EMPLOYEE MOTIVATION IN A DYNAMIC BUSINESS ENVIRONMENT

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ABSTRACT

The purpose of this study was to explore motivation factors of employees working in a software computer industry which considered as a dynamic business environment. This research was conducted using qualitative research methodology in order to gain in-depth understanding from all selected participants. The data was gathered and analysed through a non-participative observation during company visit and 15 in-depth interview sessions with selected participants.

The research aims to offer constructive benefits to the employers in order to better understand the distinctive characteristics of the talents in the computer software industry as well as identify the key motivation factors that keep employee motivated and engaged with the organization.

KEY WORDS: Employee Motivation / Dynamic Business Environment / Computer software / Agile methodology / Software developer

30 pages

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CHAPTER I
INTRODUCTION

Business all over the world has now faced the challenge related to organization performance in many aspects. External business environment such as rapid changing in technology and a shift in customer demands and trends has put a lot of pressure on almost every sector of the business. These factors pose a significant impact urging every business owners to adjust themselves to the changes. With a high level of pressure from external business environment, there is a strong need for every organization to adjust their business processes and resources in order to timely response to the changes pace of business. Human capitals remain the biggest challenge of the organization. One of the critical success factors of how the organization can achieve the best business results relies heavily on its people. Therefore, it is important to attract, develop and retain the right talents who are engaged and committed to the success of the organization. When change stirs the business or work environment, employees who become unmotivated often respond with lower productivity, sloppy output, loose ethical practices and curbed creativity (Katz, 1998). Therefore, it is crucial for every organization to fully understand the motivation of their employees to stay engaged and rise through business challenges with the company.

With the rapid changing business environment, it is important for every organizations to prepare and adapt themselves to timely and effectively response to the dynamic of the business. Business all over the world is now entering into the "Digital Era" which is characterized by the information and communication technology (ICT) revolution and its rapid international diffusion (Lawrence, 2003). Thanks to this digital era, the new technologies and innovations are required in almost every industry in order to sustain and prosper the business. The computer software industry is considered to be one amongst the most dynamic business in the digital era. With a highly competitive business environment, the computer software industry is now facing the challenges related to talent retention and high employee turnover.

1.1 Problem Statement and Research Objectives

Thailand software industry is on course to grow 11.1 per cent to 61 Billion Baht this year, thanks to the government's "digital economy" scheme, the private sector, exports and embedded systems (The Nation, 2015). Furthermore, the software market is expected to grow 12.8 per cent bigger in the year 2016 (The Nation, 2015). The Board of Investment (BOI) classifies software development as a priority activity crucial to the country's prosperity (BOI: Thailand Investment Review, 2011). A maximum investment incentive, including tax breaks and exemption on import duties for machinery, has been granted to the software ventures. According to the Board of Investment (BOI), there are nearly 40,000 technical personnel in this sector and the computer software has already expanded to a 16% share of sales in Thailand's entire Information and Communications Technology (ICT) industry which is valued at 595.60 Billion Baht (BOI: Thailand Investment Review, 2011).

Due to the growing market size and a high competition in the computer software industry, the software developer workforce has now had more opportunities to prosper their career with a numerous employers, creating an aggressive talent war within the industry as a result. Therefore, the main focus of this research will be linked to the area related to employee motivation in order to stay productive and engage with one organization over a period of time. This research will also investigate and prioritize the importance of the motivation factors that best suit to the distinctive characteristics of the software developers in Thailand.

1.2 Scope of Study and Expected Benefits

This research focuses on the motivation factors of the software developer within Thailand computer software industry. The main focus of this study is directly linked to the computer software company that apply agile project management methodology in their organization. The research aims to offer constructive benefits to the employers in order to better understand the distinctive characteristics of the talents in the computer software industry as well as identify the key motivation factors that

keep employee motivated and engaged with the organization in order to minimize the risk of business disruption due to high employee turnover.

CHAPTER II
LITERATURE REVIEW

2.1 Distinctive Characteristics of Software Developer

The most common and most frequent-cited characteristics of software developer are growth-oriented, introverted and autonomous (Sharp, Baddoo, Beecham, Hall and Robinson, 2009). However, these characteristics differ according to the nature of the business and working environment of company. In this study, the research focuses mainly on the group of software engineer who applies agile methodology in their work. Agile project management (APM) methods are often referred to as "lightweight" approaches to information technology (IT) project management, as they are in direct contrast to the traditional long-term, bureaucratic, plan-driven, document-heavy approach to managing software development (Boehm, 2002). Therefore, team collaborations and understanding the requirement of each tasks required in each team are the key factors in keeping the software developers motivated. Team motivation in software engineering has the largest impact on productivity, software quality and project overall success (Steinberga and Smite, 2011). What seems to be in contrast with their introvert nature is to have a software engineer involved in decision making as well as to participate and work well with others. However, it is crucial that certain level of teamwork is maintained when working in the project.

2.2 Dynamic Business Environment and Agile Methodology

Research has shown that there is several approaches address motivation of software developers. This includes iteration and small releases, simple design with continuous testing and continuous integration, regular face-to-face meetings, pairing and self-organizing team (Steinberga and Smite, 2011). Agile methodology usually

works better when the team members are motivated as well as empowered (Goodpasture, 2010). However, there are several barriers that could make motivation unachievable in managing agile team in rapid changing environment. Motivation and rewards are the key focus on the effective of team collaborations under agile methodology. A manager must ensure that each individual team member is motivated to use their abilities in the best interests of the team or organization (Walsh and Schneider, 2002).

2.3 Motivation Theory and Framework

Employee motivation is considered as a main driving force for the success of every organization. To be able to sustain and achieve highest business performance, it is crucial for every organization to understand and operate in such a way that all employees are motivated, engaged and committed to the success of the business. It is obvious that motivation is one of the main factors that determine the work performance of employees and highly motivated employees are crucial to an organization's success (Cinar, Bektas, Aslan, 2011).

A numerous research and studies related to motivation factors have been conducted in the past in order to facilitate a better understanding on how one can be motivated and behave in a certain way. The most influence theory is Maslow's Hierarchy of needs. Maslow (1943) classified people needs into 5 categories: physiological, safety, social (sense of belonging), self-esteem and self-realization needs. Maslow's theory describes one set of needs that act as driving forces to influence human action (Wilson and Madsen, 2008). Maslow stated that when the need at the lower level is satisfied, the next level need become dominant, and that the person is focusing on a higher rank need. According to Maslow's, gratification of our basic needs frees us to move on to the next higher level (Goodman, 1971). In contrast to Maslow's, the ERG theory: existence, relatedness and growth, believes that it is not necessary to follow the rigid progression of steps from one level to the next. In fact, more than one need can be recognized and achieved at the same time (Alderfer, 1972).

It is also interesting to understand the Two-Factor Theory (Herzberg, 1959), which consists of intrinsic and extrinsic factors. Intrinsic motivation is driven

by forces from within the employee, while extrinsic motivation is driven by outside forces (Giancola, 2014). Intrinsic factors such as career advancement, responsibility, achievement and recognition, are considered as a motivator for one to feel satisfy with the job. While intrinsic factors represent factors related to job satisfaction, extrinsic or hygiene factors are, by contrast, related to job dissatisfaction. It is likely that one might be demotivated when the hygiene factors such as supervision, pay, company policies, relation to others and working conditions, are not being satisfied (Westlund and Hannon, 2008).

Apart from the two-factor theory, the self-determination theory (SDT) (Deci and Ryan, 1985) also focused on the intrinsic and extrinsic motivation. According to the self-determination theory (SDT), intrinsic motivation is considered as the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn (Ryan and Deci, 2000). The three psychological needs that provide the basis for self-motivation in this theory consists of competence, relatedness and autonomy and the feeling of competence will not enhance intrinsic motivation unless they are accompanied by a sense of autonomy (Westtlund and Hannon, 2008). Self-determination theory (SDT) is the distinction between autonomous motivation and controlled motivation. Intrinsic motivation is an example of autonomous motivation as it represents a sense of volition and having the experience of choice (Gagne and Deci, 2005).

Apart from the motivation theory, there is also an interesting research study related to employee motivation published in Harvard Business Review in 2008. The research has defined the four drives that underline motivation and the degree of satisfaction directly affects one's emotion and behaviour. The four drives are: the drive to acquire, explain the logic of how an individual compares what they have with others. The drive to bond represents how employee can be motivated with the pride of being a part of the organization. The drive to comprehend shows that the employee has a desire to make meaningful contribution to the organization. Last but not least, the drive to defend explains the rational of employee's resistance to change (Nohria, Groysberg and Lee, 2008). Each drive is independent and not hierarchically order. Therefore, this study will benefit an organization in order to strategically apply different rewards and recognition to satisfy each drive.

2.4 Motivating Software Developer

Further to the understanding of motivation theory and framework in general, it is important to understand the needs that consider as key driving forces of employee motivation in this study. This research is conducted in order to understand the key factors that keep software developer or software engineer motivated and engaged with the organization. Information systems people possess distinctive characteristics which are different from the average population regarding their individual needs. Therefore, what motivates the software engineers is likely to be different from what motivates the population in general (Cesar, Franca and da Silva, 2012).

Experience and maturity is also another key point to understand about motivating software developers. An experienced software engineer is more likely to be motivated by challenge, opportunities for recognition and autonomy (Beecham, Baddoo, Hall, Robinson and Sharp, 2008). By contrast, the junior software developers would be more motivated by learning, exploring new techniques, and problem solving.

A review of the literature has revealed that the distinctive characteristics of software developers are introvert, growth-oriented, autonomous, and a good team player. However, the key motivation factors that keep the software developer motivated are geared towards the intrinsic factors which are preference for challenge, autonomy, ability to master or explore new techniques, and a sense of accomplishment.

2.4.1 Preference for Challenge and Autonomy

Agile Software Developer is required to be empowered and self-organizing to facilitate faster delivery of useful products (Highsmith, 2004). In agile development, the developers have to choose jobs to work on from the prioritized set of jobs, and report to the team on progress and impediments in short daily meeting (Tessem and Maurer, 2007) One of the critical success factors of this methodology is to have software developers who can response to the change of the business and be able to communicate with the team clearly about the impact and consequences of the change. Developers must have broad knowledge on all aspects of software

development but should also have specialized skills in certain areas (Conboy, Coyle, Wang and Pikkarainen, 2011).

Agile development team is considered as a self-organizing team exhibit autonomy and must have common focus, mutual trust, respect, and the ability to re-organize repeatedly to meet new challenges (Cockburn and Highsmith, 2001). As such, software developers are motivated by the challenges of the work and their ability to make decision under their area of responsibilities.

2.4.2 Ability to master or explore new techniques

A rapid changing business environment, especially in the digital era, has put pressure on every organizations to timely response to the business needs in order to best satisfy the customers and sustain the business. Computer software is also another key business area that will have to adjust itself in order to be able to response to the changes. Therefore, it is crucial that software developers must be flexible and ready for the change that may frequently occur.

In order to be successful in a digital era, both organization and employees must be able to adjust themselves to be in line with the dynamic of the business. Therefore, the company must be able to create a continuous learning environment and allow the software developers to master and explore new techniques that can help them get ahead of others. Employees are motivated by jobs that challenge them and enable them to grow and learn, and they are demoralized by those that seem to be monotonous or to lead to a dead end (Nohria, Groysberg and Lee, 2008).

2.4.3 Sense of accomplishment

The distinctive characteristics of software developers including their nature of work, personality, generations, has led a significant thoughts behind how to keep them motivated and remain engaged with the organization. Apart from other extrinsic factors, there is also a research showing that achievement is the strongest motivator factor for software developers (Asproni, 2004). Therefore, this research will mainly focus on the intrinsic motivation factors which could contribute and consider as key findings of this study.

2.4.4 Team collaboration or sense of belonging

To ensure an agile team produces quality works, an appropriate and supportive environment must be available, for example, ensuring availability of required tools, an open-office space to facilitate open communication (McHugh, Conboy, and Lang, 2011). It is important to foster unified commitment, a sense of belonging, and to give team members a possibility for growth (Asproni, 2004). In order to encourage team collaboration in agile methodology, it is also a necessity for team members to be cooperative, trusting, have good relationships with each other, and be able to make decision quickly (Cockburn and Highsmith, 2001).

From the above review of literature, the research framework of this study will focus mainly on intrinsic factors which consider to be the main factors in keeping the software developers motivated and engaged with their organization. The key focus areas of this research cover the preference for challenge and autonomy in decision making of each software developer, their ability to master or explore new techniques, their sense of accomplishment, and their contributions to the team which can enhance their sense of belonging to their organization. It is important to note that team structure comprehends the process, the communication channels, the roles, and the skills of the team members. In fact, its presence makes achievement possible, but doesn't motivate people (Asproni, 2004). The key motivation factors studied in this research are applicable only to the organization that applies agile project management technique in their working environment. Therefore, the findings of this study may not suit with information technology (IT) organization using traditional hierarchical structure in their organizations.

CHAPTER III
RESEARCH METHODOLOGY

This chapter will provide information related to the methodology applied in this research. The research design, population, sampling, data collection process and approach in doing data analysis will also be explained in this section.

3.1 Research Design

This research used qualitative design approach. The qualitative research is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions and motivations (Wyse, 2011). This type of research produce findings not arrived at by statistical approach or other means of quantification (Strauss and Corbin, 1990.). In qualitative research, any component of design may need to be reconsidered and modified during the study in response to new developments or to changes in some other component (Maxwell, 1996).

Qualitative research is good at simplifying and managing data without destroying complexity and context (Atieno, 2009). The method will help us to understand how the participants feel or think in a setting or a process the way they experience it. The relationship between researcher and participants is less formal which can help reducing the pressure of participants when answering research questions.

3.2 Population and Sampling

This research applied a non-probability sampling technique where the samples are not random selected. The sample group was selected based on a specific purpose that they were likely to generate the useful findings for the project. In this

research, a group of 15 software developers in central Bangkok is selected for an interview. This group is an experienced developer who has at least two years of software engineering background. Regardless of gender and nationality, the group consisted of 1 General Manager, 4 Team Leaders, 3 Senior Software Developers, 4 Software Developers and 3 Junior Software Developers. The age range of the sample group was between 25 – 45 years old.

3.3 Data collection

In this research, semi-structured in-depth interview was selected as a main methodology. Interviews are often used to provide context to other data (such as outcome data), offering more complete picture of what happened in the program and why (Buyce and Neale, 2006). The interviews were scheduled in advance at a designated time. Semi-structured interview generally organized around a set of predetermined open-ended questions emerging from the dialogue between interviewer and interviewee (Bloom and Crabtree, 2006).

To answer the research question, individual in-depth interviews and non-participant observation techniques during company visit were selected as data collection approach of this research. An in-depth interview is an effective mean to learn from participants about their perceptions and experiences related to the research topic. In this research, a set of open-ended questions was prepared prior to the company visit. The questions were developed in order to guide the interviewees to provide useful data that are important for the research findings. Most of the questions were formulated to capture the data related to employee motivation at the beginning, as well as, current stage of employment. Open-ended questions allow the respondent to express an opinion without being influenced by the researcher (Foddy, 1993).

To ensure validity of the data, the probing technique is adopted. Probing technique is used to encourage conversation without influence the answer (University of Illinois, 1982). The purpose of using probing technique is to gain more clarity and gather additional information from the interviewee.

Some of the interview questions used during the interview are as below:

- Please help identify some of the distinctive characteristics of a good software developer?
- Why did you choose to become a software developer?
- Why did you apply for a job with this company at the first place?
- What keep you stay with this company for more than two year?
- In your opinion, how can we make this place a better place to work?
- What make you want to come to work everyday?
- What challenge you the most in your work as a software developer?

The interview conducted during September – October 2015. Each interview session took approximately 30 – 45 minutes. A complete interview guide used for the full session interview provided as in Appendix A.

3.4 Data analysis

Qualitative research, especially in-depth interview, may require the researcher to seek relationships between various themes that have been identified, or to relate behaviour or ideas to biographical characteristics of respondents (Lacey and Luff, 2007). The data need to be collected, interpret and organize before transferring into written and verbal report.

After completion of data collection, data coding was chosen as a method of doing data analysis. Coding is the process of reviewing notes and discovering common themes (Biddix, 2009). Regardless of the qualitative method, coding is the process of focusing a mass amount of free-form data with the goal of empirically illuminating answers to research questions (Hahn, 2008). An initial coding or open coding was applied for data analysis of this study. The intent of open coding is to break down the data into segments in order to interpret them (Given, 2008). During open coding, the data that have been collected are divided into segments in order to find commonalities that could reflect categories or themes. The research findings will be presenting in the next chapter.

CHAPTER IV
FINDINGS AND DISCUSSION

This chapter will provide the key findings of the research. The data gathered from total 15 respondents, including their demographic profiles, were analysed and presented in order to understand how the software developer remains motivated in the dynamic business environment. The data were collected by in-depth interviews from 15 software developers who have been working in this field for more than 2 years.

4.1 Observation findings

During a non-participative observation on the characteristics of software developers working in this company, it clearly showed that the developers were required to work closely together in order to complete the tasks of one particular project. The developers will participate in the stand-up meeting with the team every morning in order to update the progress of the task under his or her area of responsibility. Moreover, the challenge and obstacle related to the task will be discussed openly among the team members in order to prevent any cause of delay of the project. In agile methodology, every team members are required to work closely together and each members must be willing to share ideas and provide feedback that contribute to the success of the project. Hence, the key success factor of one project relied heavily on working collaboration among team members.

From the observation during their stand-up meeting, the software developers were very responsible of their own tasks as they were well aware that their works contributed to the success of the project. The interaction and communication among team members were another key areas to observe. The developers interacted and communicated respectfully to each other. They were willing to listen and share ideas on how to work together in order to deliver the best possible results of the

project. Hence, it is important for software developers to feel that they are considered as part of the team and their works are well recognised when completing the tasks.

Moreover, the office working environment and the open-minded culture of the organization were another areas that can also impact the motivation of software developers from this observation. The open-space office layout and design with no fix seating arrangement helped facilitating more communication and interaction among team members. Employees can move freely within the office without having to ask permission from management or respective line manager. The team can easily get together to discuss about the project anytime without having to book and queue up for the meeting room. From the observation, the office layout was one of the factors that had positive impact on motivation and productivity of the team.

In term of the policy, the company has applied flexible working hours policy in the workplace in order to accommodate the employees when traveling to and form work. Flexible working hours is the policy in which certain level of trust and maturity are required as there was no time record when employees come to or finish their work. The flexible working hours can reduce the pressure at work as employees feel they are trusted and have been treated with respect in regard of their work. Moreover, employees can also feel that they have been empowered both in their autonomy in making decision and their way of work in this company.

4.2 Demographic profiles of respondents

Demographic characteristics of the respondents obtained from in-depth interviews were analyzed and presented in Table 4.1. This study included 15 software developers working in an international computer software development company located in Bangkok Metropolis, the group consisted of 1 General Manager, 4 Team Leaders, 3 Senior Software Developers, 4 Software Developers and 3 Junior Software Developers. The group of respondents consisted of twelve men (80%) and 3 women (20%). Majority age range of the respondents (46.67%) was between 31 – 35 years old and 73.33% of the respondents were graduated with bachelor degrees. In term of previous experience as a software developer, 53.33% of the respondents had 2 – 5

years experience in this field while another 46.67% had more than 6 years of experience in this job.

Table 4.1 Demographic Background of Respondents Classified by Gender, Age range, Education level and Years of experience

Demographic Background	Quantity (n)	Percentage (%)
Gender		
Male	12	80%
Female	3	20%
Total	15	100%
Age Range		
25 – 30	4	26.67%
31 – 35	7	46.67%
36 – 40	2	13.33%
41 – 45	2	13.33%
Total	15	100%
Educational Level		
Bachelor	11	73.33%
Master	4	26.67%
Total	15	100%
Year of Experience		
2 – 5	8	53.33%
6 – 10	6	40%
> 10	1	6.67%
Total	15	100%

4.3 Factors toward motivation of software developer

The in-depth interviews were conducted in order to gain some insights and key findings related to motivation factors of 15 software developers in order to remain motivated and engaged with the organization. The findings of these in-depth interviews will also be analysed and compared with the previous study, as stated in the literature review, in order to measure if there's any identical motivation factor among the group of software developer who worked in a dynamic business environment.

In this research, the 15 respondents are working in an international software development company located in Bangkok Metropolis. The respondents have been working as a software developer in this industry for at least 2 years. The results revealed motivation factors that keep majority of the respondents motivated with their current jobs are challenge at work rank 1st as there were 9 out of 15 respondents (60%) stated this factors. Working environment and culture is considered 2nd rank (6 out of 15 respondents), autonomous in decision making appeared in the 3rd rank (4 out of 15 respondents), and ability to explore new technology is another key factors which had been mentioned about in the interviews (2 out of 15 respondents).

Preference for challenge at work

Majority of the respondent stated the same thing that the challenge at work was the main factor of their motivation at work. They prefer to come to work with the thoughts of having something new and can challenge their abilities to fix the current issues or ability to do something different and challenge status quo. Regardless of position and age range, 60% of the respondents wanted to come to work and stay with the company as long as they still find some challenge in their roles and responsibilities. Some of the respondents' feedback related to how they find challenge at work motivate them are as follow:

"I like to come to work knowing there will be some new challenges for me so I can learn something new everyday."

"One of the things that keep me going with this company is the challenge of the job under my responsibility. There is always something come up for me to solve and challenge me to develop further in my role."

"I like coding and the beauty of it is like playing computer game or solving puzzles. You will have to work your ways around just to find the right fit for the puzzles. What challenge me the most is how to deliver the best quality in term of the code, find ways to fix the bugs and try to deliver the best quality work as per the requirements of the product owner in Norway."

"I'll still be staying with this company as long as the work is challenge enough to keep me busy and allow me to learn more from it."

"One of the challenge for me is to keep up with the changing requirements from the product owner. The customers' demand and the market change so fast in our industry and that is why we have to be ready to manage the change as we go. That where my challenge is and that's how I keep myself going each day."

The finding is in line with previous studies both in term of motivation theory in general and employee motivation under agile project management methodology. For the motivation theory itself, the finding is in line with the Two-Factor Model, intrinsic and extrinsic factors (Herzberg, 1959). In this study, the preference for challenge at work is considered as an intrinsic motivation factor. Furthermore, the finding of this study also in line with the Self-determination Theory (SDT) where intrinsic motivation is considered as the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn (Ryan and Deci, 2000). And the preference of challenge at work in this study is considered as such.

In term of the motivation theory for software developers who adopt agile methodology in their work, the study is in line that the developers must be able to response to the change of the business and have broad knowledge on all aspects of software development but should also have specialized skills in certain areas (Conboy, Coyle, Wang and Pikkarainen, 2011). It is also in line with another study which stated that software developers who work in agile development team must be able to re-organize repeatedly to meet new challenges (Cockburn and Highsmith, 2001). The finding from majority of the respondents is aligned with the two theories related to motivation factors of software developers working under agile project management methodology.

Working environment and culture

Under this finding, there were 6 out of 15 respondents stated that the working environment including the culture or way of work in the organization are what kept them motivated and willing to stay with the company. They will not be thinking about finding a new job as long as there is no major shift in term of the organization culture that can negatively impact way of work in the company. As described in the observation findings, the office working environment and the open-minded culture of the organization were another areas that can also impact the motivation of software developers. The finding from in-depth interviews also confirmed that the working environment and the company culture could contribute to a positive influence towards employee motivation. Some of the respondents' feedback from in-depth interviews is as follow:

"I like working here as people are open-minded and willing to listen and share new ideas. I can really feel that my opinion is counted in every projects the company implemented."

"The office environment and design are probably what I like the most here. The open-space office design gives us some flexibility in the way we work. People are nice and we treat each other with respect. There is no drama like other company that I used to work."

"I really like flexible working hours policy. This give employee a lot of flexibility at work and I feel like I have been treated as an adult with high level of maturity. It is important for me that the company has their trust in every employees and treat us with respect."

"People here are very nice comparing to others company I used to worked. Whenever I ask for something, there will be more than one person willing to help me and that become the culture we really value here."

According to the research framework, working environment and culture were not the key focus in this study. Therefore, the finding was not in line with the research framework set out earlier. At the beginning of this study, the main focus was built around understanding intrinsic motivation factors that can help enhancing motivation of the software developers. However, the finding from respondents' feedback has clearly shown that extrinsic motivation factors, such as working

environment and company culture, are proven to have significant impacts on employee motivation. It is also interesting to discover that working environment and culture are the main motivation factor for the respondents in junior position with the age range between 25 – 30 years old.

Autonomous in decision-making

There were 4 out of 15 respondents stated that autonomous in decision-making is one of the key motivation factor that keep them with the company. Most of the respondents who stated that autonomy is the key motivation factor are in middle level to senior career level. The autonomous in decision-making implies that the company and line manager trust them to do their work. Therefore, the higher the career level they are, the more autonomous in making decision they would require. Some of the respondents' feedback is presented as follow:

"At my position, it is important to me to be able to make critical decision under my area of responsibility base on my judgement. Micromanagement or too much of management interference will increase the chance of me leaving for another company."

"I feel empowered knowing that my manager trust me to do the work and allow me to use my own judgement in making decision. My manager will always provide support but it is also important to me that he allow me to do some trial and error in my area."

The finding is in line with the previous study according to the research framework. Under agile methodology, software developer is required to be empowered and self-organizing to facilitate faster delivery of useful products (Highsmith, 2004). Agile development team is considered as a self-organizing team exhibit autonomy and must have common focus, mutual trust, respect, and the ability to re-organize repeatedly to meet new challenges (Cockburn and Highsmith, 2001). Hence, the finding of this research has also proved that challenges of the work and ability to make decision under their area of responsibilities are the factors that can keep software developers motivated and engaged with the organization. It is important to note that an autonomous in decision-making is considered to be the main motivation factor of software developer especially in middle level to senior career level.

Ability to explore new technologies

According to the respondents' feedback, there were 4 out of 15 respondents agreed that continuous learning in technologies is another key motivation factor for them. In order to remain competitive in the Information Technology (IT) industry, the company must be able to adapt itself in this dynamic business environment. Hence, software developers must continuously seek new way to master and explore new techniques. The feedback from respondents is as follow:

"I like to work here as our technology is quite new and up-to-date comparing to others. Management allows us to learn and try new technology whenever it first came out to the market. The company encourages us to learn new things in order to keep up with the rapid changing pace of the industry."

"I like to learn new things especially new technologies. As a software developer, it is important for me to be able to learn and try new technologies so I can improve myself and stay up to speed with the industry."

The finding is in line with the research framework of this study. Employees are motivated by jobs that challenge them and enable them to grow and learn (Nohria, Groysberg and Lee, 2008). Therefore, it is important for the company to cultivate a continuous learning environment and encourage employees to master and explore new knowledge all the time. Ability to explore new technologies is mainly emphasized in the group of junior software developers interviewed in this study.

CHAPTER V
RECOMMENDATIONS

5.1 Practical Implications

Motivating employee is considered to be one the key to success of every business. It is important for every organization to understand how to keep employees motivated and engaged. Motivated employees are willing to go extra miles in order to help the company achieve its business objectives. When employees are motivated, their morale increases and that will also have positive impact on productivity of the organization. Therefore, it is critical for the company to try to understand the right motivation factors that can keep their employees motivated.

This study mainly focuses on the intrinsic motivation factors of the software developers who work in a dynamic business environment. The previous study also reviewed that key distinctive characteristics of the software developer are growth-oriented, introverted and autonomous (Sharp, Baddoo, Beecham, Hall and Robinson, 2009). However, the observation findings of this study also point out that software developers working under agile methodology are required to have more interaction with others, also contribute more as a team. Therefore, the characteristic of software developers working under agile methodology is more extrovert than the developers working in a traditional hierarchical organization.

Furthermore, the findings of this study also addressed the 4 key motivation factors, both intrinsic and extrinsic, of software developers who work in a rapid changing environment. The most emphasized one amongst the 15 respondents was the preference for challenge at work. Regardless of position, gender and age range, the respondents revealed that they wanted to come to work and stay with the company as long as they still find some challenge in their roles and responsibilities. The second most cited motivation factor in this study is the working environment and culture. Even though, the research framework was mainly focused on intrinsic motivation factors, the extrinsic motivation factor especially working environment and company

culture was the second most mentioned motivation factor by the respondents. This study has proved that working environment and company culture were another areas that can impact the motivation of software developers, especially the young generation who work in junior level. Another two intrinsic motivation factors that appeared in the findings of this study are autonomous in decision-making and ability to learn new technologies. For middle level to senior career level software developers, it is important for the company to allow them to make decision without any interference as it implies that the company and line manager trust them to do their work. Lastly, software developers must be able to continuously seek new ways to master and explore new techniques. Hence, it is important for the company to cultivate a continuous learning environment and encourage employees to constantly master and explore new knowledge related to their work. Enhancing ability to master and explore new learning at work is the key factors that can motivate software developers specially the junior level.

The research findings will directly benefit computer software development company in Thailand that applies agile project management methodology in their organization. The motivation factors appeared in this study will benefit the employers in order to better understand the distinctive characteristics of the software developer as well as identify the key motivation factors that keep employee motivated and engaged with the organization.

5.2 Limitations of the study & recommendation for future research

There are three potential limitations in the current study in term of number of respondents, cultural difference in each organization, and organization architecture of the company. As the software industry in Thailand is quite large, the number of respondents (15 respondents in total) in this study might not be able to represent the motivation factors of employee in this industry as a whole. Therefore, the future research should apply both qualitative and quantitative research methodology with a much larger sample group in order to validate and provide more data integrity to the findings of the study. Secondly, this research was conducted within a small

international software development located in Bangkok. The cultural difference may impact the thinking and behaviour of the respondents. Hence, the findings of this study might not be able to apply with a traditional Thai organization with no international exposure. Therefore, the future research should cover more variety of the respondents from a more diverse background in term of the culture and the number of the respondents. The last limitation of this study is related to the organization architecture or structure of the company. The main focus of this research is to understand the motivation factors of software developers under agile methodology. The organization structure of the company participated in this study is very flat and the decision-making process is decentralized. Hence, characteristics of employee as well as working process of the organization were very much different from others in the industry. Therefore, the finding of this study might not be able to fully represent motivation factors of employees in other type of company structure especially the hierarchical ones. According to these limitations and constraints, the recommendation for future research is to conduct a research using combination of qualitative and quantitative methodology. The sample size selected in the research must be large enough to cover more variety in terms of organization structure, sizing, and cultural differences in order to ensure integrity of the data in the future.

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APPENDICES

Appendix A: The interview guide

Introduction: This interview is the part of research in order to study motivation factors that have impact on software developers who are working in a dynamic business environment. This study will mainly focus on software developers who adopt agile project management methodology in their work.

Objective: To understand the distinctive characteristics of the talents in the computer software industry as well as identify the key motivation factors that keep employee motivated and engaged with the organization.

Length of interview: approximately 30 – 45 minutes.

Interview guide questions

1. Please help identify some of the distinctive characteristics of a good software developer?
2. Why did you choose to become a software developer?
3. Why did you apply for a job with this company at the first place?
4. What keep you stay with this company?
5. How can you manage to stay with the company for more than two year? Can you share your impression towards the company during the last 2 years?
6. In your opinion, how can we make this place a better place to work?
7. What make you want to come to work everyday?
8. What challenge you the most in your work as a software developer?
9. The information industry is changing so fast, how do you feel about the change?
10. Demographic questions (Gender, Age, Education, Year of experience)