CHAPTER 1
INTRODUCTION

1.1 Background and Context: The Growth of the Knowledge Economy and Thailand's Software Development Industry

Over the last two decades, knowledge has emerged to become a distinguishing feature of the world's economy (Barrera, 2007). The fundamental importance of knowledge to economic success has led to creation of the term 'knowledge economy'. The knowledge economy is defined as the effective utilisation of intangible assets such as knowledge, skills and innovation as key resources for competitive advantage and economic success (ESRC, 2005). Knowledge has become the main driver of growth in many countries, with economic trends in recent years signifying that traditional agrarian and manufacturing activities have been in steady decline, and have become less resilient to financial crises (Carlaw *et. al*, 2006).

Thailand's economic growth has reflected these global trends to become a more knowledge-oriented economy, and over the previous decade, has seen its economic growth shift increasingly towards a knowledge based economy (Mephokee, 2003). As a result, Thailand has experienced significant and rapid structural change from its traditional agrarian focus (Martin and Warr, 1994), becoming increasingly centered on participation in the global economy, and in particular, moving towards knowledge based economic activities (APEC, 2000).

One of the key characteristics of a knowledge based economy is that the performance and quality of employees become essential for business success, meaning that research into how knowledge workers can be most effectively utilised is of critical importance. As a key part of its economic, social, and knowledge development, Thailand has placed a strong focus on IT (Ministry of ICT, 2009), with innovation policies adopting the two main approaches of increasing the skill and technological capability of Thai firms, and encouraging foreign direct investment (FDI) (OECD, 2011). The software development industry is therefore a key focus of Thailand's growing knowledge economy, particularly via the attraction of FDI.

According to Groh and Wich (2012), the ability to attract and sustain FDI relates to four main aspects corresponding to the economic, legal/political, infrastructure, and business environment of a country. Each of these components represents a variety of further challenges associated with encouraging and sustaining FDI, such as market size and openness, law and contracts, corruption, transport links, and employee pay (Nunnenkamp and Spatz, 2004).

Figure 1.1 corroborates the sensitivity of FDI to different factors. For example, while Figure 1.1 shows that FDI in Thailand has seen a steady increase from 1990 to 2011, the FDI inflow fluctuates significantly. For instance, in 2008, FDI dropped substantially, representing the global economic downturn. A significant body of literature has exposed the macro economic issues associated with FDI (e.g. Kornecki, 2010; Sosukpaibul, 2007; Kongruang, 2007), but there is relatively little assessment of how to manage day-to-day issues experienced by international firms operating abroad, such as the problems encountered when recruiting, training and sustaining a diverse and intercultural workforce. There is also a scarcity of literature related to managing knowledge workers in the specific context of an internationally diverse software development industry, where the effective management of employees is critical to a company's success.

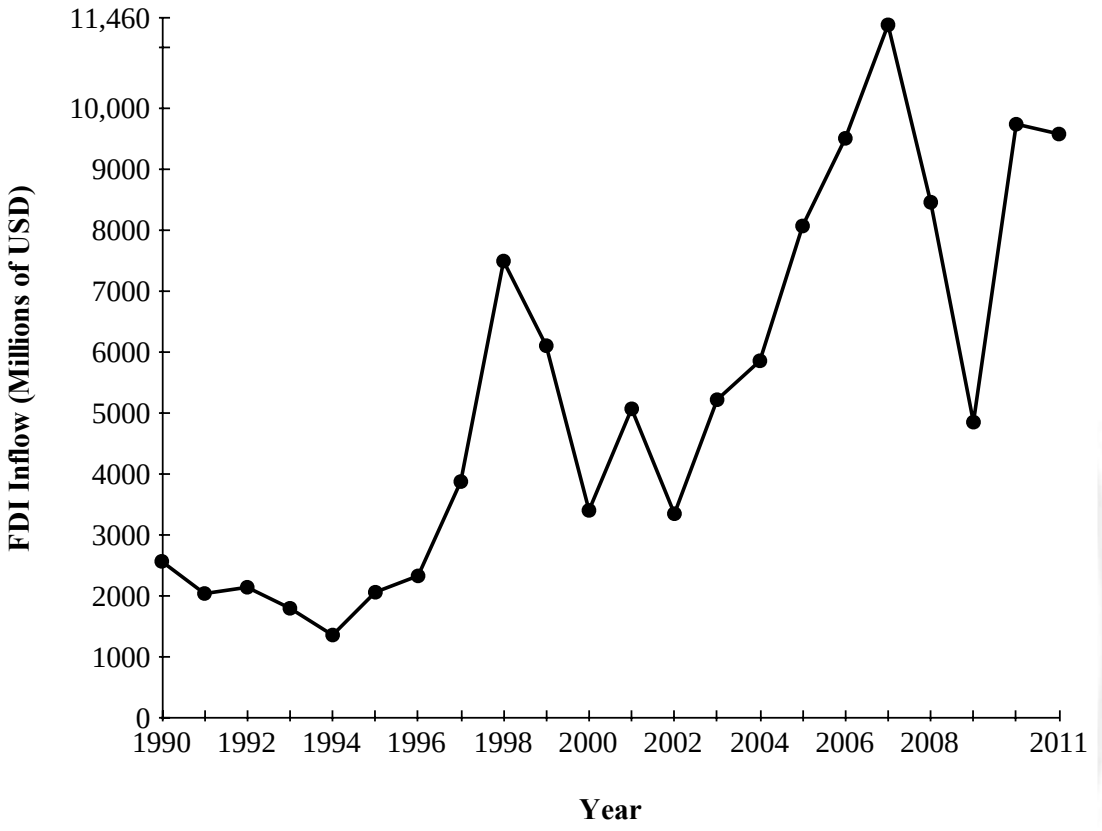

Figure 1.1 FDI inflow into Thailand's economy from 1990 – 2011

According to Reich (1991) firms are dependent on their knowledge workers to maintain competitive advantage, and as a result, only those firms that motivate their knowledge workers to perform in alignment with productivity and innovation goals will succeed (Amar, 2004). Deciding upon the most successful strategies for recruiting, motivating and retaining knowledge workers has thus become an issue of considerable debate (Horwitz *et al.*, 2006). However, despite acknowledgement in the literature of the need to motivate knowledge workers, many workplaces are not structured to promote knowledge worker innovation or creativity, and there is a requirement to understand the characteristics of knowledge workers' performance (Acsente, 2010), especially in terms of their motivation, satisfaction and the subsequent effects on work quality. This is particularly so in less developed countries, where concepts of recruitment, staff training and development are less established (Richardson, 2006; Abdullah, 2009).

In Thailand, the software development industry is nascent compared to some nations, but has been growing rapidly, at a rate of approximately 23% per year since 2004 (Royal Danish Embassy, 2007). Such growth is powered by the liberalization of FDI in Thailand, and several government initiatives encouraging expansion of the software industry (Banga, 2003), with research suggesting this growth is set to continue (Athukorala, 2003; UN, 2010). Encouraging FDI from international software firms has resulted in the market value of the Thai software industry approaching $2.3 billion USD, with annual exports of over $150 million (Thai Investment Review, 2012; Mahbub, 2012).

The growth of Thailand's software development is governed by two factors: growth in domestic software development, and growth driven by FDI. The primary driver of growth is the increased FDI in the software industry, particularly in the north of Thailand. Evidence shows that FDI correlates strongly with the overall success of Thailand's IT sector (Tan and Leewongcharoen, 2005). As a result, there have been a number of strategies to increase investment in the industry. For example, in northern Thailand, the MISOLIMA Software and Technology Park aims to develop industry clusters, international collaborations and investments (MSTP, 2010), and there are a significant number of bright and experienced programmers in Thailand (Thailand Board of Investment, 2011). To further expand the Thai software industry, there is a need for suitable knowledge workers to act as the foundation of competitive and innovative software development activities. According to the International Labour Organization (2011), the lack of appropriate knowledge workers could have adverse economic impacts on ASEAN countries, including Thailand. A significant need therefore exists to develop knowledge workers so they can effectively contribute to Thailand's knowledge economy.

1.2 Software Development: A Knowledge Based Industry

Software development is an intrinsically knowledge intensive industry, which is based on a foundation of rapidly changing technology (Kammani *et al.*, 2013). The most effective software development firms therefore understand the role that knowledge plays when developing software. Over the past two decades, the global software development industry has become a multisite, multicultural and globally

distributed industry (Herbsleb and Moitra, 2001), and one of the key aspects characterizing this industry is that it relies on critical aspects of flexibility and rapid learning (Empson, 2001). Flexibility allows the software development industry to produce appropriate knowledge in the form of products and services that meet the needs of customers, while rapid learning allows the industry to maintain technological advantage, produce software in new ways, and crucially, enables individual firms and organizations to remain successful in an increasingly competitive environment.

One of the key drivers of the global software industry relates to the emergence of the information society, which results in an increased reliance on technological services such as communication, networking, electronic buying, and searching (World Economic Forum, 2012). According to Grumbach (2013), the USA has traditionally been a dominant provider of software, with traditional firms such as Microsoft and more recently, services such as Facebook, Twitter, Google, and LinkedIn. Despite the reach of these services, the dominance of the USA in terms of software has been shifting (Manyika *et al.*, 2011). For example, China has seen significant growth in software and IT services, and is pursuing a strategy of what McGregor (2010) terms 'indigenous innovation'. Yao *et al.* (2009) confirms China's growth in the IT sector, and suggests that software and IT is seeing considerable growth in all the BRIC (Brazil, Russia, India, China) countries. While many developing economies have seen growth in the software and IT sectors, much of this growth has been related to foreign direct investment (FDI), more specifically, the off shoring of business activities by foreign firms to host countries where, among other benefits, there are significant cost savings (Prikladnicki and Audy, 2012). The benefit FDI provides to these host countries, as well as their future level of software innovation is highly dependent on knowledge workers. Lewin *et al.* (2009) argue that companies are increasingly choosing to offshore more than just simple business activities, and are beginning to offshore innovation itself. The natural result is a global race for talent, where knowledge workers, and the way these knowledge workers are managed are now critical to the success of any firm operating in the software development industry.

1.3 Knowledge Workers in the Software Development Industry

In Thailand, FDI in knowledge-based industries commonly results in local staff being recruited into an international operating environment. These international firms often locate in strategic industry clusters across Thailand, and among other reasons, offshore their activities to Thailand due to the lower cost of employing knowledge workers. However, recruiting and training knowledge workers overseas can be an expensive and unpredictable task (Chaudhary *et al.* 2012), particularly for those international firms who may not fully understand the requirements of the local labour force, and where cultural differences and misunderstandings about work-life balance may exacerbate issues of quality and performance. The result is that during the initial probationary employment period, there is a need to ensure that new knowledge workers are able to meet organisational performance and quality requirements. This is particularly so for SME investors, who may not have adequate time or resources to devote to the recruitment and training of new staff.

Cultural differences for example, may result in misunderstandings about what is expected of newly employed knowledge workers. To achieve innovation and creativity, these locally recruited knowledge workers must be clear about what is expected of them. Cultural discontinuities between international managers and locally recruited knowledge workers can also lead to work-life balance issues, which then compound the difficulties between managers and staff. This is especially true during the steep learning curve immediately after recruitment. The resulting danger is that the prospect of off shoring to Thailand and recruiting local knowledge workers becomes a poisoned chalice. This represents a danger to sustained FDI in Thailand's knowledge economy, and the research in this thesis therefore aims to prevent such issues and promote the benefits of locally recruited Thai knowledge workers by developing a knowledge management (KM) approach to the creation of a personal mastery model. Such a model will enable the benefits of locally recruited Thai knowledge workers to be fully realised.

Locally recruited knowledge workers often represent a significant cost saving for international firms when compared to the cost of labour in their home country, and act as a key attraction when deciding whether to invest in a country. However, for multinational companies operating in Thailand's emerging software development industry, evidence suggests it can be difficult to recruit, employ and retain suitable

knowledge workers. Difficulty in recruiting and managing appropriate knowledge workers then threatens the growth of Thailand's software development industry, and the knowledge economy more generally. As a result, there is a critical need to fully understand the issues international firms face when recruiting and employing knowledge workers in Thailand, and more specifically, ensuring their work performance meets the needs of these international firms.

Figure 1.2 indicates the level of pay versus the availability of specialized staff (a proxy for knowledge workers) in the seven ASEAN (Association of Southeast Asian Nations) countries where data is available. While Singapore clearly leads in terms of the supply of knowledge workers, it also leads in terms of worker remuneration (pay). Conversely, Vietnam offers a relatively low availability of specialised staff, but retains a high level of pay. Cambodia, while offering only a marginally lower pay level, offers a significantly lower supply of specialised knowledge workers. Figure 1.2 therefore indicates the strength of Thailand's position in the ASEAN region, where it offers a relatively low level of pay compared to Vietnam, but a relatively high availability of knowledge workers.

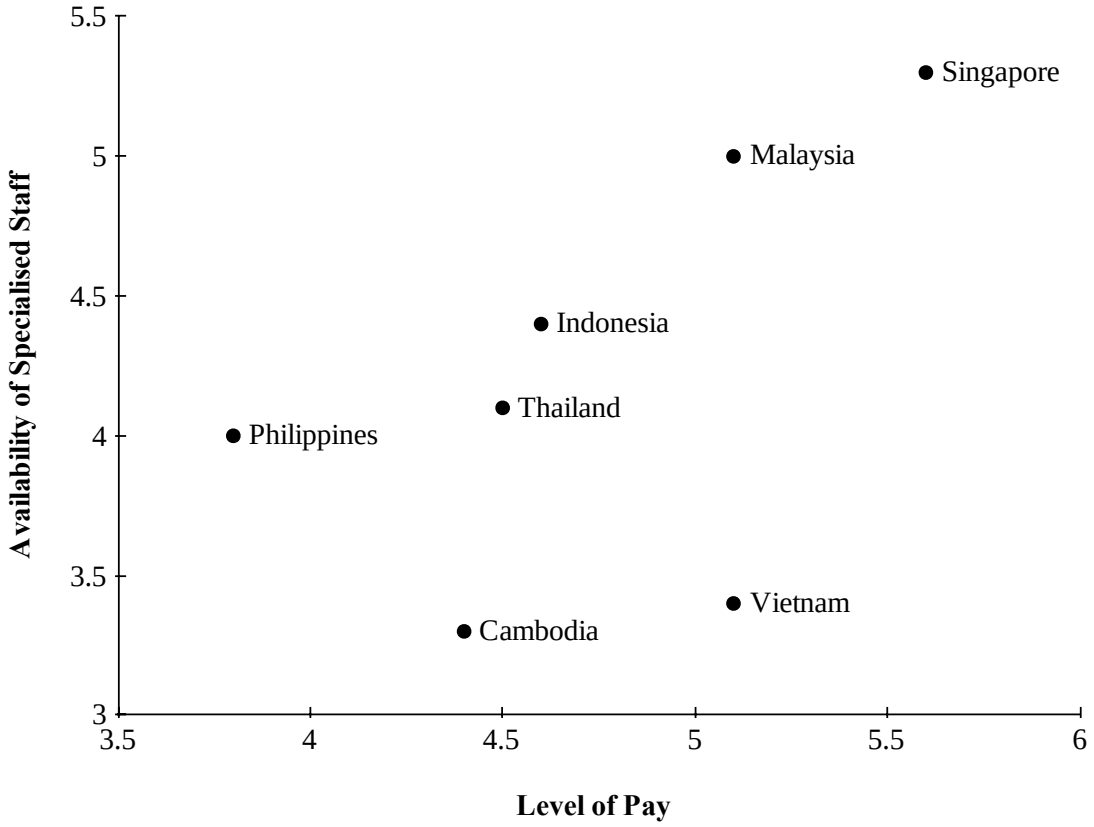

Figure 1.2 Level of pay and availability of knowledge workers in the seven ASEAN countries where data is available. (Data source: The World Bank, 2012)

According to Figure 1.2, Thailand is in a strategically beneficial position within the ASEAN region to build and grow its knowledge economy. However, as noted previously, the growth and potential expansion of international investment in Thailand's knowledge economy has intensified the issues associated with managing a skilled workforce, particularly those issues related to differences in the national and organisational culture between the host country and international investors. The key issues associated with international firms managing local knowledge workers in Thailand can be summarised under the following three categories:

- Work-life balance
- Work performance
- Cultural factors

Work-life balance is an issue of contention and debate worldwide, with a variety of literature suggesting potential solutions, and describing the most appropriate balance between work and life (Lewis and Cooper, 2008). When considering the work-life balance of locally recruited knowledge workers employed by an international firm, further issues complicate the achievement of an appropriate work-life balance, and the meaning and perspectives of what constitutes an effective work-life balance are obfuscated by work performance and cultural issues.

Work performance is hindered by issues such as how to maximize the performance of locally recruited staff within the constraints of work-life balance, and how to address cultural factors. Despite these difficulties, ensuring knowledge workers perform work tasks according to a firm's requirements is critical to maintain competitive advantage (Ndlela and Toit, 2001).

The effects of cultural factors on work performance, and ultimately, on productivity and competitive advantage, are a ubiquitous aspect of operating internationally. Thus for organizations wishing to offshore their activities, understanding and responding to these issues is critical to maximizing business opportunities and achieving effective knowledge worker performance.

The research presented in this thesis utilizes a case study approach to gather results from a German software development firm operating in Thailand. More specifically, the focus is on how to effectively recruit and encourage local knowledge workers to learn about effective work practices during their probationary employment period.

This research aims to provide a solution to work-life balance and culturally related work problems during the probationary employment period of Thai software developers recruited to work in a German software development team. To overcome the key issues faced by knowledge workers and their managers, the work in this thesis uses a knowledge management perspective to develop a model for use during the probationary employment period. Literature suggests knowledge management can bring important benefits when managing international knowledge workers by improving selection, placement, appraisal, compensation, training, and development of employees (Bhagat *et al.* 2002). The research presented in this thesis therefore adopts a knowledge management perspective to address the problem of developing

knowledge workers during their probationary employment period, with specific reference to work-life balance and culturally related issues. The research problem is detailed more specifically below, including a delineation of the work's remit.

1.4 Problem Definition

As noted previously, the increase of competitiveness in the global market has forced a substantial number of multinational companies to outsource and offshore their activities to foreign countries, particularly in Asia. An important factor is the access to comparatively cheap labour. Other aspects relate to the need to secure raw materials located overseas, the need to overcome the risks of currency fluctuations, the need to seek access to free trade areas, and to be closer their markets (Kelly, 2001). A multinational company is described as a business operating in more than one country, which on the one hand provides them with considerable latitude to address local issues such as consumer preferences, political pressures and economic trends in different regions of the world (Miroshnik, 2002). On the other hand, to operate internationally is challenging. While logistical issues present important hurdles, cultural differences have been noted as one of the most significant barriers when operating overseas, particularly in terms of managing staff.

The relationship between culture and work performance is well known, inextricably linked, and complex (Hartog, and Verburg, 2006), and expatriate managers play a critical role in managing human resources. Managers must understand how to lead local employees to perform, but they have different managerial capabilities and task readiness when trying to finish work assignments (Petison and Johri, 2008). Likewise Rodsutthi and Swierczek (2002) found that international leader characteristics and organisational culture influenced multicultural management styles and had a powerful effect on staff.

The cultural discontinuities between foreign managers and Thai employees affect the work performance of local employees, and are common regardless of professions and business types. Sriussadaporn (2006) revealed five aspects of intercultural problems at work including mentality and accountability, task management, time management, language deficiency and personal/work relationships. With specific reference to Thailand, Swierczek and Onishi (2003) presented the

differences between Japanese managers and Thai staff showing how Japanese management style significantly influences Thai staff. Cross cultural issues in international work environments are thus a common issue in Thailand.

Since cultural differences can cause conflict between foreign managers and local employees, the locally recruited employees often have negative work attitudes toward the management style and culture, which can affect work productivity. As a result, the management of human resources must ensure that staff have the ability and willingness to perform, as the success of a company depends on human capital. These international firms must consider and improve staff performance when offshoring their activities in order not to waste recruitment costs. Moreover, the effective utilization and management of knowledge and skills, along with the potential of knowledge workers acts as the firm's competitive advantage. For example, taking note of culture when selecting, training, and monitoring newly hired employees is critical to make sure that new employees live up to corporate expectations (Kranias, 2000).

In the context of software development, IT workers must possess both technical and non-technical skills. They should be able to understand a company's business, manage its projects, communicate with others, and remain capable in the face of ever-changing and advancing IT (Gallagher *et al.*, 2010). These requirements are the basic expectations of IT knowledge workers and may not be sufficient when working across cultures. Knowledge workers employed in international businesses should also have cultural awareness and should be able to comprehend and adjust to cultural sensitivity. For example, with regard to motivation, people in lower- wage countries value rewards, while challenge and promotion are valued by IT staff in higher-wage countries. People from low-context cultures (e.g. Australians) tend to speak bluntly without elaboration, and this will be different from employees who come from a high-context culture such as the Middle East. Thus explicit communication is vital for successful globally distributed IT teams. This situation suggests that to recruit an appropriate employee who fits the job and organizational environment is challenging.

To increase individual performance, training is a process whereby people acquire capabilities to aid in the achievement of organizational goals. In the case of training for new employees, orientation is the most important period for new

employees to understand their jobs, get to know colleagues and the organization (Mathis and Jackson, 2000). To evaluate the performance of new employees, a probationary period (typically sixty to ninety days) is taken as an evaluation of an employee's ability (Mondy, 2008). Unfortunately, training programs can be ineffective at developing employee performance and Tabassi and Bakar (2009) found that obstacles included poor educational background, low income, lack of motivation, and family problems. Some companies did not have training programs for staff and workers because of high expenses, financial problems, the short-term contract of the workers, low levels of education, lack of incentive among workers, and a variety of other reasons.

Thus to understand the phenomenon of cultural differences and effects on organisational productivity, this study emphasizes how Thai software developers perform their work tasks under German management, and how German managers can improve the work performance of local Thai employees. A knowledge management approach is adopted to support human resource management across cultures by designing a critical incident personal mastery model (CPM) to train new Thai software developers to understand German working culture, and increase their work performance as qualified knowledge workers.

1.5 The Case Study: A German Software Developer Operating in Thailand

There are two key justifications for the case study choice of a German software firm operating in Thailand. Firstly, there is a significant gap in the literature regarding the impact of national culture on local Thai knowledge workers, particularly those employed by multinational firms. One addendum to this assertion is that a significant body of literature exists relating to Japanese managers working in Thailand (e.g. Hiroshi, 1989; Sedgwick, 1995; Swierczek and Onishi, 2003). There is also research surrounding both the convergence and divergence of Asian (Confucian) management styles, and the resulting impact on multinational firms operating in Thailand (e.g. Chen, 2004; Rowley and Benson, 2002). However, there is a lack of research regarding European management styles and cultures, and the subsequent impact on knowledge workers in Thailand. This represents a significant opportunity for research, and is corroborated by Hofstede (1993), who argues that there are

significant cultural deficiencies in management theories, which must be understood to ensure effective business practices of multinationals operating abroad.

The second justification for selecting a German multinational firm as a case study relates to the Thai government's objectives in building Thailand's knowledge economy, and attracting foreign direct investment (FDI). Thailand has realized that to continue economic development requires more than low labour costs (Termpitayapaisit, 2007). In line with this sentiment, Jensen *et al.* (2012) state that FDI has become a significant driver of regional economic development in Thailand. In tandem with the objectives to expand Thailand's knowledge economy (and associated IT industries), the German software industry is extending beyond the available supply of knowledge workers, and is thus facing a skills shortage (Reuters, 2012). This has resulted in German IT firms seeking to offshore their operations, both to reduce cost and extend the pool of available knowledge workers. The combination of German offshoring in the IT industry, and Thailand's desire to attract FDI to extend its knowledge economy results in a need to understand the difficulties German management might face when employing Thai knowledge workers. For example, Zimmermann et al. (2013) report that the relational behaviour between German employees and their offshore colleagues has significant impacts on the success of the offshoring operation.

The need to understand how European styles of management transfer to knowledge workers in Thailand, and the desire of Thai policymakers to attract FDI, along with Germany's offshoring, provides both impetus and justification for the choice of the German case study in this thesis.

The case study firm is a software development business operating in Chiang Mai, which is Thailand's second largest city and is quickly becoming a creative business hub with a significant pool of qualified employees (Thailand Board of Investment, 2011). Since 2005, after being incorporated as a Thai Limited Company the case study firm has provided a wide variety of both standardized and bespoke software solutions. The firm is classified as an SME and in 2012, the turnover of the company is forecasted to reach 23 million Euro. The company is headquartered in Berlin, Germany where there are approximately 280 employees, while the Thai affiliate in Chiang Mai employs 80 locally recruited staff for its software development

business. The company maintains close relations with local universities in Thailand to assist when recruiting staff and developing the business.

This research utilised the German owned software development firm to address the culturally-related work performance problems of Thai software developers. Germans have been shown to have different cultural dimensions when compared to Thais (Hofstede, 1990) and by using this case study, this research investigates the problems experienced by German management and Thai knowledge workers, as well as identifying the root causes of these issues and producing a framework that will help German managers to develop Thai employees' personal mastery. The research in this thesis is based on initial research and findings into the problems affecting Thai knowledge workers employed in a German software company.

1.6 Initial Findings and Research Problems

The development of this framework is based on initial research into the key problems faced by German managers when employing Thai knowledge workers. These problems are presented below according to the perspective of German management and Thai knowledge workers. These problems then form the foundation of the thesis aim and objectives.

Problems from the perspective of German management:

- German management and Thai knowledge workers do not collaborate effectively, which affects organizational commitment, productivity and overall work performance.

- German management have identified that Thai knowledge workers are delivering work which does not meet quality expectations, and have perceived signs of work stress among the employees.

- Management sense that the work-life balance among the Thai knowledge workers is volatile and does not always facilitate high work quality/performance.

Problems from the perspective of Thai knowledge workers:

- Some knowledge workers resign early due to misunderstandings about their role, and the inter-cultural work environment. This results in knowledge loss and/or higher recruitment costs for the organization and potential curtailment of the knowledge worker's career.

- Questionnaires distributed during preliminary research suggest employees are concerned about a variety of organizational issues including systematic administration, fair treatment, employee recognition, work engagement, teamwork, and relationships with superiors and the German management.

The research problems discovered during initial research generate the overall research aim and thesis objectives, which are presented below.

1.7 Research Aim and Objectives

In this research, understanding employee performance begins with a characterisation of the problems associated with Thai software developers working within an international software development firm, and then seeks to understand the causality behind these issues, including aspects of culture. The research subsequently designs a framework-based on personal mastery to improve knowledge worker performance, with the end goal of increasing work quality. The overall thesis aim can be described as follows:

To design, create and apply a model to the probationary employment period at the case study in order to improve the work performance of Thai employees in a multinational software development firm.

To meet this overall aim, a series of six sub objectives arise:

Objectives:

1. To describe the performance and quality issues affecting Thai software developers from the perspective of the German management.

2. To investigate and characterise the root causes of the work performance and quality issues affecting Thai software developers working under German management.
3. To identify work-life balance and specific culturally-related work performance problems faced by the newly recruited Thai software developers.
4. To correlate newly recruited knowledge workers' job related issues with specific CMMI software processes.
5. To develop a probationary training system based on personal mastery for newly recruited Thai employees to solve the previously identified work performance issues.
6. To implement and evaluate the effectiveness of this probationary training system in terms of reducing culturally rooted and work-life balance related work issues, and increasing the performance of Thai software developers.

Figure 1.3 provides a visual representation of the overall thesis framework and structure. Each vertex in the diagram represents a key part of the thesis aim and objectives, while the central part of the triangle illustrates how these objectives will be met. The bottom left and right vertices show the key research problems: issues associated with a German-Thai organizational culture, and perceptions of work-life balance. The apex represents the overall aim of this thesis, which is to facilitate improved work performance via the model developed in the research. The centre of the triangle shows how the tension between German managers and the new Thai employees is positively leveraged in the thesis to identify critical incidents affecting work performance, and then build a personal mastery model to address these issues by developing knowledge workers' personal mastery, which will result in improved work performance and quality.

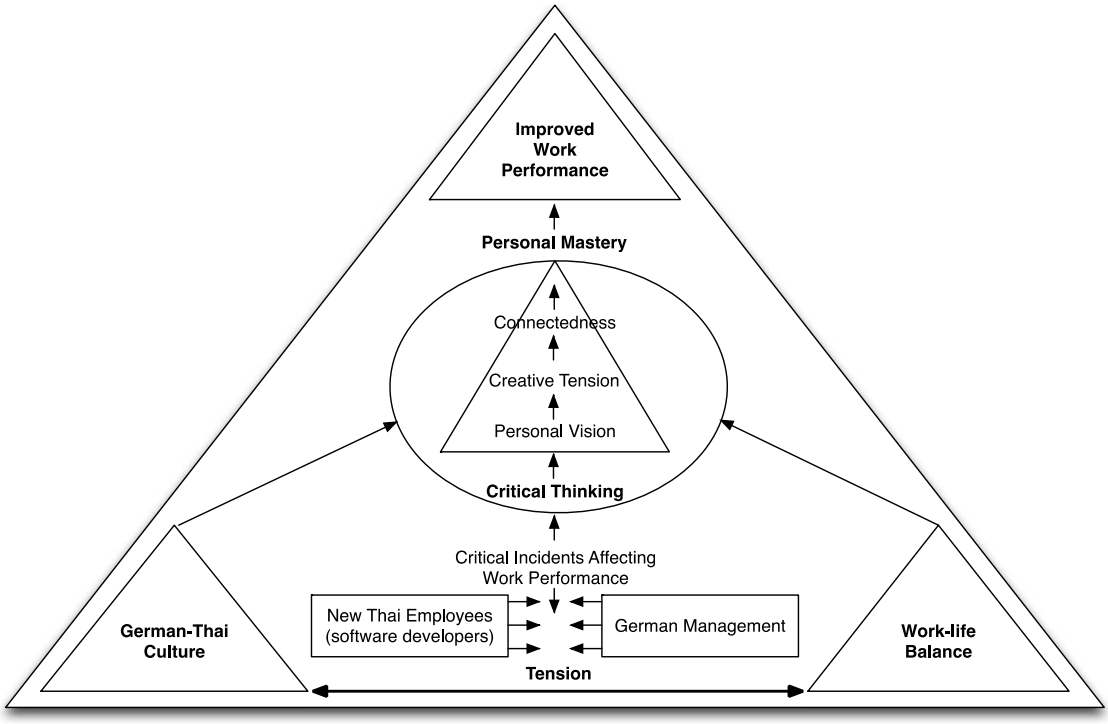

Figure 1.3 The overall conceptual framework of the thesis, with each vertex of the triangle representing the key themes of the research, including German-Thai culture, work-life balance for knowledge workers, and improved work performance at the apex of the triangle, which represents the overall research aim

The overall conceptual framework as well as the thesis aim and objectives are met through a series of five chapters, as outlined below.

1.8 Thesis Structure

The thesis structure is shown in Figure 1.4 and consists of five main chapters. A textual summary of chapters Two to Five also follows Figure 1.4.

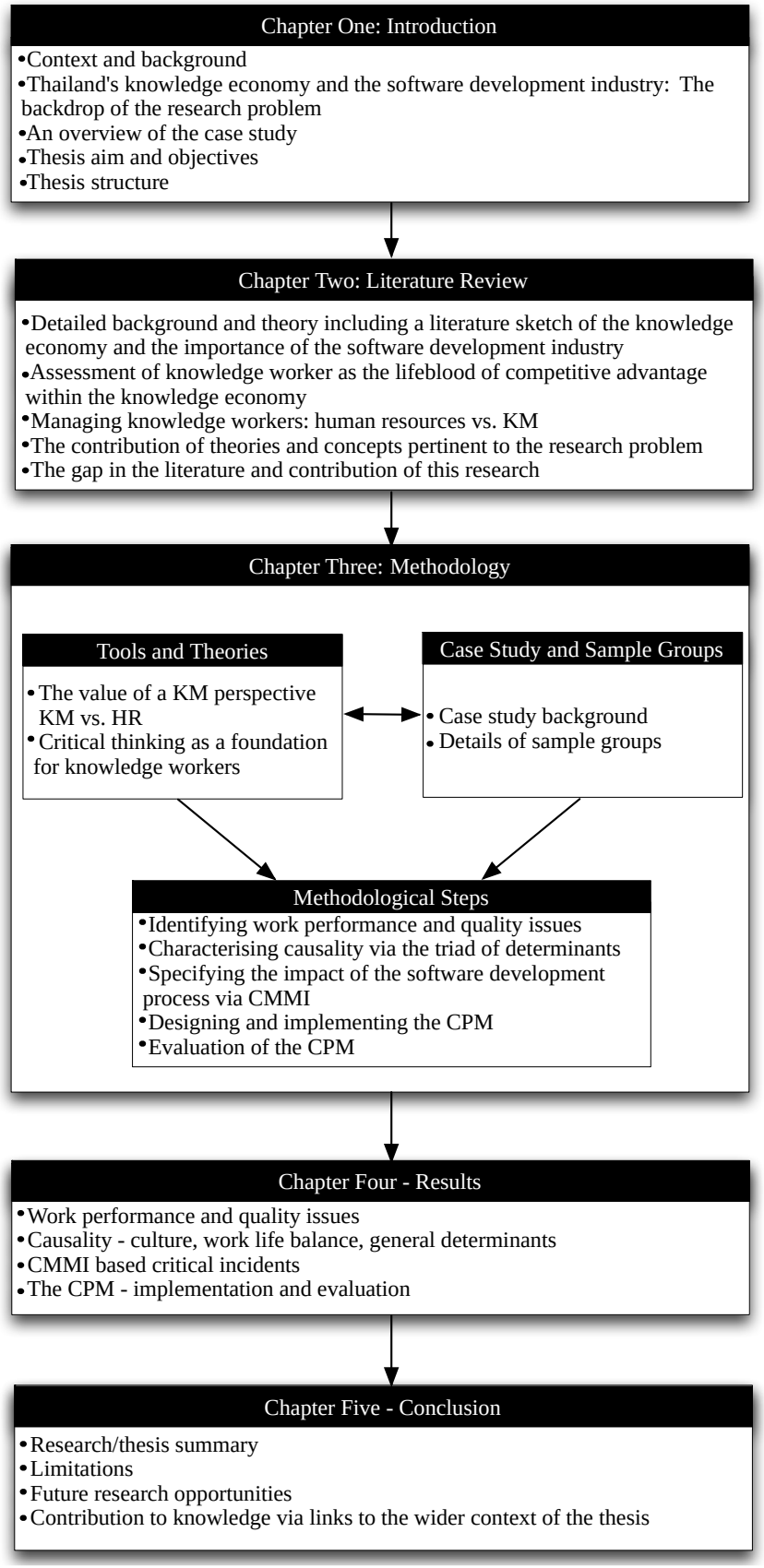

Figure 1.4 The overview of the research chapters in this thesis

***Chapter Two*:**

Chapter two outlines the literature, theory and concepts behind the work, and identifies the origin of the research problem. It provides detail and insight into the unfolding knowledge economy, the nature of the software development industry within the wider knowledge economy, and the common pattern of off shoring software development to newly developing and emerging knowledge economies. The chapter then discusses the importance of knowledge workers, and considers why human resources (HR) is not necessarily the most suitable approach when managing employees in knowledge intensive industries. The literature review then focuses on the potential of a knowledge management approach to steward knowledge workers, and highlights the potential of the main research tools, including personal mastery, force field analysis to manage change, and critical thinking as a foundation of the genesis of effective knowledge workers. Finally the chapter underscores the problems facing the software development industry in Thailand, but more importantly considers the appropriate theories and tools to build a solution to the research problem. The chapter culminates by highlighting the void in the literature to show how this research can make a significant contribution to knowledge.

***Chapter Three*:**

This chapter describes the conceptual and theoretical overview of the thesis and details the specific methodological steps used to effectively undertake the research, including the tools and techniques. It begins by outlining the knowledge management perspective taken in this research and provides a comparison against the established human resources approach to show why a KM approach is a more powerful stance to address the research problem. The chapter then provides information about the case study firm and details the sample groups used to gather data during the research process. Finally, the chapter details the practical methodological steps taken in the research in order to achieve the overall research aim and objectives.

***Chapter Four*: Results**

Chapter Four presents the results of the research, as well as analysis and discussion of the results and their implications. The structure of this chapter closely follows the methodological framework set out in Chapter Three. This chapter is the principal chapter of the thesis, and describes the key results of the research, including the critical incidents personal mastery model (CPM). The chapter ends with an evaluation and discussion of the CPM.

***Chapter Five*:**

Chapter Five summarizes the work, and presents the key conclusions according to the aim and objectives set out in Chapter One. This final chapter also includes a section outlining the research limitations and opportunities for future study, as well placing the research results back into their wider context.