Evaluating Business Process Management Maturity

A case study on a Chinese electronic company

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ABSTRACT

Nowadays, with the fierce competition, increasingly more companies begin to pay more attention to efficient management which can help companies to make quick decision, fast information transfer and shorter cycle times. In order to achieve this, many companies start internally to improve their business process continuously in different aspects to respond the changes in environment and customers’ needs. As a result, business process management (BPM) becomes the most popular business and technology management method in the recent years. BPM is an effective approach to govern and improve fundamental activities of a company’s operation such as product development, marketing, cross-function coordination and other major elements.

This thesis is focusing on how to apply BPM maturity model to evaluate a company’s BPM maturity level and help this company better implement BPM in the future. The BPM maturity model we used is based on Gartner’s (2006) model. And this model is focusing on six critical success factors that influence BPM implementation. The BPM maturity level can be evaluated through these factors. However, when we conduct this research, we find Gartner’s (2006) model is not good enough to evaluate BPM maturity level. Therefore, we improved Gartner’s (2006) model by adding more criteria and finally applied this new model to evaluate the company’s BPM maturity level.

The research approach we conducted is deductive and a qualitative strategy is chosen as our main research strategy. In this thesis we applied a case study design and a Chinese electronic company was chosen as the case company. This company has a strong position in Chinese electronic industry and it has already implemented BPM for four years. In this research, the BPM maturity level will be evaluated by the improved Gartner (2006) model, after that a couple of suggestions will be promoted to help this company better implement BPM.

Based on the analysis, we finally evaluated the maturity level of the six critical success factors. Moreover, we also found some special characteristics when BPM is implemented in this Chinese company. Firstly, In Chinese companies, governance, method and IT are the same as west companies but strategic alignment, culture & leadership and people are different from western companies. Secondly, Chinese companies want to keep their hierarchical structure when promote BPM. Thirdly, In Chinese companies, the department manager still has superior power than process owner, and the authority of process owner is limited. Finally, People as a factor is still the weak point for Chinese companies implementing BPM.

Keywords: BPM, process management, BPM maturity model, critical success factors.
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1. Introduction

1.1 Background

Nowadays, many companies are trying to increase their market share but they face fierce competition. With purpose to be the winner in the competition, most companies pay more attention to quality and customer satisfaction to gain more profits (Siha & Saad, 2008). In order to achieve that, the company has to make quick decision, fast information transfer and shorter cycles times (Simchil-levi et al., 2000; KO, Lee & Lee, 2009). Therefore, efficient management among the organization’s business process gains much attention (KO, Lee & Lee, 2009). Many companies start internally to improve their business process continuously in different aspects to respond the changes in environment and customers’ needs (Siha & Saad, 2008). As a result, business process management (BPM) becomes the most popular business and technology management method in the recent years (Garimella, Lees & Williams, 2008). Elzinga et al. (1995, p119) say that “Many companies are engaged in assessing ways in which their productivity, product quality and operations can be improved. A relatively new area of such improvement is business process management (BPM).”

However, BPM is not a newborn concept. Most organizations have heard about process management or process improvement. Moreover, many organizations have tried some process improvement methods such as Six Sigma and value stream mapping method or new technology like Business Activity Monitoring (BAM) or Service Oriented Architectures (SOA) (Garimella, Lees & Williams, 2008). Actually, BPM comes from Business Process Re-engineering and Quality Management and also has close connection with Service Oriented Architectures (Ravesteyn, 2007). Comparing with these separate measures, “BPM consolidates objectives, frameworks, methodologies and tools which have been proposed in a number of approaches including Business Process Reengineering, Business Process Innovation, Business Process Modeling and Business Process Automation/Workflow Management/Process-Aware Information Systems (Rosemann & de Bruin, 2005, p2)”. There are five key themes of BPM: process strategy, process architecture, process ownership, process measurement, process improvement. (Smart, Maddern & Maull, 2009). Actually, BPM is not a technology but a process-oriented management discipline (Hill et al., 2008)

BPM is the combination of measures, tools and technologies to design and govern business process (Garimella, Lees & Williams, 2008). BPM is an effective approach to govern and improve fundamental activities of a company’s operation such as product development, marketing, cross-function coordination and other major elements (Zairi, 1997). According to Garimella, Lees and Williams (2008), the
company can gain four good results:

- Business manager can control all the business process operation and make a quick decision to respond the external changes.
- IT managers can apply technology directly on business operation.
- Employees can link goals to process and improve personal performance.
- The organization can cope with the challenge quickly and strategy change automatically.

### 1.2 Problem Discussion

Recent research shows that the process management plays a very important role in Europe and US (Rosemann & Bruin, 2005). Although, many organizations focus on the process-oriented in the organizational operation, only a few organizations can integrate and coordinate beyond functional departments to form end-to-end process, which is from the customers to final results, and improve process-based activities efficiently (Spanyi, 2003). When one action is triggered, the end-to-end process is to let people know the whole chains of action and its potential results. So how to implement BPM effectively and achieve the company’s goal begin to be considered among the organizations.

When company has carried out BPM, they have to know the results of introducing BPM. Moreover, the company has to know where they can improve and how to improve. Then, researchers begin to introduce new models to achieve this. Since the Software engineering Institute at Carnegie Mellon University proposed the Capability Maturity Model (CMM), which illustrates five maturity levels to access the process of the software development, many researchers focus on how to evaluate the company’s maturity level. The concept of process maturity becomes very important in adopting process management (McCormack et al., 2009). So many authors such as Paulk et al (1993), Fisher (2004), Rosemann and Bruin (2005) and Gartner (2006), begin to introduce maturity into BPM model to help the company know BPM-maturity level of organizations. Maturity models have been designed to assess the company maturity level from the different factors and each factor’s criteria in different maturity level (Rosemann et al., 2005). Fisher (2004) combines five factors into the five stages of maturity which really gives a clear picture of the different maturity levels’ characters. Rosemann and Bruin (2005) use Delphi method to indentify the critical success factors which enables organizations to visualize strength and weakness. Melenovsky and Sinur (2006), who work in Gartner group and use Gartner model to name their model, use six phases to describe BPM-maturity level and also give six phases’ different requirements and features. From Gartner’s model, the organizations will know which phase they stay in and know which factors fall behind.

When we do our research at the beginning, the Ilex manager told us that the Ilex took the Gartner’s model to evaluate BPM-maturity level. This really makes us want to
know why this consult company wants to use Gartner model. Then we do research on the Gartner model. We have to say that Gartner model gives much specific information to identify characters of each maturity level. Gartner model focuses on six critical success factors which are strategy alignment, culture and leadership, people, governance, methods and IT. This model uses different factors to formulate different levels’ requirement and let organizations evaluate BPM by themselves. This model gives six factors’ criteria in different maturity level which is really helpful for company to know their maturity level.

However, these criteria are not good enough to help the company to measure the maturity level by the company itself. Actually, Fisher (2004), Rosemann and de Bruin (2005), Ahmad, Wasana, Alibabaei, Ahmad, Aghdasi and Mohammad (2009) and Trkman (2010) also focus on the different factors and criteria. Rosemann and de Bruin use their model to do comprehensive case survey and determine the real factors by Delphi method in world wide. Fisher (2004) introduces these factors into his own BPM-maturity model and also gives each factor’s criteria in different maturity level.

Through the literature review, we find that it is very important to let organizations know where they are today. But Gartner model cannot help companies evaluate their maturity level perfectly. The company can use factors to show BPM-maturity level but they have to know each factor’s status in this company. So they need more criteria to know how to use BPM to improve business performance and help company to improve their business process designing and carrying out. Hence, Gartner model should be complemented with more criteria to give the clear picture of the evaluating standard. So if one company wants to adopt Gartner model, they have to be given more criteria.

1.3 Research Purpose

The purpose of this study is to use the existing theory to give more criteria to evaluate the company’s BPM-maturity level and help the company to carry out BPM more propitious. In our paper, we use Gartner (2006)’s BPM-maturity model as our basic theory to evaluate the company’s BPM-maturity level because this model has been carried out by Ilex which is a Sweden consultant company, and it is also one of the rounded theory to describe BPM-maturity level. However, this model can be improved to give more criteria to find out each factors’ maturity level. So, we will improve Gartner model and use the new one to assess a company’s BPM-maturity level.

BPM has been introduced into China and some companies have carried out it. So we use a Chinese company as a research object to see how to use our new model to evaluate a Chinese company’s BPM-maturity level. However, Chinese context is different from western countries, so whether BPM is treated in the same between western countries and China is really interesting for us. Hence, we want to find some
special characteristics when a Chinese company uses BPM.

1.4 Research Questions

Researching on theory, we will add more criteria of each factor to describe different BPM-maturity levels. When we find more criteria, we will try to add them into new model. As long as we finish the improvement of new model, we will try to use the new one to evaluate a company’s BPM-maturity level. In this process, we can also give possible methods to help organizations to enter the higher maturity level and improve the falling factors. Our research objective is a Chinese company, so we also want to know whether there are some special characteristics when BPM is implemented in a Chinese company. So our research questions can be separated as follows:

1. How to improve Gartner model to evaluate a company’s BPM-maturity level?
2. How to apply a new model to evaluate a Chinese company’s BPM-maturity level?
3. Whether there are some special characteristics in Chinese background when BPM is implemented in a Chinese company?
2. Theoretical framework

2.1 Business process management

2.1.1 What is a process?

Process is a very broad word appears in many different disciplines, and for different people, process has different meanings (Gulledge Jr & Sommer, 2002), for example, software engineers regard process as the relationships among static activities while industrial engineers consider process as dynamic linking of activities (e.g. process flows). When comes to business process, Davenport and Short (1990) define a process as “a set of logically related tasks to achieve a defined business outcome”. IMI (1994) also defines business process as the “strands of activity that link the operations of an organization to the requirements of its customers”. Mohamed Zairi (1997) defines “a process is an approach for converting inputs to outputs. It is the way in which all the resources of an organization are used in a reliable, repeatable and consistent way to achieve its goals”. Moreover, according to Bulletpoint (1996), there are four key features to any process, including:

- “predictable and definable inputs;
- a linear, logical sequence or flow;
- a set of clearly definable tasks or activities;
- a predictable and desired outcome or result, which gives us a clear picture of what processes are.”

2.1.2 What is business process management (BPM)?

The concept of BPM is mainly evolved from Business Process Reengineering (BPR) which once attracted many researchers’ attention during 1990s (Davenport and Short, 1990; Davenport 1993; Hammer, 1990; Hammer & Champy 1993), the main focus of BPR are IT and business, and its success is built on the good communication and collaboration of IT and business (Antonucci & Goeke, 2011), however, the emerge of BPM extends and broadens the scope of BPR through the integrating IT and business (Hill et al., 2006). Although IT still provides a fundamental support to the business process, it is only a small part of the BPM (Antonucci & Goeke, 2011). It is acknowledged that BPM evolved from being system(technology) oriented, to a management practice, and now to a general discipline dedicated to a process-centric, customer-focused organization with goals of integrating management, people, process, and technology for both operational and strategic activities (Hill et al., 2006; Melenovsky, 2005). And a successful BPM activity requires both broad BPM knowledge and firm-specific business expertise (Antonucci & Goeke, 2011).
Although the concept of BPM evolved from many relative concepts, such as Total Quality Management (TQM), Business Process Reengineering (BPR) and Enterprise Resource Planning (ERP) (Paim et al., 2008), and so many disciplines feeding into the concept of BPM, a universally accepted definition of BPM does not exist. Among the literature of BPM, many researchers have given the definition of BPM. Elzinga et al. (1995) defines BPM as “a systematic, structured approach to analyze, improve, control, and manage processes with the aim of improving the quality of products and services”. Zairi (1997) describes BPM as “a structured approach to analyze and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of a company’s operations”. Zairi (1997) also says “BPM is concerned with the main aspects of business operations where there is high leverage and a big proportion of added value”. In this thesis, we are going to follow the definition made by Elzinga et al. (1995), who considers BPM as an approach to analyze, improve, control, and manage processes in order to help the organization to improve the quality of products and services. We think this definition is more suitable for our case company to define its BPM elements.

Besides the definitions above, different researchers have different focuses on BPM. Lee and Dale (1998) assert BPM is a customer-focused approach to manage and improve all processes in a company. Jarrar et al. (2000) argue that BPM should focus on process improvement across the supply chain as well as the change management, people management and development. BPM aims to achieve the optimized value creation through the control and analysis of operational business processes by the support of techniques and software tools (van der Aalst et al., 2003). Harmon (2003) stresses BPM is IT-focused which characteristics BPM from the perspective of business process automation. Rosemann and de Bruin (2004) conclude that although various approaches have been used on the study of BPM, the main focus of BPM is on process and process improvement.

2.1.3 The benefits of implementing BPM

Antonucci and Goeke (2011) argue that the goal of BPM is to help the organization complete its objectives in a more efficient and effective way. According to Garimella, Lees and Williams (2008), it is very important for the organization to communicate and collaborate between business and IT activities in developing, implementing and optimizing the operational business processes. In order to maximum the effectiveness of business processes, three steps can be followed, firstly, the organization need to determine the optimal process for the current situation, secondly, try to make the process operate as effectively as possible, thirdly, make sure the decisions and controls are good for the ongoing effectiveness.

During the implementation of BPM, the organization can judge how effectiveness it is and redesign the processes that will improve the performance by the key metrics that
are important to how the process influence business (Garimella, Lees & Williams, 2008), it is also argued that process automation and agility can make good efforts to promote the process effectiveness. According to Garimella, Lees and Williams (2008), automation process can help the organization combine the new and existing services to do the jobs automatically instead of handling them manually, which will increase productivity and reduce the errors, then help promote the effectiveness. The agility process can lead to faster response times to problems and faster time to formulate solutions, because agility allows the organization to recognize change when it happens, analyze the impact of that change, and develop solutions to how the business should respond, in this case, it will make the process operate more agile and efficient.

2.1.4 Critical success factors of BPM

As we illustrated in the introduction part, many researchers are focusing on the critical success factors of BPM, which includes strategic alignment, culture and leadership, people, governance, methods and information technology (Fisher 2004; Rosemann, de Bruin, Freeze & Kulkarni 2005; Melenovsky & Sinur 2006). These six critical factors are also our focus in this thesis, and we will study deeply in each factor in order to better evaluate BPM maturity level.

Strategic alignment

According to de Bruin and Rosemann (2006), strategic alignment of BPM is to enhance the linkages that connect organizational priorities and enterprise processes in order to achieve its business objectives. It is very important for the organization to make a tight linkage between competitive strategy and operational function so as to improve its performance through BPM (Rhee & Mehra, 2006), and proactive implementation of BPM as part of organization’s business strategy coupled with a customer-central focus is considered as the most important predictor of BPM. O’Neill and Sohal (1998) argue that BPM goals established based on the strategic direction will help the organization to achieve long-term benefits. It is also found that organizations that lack of linkages between their strategy and BPM project is one of the reasons lead to failure (Bandara, Indulska, Chong, & Sadiq, 2007). Strategic alignment plays a very important role between business objectives and the goals of BPM, which is an essential element for the success of projects (Bandara, Wasana & Alibabaie, Ahmad & Aghdasi, Mohammad, 2009).

Culture

Culture is a broad concept which includes values, beliefs, attitudes and behaviours in people’s mind that distinguish one group or category of people from another (Hofstede 1993; McSweeney 2002). According to Bandara et al. (2009), organization culture implies the usual way that people behave in their organizations. It is very difficult to change an organization culture in a short time, as a result, the
characteristics of culture are considered to be key factors that influence BPM project success (Grugulis & Wilkinson, 2002). Rosemann and de Bruin (2005a; 2005b) and Rosemann et al. (2004) assert that culture is a critical success factor regarding BPM, and it is crucial for organizations identifying the potential resistance to change or a lack of process understanding at the beginning of launching BPM. Cultural barriers in BPM such as hierarchical structures, vertical communication, and the perception of IT should attract the top management’s attention since they may hinder success BPM project (Corrigan, 1996).

**Leadership**

Many existing literatures point out the vital role leadership plays in implementing BPM (Ahadi 2004; Sutcliffe 1999), and it is very important for leadership playing the role in driving, monitoring and controlling the activities related to the change. It is also argued that lack of good leadership is one of the main reasons for the most failures in business process changes (Hammer & Champy, 1993). Leadership is not only the CEO’s responsibility, larger senior leadership team and the middle management are also playing important roles in supporting process design and facilitating cultural change throughout the organization (Lukas et al., 2007). It is found that no matter the employees support a new strategy or not, the leaders can still affect the speed and effectiveness when they implement new processes (Caldwell et al, 2008). According to Bandara et al., (2009), leadership is crucial during the implementation of BPM, and high power of senior management will make the implementation of BPM more effectiveness when the organization solves the conflicts between managers and problematic issues across organizations.

**People**

According to Melenovsky and sinur (2006), the factor people represent the individuals and groups who continually enhance and apply their professional knowledge towards the process-oriented changes in the organization. Schneider, Brief and Guzzo (1996) argue that the most important thing for implementing an efficient change in the organization is changing the ways the employees do the jobs before, if they do not change their behaviors, it will be impossible to carry out the new strategy successfully. Since all of the changes that take place in an organization need to be conducted by people ultimately, people is considered to be one of the critical factors that influence the success of BPM (Paper & Chang 2005). However, sometimes it is very difficult for people to follow the changes in the organization which can lead various resistances because of the lack of trust between top management and employees or the fear of losing jobs (Attaran 1999). As we know that BPM is a process-oriented management, in order to implement BPM successfully, people in the organization need to change their attitudes and traditional ways of work, they have to learn how to integrate their works to achieve the process outcomes (Jeston & Nelis 2008), so that it is very important for organization to arrange expertise training during the
implementation of BPM (Pritchard & Armistead, 1999).

**Governance**

Governance refers to relevant and clearly responsibility, decision making and reward processes to guide actions (Melenovsky & sinur, 2006). According to Lee and Dale (1998), it is important for the organization to define the process owner clearly, and make sure their responsibilities of the process performance and improvement, a process owner should have the authority of designing process, measuring its performance and training the workers who perform it. Lukas et al. (2007) also argues that the implementation of the team process owners is a very important strategy that can be used in many systems, and the participation of process owners in the change of process makes them successfully implement new work methods developed by the team. Kuwaiti (2004) also argues that process owners take the responsibility of developing the required skills that applied by employees, and they should keep improving the capabilities of the business processes.

**Methods**

Methods refers to the approaches that an organization uses to support its process-oriented actions is considered to be one of the critical factors that influence the success of BPM (Melenovsky & sinur, 2006). Different kinds of methodologies have been developed to help organizations manage their business process projects (Mansar, Marir et al. 2003). For example, many organizations have tried some process improvement methods such as Six Sigma and Lean or new technology like Business Activity Monitoring (BAM) or Service Oriented Architectures (SOA) (Garimella, Lees & Williams, 2008). Vakola and Rezgui (2000) also assert that apply the methods to govern the business process projects will contribute to the success since they can help to solve the problems. During the process of BPM implementation, establish process ownership and let business process owners drive BPM to the whole company is one of the methods that can apply (Fisher, 2004). As a result, it is crucial for organizations to select and implement appropriate techniques and tools to promote BPM’s performance.

**Information technology**

Information technology which includes the software, hardware and information management systems that support the process activities is a critical factor of BPM success (Melenovsky & sinur, 2006). It is argued that IT should be applied in improving the effectiveness of business process, rather than automating the processes (Hammer 1990; Akhavan, Jafari et al. 2006). IT plays an important role in BPM projects, for example, it can help control the business processes change, facilitate the process designing phase and help complete the final implementation (Al-Mashari & Zairi 2000; Attaran 2004). However, organizations also need to be very careful when
they apply IT, because it can bring disadvantages to the business process project which will hinder the success of BPM (Boudreau & Robey 1996; Al-Mashari & Zairi 2000). Terziovski et al. (2003) states that although IT is very important, IT itself cannot bring any competitive advantages, the organizations must rearrange their core processes from a customer-focus.

2.2 The phase of BPM-maturity

2.2.1 BPM-maturity model

The most of the BPM-maturity models are based on the Capability Maturity Model (CMM) (Rosemann & Bruin, 2005). CMM uses five maturity phases to illustrate the degree maturation of the software engineering which is adopted by most BPM authors to create BPM-maturity model. These five phases are: (1) Initial State, (2) Defined, (3) Repeatable, (4) Managed and (5) Optimized (Harmon, 2003). In order to give a clear picture to understand the whole picture of BPM-maturity, Paulk et al (1993) make a comparison of high and low maturity and the five maturity stages. In Paulk et al (1993)’s theory, comparing with the low maturity level, the high maturity organization will have high BPM expertise, focus on the wide coverage of the organization and become more proactive.

However, the software maturity model cannot deal with the business problems correctly. CMM only shows the degree maturation of the software engineering, which does not explain business process management maturity level. So, in the recent years, most of researchers pay much more attention to give more suitable model to reflect the demand and particularity of the business process management. Fisher (2004) also uses five states to show the state of process maturity. From Fisher’s theory, he has gotten rid of the software engineering and begins to focus on the business process management.

To present different BPM-maturity levels’ requirement, Fisher (2004) introduces five factors to demonstrate different maturity level: Strategy, Controls, Process, Technology and People. However, Rosemann and Bruin (2005) use governance instead of control, and add methods and culture into the model, which is the same as Gartner (2006). Rosemann and Bruin give more specific comparison of low and high maturity which demonstrates the different performances between the low maturity and high maturity, as Table 1 shows. Fisher, Rosemann and Bruin focus on the BPM area and give each factor’s criteria to show the different BPM-maturity level’s requirement.

<table>
<thead>
<tr>
<th>Low Maturity</th>
<th>High Maturity</th>
</tr>
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<tbody>
<tr>
<td>Un- coordinated, isolated projects</td>
<td>Coordinated BPM activities</td>
</tr>
<tr>
<td>Low BPM skills</td>
<td>High BPM expertise</td>
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</tbody>
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<table>
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<tr>
<th>Key personnel</th>
<th>Organizational wide coverage</th>
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<tbody>
<tr>
<td>Reactive</td>
<td>Proactive</td>
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<tr>
<td>Manual</td>
<td>Automation</td>
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<tr>
<td>Internally focused</td>
<td>Extended organization</td>
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<tr>
<td>Low resourcing</td>
<td>Efficient resourcing</td>
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<tr>
<td>Native</td>
<td>Comprehensive understanding</td>
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<tr>
<td>Static</td>
<td>Innovative</td>
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Table 1: Comparison of low maturity and high maturity (According to Rosemann & Bruin, 2005)

Moreover, according to Melenovsky and Sinur (2006), there are six phases to show the different BPM-maturity level (see figure 1): (phase0) acknowledge operational inefficiencies, (phase1) process aware, (phase2) intra-process automation and control, (phase3) inter-process automation and control, (phase4) enterprise valuation control and (phase5) agile business structure. Melenovsky and Sinur (2006) provide the different phases of maturity’s performance.

Comparing with Fisher (2004)’s model, Melenovsky and Sinur (2006) model gives more specific information to identify characters of each maturity level. According to Melenovsky and Sinur (2006), in the phase0, organization realizes that some business obstacles cannot be deal with by traditional approaches. So organization needs to find causes of bad performance and falling factors. In the phase1, organization begins to become “process awareness”, and takes some actions to improve a specific process. But the organization will not invest much on BPM technologies. Comparing with phase1, organization executes a explicit business process and apply some basic software in the phase2. With launching BPM process, the organization realizes the significant change and better process performance. However, phase0, phase1 and phase2 only focus on the internal organization, so the organization cannot take some effective action to cope with the changing external environment. From phase3, the organization will resolve more comprehensive relationship. In the phase3,
organization enhances the relationship among the whole business process and cross-department cooperation and integration become a habit gradually. The process owners have to cope with cross-process ineffectiveness and obtain much more controlling power in far-ranging inter-company processes. In contrast to phase3, in the phase4, organization will link strategic goals to process execution directly, which happens dynamically. Ultimately, in the phase5, the organization will respond the environment change agilely and the agile business structure helps the organization capture new opportunities, gain more flexible knowledge about customers, employees, competition and partners.

In addition, the highest maturity level can be treated as the most complicated level of launching BPM but it is not the same standard for different organizations. The highest maturity level is treated as an ideal state. For example, ecosystem is an ideal situation for a company which cannot be completed perfectly. Companies should have their own aims and perspectives to carry out BPM and determine which level they want to enter. So the most appropriate BPM-maturity level is based on the perspectives, combining objectives, relevant limitations, specific business cases, etc (Rosemann & Bruin, 2005). In the recent years, many researchers begin to use Delphi method to determine the model’s component (Becker, Knackstedt & Pöppelbuß, 2009).

2.2.2 Evaluating BPM-maturity level

The assessment of process maturity is to evaluate organization’s strength and weakness and to enable organization to know which level the organization stays in (Ibbs & Kwak, 2000). “Maturity models in and of themselves aren’t valuable unless we can apply them and achieve benefits from them (Fisher, 2004: p5).” Maturity model should identify the issues which will help organization take measure to deal with these issues and achieve higher maturity level (Pulk, weber, Garcia, Chrissis & Bush, 1993).

Rosemann et al. (2005) and Melenovsky & Sinur (2006) focus on six critical success factors’ performance, comparing Fisher (2004)’s five factors. Although these authors focus on the different factors, all the authors try their best to introduce factors into the BPM-maturity model. Rosemann et al and Melenovsky & Sinur apply the similar factors (strategic alignment, culture and leadership, people, governance, methods and information technology) and a lot of companies begin to use their achievements. For example, Ilex is a Sweden company which has taken Melenovsky & Sinur’s theory to help Volvo, Swedbank, Tele2, Ericsson and other companies step into the higher BPM-maturity. Nowadays, different researchers usually use the different factors’ performance or criteria in different levels to show BPM-maturity level. The researchers usually take questionnaire and Delphi technique to find different factors’ performance or criteria in a company and show the company’s maturity level (Rosemann & Bruin, 2005).
According to Melenovsky and Sinur (2006), the BPM-maturity model is divided into six levels and measuring the different factors’ performance is an effective method to show the BPM-maturity level. Fisher (2004), Rosemann, de Bruin, Freeze and Kulkarni (2005) also use this method to measure the BPM-maturity level.

However, Fisher (2004), Rosemann & de Bruin (2005) and Gartner (2006)’s BPM-maturity model have their own strength and weakness. Fisher (2004) gives each factor’s criteria in different BPM-maturity level and show how to use his model to evaluate the BPM maturity. But fisher’s model is based on the CMM and focuses on the limited area which cannot deal with the problems perfectly. Rosemann and de Bruin (2005) introduce the context into the BPM-maturity model which really helps us know BPM must be adjusted according to different industry. Gartner (2006) uses a business model (Table 2) to illustrate BPM-maturity and give some details about each maturity levels’ characters.

<table>
<thead>
<tr>
<th>Strategic Alignment</th>
<th>Phase0</th>
<th>Phase1</th>
<th>Phase2</th>
<th>Phase3</th>
<th>Phase4</th>
<th>Phase5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization focus on functional areas and product line</td>
<td>Construct new dimension of process to combine different function area</td>
<td>Combine global business process and organization goals</td>
<td>The business process integration extend the suppliers and customers</td>
<td>Link strategic goals and complicated process webs</td>
<td>Partners yield and share the competitive advantage with organization</td>
<td></td>
</tr>
<tr>
<td>Governance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emphasize on separate department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The governance structure is decentralized</td>
<td></td>
</tr>
<tr>
<td>People</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little understanding of end-to-end process occurs</td>
<td>Master some process skills and gain little expertise</td>
<td>Employees are accustomed to cross-function cooperation</td>
<td>Employees anticipate the process changes and formulate the possible measures</td>
<td>Staffs link their goals to process and eliminate the differences and contradictions</td>
<td>Employees are positive and active with continuous change</td>
<td></td>
</tr>
<tr>
<td>Culture &amp; leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional hierarchy</td>
<td>Emphasize reengineer and adjust the existing process</td>
<td>Pursue the continuous improvement</td>
<td>Process attitudes and behaviors change into habits</td>
<td>BPM gain organization's mutual trust and cooperation as making complicated decisions</td>
<td>Require limited adjustment to deal with the resistance to change</td>
<td></td>
</tr>
<tr>
<td>Focus on local operational metrics</td>
<td>Accept the process value system</td>
<td></td>
<td></td>
<td>Leadership pay attention to process simulation and generate suitable alternatives</td>
<td>Leadership is to make everyone become a decision-making authority</td>
<td></td>
</tr>
<tr>
<td>Phase0</td>
<td>Phase1</td>
<td>Phase2</td>
<td>Phase3</td>
<td>Phase4</td>
<td>Phase5</td>
<td></td>
</tr>
</tbody>
</table>

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13

But Gartner do not give explicit details about each factor’s performance in different BPM-maturity level, which cannot help companies to find their own problems by themselves. So, we decide to combine Fisher (2004), Rosemann & de Bruin (2005) and Gartner (2006)’s theory and give more details of each factors’ criteria. For example, Fisher (2004) use ecosystem to describe IT’s performance in phase 5, which is more accurate to describe this maturity level. Rosemann and de Bruin (2005) realize that linking process metrics and performance is a very important criteria of governance factor in phase3. So we will add more criteria to improve Gartner model (Table 2). This improved model will show each factor’s performance in different maturity level more detailed. Critical success factors’ criteria in the BPM-maturity level as follows: Table 3 (Fisher (2004), Rosemann, de Bruin, Freeze & Kulkarni (2005) and Melenovsky & Sinur (2006)):

1. Phase0: acknowledge operational inefficiencies

In this phase, organizations do not have process ideas. Form the strategic alignment, organizations focus on functional areas and product line. The companies always have functional hierarchy and emphasize on local operational metrics. The companies’ culture is full of opponent and distrust. People in these companies have little understanding of end-to-end process occurs and they only want to do their own jobs without cooperation. All the employees drive by certain cases.

From the governance, companies emphasize on separate department and people have to face fierce internal competition. Companies always focus on static operation structure and adopt “water fall” method. Moreover, they pay attention to reengineering and organizational transformation without formal measurement program. IT is built-to-last architecture and is an independent system. Companies use

<table>
<thead>
<tr>
<th>Information technology</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-to-last architecture</td>
<td>Adopt “water fall” method</td>
</tr>
<tr>
<td>Use application-centric method to solve problems</td>
<td>Pay attention to reengineering and organizational transformation</td>
</tr>
<tr>
<td>Design process and model process</td>
<td>Leverage Six Sigma, Lean and Value Stream Mapping methods</td>
</tr>
<tr>
<td>IT leads the major process management changes</td>
<td>Turn to process improvement initiatives</td>
</tr>
<tr>
<td>IT organization create automation process to help relative business managers</td>
<td>Business process owners drive the BPM into the whole company</td>
</tr>
<tr>
<td>Moving activities from people to rule-driven services</td>
<td>New methods and enhanced approached are introduced to support process management</td>
</tr>
<tr>
<td>Highlight rule optimization and real-time infrastructure</td>
<td>Create goal-driving process and visual tracking methods</td>
</tr>
<tr>
<td>Build collaborative infrastructure to support the process management</td>
<td>Create real-time and agile-infrastructure-driven goals</td>
</tr>
<tr>
<td>IT organization combines agile service and real-time infrastructure</td>
<td>Utilize BPM approaches to automate the process execution and monitoring without negative technical influence</td>
</tr>
<tr>
<td>Highlight rule optimization and real-time infrastructure</td>
<td>Utilize the smart and real-time technologies</td>
</tr>
<tr>
<td>“swarming agent” management are deployed to gain the competitive advantage</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Each factor’s criteria in BPM-maturity level (Gartner Model) (According to Melenovsky & Sinur, 2006, p 6)
application-centric method to solve problems.

2. Phase 1: Become Process Aware

From this phase, the company’s strategic alignment is to make process improvement plan and construct new dimension of process to combine different function area. Sometimes, process modeling exists in the organization. Companies’ culture combines some process message and companies have responsiveness to process change, but companies’ culture still emphasizes reengineer and adjusts the existing process. Employees master some process skills and gain little expertise and they can understand little about cross-functional department cooperation.

In phase 1, the companies become process management decision making and introduce global process owners in the organization. They leverage Six Sigma, Lean and Value Stream Mapping methods and turn to process improvement initiatives. IT department begins to design process and model process and IT leads the major process management changes.

3. Phase 2: Establish Intra-process Automation and Control

When companies enter this phase, they begin to link the strategy and process capability and combine global business process and organization goals. Companies’ culture pays attention to process values and beliefs, pursues the continuous improvement and accepts the process value system. Employees are accustomed to cross-function cooperation and communication. Sometimes, staffs can predict the future results and find the suitable alternatives dynamically.

Moreover, companies’ governance focuses on process roles and responsibilities and companies have strong capability to deal with differences and contradiction between process and policy. Continuous process improvement is merged into organization structure. The whole company implements and executes the process management and business process owners drive the BPM into the whole company. IT organization creates automation process to help relative business managers. IT moves activities from people to rule-driven services and highlights rule optimization and real-time infrastructure.

4. Phase 3: Establish Inter-process Automation and Control

Stepping into phase 3, companies build process architecture. The business process integration extends the suppliers and customers and business process becomes the basic element of organization. Comparing with the phase 2, process attitudes and behaviors change into habits and cross-function communication and cooperation becomes the values of organization. Moreover, formal business process leadership has priorities. Employees will get professional process education and anticipate the
process changes and formulate the possible measures. From the internal environment, resistance to change is seemed to be inappropriate, and process leaders define, design and carry out the core process.

Referring to governance, companies link process metrics and performance and put suppliers and customers into the process management. So suppliers and customers can keep the same step with the organization process management. Business cases drive the project and functional team is in charge of BPM execution. The whole companies focus on process control and measurement. They introduce new methods and enhanced approached to support process management. The aim of the IT is to build collaborative infrastructure to support the process management and streamline the process and information management by the help of system. In addition, IT organization combines agile service and real-time infrastructure.

5. Phase4: Establish Enterprise Valuation Control

Entering to phase4, companies focus on process output measurement and link strategic goals and complicated process webs. Companies are organized by the BPM automatically and the goals are set up by process performance and changes. BPM gain companies’ mutual trust and cooperation as making complicated decisions. Referring to leadership, companies pay attention to process simulation and generate suitable alternatives. Employees share process collaboration and communication experiences and follow the BPM directions and analysis process changes. Staffs link their goals to process and eliminate the differences and contradictions.

In phase4, companies begin to build process management standards as the main performance approaches. They try to streamline structure to overcome the instant changes and make real-time optimization plan to cope with organization challenges. Companies focus on seeking process improvement and innovation and create goal-driving process and visual tracking methods. The IT will help companies create real-time and agile-infrastructure-driven goals. The IT utilizes BPM approaches to automate the process execution and monitoring without negative technical influence

6. Phase5: Create an Agile Business Structure

Phase5 is the highest BPM maturity level. In this phase, the partners and organization are organized process. Partners yield and share the competitive advantage with organization. Companies have strong predictable capabilities and market advantage. They can cope with the environment change dynamically and respond real-time. The companies’ culture is to form process management social networks. Companies require limited adjustment to deal with the resistance to change. Leadership is to make everyone become a decision-making authority. As an employee, he or she can be treated as process management leaders. Each employee is positive and active with continuous change, who knows his or her roles and responsibilities clearly and
becomes a decision-making authority.

In phase 5, the governance structure is decentralized. Everyone can visualize the top manager’s strategy changes in the whole organization. Companies start to link goal execution and barriers elimination and relative process metrics can measure the partners’ performance. New methods are introduced to generate goal plans to cope with fierce competition. Companies create business process criteria and make them standard strategic management style. More importantly, they can generate potential opportunities by the BPM. The process integration will happen across the ecosystem. “Surround simulation” and “swarming agent” management are deployed to gain the competitive advantage. IT department focuses on the balance between self-adapting events and criteria management.

<table>
<thead>
<tr>
<th>Phase0</th>
<th>Phase1</th>
<th>Phase2</th>
<th>Phase3</th>
<th>Phase4</th>
<th>Phase5</th>
</tr>
</thead>
<tbody>
<tr>
<td>★ Organization focus on functional areas and product line</td>
<td>★ Construct new dimension of process to combine different function area</td>
<td>★ Combine global business process and organization goals</td>
<td>★ The business process integration extend the suppliers and customers</td>
<td>★ Link strategic goals and complicated process webs</td>
<td>★ Partners yield and share the competitive advantage with organization</td>
</tr>
<tr>
<td>★ No process idea</td>
<td>★ Make process improvement plan</td>
<td>★ Link the strategy and process capability</td>
<td>★ Build Enterprise process architecture</td>
<td>★ Organization is organized by the BPM automatically</td>
<td>★ Cope with the environment change dynamically and respond real-time</td>
</tr>
<tr>
<td>★ Functional hierarchy</td>
<td>★ Emphasize reengineer and adjust the existing process</td>
<td>★ Pursue the continuous improvement</td>
<td>★ Process attitudes and behaviors change into habits</td>
<td>★ Focus on process output measurement</td>
<td>★ The partners and organization are organized process</td>
</tr>
<tr>
<td>★ Culture is full of opponent and distrust</td>
<td>★ Have responsiveness to process change</td>
<td>★ Accept the process value system</td>
<td>★ Formal business process leadership has priorities</td>
<td>★ The goals is set up by process performance and changes</td>
<td>★ Strong predictable capabilities and market advantage</td>
</tr>
<tr>
<td>★ Focus on local operational metrics</td>
<td>★ Culture combines some process message</td>
<td>★ Pay attention to process values and beliefs</td>
<td>★ Cross-function communication and cooperation becomes the values of organization</td>
<td>★ BPM gain organization’s mutual trust and cooperation as making complicated decisions</td>
<td>★ Require limited adjustment to deal with the resistance to change</td>
</tr>
<tr>
<td>★ Little understanding of end-to-end process occurs</td>
<td>★ Master some process skills and gain little expertise</td>
<td>★ Employees are accustomed to cross-function cooperation</td>
<td>★ Employees anticipate the process changes and formulate the possible measures</td>
<td>★ Leadership is to make everyone become a decision-making authority</td>
<td>★ Leadership is to make everyone become a decision-making authority</td>
</tr>
<tr>
<td>★ Employees only focus their own jobs and no</td>
<td>★ Limited understanding cross-functional department</td>
<td>★ Communication process among the whole organization</td>
<td>★ Carry out professional process education</td>
<td>★ Employees share process collaboration and communication</td>
<td>★ Form process management social networks</td>
</tr>
<tr>
<td>★ Little process idea</td>
<td>★ Predict the future</td>
<td>★ Resistance to change is</td>
<td>★ Staffs link their goals to process and eliminate the differences and Contradictions</td>
<td>★ Employees are positive and active with continuous change</td>
<td>★ Everyone can be treated as</td>
</tr>
</tbody>
</table>

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*Evaluating Business Process Management Maturity: A case study on a Chinese electronic company*

<table>
<thead>
<tr>
<th>Cooperation</th>
<th>Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>★ Driving by certain cases</td>
<td>results and find the suitable alternatives dynamically</td>
</tr>
<tr>
<td></td>
<td>seemed to be inappropriate</td>
</tr>
<tr>
<td></td>
<td>★ Process leaders define, design and carry out the core process</td>
</tr>
<tr>
<td></td>
<td>★ Employees follow the BPM directions and analysis process changes</td>
</tr>
<tr>
<td></td>
<td>process management leaders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Emphasize on separate department ★ The fierce internal competition ★ Static operation structure</td>
<td>● Become process management decision making ★ Introduce global process owners in the organization</td>
</tr>
<tr>
<td></td>
<td>● Have strong capability to deal with differences and contradiction between process and policy ★ Focus on process roles and responsibilities</td>
</tr>
<tr>
<td></td>
<td>● Continuous process improvement is merged into organization structure</td>
</tr>
<tr>
<td></td>
<td>● Put suppliers and customers into the process management</td>
</tr>
<tr>
<td></td>
<td>★ Suppliers and customers keep the same step with the organization process management</td>
</tr>
<tr>
<td></td>
<td>★ Link process metrics and performance</td>
</tr>
<tr>
<td></td>
<td>★ Business cases drive the project</td>
</tr>
<tr>
<td></td>
<td>Make real-time optimization plan to cope with organization challenges</td>
</tr>
<tr>
<td></td>
<td>★ Build process management standards as the main performance approaches</td>
</tr>
<tr>
<td></td>
<td>★ Streamline structure overcome the instant changes</td>
</tr>
<tr>
<td></td>
<td>★ Visualize the top manager’s strategy changes in the whole organization</td>
</tr>
<tr>
<td></td>
<td>Link goal execution and barriers elimination</td>
</tr>
<tr>
<td></td>
<td>The governance structure is decentralized</td>
</tr>
<tr>
<td></td>
<td>★ Relative process metrics can measure the partners’ performance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Adopt “water fall” method ★ Pay attention to reengineering and organizational transformation ★ No formal measurement program</td>
<td>● Leverage Six Sigma, Lean and Value Stream Mapping methods</td>
</tr>
<tr>
<td></td>
<td>● Turn to process improvement initiatives</td>
</tr>
<tr>
<td></td>
<td>Business process owners drive the BPM into the whole company</td>
</tr>
<tr>
<td></td>
<td>● Implement and execute the process management</td>
</tr>
<tr>
<td></td>
<td>● New methods and enhanced approached are introduced to support process management</td>
</tr>
<tr>
<td></td>
<td>★ Functional team is in charge of BPM execution</td>
</tr>
<tr>
<td></td>
<td>★ Focus on process control and measurement</td>
</tr>
<tr>
<td></td>
<td>Create goal-driving process and visual tracking methods</td>
</tr>
<tr>
<td></td>
<td>★ Seek process improvement and innovation</td>
</tr>
<tr>
<td></td>
<td>New methods are introduced to generate goal plans to cope with fierce competition</td>
</tr>
<tr>
<td></td>
<td>Generate potential opportunities by the BPM</td>
</tr>
<tr>
<td></td>
<td>The process integration across the ecosystem</td>
</tr>
<tr>
<td></td>
<td>Create business process criteria and make them standard strategic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information Technology</th>
<th>Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Built-to-last architecture ★ Use application-centric method to solve problems ★ Independent system</td>
<td>● Design process and model process ★ IT leads the major process management changes</td>
</tr>
<tr>
<td></td>
<td>● IT organization create automation process to help relative business managers ★ Moving activities from people to rule-driven services ● Highlight rule optimization and real-time infrastructure</td>
</tr>
<tr>
<td></td>
<td>● IT organization create collaborative infrastructure to support the process management ★ IT organization combines agile service and real-time infrastructure</td>
</tr>
<tr>
<td></td>
<td>★ Streamline the process and information management by the help of system</td>
</tr>
<tr>
<td></td>
<td>Create real-time and agile-infrastructure-driven goals ★ Utilize BPM approaches to automate the process execution and monitoring without negative technical influence</td>
</tr>
<tr>
<td></td>
<td>Utilize the smart and real-time technologies ★ “surround simulation” and “swarming agent” management are deployed to gain the competitive advantage</td>
</tr>
<tr>
<td></td>
<td>IT department focus on the balance between self-adapting events and criteria management</td>
</tr>
<tr>
<td></td>
<td>Utilize BPM methods to monitor and improve process execution automatically and dynamically throughout the ecosystem</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3: Each factor’s criteria in BPM-maturity level (New Model)</th>
</tr>
</thead>
</table>
Different factors have their special criteria in different Maturity level. “By articulating the core characteristics of each lever of change in the context of each state of maturity, companies can quickly assess where they stand from a maturity perspective for each of the levers of change (Fisher, 2004)”. So the organizations can apply this to have a transparent picture of their BPM-maturity level and begin to resolve lagging factors.

However, evaluating the BPM-maturity level should be based on context, such as unique objectives, different industry constrains and related business cases (Rosemann, de Bruin, Freeze & Kulkarni, 2005). It is not suitable to treat BPM as the same almighty method for all organizations. Researchers have found that the highest BPM maturity level (level 5) is not a perfect way for all the organizations, which sometimes can be treated as the most complicated level of evaluating BPM (Rosemann, de Bruin, Freeze & Kulkarni, 2005). As Figure2 shows, the strategic alignment and people are influenced by the context. So the companies should focus and design their own BPM especially on the strategic alignment and people. In addition, Rosemann and de Bruin (2005) point out that the BPM-maturity model should deal with case-by-case challenges to determine the accurate BPM maturity level.

*Figure2: the underlying model (according to Rosemann, de Bruin, Freeze and Kulkarni, 2005)*
3. Methodology

3.1 Research approach

According to Bryman and Bell (2007), there are two main types of research approaches inductive and deductive that can be applied when conducting the research. The inductive research approach is applied when the researchers start with data collection and aim to develop new theories based on the data they collect (Sauniders et al., 2007). On the opposite side, the deductive research approach is applied when researchers start with building a theoretical framework based on the previous theories, and then try to apply this theory to a specific instance (Hyde, 2000).

In this thesis, the research approach is more deductive, because according to our research purpose and research question, we are going to assess BPM maturity level of the case company through the critical success factors. Therefore, it is very important for us to go through the previous theory concerning BPM and BPM maturity model before we collect the empirical data. Bryman and Bell (2007, p 11) state that, at the beginning of conducting the deductive approach, it is very important to build a broad and solid literature review and have a full understanding of the theoretical considerations concerning the specific research field. From this point, we started our research by searching and reading the classic theories regarding the field of BPM and BPM maturity model. After that, we build our own theoretical framework which combines theories of three researches, integrate them together and try to make more criteria that assess the company more clear in each factor and each maturity level. Then, we apply this theory to a Chinese electronic company which has already implemented BPM and try to figure out the BPM maturity level of this company. Through seeing the maturity level of each factor and based on the company’s current resource and capability, we will promote suggestions for the company to better implement BPM.

3.2 Research strategy

According to Bryman and Bell (2007), there are two main research strategies quantitative and qualitative that can be used in the researches. Quantitative research is a research strategy that emphasizes quantification in the data collection and analysis. Researchers who use quantitative research should promote certain hypothesis at the beginning of research, and try to collect a large amount of statistic data in order to prove the hypothesis (Bryman & Bell, 2007). The main methods that used in quantitative research are social survey, experiment, official statistics, “structured” observation and content analysis (Silverman, 2000). On the opposite side, qualitative research is a research strategy that usually stresses words rather than quantification in the collection and analysis of data. In qualitative research, more detailed and specific

data can be collected through observing, interviewing and document. Bryman and Bell (2007) also argue that qualitative strategy can help people understand social phenomena better from a depth perspective which will give them more knowledge from the specific research field.

In this thesis, we preferred qualitative strategy. Our research is to assess the BPM maturity level in a company through the main success factors including strategic alignment, culture and leadership, people, governance, methods and information technology. Among these factors, people, culture and leadership cannot be captured through quantitative strategies because these factors contain human behaviors and social phenomena. So these factors can be better captured through qualitative strategy, and face-to-face interview which is one of the qualitative research methods that will help researcher get fruitful qualitative data. During our research, we conducted four interviews. Besides that, phone interview and e-mail are also employed during the data collection process.

3.3 Research design

According to Bryman and Bell (2007), research design can provide a framework for data collection and analysis. There are four main research designs including cross-sectional design, longitudinal design, experimental design and case-study design. In this thesis, we chose case-study design to conduct our research.

Case-study design can be selected when the researcher is interested in understanding a specific case, and the case study is concerned with the complexity and particular nature of the case in question. The basic case study entails the detailed and intensive analysis of a single case, which can be a single business, a single factory/department of a business, a single event or a single individual (Bryman & Bell, 2007). When it comes back to our research purpose and research questions, our research focuses on evaluating the BPM maturity level in a specific company. By analyzing the six success factors, we can find out which factors are not good enough comparing with the other factors, and then we will try to help the company by providing improvement suggestions. We are very interested in understanding how BPM maturity theory is applied in one specific company and also want to help the company to implement BPM in a better way. So we finally choose case-study design. Case-study design helps us understanding the complex issues better during BPM maturity journal and is more suitable for conducting our research.

After we decide to choose case-study as our research design, we start to select which industry and company we are gonging to focus on. Firstly, we make decision to choose Chinese company to do the research, because both of the authors are from China and have the advantage of using Chinese to communicate with Chinese company. We are very interested in finding out how BPM works in Chinese company and how to apply the BPM theory to the real case to help the company evaluate its
BPM maturity level. Secondly, we have already known that BPM is also introduced in Chinese manufactory industry which employs BPM to promote efficiency, so we want to focus on the manufactory industry. The most important thing is that the company should have implemented BPM. Under this condition, we can evaluate the company’s BPM maturity level. After a set of selection, we finally choose Company A which is a Chinese electronic company and has already implemented BPM. When we contacted with this company, the managers showed great interest in our research and agreed to take part in the interviews. Besides that, they also provided us necessary information that we need in this case study.

3.4 Data collection

According to Bryman and Bell (2007), data in qualitative research includes primary data (e.g. interviews) and secondary data (e.g. documents, websites). In this thesis, our data collection is based on both primary data and secondary data. It is acknowledged that interview is one of the main methods that can be used in collecting primary data in qualitative strategy. Therefore, we collect the empirical data mainly through the interviews. However, the case company is in China, so we are not able to go to China and visit the company. Hence, the interviews we hold are mainly with the help of Skype. Under this circumstance, we are not able to have the real face-to-face interview, experience and feel the real environment of the company. As a result, we may lose some important information, such as the interviewee’s body language, which could be one of the limitations of our interview data collection.

During our research, we hold four interviews, and the interviewees include the chief of the subsidiary company (company A), the manager of marketing department, the manager of material management department and the manager of technology and quality department. We chose these four managers to conduct our interviews because the chief manager of company A is the person who has the power to make big decisions regarding to the managerial strategies, and knows the whole procedures. He also knows that how BPM works in the company and has the power to change BPM managerial style. For the reason that this manager is in the crucial position of BPM implementation, so we also employed telephone interview and e-mail as the supplement tools for collecting data beside the interview. However, we often got short answers through the e-mail because the manager is always busy. That’s why we also applied telephone interview which can give us more specific answers and explanation. The managers of marketing, material management, technology and quality department are also the responsible people for BPM implementing. They can provide us more detailed information about how BPM implements and how the six success factors perform in their departments. Besides interviews, e-mail was also used to ask them for further information during the data collection.

Before we conduct the interview, we prepared an interview guide carefully, since Bryman and Bell (2007) argue that it is necessary to have an interview guide before
conducting the semi-structured interview. In order to assess the company’s BPM maturity level through the critical success factors’ maturity level, we construct our interview guide with the focus on the critical factors. Based on our theoretical framework which we established before, we formulated our interview questions according to the criteria concerning each success factor and each phase. In this way, the detailed data of evaluating the factors and their maturity level can be captured. Besides the primary data, secondary data are also collected through the way of borrowing documents and searching information on the website.

Moreover, we also collect the data for building the theoretical framework. We searched the theory mainly through the books, articles and journals by using the data base in the library of Halmstad University and Google Scholar. We use the key words such as “BPM, BPM maturity and process management” to find the relevant theories concerning our topic and research questions. After we read the theories, we choose the theory that fits our research and integrated them in order to establish our theoretical framework.

### 3.5 Data analysis

When we finished interviews, we began to transcribe the interviews from the record, and start to analyze the data. According to our research questions, we want to assess the company’s BPM maturity level through evaluating the success factors’ maturity level. Therefore, we started our data analysis by separating the data into six dimensions which are strategic alignment, culture and leadership, people, governance, methods and information technology. Then we connected the empirical data with the theoretical framework on each factor. In our theoretical framework, we established a clear description of the criteria regarding each factor and each phase, so we can use the criteria as the main tool to analyze the data. Take the strategic alignment for example. Firstly, we separated the data concerning the factor strategic alignment from the whole empirical data. Secondly, we connected this data with the theory concerning the criteria of different phases on the factor strategic alignment. Finally, we compared data with criteria, and figure out, in which phase, the data can fulfill all the criteria or most of the criteria. Then we can indicate that the maturity level of the factor strategic alignment is in phase X. During this process, we recollect data several times when we find the previous data are not sufficient to explain the case. By applying the same method, the other five success factors will be assessed one by one. At the end of analysis, all of the factors’ maturity level will be figured out and a couple of suggestions will be promoted to help the company better complement BPM in the future.
4. Empirical Findings

4.1 General information of the case company

4.1.1 Parent Company’s general information

Parent Company was established in 1958 and has developed significantly in the past 53 years. It is now one of the largest Chinese consumer electronics providers, which focuses on R&D, manufacturing and marketing of consumer electronics products. In 1994, it became a public traded company with shares listed on the Shanghai Stock Exchange. In 2010, its annual turnover hit 41.7 billion RMB with its overall brand valued at 68.26 billion RMB. Today, it has branches and joint ventures with over 32,000 employees worldwide.

Parent Company has four R&D and manufacturing bases which are located in Mianyang, Zhongshan, Nantong, and Changchun in China. It now has become an international company which has established overseas branches and representative offices in U.S.A, Europe, Australia, Russia, Southeast Asia and Middle East. Parent Company has world-class manufacturing facility, numerous products and leading R&D capability. It has carried out ISO9001 management authentication and ISO14001 environmental authentication. Many products of parent company have passed international conformity assessments so the parent company can give more competitive products for the global market.

As an international company, Parent Company has more than 20,000 Sales and Service outlets available worldwide. It provides high quality products and services to more than 90 different countries and regions, which has been ranked No.1 in the Chinese market in the past 15 years. Nowadays, one out of every four TVs in China is manufactured by Parent Company. It has become an Industry Leader and the biggest supplier of consumer electronics in Asia.

Parent Company invests much money on the product innovation especially on the electronics industry. In order to develop the advanced high technologies, it has built state-level technology center and a first-rate scientific research workstation for post-doctors. In 2000, it introduced BPM to operate the company. The firm cooperates with Toshiba, Sanyo, GE, Microsoft, TI, Samsung, LG, and Philips etc to build the joint laboratories. In China, Parent Company has established two R&D centers in Shanghai and Shenzhen respectively. In American Silicon Valley and Japan, it also has its own R&D center. Its goal is to be the leader in global digital industry and provide Clever, Comfort and Cool life style to customers.
4.1.2 Company A’s general information

Company A is a subsidiary company of Parent Company. It was established in 2007, which is located in Changchun City of Northeast of China. It provides CRT TV, TFT-LCD TV, PDF TV, TFT-LCD graphscope and automobile electronic products. As a new subsidiary company of Parent Company, Company A also provides Clever, Comfort and Cool life style to customers. It designs, invents and produces automobile electronic products such as GPS navigation products, mobile digital TV receiver and automobile multimedia equipments.

Company A’s registered capital is 20 million RMB. Its annual turnover is more than 100 million RMB. Its import turnover is almost 7 million RMB and export turnover is nearly 20 million RMB. Company A has about 500 employees and most of employees graduate from technical school. The firm’s target markets are China, Mongolia, Russia and North Korea. This company’s target customers are terminal consumers and distributors. Its anticipated productivity is to produce 100 million CRT TV, 50 million TFT-LCD TV and PDF TV, 20 million automobile electronic products and 30 million digital TV per year.

In order to coordinate with Parent Company’s plan which is to enter automobile electronic industry, Company A takes a lot of measures to research on this industry such as cooperate with the university, introduce high technology and carry out market investigation. It can use the parent company’s laboratories and innovation centers to design and develop products. But as an independent company, Company A must determine to produce what kinds of products and bear risks. So when the company was established, it began to introduce the other companies’ automobile electronic technology which could reduce R&D cost and avoided risks.

Company A is located in the Parent Company’s industry park in Changchun City. In this industry park, there are other three subsidiary companies of Parent Company. Company B is a logistic company which provides and transports Parent Company’s all products. Company C is a heat-wrapping company which can design the package and produce TV’s shells and packages. Company D is a precision instrument manufacture company which can design and produce chip board. As the Parent Company’s subsidiary companies, these four companies cooperate with each other and can share the information instantly. As for closing to the suppliers (the other three companies), company A saves a lot of transportation fees and time during the process of purchasing material.
4.2 Company A’s organization structure

As a typical Chinese company, Company A also uses the hierarchical structure to operate the company but this structure changed a lot when the company carried out BPM.

As the company established beginning, the company used the five departments to operate company. The chief manager governs the whole company and determines all the big decisions. “But when the company wants to change something, I should have the agreement with all the five department managers”, chief manager said. Marketing department (MD) is responsible for the market expansion, market investigation and products sales. Technology and quality department (TQD) plays a very important role which is the biggest department in Company A. TQD is divided into three parts: quality department, manufactory and technology department. Quality department assesses all the manufacture process and make sure all the end products have high quality. When the manufacture process has something wrong, quality department will check instantly and make some change. Moreover, technique management is the main function of the quality department. Technology department is in charge of the process design, manufacture process innovation and machine’s maintenance and inspection. TQD manager said that “quality department and technology department have a deep cooperation between each other and share the information at the same time.” Manufactory is responsible for producing, assembling and transport products to the warehouse.

MMD manager said that “Material management department (MMD) is the second biggest department in Company A”. MMD controls two departments which are material department and purchasing department. Material department governs the company’s tangible asset, and control all the company’s product materials. Purchasing department should collect all the departments’ purchasing plan, contact with the suppliers and purchase the materials. Finance department will manage cash flow, make annual and month budget and govern all the capital transaction. Human resource department will do employment plan, evaluate the employees’ performance, design and carry out wage rules and take logistic duties.

When the company was established in 2007, the company used this organization structure (Figure 3) to operate the company. This structure is simple but also can be seen the parent company’s influence. “As a new established company and also a subsidiary company, we want to use the existing structure to avoid the operational risks. The business process management just follows the parent company’s method and makes little change for our own company”, chief manager said.
However, in 2008, the company encountered the world financial crisis. The company’s sales decreased dramatically. The company has to deal with fund shortage. In order to pass this crisis, the company begins to evaluate all the operational processes and integrate some departments. Company A creates general management department (GMD), which is responsible for the original marketing department’s duties and also will take the logistic duties. The integration between the quality department and technology department (TQCD) really helps the company to deal with uncertain changes and make some process innovation. TQCD managers said “the quality department finds problems and technology department can make the change at the same time. This really avoids the small problems become disaster”. The Company A is a new established company, so the finance department and HR department do not have many tasks. With this consideration, Company A merges the finance department and HR department (FHRD). These measures really helped the company to reduce cost and increase operational efficiencies.
4.3 BPM in Company A

Company A merged a local company in Changchun city in 2007 and accepted all the local company’s employees. “The employees from the local company really help us avoid instability but we also realize that making changes is difficult for the local employees” chief manager said. This is really a good way to avoid instability for a new establishing company but the company will also face strong assistance. The chief manager and other important managers are from parent company, but the medium managers and basic staffs are from the local company. So when top managers take some new methods or strategies, the medium managers often misunderstand them and take their own methods. Consequently, the top management carries out the new method but medium managers and basic staffs prevent the launching process. When the top managers introduce BPM into Company A, most of employees cannot understand it correctly. “Honestly, BPM is also a new strategy for top managers to learn. The top managers are still in the learning process and they always try to create new BPM strategy for our company” chief manager said.

**Strategic alignment**

The company uses BPM to establish the function, product line and geography. The top managers also introduce BPM in organizational planning and function. TQD manger said that “we ask the manufactory to outline their process and make the process cards to let every staffs know their own responsibilities”. For example, in the manufactury, based on the high productivity and low cost strategy, the product line is separated into three parts: supporting process, chip manufacturing process and assembling process.

![Figure 5: Process of manufactory in Company A](image)

These three processes are correlated. Supporting process produces subsidiary products such as TV’s remote-control units, TV’s loudspeaker and TV’s attaching plug. Chip manufacturing process only produces chips and assembling process only assembles components and produces final products. If one process has something wrong, the other two processes cannot be stopped. If one process finishes earlier, this process can produce other kinds of products. These processes can be seen and governed by TQCD manager and manufactory manager. So the TQCD manager can check the problems instantly and manufactory manager can respond quickly. Sometimes, TQCD and manufactory will cooperate together to cope with the hard problems.

In Company A, each department has their own process management but all the
departments should have the same strategic goals that make sure that employees are satisfied, customers are satisfied and stockholders are satisfied. Company’s goals will not changed but each year the company will evaluate all the departments that to make sure all the departments have the same step.

**Culture and leadership**
The top managers in this company really want to use BPM to improve operational efficiency. Top managers hope company A’s culture is the process ownership so they improve the process continually and consider the adoption of new process value system. However, as a traditional Chinese company, company A’s culture is still a functional hierarchy and most of basic staffs focus on local operational methods.

Moreover, BPM really threatens some employees’ benefits, especially for someone are used to traditional method. As a new merging company, the local company’s culture still influences basic staffs and medium managers. So the top management tries to provide opportunities to let staffs have cross-functional communication and cooperation. In addition, the company is trying to infuse the BPM into the company’s daily life and creating environment to let everyone know BPM. In the company, each department has its own process owner to govern the process. With the help of the expert from the parent company, the company designs and revises process to make value-added process, which helps the company to make all the operation to work forward smoothly.

**People**
In Company A now, medium manager knows BPM very well. They try their best to visualize their process, but they have to face the resistance from the staffs. Sometimes, especially for the basic staffs they still use their own way to do something. So the basic employees do not understand BPM exactly. This is really a big problem for the company carrying out BPM.

Company A sends employees to Parent company and staffs can get good BPM education there. Sometimes, parent company will send professional BPM managers to train employees. BPM is a long-term strategy, so Company A takes five years project to train their employees. The firm has a process owner to take responsible of carrying out BPM, and invite an expert to help company design and revise process. The company also employs new graduates who can understand and accept BPM quickly. For the basic workers, the company invites professional workers from the Samsung to let basic workers learn how to improve efficiency and try to make innovation for the process management. If some staffs are still not used to BPM, unfortunately, they have to leave.

“*Top management members always try to cooperate with each other. Sometimes, when we face the big problems we begin to construct a new process to deal with the problems, which is really effective and practical*”, chief manager said. Each manager will have a meeting every morning and all the employees in the manufacture factory
will give their suggestions to direct managers. Sometimes, TQCD and manufactory only change the manufacture process, but in the high levels top managers will not change a lot, for the purpose that keeping their operation consistently. So TQCD only designs when each department put forward the new process. Besides, TQCD has a close relationship with the parent company’s BPM department.

**Governance**

As a manufacture factory, company A focuses on the process and responsibilities especially in the manufactory department. In the manufactory, everyone knows their roles and duties. They have the duty cards to know their own working process and also the whole company’s manufacturing process. If an employee makes mistakes, TQCD and manufactory can know the events instantly and these two departments will take measures at the same time. This really helps the company to increase the productivity. For example, when the company produces one type of CRT TV, the daily productivity is 1000 TV. By the help of the improvement of process managing, the productivity is also 2200 TV per day.

Company A also tries to deal with the conflict between the process and policy. When the company wants to carry out a new process, the management team will take a meeting to find a suitable method and all the managers from the different departments will cooperate with each other. Sometimes, they will change policy or make some changes of the process. The whole company emphasizes on the continuous process improvement to make the company’s structure to adapt the process changes. TQD manager said: “the process owners take the responsibility to put forward BPM and have a good communication and cooperation with the different departments, but they must follow the directions and instructions from the department managers and they could not design the process by themselves”.

**Methods**

TQD is in charge of the BPM execution. Firstly, TQD will design the processes to increase productivity and improve efficiency. TQD always cooperates with the parent company and invite professional BPM managers to help company to plan the processes and evaluate the existing process. Secondly, TQD collects information from the other departments, especially process owners and cooperates with them to create new process. So, each department’s process owner plays an important role to govern and execute BPM.

Company A provides Clever, Comfort and Cool life style to customers, so the company takes value chain analysis to support the process management. The value chain analysis helps the company know strength and weakness and takes measures to cope with the tough problems. This company realizes that BPM is important to company’s productivity and efficiency, so that it focuses on implementing and executing process management. Sometimes, they will try to communicate with the other three sister companies to let them revise some process.
Information Technology
In company A, the main managers can see their own department process through the internet. By the help of the IT system, the process and information management become streamlined and managers can cope with the unpredictable changes. For example, the company’s minor purchase process will help TQD and MMD to see the whole process and show the collaborative infrastructure to help the process management.

Figure 6: Minor purchase process
From figure 6, we can see that company A tries to make process to build real-time structure to let everyone evaluate company’s situation and also make some measures to avoid risks. But “the whole process can only be seen by TQD manager and chief manager and each department can only see their own process”, MMD manager said.
5. Analysis

5.1 Overall view of BPM implementation in company A

As the empirical data shows, the company A’s parent company is an Industry Leader and the biggest supplier of consumer electronics in Asia so it has a strong R&D capability in the field of product innovation. Furthermore, the parent company has already implemented BPM and its vision is to provide Clever, Comfort and Cool lifestyle to customers. As one of the subsidiaries of the parent company, company A takes the same strategic goals with the parent company and sets its goals to design, invent and produce automobile electronic products with high quality to its end customers. Although this goal shows company A has a customer-focus, it is not this company’s initial aim of implementing BPM. Company A’s main purpose of implementing BPM is to control, improve and manage the process better. Through the way of integrating the existing process, company A can reduce the cost and promote efficiency. Meanwhile, the operational risk will be decreased. However, we don’t find any evidence show company A has a customer-focus during its process management. From this point, we can see the difference between company A’s practical goals and the western theories concerning BPM. Lee and Dale (1998) point out that BPM is a customer-focused approach to manage and improve all processes in a company. However, company A applies BPM with the purpose to reduce cost, promote efficiency and avoid operational risk, which could be one characteristic of BPM implementation in Chinese companies.

The electronics industry is a high-tech and fierce competitions industry in China. In order to provide the variety electronic products with high quality to customers, Company A uses the same laboratories, innovation centers and technology with its parent company to design and develop products. Besides that, Company A also applies the same approach with its parent company to analyze, improve, control, and manage processes. This approach of management reflects what Elzinga et al. (1995) argued before that BPM is the approach to analyze, improve, control and manage processes in order to improve the quality of products and services.

In order to accomplish the organizational goals, company A made some change of the organizational structure during the implementation of BPM. Before 2009, company A organized five departments which were marketing department (MD), technology and quality department (TQD), material management department (MMD), finance department (FD) and human resource department (HRD). However, with the implementation of BPM deeply, company A realized that some processes need to be changed and integrated in order to reduce cost and increase operational efficiency. As a result, in 2009, Company A integrated technology department and quality department in order to help the company to deal with uncertain changes and make
some process innovation, besides that, finance department and HR department are also merged to reduce the cost. These changes of structure show company A’s BPM elements that is analyzing, controlling and improving the processes constantly in order to improve the quality of products (Elzinga et al., 1995).

In this thesis, we will evaluate BPM maturity level through six success factors which are strategic alignment, culture and leadership, people, governance, methods and informational technology (Melenovsky & sinur, 2006). During the rest part of analysis, we are going to evaluate these six success factors separately and try to find out which BPM maturity level Company A stays in order to provide some suggestions for this company to work forward to get into a higher level of BPM maturity.

5.2 Strategic alignment

According to de Bruin and Rosemann (2006), strategic alignment of BPM is to enhance the linkages that connect organizational priorities and enterprise processes in order to achieve its business objectives. When Company A sets up its goal, the top management will break down this goal to the relevant department and process managers and ask them to make process cards to let every staffs know their own responsibilities. This kind of process management links the strategic alignment between company A’s objective and the goals of process management. This represents what Bandara, et al. (2009) argue before, strategic alignment plays a very important role between business objectives and the goals of BPM, which is an essential element for the success of projects.

When evaluating the maturity level of strategic alignment in company A, we find that this company focuses on process management, and the top management will examine the functions of all processes regularly in order to make sure all of them can work normally. Sometimes, they may discover the problematic process which does not work very well. Then they will inform the process manager to improve the process under the help of TQD. Sometimes, when they find some processes are not working efficiency, or some processes cannot add value to the products, they will ask the process designer to redesign the process or establish new process. These empirical data reflects the criteria of phase1 both in the Gartner (2006) model and the new model, which describes the company begins to construct new dimensions of process to combine different function area and make process improvement plan. Besides that, process modeling also exists in the organization (Fisher 2004; Rosemann, de Bruin, Freeze & Kulkarni 2005; Melenovsky & Sinur 2006).

When it comes to phase2, according to Gartner (2006) model, the company should combine global business process and organization goals. However, in company A we only found that the top management combined certain business process and the company’s goals, but not in the global range of the processes. But this company has already linked its strategy and process capability which our new model emphasizes to
supplement Gartner (2006) model. Shen (2005) also argues, it is very important for the company combining its global strategy and BPM implementation, when the company begin to implement BPM, the top management must clearly know “what is the company’s global development strategy? Why they want to implement BPM, what objectives are they going to achieve? How does BPM support the achievement of these objectives?” Only when the top management clearly answers these questions can they know exactly how to implement BPM in the efficient way. Based on the empirical data above, the maturity level of strategic alignment in company A reaches phase 2.

If this company wants to move from phase 2 to phase 3, considering that company A’s two main suppliers are located very close in the industry park, it will be much easier for company A implementing business process integration to its suppliers. We suggest that company A can extend the business process integration to its suppliers first. Then, Company A extends to its distributor, which consistent with Yan and Liao’s (2005) argument, it is very important for the company integrating its suppliers and customers by BPM. Nowadays, the competition exists not only between the companies, but also in the supply chains. Yan and Liao (2005) also assert that BPM implementation is not be accomplished in a short period but long time improvement and continuously refining the process, which are crucial for the success of BPM. Therefore, we suggest Company A keeps improving the existing process and promoting the implementation of BPM in the whole company and letting business process become the basic element of the company. In addition, the top manager and TQD should start to build the whole process architecture of this company and make every staff clearly know their jobs and responsibility.

5.3 Culture and leadership

According to Bandara et al. (2009), organization culture implies the usual way that people behave in their organizations. It is very difficult to change an organization culture in a short time. As a result, the characteristics of culture are considered to be key factors that influence BPM project success (Grugulis & Wilkinson, 2002). In company A, when the top management team introduced BPM several years ago, there was certain resistance because BPM really threats some employees’ benefits, especially for someone are used to traditional work method. Under this circumstance, the top management team began to organize trainings for staffs, educated them what BPM is and what the benefit of implementing BPM is. They also have to let them know they have to change their traditional ways of doing the job because this new approach of management can better benefit both customers and their company. Bandara et al. (2009) also argue that leadership is crucial during the implementation of BPM, and high power of senior management will make the implementation of BPM more effectiveness when the organization solves the conflicts between managers and problematic issues across organizations. The same as we have found that, the efforts from the top management team contributed a lot to help foster a

process-oriented culture.

Nowadays, with the implementation of BPM in Company A, the BPM culture has been established gradually, each process has a process manager who takes the responsibility to improve the process constantly. This reflects what Gartner (2006) model points on phase 2, the company pursues the continuous improvement of process. However, Gartner (2006) model also argue that the company on phase 2 should accept the process value system. In company A, not all of staffs accept the process values, so the department manager and process owner try to make staffs have the awareness of process values and beliefs. When new process is designed and applied, staffs are trained of this new process, in order to learn the new process value and change their old process values and beliefs. This reflects what our new model supplements in phase 2, the company begins to pay attention to process values and beliefs. As a result, the maturity level of culture and leadership reaches phase 2 (Fisher 2004; Rosemann, de Bruin, Freeze & Kulkarni 2005; Melenovsky & Sinur 2006).

However, when we evaluate the factor culture & leadership, we find that the Company A’s hierarchical structure hasn’t be changed too much although it has implemented BPM for about 4 years. The biggest improvement was in 2009, when company A integrated technology department and quality department. However, this little change doesn’t represent the top management team has the plan to turn the whole hierarchical structure into the process architecture. According to Corrigan (1996), hierarchical structures and vertical communication as the cultural barriers in BPM may hinder the success of BPM implementation. However, in this Chinese company, the top management team wants to reserve the tradition hierarchical structures when they promote BPM, which could be one characteristic of BPM implementation in Chinese context. Because in China most companies use the hierarchical structure to organize the company, and it is very hard for them to change their traditional organization structure and establish a totally new structure. Therefore, company A doesn’t want to change its hierarchical structure too much although BPM has been implementing.

If company A wants to work forward to next phase, they have to do some special changes. Company A doesn’t want to change its hierarchical structure too much, so we suggest that company A can encourage the cross-function communication and cooperation gradually. By providing the communication environment and keeping training the staff, employees will turn their process attitudes and behaviors into habits. In this case, company A can make BPM culture spread deeply through the whole company.
5.4 People

As Melenovsky and Sinur (2006) mentioned before, the factor of people represents the individuals and groups who continually enhance and apply their professional knowledge towards the process-oriented changes in the organization. In company A, all members of top management are from the parent company, and they all have the previous work experience towards BPM. Therefore, they are the initial people to know and implement BPM in this company. With the deeply implementation of BPM, from the middle management team to the manufacture workers, more and more people have been trained and learn the basic process skills. So far, the influence of BPM has covered the whole company. However, at the beginning of BPM implementing, people did not want to make this change and had some resistance. As Attaran (1999) showed before, sometimes it is very difficult for people to follow the changes in the organization which can lead various resistances because of lacking of trust between top management and employees or the fear of losing jobs. In Company A, the top management team solved these problems through the way of communicating and training people. Following the establishment of BPM culture in this company, people begin to know and learn process skills. Nowadays, there are few resistances towards BPM implementing in this company.

Although all of staffs in this company know and apply process skills in their daily work, their knowledge about BPM and process skills still stays in the primary stage. Because when company A established in 2007, only the top management from the parent company knew BPM, all of the other staffs were from the local company, and they didn’t know BPM at all. During these years, although the top management organized several trainings for the staff, the staff only learned the basic skills. Sometimes they just pretend to know BPM, but, actually, they don’t know what BPM exactly is. They just do what the process owner asks them to do, however, they don’t consider much about why they do it and how they can do it better.

In addition, although this company has process management and process managers, the top management team of company A doesn’t want to change its original hierarchical structure through the implementation of BPM. The established processes can only work under their own department. In another word, each department has its own process management system. People, in the same department, can cooperate with each other efficiently. However, when they come to another department, they seldom know the other processes and little cooperate with the other department.

Based on the analysis above, we consider the maturity level of people still stays in the primary stage and describes of phase 1 are more suitable to this company’s situation. In company A, people can master some process skills and gain little expertise (Gartner, 2006) but they have limited understanding of cross-functional department cooperation (Fisher 2004; Rosemann, de Bruin, Freeze & Kulkarni 2005).
From this analysis we can see that the main problem towards people is that staffs in company A don’t learn the real knowledge concerning BPM, and the hierarchical structure of this company prevents the staff in different department from communicating and cooperating with each other across the process system. If company A wants to improve the present situation and implement BPM better, the top management team should recruit more experts on BPM to train staffs and teach them more professional knowledge towards BPM. Moreover, the top management team can organize some simulation towards process management and improvement, which can make the staffs have clear picture on how BPM works and what the benefits of working in this way. Besides that, cross-functional department cooperation should be promoted, and the top management team ought to make some process improvement plans to fulfill that.

5.5 Governance

Governance refers to relevant and clearly responsibility, decision making and reward processes to guide actions (Melenovsky & Sinur, 2006). According to Lee and Dale (1998), it is important for the organization to define the process owner clearly, and make sure their responsibilities of the process performance and improvement. In company A, the clearly responsibility and governance of the processes have been established. Each department has its own processes and also has its own process owner who is also the process manager. The responsibility of the process owner is to control, manage and improve the processes constantly. Besides that, the top manager often organize meeting with the process owners, and discuss the problems and difficulties of process management with them. Then, based on the suggestions of process owner, top management will make process improvement plan and ask the department manager to help process owner implement the plan.

When we evaluate the maturity level of governance in this company from the empirical data, we find evidence shows that company A focuses on the process roles and responsibilities in the manufactory department and the whole company emphasizes on the continuous process improvement to make the company’s structure to adapt the process changes, which is consistent with the criteria of our new model on phase2. Besides, Gartner (2006) model also argues that the company on phase2 should have a strong capability to deal with differences and contradiction between process and policy. In company A we also found the empirical data fulfill this requirement. As a result, the maturity level of the factor governance arrives phase2.

However, when we analyze the empirical data, we also found some inconsistencies between the theory and BPM implementation in this Chinese company. Lee and Dale (1998) assert that a process owner should have the authority of designing process, measuring its performance and training the workers who perform it. In company A, the process owners only have the responsibility of managing and improving the processes. However, they don’t have the authority of designing the process. The
department manager has the responsibility of designing process. As a result, the process owners must follow the directions and instructions from the department managers. Besides that, when the conflict between the process and policy occurs, the process owner cannot communicate with the top management directly. The department manager is the person who connects the process owner and the top management team and helps them have a good communication to solve the conflicts. From this we can see that in Chinese company, the authority of process owners is limited. The top management will not give the full authority what process owners need, and the department manager still has more power than process owners in BPM implementation.

Based on the criteria, we suggest company A start to establish the criteria that can assess the performance of process, which will help this company evaluate, control and improve the existing process better. According to Shen (2005), Company A should link the reward of employees with the performance of process can stimulate staffs work more efficiently. In addition, as we mentioned before, it will be very beneficial for this company integrating its suppliers and distributors to process management. Company A can cooperate with sister companies: Company B, Company C and Company D closely and make process change with them together.

### 5.6 Methods

According to Melenovsky & sinur (2006), methods refers to the approaches that an organization uses to support its process-oriented actions, and it is one of the critical factors that influence the success of BPM. In company A, the main method of implementing BPM is through the establishment of process ownership, and the process owner is the central person that in charge of the control, management and improvement of BPM. This reflects what Gartner (2006) model points out that on phase2, the business process owners are the driver of implementing BPM to the whole company. Besides that, our new model supplements that on phase2 the company should implement and execute the process management, which company A also fulfilled. When it comes to phase3, Gartner (2006) model illustrates that the company should introduce new methods and enhanced approach to support process management. However, it is very hard for us to define new methods and enhanced approach. Therefore, only using Gartner model’s criteria to evaluate phase3 is not sufficient. According to our new model, on phase3 the company should also establish the functional team which is in charge of BPM execution and focuses on process control and measurement. However, company A hasn’t reaches these requirements. Hence, the methods’ maturity level for Company A stays in phase2.

In company A, there is no functional team that is specialized in BPM execution, the people who control and take the responsibility of BPM implementation are process owner. However, Shen (2005) shows that establishing a specialized department with the experts on BPM who take the responsibility of BPM implementing can help the
company control and monitor the process management better. In this situation, it is very important for this company to build a department that controls everything of BPM implementation. Besides that, we suggest Company A invites more experts on BPM from its parent company and let them work in different departments to help the company control and manage BPM well.

### 5.7 Information technology

According to Melenovsky & sinur (2006), information technology, which includes the software, hardware and information management systems which support the process activities, is a critical factor of BPM success. IT plays an important role in BPM projects, for example, it can help control the business processes change, facilitate the process designing phase and help complete the final implementation (Al-Mashari & Zairi 2000; Attaran 2004). As the previous empirical data shows, the parent company has a strong capability in the field of R&D and information technology. In order to keep the strategic alignment with the parent company, company A shares the same techniques of information technology and also has a strong IT department.

In company A, the initial purpose of establishing IT department is to support the activities of all the departments in both software and hardware perspectives. With the implementation of BPM throughout the company, IT department is becoming the most important supporting department of BPM implementation. Nowadays, IT department can help the company design and model the process. Moreover, IT also helps company change and improve the existing processes when some departments do not work very well. Once the IT department designs a new process, the manager and process owner in the relevant department will be informed and educated to learn the new process. After that, the process owner will take the responsibility to coach his or her staffs to learn and apply the new process instead of the old one. The figure in the empirical part is a good example to show how the minor purchase process is designed and works in the company, which also presents that this company has the ability to build collaborative infrastructure to support the process management. By the help of IT systems, this company tries to streamline the process and information management, which is the same as our model’s requirements on phase 3. Therefore, the maturity level of IT in this company reaches phase 3, which is a relatively mature level compared to the other factors.

When we were collecting the empirical data, the chief manager showed that they were satisfied with the current performance of IT department, they wanted to stay in this stage and did not have plan to make large change or improvement of IT. Considering the limited resource and capability of this company, we suggest this company pay more time and energy on the improvement of the other critical success factors. Company A can keep IT department staying in the phase 3 until the other factors reach phase 3 as well. At that time, company A can make new plan to facilitate IT move into the next phase.
6. Conclusions

6.1 Company A’s BPM-maturity level

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*Figure 7: BPM-maturity level of Company A*

Based on our research findings, we finally have evaluated the maturity level of the critical success factors that influence BPM implementation in the Chinese electronic company. As the picture above shows, the maturity level of the factor people stays on phase 1, the maturity level of IT reaches phase 3, and the maturity level of the other four factors including strategic alignment, culture and leadership, governance and methods have already arrived phase 2.

Based on our analysis, we conclude several advices to help this company better implement BPM towards a higher level of maturity:

1. From the perspective of strategic alignment, we suggest the top management team extends the business process integration to its suppliers first, and then extends to its distributor. Besides that, Company A should keep promoting the implement of BPM in the whole company and let business process become the basic element of the company. Meanwhile, the top management team and TQD should start to build the whole process architecture of this company and make every staff clearly know their jobs and responsibility.

2. In terms of methods, we suggest Company A build a department that controls everything of BPM implementation. Moreover, company A should invite more
experts on BPM from its parent company and let them work in different departments to help the company control and manage BPM better.

3. When it comes to IT, we suggest company A keep IT department staying in the **phase 3** until the other factors reach phase 3 as well. In this way, company A can pay more time and energy on the improvement of the other critical success factors. In addition, it is very important for the top management team keep balance of the resources to develop all of the factors evenly.

### 6.2 Special characteristics of BPM in Chinese companies

Besides the findings above, we also found some special characteristics that this Chinese company shows during BPM implementation compared to our theoretical model.

1. In Chinese companies, governance, method and IT are the same as west companies but strategic alignment, culture & leadership and people are different from west companies which are resulted by different culture and environment.

2. Chinese companies want to keep their hierarchical structure when promote BPM, and it is very difficult for these companies to change their original hierarchical structure.

3. In Chinese companies, although process owner takes the responsibility of process management and improvement, due to the hierarchical structure, the department manager still has superior power than process owner, and the authority of process owner is limited.

4. The aim of carrying out BPM for Chinese company is to reduce operation cost and increase efficiency. So they will not focus on the adding customer value too much.

5. People as a factor is still the weak point for Chinese companies implementing BPM. It is really difficult to make all of staffs know exactly what BPM is and master professional skills towards BPM. So how can the top management team maximum motivate staffs to master BPM knowledge and implement BPM better is still a challenge to Chinese companies.

The above problems could be regarded as special characteristics that BPM implementation in Chinese context. Therefore, it is very important for Chinese companies take consideration of these issues when they implement BPM. From the perspective of our case study, in order to help Chinese companies solve these problems we provide several advices as follows:

1. Under the conditions that keep the original hierarchical structure, Chinese companies can encourage the cross-function communication and cooperation gradually. They should provide more opportunities for staffs in different departments to communicate with each other about their process management systems. By doing this, Chinese companies can decline the drawbacks that hierarchical structure influence on BPM.
2. Due to the hierarchical structure, department manager has more authority than process owner on BPM implementation. To solve this, Chinese companies should organize more training for department managers and let them master more professional knowledge of BPM than process owners, which can foster the department managers take the responsibility of managing the process owners and control everything in the department better.

3. Concerning the factor people, we suggest the top management recruit more experts on BPM in order to train the staff and teach them more professional knowledge towards BPM. Moreover, the top management can organize some simulation towards process management and improvement, which can make staffs understand how BPM works and what the benefits of working in this way thoroughly. Chinese leaders should know that the knowledge from the practice is more understandable than the knowledge from theory.

6.3 The advantage of the improved Gartner model

Comparing with the Gartner model, our new model gives more criteria to help companies to evaluate the BPM-maturity level by themselves. BPM-maturity level is very important for a company that wants to or already carries out BPM. Evaluating BPM-maturity level helps company know which factors they should improve and where they can find the key problems. However, in Gartner model, each factor’s criteria is not enough to describe the BPM-maturity accurately. Hence, the new model adds more details of criteria to give a comprehensive model to evaluate BPM-maturity level. As for adding more criteria, the differences between the phases are clear which can help company determine the different phase quickly. With the purpose to research on a Chinese company, our new model also makes a new improvement which is to reduce “focusing on the efficiency and cost” in strategic alignment.

But the new model is still needed to be improved. From our paper, we can find that it is not a simple model for a company to use and the using method should be given to the company. So we suppose that we can rely on the software to make this model easy for company to use. In our model, we just give the general criteria to evaluate BPM-maturity level, which is not enough for companies from different countries. The companies have different background and perspectives so the model should reflect companies’ context.

In our paper, we just use interview through the Skype, phone interview and e-mails which are all the indirect ways. We have to do the face-to-face interview to get more information. In addition, we do not go to the company to do large scale research, which is really a disadvantage for us to see the model’s flexibility. Moreover, we just focus on one company and do not give extensive data to test our model.
Appendix

Interview Guide

When did your company begin to implement business process management?
How do you feel about BPM implementation in your company, does BPM work very well, or you meet some problems?
What is your opinion about the BPM maturity level in your company?

A. Strategic alignment

1. Does your company implement BPM or your company only has a functional orientation? What is the main organizational structure in your company? Which departments have implemented BPM? How does BPM work in this department?
2. If your company has already implemented BPM, do you often set goals for the processes and align these goals to the company’s strategic goals, and how? If your company’s strategic goals change, will you adjust the goals of certain processes accordingly, and how?
3. Does the top management team have a good communication with the process managers or process owners, especially when the top management makes some big decisions?
4. Does your company has some plans for improving the existing processes or your company is going to build new processes, and how it works? Do you consider constructing new dimension of process to combine different function area, and why? Do you have process modeling in your company, is there someone in charge of that?
5. Do you often link your company’s strategy with your process capability? Do you often combine your company’s goals and your business process’s capability, and how do you fulfill that in practice?
6. Does your company have the process architecture, who designed it? Does your company implement BPM to the integration extend the suppliers and customers, and how? Is business process becoming the basic element of your company?

B. Culture and Leadership

1. Does everyone in the management team clearly know what BPM is, and how to apply process management to the company?
2. Does the top management have the plan to change the company’s culture towards the process-oriented, and how?
3. Do the managers stress the importance of changing and improving the processes continuously, and in which way?
4. What will you do if some of the employees resistant to the change towards

process-oriented?

5. Dose the top management pay attention to process values and beliefs, pursue the continuous improvement of the existing process and accept the process value system, and how does the top management do that?

6. Does everyone works in the process begin to change their process attitudes and behaviors into habits? Does the formal business process leadership have the priorities in your company, and in which way? Do the cross-function communication and cooperation become the values of your company?

C. People

1. Have all of the top managers and process managers or process owns received the education in process measurement, control and improvement?
2. Has all of the staff been educated in process orientation, development and improvement and mastered some process skills and expertise?
3. Do the process managers have the good communications with the employees who are working on the processes, and in which way?
4. Do employees who work on the processes know exactly what they should do to accomplish the process goals?
5. Do employees understand well the cross-functional department cooperation? Are the employees accustomed to the cross-function cooperation, and how do the employees do that?
6. Do you have the process communication among the whole company, and how? Can you use your process management to predict the future results and find the suitable alternatives dynamically, and how?

D. Governance

1. Does your company have the position for process manager or process owner? If so, what are their responsibilities, and how do the process owners realize their responsibilities?
2. Does each of your process have a process owner? Dose each of the sub-process have a local process leader? Does all of the staff clearly know the responsibility and authority of the process owners, in which way and how the employees will be evaluated?
3. Does your company have the position for process modeling and continuously improvement, and how do the people in this position realize his or her responsibility?
4. What is the decision making mechanism in your company? Does the staff have the chance to engage in the decision making, and in which way?
5. Does your company have the focus on process roles and responsibilities? Do you think the top management of your company has a strong capability to deal with differences and contradiction between process and policy, and how do they do that? Does your company merge the continuous process improvement into the
organization structure, and in which way?
6. Does your company link the process metrics and performance together, and how? Do you plan to put suppliers and customers into the process management, and in which way?

E. Methods

1. What kind of method does your company use to design the processes, and how?
2. What kind of method does your company use to develop the existing process, and how?
3. What kind of method does your company use to manage and document the daily activities concerning process-oriented?
4. Have your company implemented and executed the process management, and in which way?
5. Are the business process owners becoming the drivers to implement BPM into the whole company? And how do the process owners achieve that?
6. Is there a functional team in charge of BPM execution in your company, and how does it work? Does your company focus on process control and measurement, and in which way? Does the top management have the plans to introduce some new methods and enhanced approach to support process management? If so, what are the plans in detail?

F. IT

1. Does your company have the IT department that can give good support to the process management? And what is the responsibility of this department?
2. What kind of system do you apply in your IT department now, and how it works?
3. Does this IT system fit your management structure well now, if not, what is the problem?
4. Does your company have the plan to improve IT department and make it more suitable for the process management, why?
5. How does the IT department cooperate with the other department during BPM implementation?
6. Have your company built the collaborative infrastructure to support the process management, and how it works? Does your company streamlined the process and information management by the help of IT system, and how? Dose the IT department combine the agile service and real-time infrastructure during BPM implementation, and how?
7. Does your company create the real-time and agile-infrastructure-driven goals and utilize BPM approaches to automate the process execution and monitoring without negative technical influence? If so, how do you do that, and how does it work?
References


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