance which has five domains: Strategic Alignment, Value Delivery, Risk Management, Resource Management and Performance Measurement. Every one of them is important cannot be absent to achieve the objective of IT governance--to align the IT with Business.

![Five Domains in IT Governance](Governance Institute, 2007)

- **Strategic Alignment:** This domain is main focus on the connection and link between the IT strategy and business strategy also the business process with the IT operations.

- **Risk management:** This domain is main focus on the risk control of the enterprise, transparency about the significant risks.
• **Value Delivery:** This domain is main focus on if the IT delivers the value against to the IT strategy, optimizing the IT cost and providing the intrinsic value of IT.

• **Resource Management:** This domain is main focus on the optimal investment in IT.

• **Performance Measurement:** Keep track and monitor the implementation of IT strategy, resource usage, IT process performance, IT project completion and service delivery.

All the five domains decide an ITG framework works or not. So our research will take these five domains as an important consideration when we generate the questionnaire in our mail survey.

### 2.2.1 IT Governance for Business-IT Alignment

With the increasing importance of IT used as an asset for enterprise to enhance their business competitiveness, more and more enterprise improves their investments on IT. Meanwhile, there are an increased complexity and a demand for both flexibility and control of the IT structures that are not really easy to combine (Ulf, 2011). IT governance is here to solve these problems, a good IT governance draws on the principles of corporate governance to achieve alignment and corporate performance goals (Weill, 2004). In the study of Ulf, a framework has been supplied which is a structured way to address the area of transformation and business and IT alignment (Ulf, 2011).

### 2.2.2 IT Governance frameworks

The frameworks are regarded as useful guides for the implementation of the IT governance. According to the IT Governance Institute, ITG “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 strategies and objectives.” So that in 2005, Craig Symons proposes a theory that to implement good IT governance requires a framework based on three major elements:
Theoretical background

*Source: Craig Symons, “IT governance Framework”

- **Structure:** the framework should point out who makes the decisions, what kind of structural organizations will be created, who will work in these organizations, and what responsibilities will they have.

- **Process:** the framework should point out the process of the IT investment decision, include of the proposing investments, reviewing investments, approving investments, and prioritizing investments.

- **Communication:** the framework should point out how to monitor measure and communicate the results of these process and decisions, also the mechanisms which will be used to communicate IT investment decisions to the board of directors, executive management, business management, IT management, employee, and shareholders

Although there is not a single, complete and general framework for all the enterprises, but there are still many useful frameworks available for most of the large company to apply or used as a guide to develop their own IT governance framework. Most of the existing frameworks are complementary advantages in different areas, so that the mix use of them is often.

### 2.2.3 Selection of Frameworks

**Introduction of COBIT 5**

Control Objectives for Information and related Technologies (COBIT) was first developed in 1996 by the Information Systems Audit and Control Association (ISACA) and the latest vision of COBIT is COBIT 5 launched in 2012. COBIT contains a number of measures, indicators, processes and best practices (Hill P. and Turbitt K, 2007). COBIT as an open standard, is regarded as the guide for IT governance and management.

The core idea of COBIT 5 is the five principles of it, they are:

*Source: Craig Symons, “IT governance Framework”

- **Meeting Stakeholder Needs:** The existence of the enterprise is through the earnings, optimize to maintain a balance between risk and operational resources, so as to create value for its stakeholders. COBIT 5 can provide all the necessary process and other enabler to support the business value creation with the using of IT. Due to the different objectives of every enterprise, an enterprise can develop their own COBIT 5 through goal cascade, translating
high-level enterprise goals into manageable, specific, IT-related goals and mapping these to specific processes and practices.

- **Covering the Enterprise End-to-end**: COBIT 5 integrates the IT governance into the enterprise governance. It not only focuses on the IT function, information and related technology is regarded as asset of the enterprise as the other asset and everyone in the enterprise can deal with them.

- **Applying a Single Integrated Framework**: COBIT 5 keeps highly consistent with other IT related standard and framework, so that it can be the overarching framework for IT governance and management.

- **Enabling a Holistic Approach**: Efficient and effective IT governance and management of the enterprise need a holistic approach should consider the various components interact with each other. COBIT 5 defines a set of enablers to implementation of IT governance and management in the enterprise.

- **Separating Governance From Management**: COBIT 5 makes a clear distinction between governance and management. Governance is the responsibility of the board of directors. Specific governance responsibilities may be delegated to special organisational structures at an appropriate level, particularly in larger, complex enterprises. Management is the responsibility of the executive management under the leadership of the CEO.

With the use of these five principles, the enterprise can build a kind of optimization of information technology (IT) investment and benefit for stakeholders, exceptional governance and management framework.
Theoretical background

Figure 5: Five Principles of COBIT 5

*Source: COBIT® 5, figures 2. © 2012 ISACA® all rights reserved.

Through the implementation of COBIT, increased management awareness and support for control. COBIT provides the implementation of the tool set including excellent case information (provide a template for the business process, make good sample quickly to transplant), help to well describe the IT management concept to the management. Management based on the optimal control based on practice ability is also enhanced to make the right decisions. COBIT model, realize the interaction between the enterprise strategy and IT strategy, and from the virtuous cycle of continuous improvement mechanism, provides for the enterprise has a certain reference value for the solution.

Introduction of ITIL

Information Technology Infrastructure Library (ITIL) defines a guidance of best practice processes; it initially developed in the UK by the Office of Government Commerce (OGC) 1980s. Nowadays, ITIL is becoming a de-facto standard for IT management in organization. Moreover it used as a guideline for establishing IT service management process. It describes processes, approaches, missions and checklist that are not organization-specific, used by an organization for buildup integration with the organizational strategy, delivering and maintaining a minimum level of competency, and it also combines principles, practices and methods from quality management, change management and capability improvement. Although
ITIL. covers a number of areas, it is mainly focus on identifying best practices in regards to dealing with IT services levels and is particularly process-oriented. In its current vision (known as ITIL 2011 editions), ITIL is published a series of five core volumes:

![ITIL Service Lifecycle](source: ITIL 2011 edition)

- **ITIL Service Strategy**: Understanding of organizational goals and customer needs
- **ITIL Service Design**: Combine systems strategy into plans to deliver business objectives
- **ITIL Service Transition**: Develop and improve the capability for introducing new services into supported environment
- **ITIL Service Operation**: Deal with services in supported environments
- **ITIL Continual Service Improvement**: Achieves large scale improvement and services incremental

ITIL provides a fundamental framework for IT governance; the reason why ITIL achieved great success and it been widely used by the organizations all around the world is that ITIL focus on IT service delivery and continuous quality improvement and evaluation. Using ITIL to improve organizational performance has several superiorities, because it provides a complete IT service life cycle. The initial phase of this life cycle is service strategy; this stage helps the organization to determine the purpose of the service that they would provide. After making sure goals of the service, is the service designing step, service transition and service operation phase, during this period the service strategy has been continually implemented. Moreover, ITIL provides abundant approach for IT management, also draw a lot of management concepts, including project management, quality
management and operational management, with these rich resources, users can easily implement IT service management in the enterprise. ITIL involves the interfaces of other industry standard. Such as software development standards CMMI, currently very popular COBIT and PMP (Project Management Professional Certification) project management methods. But may exist between ITIL and some overlap of these standards, including cross each other in the implementation of related projects. To sum up, the advantage of adopting ITIL in an organization can be summaries as follows:

*Source: ITIL 2011 edition*

- Improve customer satisfaction with IT services
- Improve usability of the IT services, increasing the profit of organization directly
- Savings due to rework, messy process and waste of time caused financial losses, improve resource management and use
- Improve market-oriented new products and services from the time a market-oriented
- Improve decision making and optimize risks

While ITIL has a large corporate identity is an undeniable fact, but there is increasing evidence that, ITIL really can help small and medium IT team. In fact, small and medium IT team can scale itself into a part of ITIL assets. Small and medium sized companies cannot only import ITIL, but compared to large enterprises. Build and speed is much faster import. Mainly because of the small and medium enterprises, internal staff involved in fewer, and therefore relatively fewer objections will be addressed. Meanwhile, in small and medium enterprises, it is easy to convene a meeting of all the key decision makers together.

In the previous section we introduced COBIT which is focus on the perspective of audit and control, but ITIL takes the perspective of service management, so these two frameworks are more complementary than competitive, reasonable trade-off will be a combination of both can work together to create a governance framework.
Introduction of Balanced Scorecard and ISO/IEC 38500

The BSC (Balance Scorecard) and ISO/IEC 38500 is not used in our thesis, because BSC is mainly about organization's strategic objectives, it focus on measure the performance of enterprise to keep the business activities on track, it is an assessment tool of financial, customer, internal processes, learning and innovation, but not the guidance on how should the organization manage their IT with business goals. ISO gives a framework of good governance of IT and guidance for corporate governance of IT, but this standard has relationships with other major ISO standard, it covers too much other knowledge that is hard to deal with.

The reason for us to choose COBIT 5 and ITIL as our research target is the comprehensive and operability:

As ISACA said, COBIT 5 is the only business framework for the governance and management of enterprise IT. COBIT 5 is built based on COBIT 4.1 and it aborts other major ITG frameworks and standards so that it is a very comprehensive framework to use.

In ITIL, there are many best practices that mean they are the confirmed cases and proved to be useful. So that enterprises can choose the similar cases for them to imitate so as to increase the success rate of the implementation of IT governance.

Why choose COBIT5 and ITIL as theoretical framework

COBIT 5 presented by Information Systems Audit and Control Association (ISACA) as a new generation of guidelines to support the enterprise with it management and IT governance. COBIT 5 was constructed within 15 years practical applications and implementation through business, IT, risk, security, identification organization and users, so it has sufficient authority.

A framework in the IT governance area that has had a great deal of impact is COBIT. The purpose of COBIT is to maximize the benefits derived through the use of information technology and developing appropriate IT governance and control in a company (von Solms, 2005).

ITIL developed in the UK by the Office of Government Commerce (OGC) 1980s. It is becoming a de-facto standard for IT management in the organization, moreover it used as a guideline for establishing IT service management process. ITIL provides a set of open and standardized of information technology services for the management architecture that supports IT service management standards
and approaches. Based on this library, IT staff is no longer only focus on technology dimension, but also considers the combination of a business goal and IT strategy, through the introduction of software tools and services for enterprise IT organizations to demonstrate value. Organizations are increasingly dependent upon IT to satisfy their corporate aims and are responsive to their business needs. This growing dependency necessitates quality IT services at a level matched to business needs and user requirements as they emerge (Governance Institute, Office of Government Commerce and the IT Service Management Forum, 2007).

2.3 SMEs

Small and medium size enterprises (SMEs) are those enterprises whose number of employee below a certain limits. The definitions of SMEs are quite different in every country.

Compare with those large companies, SMEs’ enterprise operation and management model is relatively simple and poor in anti-risk ability. So they need IT to help them to create business advantage and risk management. Below is the definition of SMEs in EU and China.

2.3.1 EU SMEs

In July 2011, the European Commission said it would open a consultation on the definition of SMEs in 2012. In Europe, there are three broad parameters which define SMEs:

*Source: European Commission
- Micro-entities are companies with up to 10 employees
- Small companies employ up to 50 workers
- Medium-sized enterprises have up to 250 employees.

2.3.2 Chinese SMEs

### Theoretical background

**Table 1: Definition of Chinese SMEs**

<table>
<thead>
<tr>
<th>Industries</th>
<th>Size Category (Employment-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>≥2000, 300-1999, ≤300</td>
</tr>
<tr>
<td>Construction</td>
<td>≥3000, 600-2999, ≤600</td>
</tr>
<tr>
<td>Wholesaling</td>
<td>≥200, 100-199, ≤100</td>
</tr>
<tr>
<td>Retail</td>
<td>≥500, 100-499, ≤100</td>
</tr>
<tr>
<td>Transportation</td>
<td>≥3000, 500-2999, ≤500</td>
</tr>
<tr>
<td>The postal service</td>
<td>≥1000, 400-999, ≤400</td>
</tr>
<tr>
<td>Hotel and restaurant</td>
<td>≥800, 400-799, ≤400</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>≥3000, 500-2999, ≤500</td>
</tr>
<tr>
<td>Warehousing</td>
<td>≥500, 100-499, ≤100</td>
</tr>
<tr>
<td>The real estate</td>
<td>≥200, 100-199, ≤100</td>
</tr>
<tr>
<td>Financial</td>
<td>≥500, 100-499, ≤100</td>
</tr>
<tr>
<td>Geological exploration and water environment management</td>
<td>≥2000, 600-1999, ≤600</td>
</tr>
<tr>
<td>Entertainment</td>
<td>≥600, 200-599, ≤200</td>
</tr>
<tr>
<td>Informatics</td>
<td>≥400, 100-399, ≤100</td>
</tr>
<tr>
<td>Computer service and software development</td>
<td>≥300, 100-299, ≤100</td>
</tr>
<tr>
<td>Leasing</td>
<td>≥300, 100-299, ≤100</td>
</tr>
<tr>
<td>Business and technology service</td>
<td>≥400, 100-399, ≤100</td>
</tr>
<tr>
<td>Citizen service</td>
<td>≥800, 200-799, ≤200</td>
</tr>
<tr>
<td>Other</td>
<td>≥500, 100-499, ≤100</td>
</tr>
</tbody>
</table>

The definition of SMEs between China and EU are quite different, Chinese standards are more detailed and the size of employees is larger than SMEs in EU.
2.4 IT governance in SMEs

In 2013, Symantec company made a survey to see the global SEMs IT confidence index, around 2452 global organizations in 20 countries in the Americas, Western Europe/the Middle East and the Asia/Pacific region take part in this survey. According to the IT indices of every company. Symantec spited the companies into three groups: top-tier, middle-tier and bottom-tier. As the result showed, 83 percent of the top-tier takes IT as an enabler to advance their business compare with 44 percent in the bottom-tier. Through this survey, IT is no doubt the key to remain with the business competitive even in the smallest company; even the good use of IT will improve the productivity of the companies and enable them to compete with that large enterprise. But while using IT. “it also requires sophisticated management and can pose serious risks.” (Symantec, 2013) Unfortunately, we haven’t found such survey in China even more than 99% enterprise are SEMS and the contribution is greater than 60% of GDP in 2013. This is in some degree shows that IT in Chinese SEMs is not as important as in western countries.

The survey has already shown the importance of IT in promoting the business of the SEMs, on the other hand, how to manage and governance IT determines the quality of the IT performance and the value created by IT.

So that how to governance and management IT becomes a challenge for the SMEs who like to take IT to increase their business competitiveness. “The world of SMEs is significantly different from that of large companies, and therefore, the concept of IT governance in SMEs needs reconsideration.” (Jan, Hendirk and Dirk, 2011). In 2012, they claimed that the concepts and the theoretical findings of IT governance in SEMs have to be rethinking.
3 Method

3.1 Selection of the Research Approach

Mail survey is selected as our research approach. We will send the mail to the companies we pre-chosen with the questions and the instructions on how to answer the questions. The reason we choose a mail survey as the research approach is that a mail survey is one of the cheapest and most efficient method for us to get enough respondents, and it’s easy to operate. Interview is another candidate method, but compares with interview, mail survey will be less social desirability bias and discomfort talking about a personal issue.

On the other hand, there are still many weaknesses in the mail survey. The questions are designed by the researcher; the participants will be confused with some questions sometimes and maybe cannot be explained by the researchers immediately. For the researchers, they cannot control the order of the participants answer the questions. This will be a problem if there is a progressive relationship between the questions. Also, not every mail will be replied, the participants we choose are busy business man and our mails are not “important” to them, so that the quantity of the reply will be a problem for us to deal with.

3.1.1 Survey study

Survey research is often assessing thoughts, opinions, and feelings (Shaughnessy, J. Zechmeister and E. Jeanne, Z., 2011). Survey act as a tool used to collect information and opinion on specific target groups, the target group depends on researcher’s study field and purpose. A survey can be administered in different ways, for instance a method known as a structured interview which is researcher asks each participant the questions, or another method like questionnaire, the participant fills out the survey at his or her own.

According to the characteristics, survey can be classified into two types, which are descriptive survey and explanatory survey. Descriptive survey aims to arrange data and disclosure the trend of the moment. Survey investigation is the best approach to write a descriptive. Explanatory usually conducted for an unclear problem. It often occurs before we know enough to make conceptual distinctions or posit an explanatory relationship (Shields, Patricia and Rangarjan, Nandhini. 2013. A Playbook for Research Methods: Integrating Conceptual Frameworks and Project
**Method**

Management. Explanatory in order to explain “how” and “why” and point out possible causal links between variables.

Survey needs for researchers to concentrate on a target group, this target group is called "sample". A survey may involve many different observation types and techniques, but in the context of survey sampling it most often involves a questionnaire used to measure the characteristics and/or attitudes of people. When dealing with a huge target group is hardly to collect all the information entirely, using samples wisely in survey can reduce the cost and amount of work. Survey samples can be divided into two types: probability samples and non-probability samples. Probability samples aiming for representative of the entire target group, that is to say the sample selected by researchers is can highlight the characteristics of the entire target population, for example using random samples, each unit in the population has the exact same probability of inclusion. Non-probability samples are suitable when there is no need to generalize, or the research field is new and the researcher wants a brief overview, or time and money is limited. For instance researcher chooses the sample close at hand (classmate or family member).

Survey method is preferred by many researchers due to its various advantages and benefits, however survey also have their disadvantages and weak points that should be considered.

*Source: https://explorable.com/course/the-survey-guide*

**Advantages:**

- High Representativeness: Enables to collect a lot of data, so it has strong representation
- Low Cost: Only pay for the production of questionnaires, if do an interview sometimes the transport fees only.
- Convenient Data Collection: The questionnaires can simply be sent via e-mail or fax, or can be administered through the Internet.
- Little or No Observer Subjectivity: Survey provide participants with a standardized stimulus, so the responds of the question without researcher’s biases.

**Disadvantages:**

- Inflexible Design: The survey that was constructed at the very beginning cannot be changed throughout the process of data collecting.
- Possible Inappropriateness of Questions: Researcher try to make questions that are general enough and reasonable for the target group, however there
will be some questions are not as appropriate for all the participants as they should be.

In this case, we choose the questionnaire because we need a lot of respondents to answer the research question so that the answer will be representative for the Chinese SMEs.

Also, through the answers of some context questions we can get the idea of what are these enterprises consider most when they implement their IT governance or IT governance is not regarded as an important issue.

### 3.1.2 Questionnaire

Questionnaire is a research instrument includes a series of questions and prompts for the purpose of gathering information from respondents. There are four kinds of question in the questionnaire:

- **Factual question**- Respondents choose an answer that correspond to their situation, often use YES/NO as the answer.

- **Opinion question**- Respondents choose an answer that reflects their opinion; usually the answer is different levels or scales, for example easy/normal/hard.

- **Closed question**- Respondents choose from a number of suggested answers including “other”, like coffee/tea/milk/other.

- **Open-ended question**- Respondents answer in their own words.

Different type of question aims to separate purposes, it depends on the researcher. To generate a questionnaire, researcher should consider the research purposes and discuss with others in the field. With wide reading on the specific topic, researcher takes a list of information they wish to obtain from respondents and devises questions. To test the validity of the questionnaire, researcher should send the draft version to several respondents, so that makes sure they understand the questions and obtain some suggestion from them. The final version of the questionnaire should be carefully considered, because once the questionnaire has been sent out by the content of it cannot be changed. Questionnaire has many advantages, it cheap to produce and launch, the responses are gathered in a standard way and using a questionnaire is relatively quick to collect information. There also some disadvantage when using questionnaire, because the content of
the question is unchanged so it has low flexibility. Moreover, if the questionnaire needs long time to finish, people may refuse to do it, and then the return rate will be very low.

3.1.3 Qualitative or Quantitative Research

Quantitative research is a more logical and data-based method which provides a measure of what people think about a statistical and numerical point of view (Given, Lisa M. 2008.). The purpose of quantitative research is tantamount to collect a large amount of data and generalize results from a target group which interest in, also approaches the views and opinions in a chosen sample. Frequently used quantitative research methods such as questionnaire, that is a series of questions and answers that redesigned by researchers, what respondents should do is to check the design from a selection of predefined answers to these investigations, and the researchers collected answer questions and do analysis..

Different from quantitative research which relies on numbers and data, qualitative research mainly focusses on what, why and how people make a certain decision. Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior. Qualitative research is largely launched by discussion around specific concepts or ideas with open questions, participants are encouraged to explain and elaborate their reasons for a definite question and opinion which can reveal underlying motivations, associations and behavioral triggers (Creswell and John. W. 2004). The most universal forms of qualitative research are face to face interviews and relevant target group investigation.

Due to mail survey is the research method of our study and also we will generate suggestions for these SMEs, so both quantitative and qualitative is applied in our thesis to measure the point of view of SMEs with its business and IT alignment strategy, also with the questions that is constructed based on COBIT5 and ITIL to see which standards and guidance is more important for Chinese SMEs in IT governance.
4 Implementation

The aim of the survey we will process is to see the adoption of COBIT 5 and ITIL used as a framework for governance IT in SMEs in China. Related literature has been wrote by Masarat, Maslin and Shamsul in 2011, they found such large frameworks are not suitable for the small and medium size enterprises cause they have their unique characteristics like quick communication, flexible and etc.,. This is the enabler for us to investigate how the SMEs in China governance their IT; are they applying the larger frameworks for they have their own mechanism for IT governance and what are they concern most when planning the IT strategy.

We selected the two frameworks are used as objects, the reason we choose these two frameworks is because they have the authority, and there is substantial help for businesses, we will also introduce how they help enterprises to promote their governance in IT.

We choose a mail survey to do the research, since its low cost, not time consuming, the answer for the questions is standard and the most important reason is we will get large amount of answer and this will increase the reliability of our research.

4.1 Process of research

<table>
<thead>
<tr>
<th>Task</th>
<th>Start</th>
<th>End</th>
<th>Dur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Thesis</td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>1. Research question definition</td>
<td>2/5/14</td>
<td>6/5/14</td>
<td>5</td>
</tr>
<tr>
<td>2. Literature review and study</td>
<td>2/11/14</td>
<td>2/28/14</td>
<td>14</td>
</tr>
<tr>
<td>3. Design the questions for the questionnaire</td>
<td>3/1/14</td>
<td>3/31/14</td>
<td>23</td>
</tr>
<tr>
<td>4. Select the sample to do the mail survey</td>
<td>4/1/14</td>
<td>4/15/14</td>
<td>11</td>
</tr>
<tr>
<td>5. Send out the mail survey waiting for respondents</td>
<td>4/15/14</td>
<td>5/15/14</td>
<td>23</td>
</tr>
<tr>
<td>6. Generate the finding and answer the research questions via the result of questionnaire</td>
<td>5/15/14</td>
<td>6/1/14</td>
<td>12</td>
</tr>
<tr>
<td>7. Finish the thesis</td>
<td>6/1/14</td>
<td>6/5/14</td>
<td>4</td>
</tr>
</tbody>
</table>

Figure 7: Time plan

The step we do our research is:

- Research question definition
- Literature review and study
- Design the questions for the questionnaire
- Select the target group to do the mail survey
Implementation

- Send out the mail survey waiting for responds
- Generate the finding and answer the research questions via the result of questionnaire
- Finish the thesis

### 4.1.1 Survey question generation

The questionnaire we designed are based on the eight domains, they are the context questions, the questions about the need for the informatics of the enterprises, the questions about how important of IT within the enterprise and the five domains of IT governance. All the questions of the questionnaire can be seen in Appendix 1.

- Q1-Q4 are contest questions, aim to get a general know of the respondents.

We want to gain some information of these SMEs like what industry they are, what is the outsourcing rate of their IT staff. These data will be used for the cross impact analysis. To see if there is some other issue will influence the selection of IT governance framework.

- Q5-Q8 will be the answer of RQ1, through the distribution of the answer we will know if IT governance is consider important in the enterprises.

Through ask the question of the companies’ maturity level on the IT governance, the influence made to the influence by IT, we can see the importance of IT governance in enterprise governance.

- Q9-Q20 are based on the five domains of ITG and separate COBIT5 and ITIL, aim to answer RQ2.

Through the questions about the five domains of IT governance (Strategy Alignment, Performance Measurement, Risk Management, Value Devilry and Resource Management) we can see what are missing in Chinese SEMs, also we will know what are excepted by those companies want to gain from IT governance.

In addition, through the answer of the questionnaire, we hope to see what are these enterprises expect IT brings them and we want to generate some tips for them when they implemented their own IT governance.
To avoid the misunderstand of the questions, we replace all the terminology in the questions to make sure that all the responders who haven’t knowledge of COBIT and ITIL can under what are we asking.

### 4.1.2 Test of the questionnaire

To make sure the entire sample can understand our questions, we have done a test before we send the mails.

We send our questions to our friends who are not aware of COBIT and ITIL to see if they can understand what are we asking. Then we send our questions to the one who is aware of COBIT, ITIL and IT governance, to see if the questions are meaningful.

Though the test, we replace some terminology in the questionnaire with the normal and easy understand words to keep all the questions can be understood and correctly answer at every sample.

Also, we get the average time to finish this questionnaire and we write in the introduction of it, make the responders know how long it will bring them up to finish.

### 4.1.3 Sample selection

Since 2013, there are more than 98% of the companies are SMEs, the number is more than 42 million. The entire sample we selected is randomly from the China SME Online and China Association of Small and Medium Enterprise. These two website are the regular site of Chinese SMEs organization and running by government.

We send our questionnaire to CEO or CIO (if there is a CIO in this enterprise) via mail. The way we get their mail address is their company website.

Compare with CEO, we prefer CIO be our sample, because CIO must have the knowledge of IT governance, they are the top-level of the companies and they will take part in the design of business strategy and IT strategy, so that their answer will be more reliable for us. But after we connect many companies, we found that most of these SMEs have no CIO, so we decide take CEO as the sample to
answer the questions. Because CEO knows the business strategy and has the knowledge of enterprise governance, we believe our question can be understood by them.

The numbers of SMEs we choose are 200, all of them are collected from the website we mention above, the collection cycle will be two weeks and the expected recovery is more than 50%.

4.2 Analysis Method

After we get enough responds, we use descriptive statistics to analysis the responded we gain from the mail survey. The data will be put into graphs, and see the distributions of the them, because of the some of the research questions are directly asked in the questionnaire, we can answer these questions by the result of the questionnaire. These methods (Charts, graphs and write-ups in text form) are various methods to analyze and are designed to polish and refine the data, so that the readers can reap the interesting or useful information without going through the raw data.

On the other hand, we will do some cross impact analysis between the different industries and the difference of selection IT governance frameworks to see if the type of industries will affect the choice of IT governance frameworks.

4.3 Reliability and Validity

To increase the reliability of this research, the candidates we choose to answer the questioner are the CIO or/and CEO of the Chinese SMEs, they have the related business and IT governance knowledge so as to prevent the incorrect answers. The questions we designed will not involve any subjective judgment and violate the privacy of the responders. In this way will keep the motivation and increase the response rate.

The validity of our search is that through the survey, we will generate some general tips for the Chinese SMEs when they implementing their IT governance. All the suggestions are generate based on the data we collected form the literature review of Chinese SMEs IT governance situation combine with the result we gain form the questionnaire, so these suggestions can be test in the SMEs to see if it works.
5 Result and Analysis

This chapter includes the results and analysis of the questionnaire. The chapter begins by presenting the context information of the responders. Then the results of questions which are designed according to the five domains of IT governance so as to answer the research questions.

This survey was sent to 200 CEOs/CIOs of Chinese small and medium enterprises which are selected from China SME Online and China Association of Small and Medium Enterprise and we receive 140 responds which is more than our expected of 50% of the total samples.

5.1 Context information of the responds

![Distribution of Industry](image)

Figure 8: Distribution of industries

In 140 respondents, information technology industry is the biggest group (27.14%); the energy, mining and construction and telecommunications are least. This is completely in line with the industrial distribution of our country.

Although information technology industry is the majority of the respondents, the outsourcing rate is very low, as the result shows:
Result of the Questionnaire

Table 2: Outsourcing Rate

<table>
<thead>
<tr>
<th>Outsourcing Rate</th>
<th>IT</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT service</td>
<td>55.26%</td>
<td>65.19%</td>
</tr>
<tr>
<td>IT infrastructure provisioning</td>
<td>47.37%</td>
<td>65.69%</td>
</tr>
<tr>
<td>IT infrastructure maintenance</td>
<td>52.63%</td>
<td>67.59%</td>
</tr>
<tr>
<td>App. development and maintenance</td>
<td>47.37%</td>
<td>61.60%</td>
</tr>
<tr>
<td>IT help desk</td>
<td>42.11%</td>
<td>63.99%</td>
</tr>
<tr>
<td>End user technique support</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 2, we can see clearly that the outsourcing rate of information technology is significantly lower than the average. After investigating these IT companies, their core business is app development IT infrastructure building and maintenance, so that they are the vender of these IT services.

5.2 Adoption of the IT governance frameworks

Through the result of 140 companies, we can see that the adoption of IT governance framework is low, 44.29% of the respondents haven’t IT governance framework in their companies. This result also can be supported by the question 6: The maturity levels on IT governance. The answer to question 6 shows that 40.71% of the respondents’ IT governance is at the entry level and 4.29% of the respondents think that IT governance is not important in their company.

![Figure 9: Maturity level on IT governance](image-url)
From the angle of different industries, ITIL is widely used in health care, telecommunications and finance industry. In 12 health care respondents, 50% of them are using ITIL as the framework for IT governance, the second place is telecommunications industry, about 42.86%; the average adoption rate of ITIL is 28.57%.

![Figure 10: The adoption of ITG frameworks from different industries](image)

COBIT is widely used in energy and IT industry. In 38 IT respondents, 31.58% are using COBIT as the framework for IT governance; the average adoption of COBIT is 21.43%.

### 5.3 Strategic Alignment

The strategic IT work planning is the guideline for IT work and it determines whether IT is align with business. As the result of the questionnaire, 42% of the companies’ IT work plan is made by the executives and 37% of the companies’ IT work plan is according to the need of the department.
From the industry aspect, all the respondents of the energy industry think IT is not part of their business and the only mission of them is to keep the working environment running. Meanwhile, 66.67% of the health care, 66.67% of the manufacturing, 80% of the transportation and 71.43% of the telecommunications industry take IT as a part of their core business. This shows that the kind of industry will determine the use of IT and the importance of IT governance.
When asking the focus on IT strategic planning in the future 3 to 5 years, “Promote the service ability of the enterprise” got the highest score 4.04 and “Reduce the running cost of the enterprise” got the lowest score 3.72, while the average score is 3.82.

<table>
<thead>
<tr>
<th>Result of the Questionnaire</th>
<th>Not important</th>
<th>General</th>
<th>Medium</th>
<th>Important</th>
<th>Very important</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce the running cost of the enterprise</td>
<td>7.0 (9)</td>
<td>14.0 (30)</td>
<td>24.0 (29)</td>
<td>41.0 (56)</td>
<td>44.0 (49)</td>
<td>3.72</td>
</tr>
<tr>
<td>Promote the ability of the enterprise innovation</td>
<td>6.5 (70)</td>
<td>12.0 (57)</td>
<td>24.0 (14)</td>
<td>53.0 (42)</td>
<td>45.0 (23)</td>
<td>3.91</td>
</tr>
<tr>
<td>Promote the service ability of the enterprise</td>
<td>4.2 (89)</td>
<td>14.0 (43)</td>
<td>21.0 (50)</td>
<td>40.0 (29)</td>
<td>57.0 (14)</td>
<td>4.04</td>
</tr>
<tr>
<td>Internal promote the ability of control on the risk management</td>
<td>5.0 (71)</td>
<td>14.0 (98)</td>
<td>25.0 (57)</td>
<td>48.0 (56)</td>
<td>52.0 (56)</td>
<td>3.92</td>
</tr>
<tr>
<td>Use IT to build the competitive advantage of the enterprise</td>
<td>6.0 (29)</td>
<td>15.0 (71)</td>
<td>35.0 (30)</td>
<td>48.0 (56)</td>
<td>44.0 (56)</td>
<td>3.78</td>
</tr>
<tr>
<td>Use IT to improve the current profitability of the enterprise</td>
<td>6.0 (29)</td>
<td>15.0 (29)</td>
<td>34.0 (24)</td>
<td>45.0 (14)</td>
<td>45.0 (14)</td>
<td>3.79</td>
</tr>
<tr>
<td>Use IT to create new profit model for the enterprise</td>
<td>6.0 (71)</td>
<td>15.0 (43)</td>
<td>35.0 (43)</td>
<td>52.0 (14)</td>
<td>44.0 (29)</td>
<td>3.78</td>
</tr>
<tr>
<td>Use IT to implement the collaboration chain of the enterprise</td>
<td>6.0 (29)</td>
<td>15.0 (43)</td>
<td>37.0 (43)</td>
<td>50.0 (14)</td>
<td>38.0 (14)</td>
<td>3.75</td>
</tr>
</tbody>
</table>

Figure 13: Score of IT strategy

The score I set is that 1 for not important, 3 for medium and 5 for very important. The formula for the average score is:

\[
\text{Average Score} = 1 \times \text{proportion of not important} + 2 \times \text{proportion of general} + 3 \times \text{proportion of medium} + 4 \times \text{proportion of important} + 5 \times \text{proportion of very important}
\]

### 5.4 Value Delivery and Resource Management

Only 24.29% of the responds do evaluation of IT investment return in each construction of IT, including any IT equipment procurement. And 17.14% do not do the evaluation only if there is a request from the high-level.
For resource management, related to the outsourcing rate, most of the IT infrastructure provisioning and maintenance are outsource, so that the management of IT asset is also done by the vendor of IT service.

5.5 Risk Management

Question 8 and question 16 are about the risk management. As the result shows, the most risk the respondents think will face in starting work of IT governance is “Lack of employee and related knowledge to process the governance work”, 63.57% of the respondents select this option. This is also can be supported by the result of the question of the maturity level of IT governance.
5.6 Performance Measurement

The result of judgment of the IT performance is done by the CEO/CIO of the companies is shows below.

<table>
<thead>
<tr>
<th>Options</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our team is very effective for IT</td>
<td>3.28</td>
</tr>
<tr>
<td>Our IT project usually able to finish within the allotted time</td>
<td>3.39</td>
</tr>
<tr>
<td>We constantly improve the system operation planning</td>
<td>3.30</td>
</tr>
<tr>
<td>We continuously improve our working software usage.</td>
<td>3.33</td>
</tr>
<tr>
<td>Our computer operation of high performance</td>
<td>3.34</td>
</tr>
<tr>
<td>We handle the user requirements to the information system well</td>
<td>3.53</td>
</tr>
<tr>
<td>We have a powerful network management function</td>
<td>3.40</td>
</tr>
<tr>
<td>We have reasonable allocation IT internal resources</td>
<td>3.36</td>
</tr>
</tbody>
</table>

50.71% of the judgment are made by the personal judgment of CEO/CIO, so to say that there is not a formal measurement mechanism for IT works in most of the companies.
5.7 Answer for Research Question

RQ1: Is COBIT5 and ITIL used as a framework in Chinese SMEs?

According to the 140 respondents, the largest proportion is Information Technology industry, the second and third place is Education and Finance respectively. This result demonstrates that in China, IT SMEs has a large proportion of the entire industry, also the development of IT industry is booming. Although the IT industry developed fast in China, for IT implementation and IT governance in most of SMEs is not run well. The implementation of IT governance in Chinese enterprises is still in the entry level; this can be seen from our questionnaire consequence. Only half of the surveyed SMEs using COBIT or ITIL as their framework, that there is half of the SMEs do not use these two framework, in this part of SMEs there are some other ways to support their IT governance or even do not know what IT governance is.

On the other hand, the outsourcing rate is some degree influence the chosen of IT governance framework. Take telecommunications industry for instance, the quality of IT service like the IT infrastructure and maintenance will directly affect the performance of their core business, so that in the selection of IT governance framework, they will more focus on how to management the IT service performance well than decide the IT object. So that we can see form our result of the questionnaire that 42.86% of the telecommunications companies choose ITIL.
as the framework for IT governance, because the characteristics of ITIL has some guidelines for service management and service delivery processes.

COBIT and ITIL do use as the frameworks for IT governance in Chinese SMEs but not that popular like in large Chinese companies. The main inhibitor for this is the lack of employee, related knowledge and money to implement the frameworks.

RQ2: Is IT governance plays an important role in Chinese SMEs enterprise governance?

From the survey and the data we have collect from questionnaire, 4.2% of the surveyed SMEs think that IT governance is not important, half of the SMEs recognize the importance of IT governance and ready to begin implementation, but due to internal factors of those SMEs, for example lack of the IT governance knowledge and resource, which makes them at the initial phase. On the other hand, 55% of the surveyed SMEs already start IT governance work, and in a continuous optimizing or maintaining stage, this fully shows the importance of IT governance in Chinese SMEs, and it occupies a very important position in the enterprise governance.

But there is no doubt that IT is playing a more and more important role in the business so that the efficiency of IT governance and management is the problem most of the companies are facing. From the result we can see that only realize the importance of IT governance is not enough. The understand of IT should be exchanged for the technology level to the strategic level.

RQ3: When implement IT governance, what benefit of Chinese SMEs want to obtain most?

About IT governance, Chinese SMEs is facing the starting stage. Most of them want to use IT governance as a tool to help enterprise achieve the business goal and support IT management. Specifically, Chinese SMEs willing to have a best solution to IT governance rather than guidance and terms, in other words the enterprise wants a more practical way to deal with the IT governance problem. On the other hand, for the benefit of the enterprise wants to obtain most is to use IT governance improves customer's satisfaction and strong IT service capabilities. Although these enterprises pay more attention to the customer's satisfaction and enhance IT service capabilities, but this doesn't mean they do not focus on risk control and reduce costs; a small part of the enterprises, due to the shortage of funds, wish to reduce operating costs by using IT governance. The requirement of IT governance relies on different aspect, the company size, the core business of the company, the company culture and etc. But one thing is sure that IT
governance is needed by most of the Chinese SMEs for improve their performance of IT so as to improve their business competitiveness.
6 Discussion and Conclusion

In this chapter we will discuss the result we have found from the survey, and according to the data we have collected from the questionnaire to analyse the situation of IT governance the Chinese SMEs is facing, so that to see what is the most important part of Chinese SMEs when launch IT governance work and generate some advice to them. Finally draws the conclusion of this thesis, based on the result we have been found and the business environment of China to generate some suggestion which is suitable for Chinese SEMs, also suggest the further work could be continued in the future.

6.1 Discussion of method

The aim of our questionnaire is to answer the research question of this thesis and through the result we can generate some suggestion for those Chinese SMEs when they launched their IT governance. The strength of mail survey and questionnaire we thought after implemented them is that they are easy to operate; we just need to ensure every mail is sent to the sample we choose correctly and wait for the respondent. The other strength of the mail survey is that we can get enough responds for us to answer our research question.

Though the result of the questionnaire, we found that most of the companies realize the importance of IT governance but less of them implemented IT governance in their companies and the need for IT governance are quite different for different industry. Plus, the outsourcing rate of every company will influence the choice of IT governance can be seen from our research.

There is still some weakness in this survey:

- The design of the questions for the questionnaire: Every question should be designed based on solving the research question. And all the questions should be test before send to the samples in case the questions are misunderstood.

- The amount of samples: The respond rate was a big problem when we design this survey; luckily we got enough respondent for us to generate the result to answer the research questions.

- The result of the questionnaire was generating from the respondents of 140 Chinese SMEs which are collected form the governance website. So all the samples are the small and medium size enterprise in accordance with the provisions of the Chinese government. All the question are designed based on the theory of IT governance, the knowledge of COBIT and ITIL and the research
questions so that we think the result can reflect the current situation of IT governance in Chinese SMEs and enough to answer the research question.

6.2 Discussion on the Survey Study

The purpose of our thesis is to explore the adoption of COBIT and ITIL in Chinese SMEs, and make some suggestions to the SMEs who at the early stage of IT governance, so they are able to do it in governance faster and efficient. In previous studies, we learned with adequate human and material resources those large frameworks like COBIT and ITIL can be implemented for large enterprises. Through our research study the situation of the adoption of COBIT and ITIL in SMEs has been presented.

In most population country like China, it has an astronomical number of firms, which account for a large proportion of SMEs and the competition among peers is very intense. With the development of information technology and progress, it is recognized that the use of IT systems to manage in an enterprise can improve the efficiency of enterprise IT governance is therefore very important. Because IT governance has just introduced into China for a short time, most of literature about this field is focused on large-scale enterprises, few studies on SMEs, so it is hard to find a way to guide Chinese SMEs to implement IT governance work. The previous studies of IT governance pay more attention on how to use IT governance effectively in large-scale enterprise and the optimization of it, for SMEs in China was ignored, due to this situation, although the IT governance in the larger enterprises have developed rapidly, but for some small and medium enterprises are still at a very early stage. It could not be denied that most of the SMEs have a common problem which is the shortage of funds and personnel, people think it is hard to launch IT governance work, but still SMEs in China need IT governance as a support to help them in the future.

Through our findings, we learned that part of SMEs in IT management and implementation aspects of the work is contracted out to a third party, they do not have their own IT management and IT governance methods. From the feedback we get the results of view, most of the company’s focus is an effective and quick solution for IT governance, rather than related guidelines and terms, in other words what is the SMEs actually need is the practical cases and IT governance resolve methods. Furthermore, when we asked about when the return on IT investments over the past three years, only 14.29% of the companies said they are satisfied, so the majority of enterprises in the current IT governance situation are not very satisfactory. Be obtained for the benefits of IT governance, most of them believe that enhance the competitiveness of enterprises through strengthen
customer satisfaction and further increase the company's revenue is the best, at the same time improve service capabilities are particularly important.

### 6.3 The adoption of COBIT 5 and ITIL

From the survey results above, Chinese small and medium enterprises are more focused on IT service capabilities and customer satisfaction, they believe these two parts can help the enterprise to obtain more competitive in the business environment in China. On the other hand, what is the Chinese SMEs need most is an effective IT governance approach, allowing these companies to find the appropriate way to implement IT governance work, so a framework which provide the implementation of specific actions is more suitable for these enterprises.

Since we mentioned before, ITIL is a framework focus on practical implementation, it gives an introduction of what should enterprise consider and why before they actually do the work, it is essential for a company who at the early stage of IT governance. In addition, the core of ITIL is IT service which gives a life cycle of continual service improvement, it also provides the principles and process to maintain and improve the satisfaction of the customer, so ITIL is basically meet the needs of Chinese SMEs. Moreover, ITIL provides the details of how to implement IT governance in a practical dimension; it provides several actual cases, which allow the enterprise finds a similar one to guide them during the IT governance implementation. From the point of these circumstances, ITIL is more suitable for the small and medium enterprises in China.

For COBIT, it is more like a handbook. It mainly gives some guidelines and constraints on IT governance and coordination for IT governance, and provides advice on how to make this concept into different departments throughout the company. The conditions and requirements of launch of COBIT are complex and very detailed, which for a small and medium company in terms of is a big challenge, and if a specific enterprise wants to use COBIT the maturity of it is also a mandatory requirement. So we think COBIT as a framework for IT governance optimization and maintenance, in other words, to use it after the start of the IT governance process to optimize the entire IT governance, and make IT governance guidance for future standardization is more reasonable and realistic for SMEs in China.
6.4 Suggestions

Although more than half of the respondents have realized the importance of IT governance and the work has been started, there still some problem in how to process and improve the current situation. Here we will generate some suggestion based on the literature review of Chinese SMEs IT governance and combine with the result of the questionnaire for the Chinese SMEs.

- Change the tradition thinking of IT governance.

Compare with modern information technology and information service in those companies, the top level still keeps the tradition understands of IT governance. IT is regarded independent from the core business and the object of IT is intended to support the business environment. So our suggestion is that set up and maintain IT strategic position, establish the concepts about the interaction between enterprise strategy and IT strategy, clarify the role of IT in the business.

- The object of IT should:

  1. Start from the organization’s strategic rather than start from the demand of the system.
  2. Start from the change of business rather than start from the change of technology.

- Establish the IT governance committee in the company

The committee is made up of the top level of organization include the IT management and business management departments. Hold a regular meeting and set the business and IT strategy at the meeting so as to keep the alignment of business and IT also integrates the IT governance to the organization’s internal control.

- An independent audit of information system

The audit of the information system is to obtain and evaluate evidence, to determine whether the current information system can ensure the security of assets, data integrity and efficient use of the resource of the organization and effective realization of organizational goals.

- Obtain an IT governance framework
There are many frameworks are proved as the efficiency for IT governance in the enterprise. Although SMEs are very different from those large companies, some part of the frameworks still can be applied for efficient governance. So our suggestion is that the manager of IT department should know some framework like COBIT, ITIL and ISO20000 and find or create their own framework while the process of implementing those large frameworks.

6.5 Conclusions

With the development of information technology, the use of IT could not stop at the technology level but should at the strategic level, integrate IT with business, align IT strategy with business strategy is a trend in most foreign companies. IT governance is regarded a necessary mechanism for managing IT for the strategic level has been widely used in the SMEs all around the world, but in Chinese SMEs, the work of IT governance is still at the entry level.

COBIT 5 and ITIL do use as a framework for some Chinese SMEs but not most. This is not because they are not suitable for Chinese SMEs but less Chinese SMEs has the knowledge of COBIT5 and ITIL.

Through this survey, we investigate the situation of Chinese SMEs’ IT governance and the problem they are facing. The biggest problem with them is their traditional think of IT but not the lack of IT governance framework.

For the future work, we found that the outsourcing rate of the company will some degree influence the choice of IT governance framework and the strategy of IT management. This can be an interesting subject for research. On the other hand, the investigation of the feasibility of our suggestion can be another subject.
7 References


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Appendices

8 Appendices

Appendix 1 Questionnaire

Dear Mr. /Mrs.

With the growth of Chinese economic and the information technology, IT plays an important in the business. But while using IT to promote our business competitiveness, how to manage and governance IT becomes a big problem for most CIO. The problems can be how to manage the risk, maximum the IT value and ensure the IT performance on track. IT governance here is used as a method to effectively control and manage risks associated with IT.

This survey is about the adaption of COBIT and ITIL in your company. Maybe you don’t know much about these two IT governance frameworks or you even not hear about them, but this will not infect this survey, the question are not technical problems but about what is your company more concern when perform IT governance.

As the result of the survey, we will generate some conclusion and recommendations for the companies in their IT governance work.

Thank you for your time.

( ) 1. What is your industry?

A. Education
B. Energy
C. Financial
D. Healthcare
E. Manufacturing
F. Mining and construction
G. Retail
H. Technology
I. Telecommunications
J. Transportation

2. How is the outsourced degree of the following activities by your company? (Please mark from 1 to 3 points, 1=Not outsourced, 2=Partially outsourced, 5=Fully outsourced)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT infrastructure provisioning</td>
<td></td>
</tr>
<tr>
<td>IT infrastructure maintenance</td>
<td></td>
</tr>
<tr>
<td>App. development and maintenance</td>
<td></td>
</tr>
<tr>
<td>IT help desk</td>
<td></td>
</tr>
<tr>
<td>End user technique support</td>
<td></td>
</tr>
<tr>
<td>Other :_________________ (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
3. What is the framework implement in your enterprise?
A. COBIT  
B. ITIL  
C. ISO/IEC 38500  
D. Other: ________________ (please specify)

4. What do you think is the most important part for the ITG framework?
A. Keep the goal of IT aligns with the business goal.  
B. Keep the IT service perform high  
C. Low the cost of IT  
D. Management the risk of IT

5. What do you think is the most enabler in your enterprise to promote effective IT governance?
A. The frameworks and standards for IT governance. E.g. COBIT  
B. The best practice frameworks and standards. E.g. ITIL  
C. A specific tool to implement and improve the IT governance.  
D. There is no IT governance in our enterprise.

6. How do you think your company’s maturity level on your IT governance?
A. We have good governance of IT and the process of IT governance is continuously optimized.  
B. We have good governance of IT and we keep it.  
C. We know the important of IT governance and we just start the related work.  
D. We don’t think it is important.

7. In the last year, what influence made to the enterprise by IT? Please select three of the most main benefits. (Multiple choice)
A. Reduce the enterprise cost.  
B. Promote the enterprise innovation.  
C. Increase (external) customer satisfaction.  
D. Strengthen the safety/risk management.  
E. Create a competitive advantage.  
F. Increase the existing sources of income  
G. Bring new revenue sources  
H. Make the supply chain automation/visualization.  
I. Make the business global.

8. What do you think is the most inhibitor of starting the work of IT governance?
A. No enough money to start the work  
B. Lack of employee and related knowledge to process the governance  
C. Enterprise culture
D. Core business of the enterprise needn’t the support of IT

9. Please mark the focus on IT strategic planning in the future 3 to 5 years:
   (please mark from 1 to 5 points, 1=Not important, 3=Medium, 5=Very important)

<table>
<thead>
<tr>
<th>Focus</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce the running cost of the enterprise</td>
<td></td>
</tr>
<tr>
<td>Promote the ability of the enterprise innovation</td>
<td></td>
</tr>
<tr>
<td>Promote the service ability of the enterprise</td>
<td></td>
</tr>
<tr>
<td>Internal promote the ability of control on the risk management</td>
<td></td>
</tr>
<tr>
<td>Use IT to build the competitive advantage of the enterprise</td>
<td></td>
</tr>
<tr>
<td>Use IT to improve the current profitability of the enterprise</td>
<td></td>
</tr>
<tr>
<td>Use IT to create new profit model for the enterprise</td>
<td></td>
</tr>
<tr>
<td>Use IT to implementation the collaboration chain of the enterprise</td>
<td></td>
</tr>
</tbody>
</table>

(  ) 10. How your company creates the IT planning?

A. Fully done by IT team, assist other business departments to cooperate.
B. Under the requirements form the business departments, IT team do the overall evaluation and summary.
C. Make by the high-level in the company, IT team is the main execution of the plan.
D. Make by the high-level in the company, IT team will assist the relate business departments to execute.

(  ) 11. How do you think the IT work in your enterprise?

A. Fulfil the business requirement. Keep the business environment running and useful.
B. IT is part of the business, help it to innovate and achieve the strategic plan.

(  ) 12. Who will responsible for the assessment of IT investment return?

A. IT team responsible for the IT investment return.
B. IT team is mainly responsible for the IT investment return.
C. Related business department responsible for the IT investment return.
D. Related business department is mainly responsible for the IT investment return.

(  ) 13. The evaluation of IT investment return in the past 3 years is?

A. Very satisfied.
B. Satisfied.
C. Good.
D. Not satisfied.

(  ) 14. How you do the judgement above?

A. IT achieve its goal
B. With the help of IT, the business goal achieved.
C. Personal judgement.
15. When implementing the IT governance, which you think is can be the challenges? (Multiple choice)

A. The change of business.
B. The communication issues.
C. No commitment and support from the top-level.
D. Difficult to show the value and benefits of the IT governance.
E. Current enterprise governance is ineffective to support the IT governance.
F. The complexity of the enterprise organization.
G. Do too much at once.
F. Don't know.

16. In which way you prefer to find and avoid the risks?
A. There is a guide teaches you to do so.
B. Through the best practices.

17. Is there an evaluation of IT investment return in IT construction every time?
A. Each construction of IT, including any IT equipment procurement will be dominated by the IT department for evaluating IT investment return.
B. Only in the construction of key IT projects, will be dominated by the IT team to evaluate IT return on investment and related business department.
C. For each specific IT projects, dominated by business department, the IT team to participate in IT investment returns under evaluation.
D. Rarely does IT return on investment evaluation; unless IT is the request of the high-level, this work will start.

18. Your evaluation of work performance of the IT department in your company. (Please mark from 1 to 5 points, 1=Don’t agree, 3=Medium, 5=Fully agree)

| Our team is very effective for IT |  |
| Our IT project usually able to finish within the allotted time |  |
| We constantly improve the system operation planning |  |
| We continuously improve our working software usage. |  |
| Our computer operation of high performance |  |
| We handle the user requirements to the information system well |  |
| We have a powerful network management function |  |
| We have reasonable allocation IT internal resources |  |

19. How you make the judgement above?
A. Through the result of the quantitative assessment of IT hold by our company.
B. Through the result of the quantitative assessment of IT hold by outsource.
C. Personal judgement.

20. Work on IT governance, you pay more attention to?
A. The strategic plan for IT, clear the goal of IT work.
B. The guide for IT work, make sure how IT achieve the goal.
C. The quality of IT service.
D. Other: __________