

# **Corporate culture and knowledge administration of big software companies in Ha Noi**

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## **Abstract**

In the subject of organizational management and structural, knowledge management and organizational culture are theories in this research area. A plenty of researches was conducted in the purpose of investigating the connection of corporate culture - knowledge administration. Nevertheless, the number of researches on the relevance of organizational culture to knowledge management in software companies is limited due to the fact researchers have focused mainly of leadership management. Due to the limitation of data collection, this research will not identify any individual organizational culture of software companies, this research will assess how those companies affect value directions of software engineers via qualitative study.

According to organizational culture, each software company pursues different types of values. Despite the fact that there are some software companies share the same value on tip of the iceberg, the value directions of software engineers in those firms are totally different. By conducting interviews with those engineers, through three interpersonal value directions, we could review their actions and philosophy about knowledge management.

## **1. Introduction**

Knowledge management is more than essential for firms nowadays. The ultimate purpose of knowledge management is to acquire competitive edge, boost trading performance, enhance consumer concentrate and product innovation. Takahashi and Vandenbrink (2004) mentioned knowledge administration as a method with the primary purpose of building, reserving, distributing and exploiting corporate knowledge. The practice of knowledge administration has various characters, it could contain IT, corporate structure, etc. (Krasnodębski, 2003). Knowledge is an intangible personal property therefore it could turn into a competitive advantage of strategic source on account of its uniqueness and motivational uncertainty (Swales, 1997), followed by turning into the rational aim of administration.

Over the last few years, Viet Nam's IT business (especially the capital Ha Noi) has realized the essential of knowledge administration progressively, but the focus is still not appreciated enough; theories of knowledge administration and the growth of software companies are still underrated. The substance of rival in software industries now turns into the race of knowledge. Efficient growth and scientific administration of understanding sources is the root of competitive edge. "This is 21<sup>st</sup> century and without knowledge administration is very important for our company to compete with other rivals in the industry." Thanh Nam Nguyen - former director of FPT Group said (VnExpress, 2016). The knowledge of these employees will be abstracted, reserved and duplicated. That differentiates big software companies and newbie ones.

High talent mobility is the biggest feature in this business. Culture plays a vital role to preserve the motive power to accomplish a supportable growth which is affected by economic environment conversion and the significance speed of technology and science. Culture is a creation of a corporate environment, followed by promoting the building of knowledge administration as well as nature the vying of those companies.

Eighty percent of knowledge administration is about individual and corporate culture and the rest is about knowledge administration technology (Hall, 2006). Consequently, the current culture of a company is essential to the triumph of knowledge administration. The culture will offer a structure to help comprehend the psychosocial procedure which link between staffs and companies as well as suggests the process of interference to control corporate knowledge smoothly. Therefore, here is the ultimate questions of this research "In which way does the corporate culture impact knowledge administration among Ha Noi's software companies?".

Omasits (2008) stated that culture has a variety of effects on knowledge management, such as:

- a. Knowledge contains lots of meanings, however culture will identify which ones are commendable to manage

- b. Corporate culture identifies whether employees are ready to swap individual understanding and corporate knowledge, too
- c. Corporate culture also identifies how knowledge is processed and how new one is created

Despite the fact that the number of people who realize the essential of corporate culture to knowledge administration has become increasingly, there is still a gap in understanding how corporate culture impacts all elements of corporate knowledge administration by impacting the behaviors of staffs. Therefore, in order to tackle this lack of understanding, the researcher propose a qualitative study on software companies, where directors and number of staffs will answer some below questions:

- a. In which way does discrepancy in cultural values, hypothesis and priorities impact the way software engineers obtain and exchange their knowledge?
- b. In which way does diverse corporate cultures impact the way software engineers seek out data, declare and swap knowledge?
- c. Are there any cultural obstacles that affect software engineers' knowledge administration?

## **2. Literature Review**

### **2.1 Big software companies**

"Big software companies" makes reference to those with more than 100 software engineers. Apart from software engineers, those firms also include heads, assistants, managers, analysts, etc. Big software companies can reach to many cities, from rural to urban, states and even nations (Manjoo, 2018).

Here are the purposes of the research on Viet Nam (Ha Noi)'s big software companies:

- a. Having top-class software engineers in the IT industries, big software companies play an important role globally and they have always been the research objectives of investigators in the long-term period
- b. Those big software companies must pay more attention to the structure of corporate culture and knowledge administration therefore it could be less complicated to acquire these data from this perspective. Numerous small and medium-sized software companies haven't been able to create a specific corporate culture due to the limitation of their company's size
- c. Throughout the history, big software companies' business has still rose even in the economic downturn (Chaharbaghi, 2003). Moreover, the worse the depression was, the stronger they were in terms of enduring risks. That's why we need to investigate more about this field.

### **2.2 Knowledge administration of big software companies**

#### Understanding of knowledge administration

According to Wright (2005), the internal knowledge between staffs and their efficiency is the most precious property of organization in the 21<sup>st</sup> century, both commercial and non-commercial. On the other hand, Foss and Stieglitz (2010) stated that knowledge is considered as the foundation of competition between organizations.

Knowledge is all about thinking, facts, ideas, information and technologies that have been sustained in human history. Knowledge is created by human's data gained from faith, experience and personal culture. Merging knowledge with activities and decision making can make a person more grown-up and fruitful (Tseng, 2010). Takahashi and Vandenbrink (2004) assumed 'knowledge' as a fusion of experience, quality, data and professional ideas and then those new data will be evaluated and incorporated. There are three types of 'knowledge': individual, community and organized.

Reddy (2009) reviewed 'knowledge' administration as an evident and methodical procedure. This procedure includes the establishment, gathering, distribution and implementation of knowledge (Luu, 2012) and to convert personal knowledge into common one successfully. Distributing knowledge and invention plays an important role in terms of implementing knowledge. Takahashi and Vandenbrink (2004) declared knowledge administration as a conversion of concealed knowledge into corporate property which could be reviewed and utilized by everyone in a system. As stated by Gebert et al., (2003), knowledge administration is an attempt to modify staffs' knowledge into community corporate properties. Madsen (1997) outlined knowledge administration as a procedure that enables companies to establish, verify, distribute and utilize new understanding. From professional to critical level, the employ of knowledge administration actions is going to impact significantly to corporate culture and efficiency. Luu (2012) claimed that knowledge administration is the transmission of essential data and expert knowledge of the company, for example: decision making, issue settling, studying and critical scheduling.

#### The administration procedure of knowledge

Knowledge administration is an active and methodical procedure. Once knowledge is obtained, arranged, established, reserved, swapped, disseminated, other staffs can utilize this, create more effective resolutions and adjust themselves to fit in the market, as well as reaching targets better (Hislop, 2010). Lin (2007) propose two procedure examples for knowledge administration. There are two types of systems in knowledge administration: manual and mechanization. Those systems supply a structure for equalize the tech and approaches that deliver value and combine them completely. They allow investigators and engineers to cope with the concerns from parties involved in the understanding stream. Due to this action, personal, networks and companies can demonstrate wise actions in diverse circumstances

In accordance with his investigation, Hislop (2010) created a modern corporate knowledge administration model. He also claimed that scholars haven't had an evident awareness of the procedure, demand, design and response of knowledge administration; those are very crucial in order to examine the procedure model of knowledge administration, from the start to the end of the procedure. Within big software companies, this procedure of knowledge administration is comparable with other firms.

### **2.3 Corporate culture**

The concepts of culture have always been hard to explain. Establishing human's interior method of philosophy and structure of reference. Culture might be powerful or poor, but there is no doubt that an excellent culture could be more efficient for companies (Madsen, 1997). Culture is the soul of a company. Outcomes could be collected via behavior, but it is worth finding out their motivations. Madsen (1997) has raised consciousness about culture, contemplated the function of employment as a median of behavior as well as emphasized the beneficial function of cultural structure.

Corporate culture plays a vital role to acknowledge all the aspects (variety) of a company. The core of cultural ideas has roots in the comprehensive essential of the mutual understanding of any aligned activities. Corporate culture is a party curiosity which is impacted by related component. According to Madsen (1997), culture is a jointed fundamental assumption model shared by a party with the purpose of settling their inner union issues and outer resilience. Those issues have been settled successfully by culture, therefore when it comes to recent members, this theoretical model is proper method of understanding to deal with these types of issues. Corporate culture grows because of the effort of company to settle problems of inner inclusion and outer acclimatization. Those related elements have made corporate culture of diverse systems singular. Investigators suggested that a strong standard for corporate consistency is equal to an integrated culture in an organization, which could link and harmonize variety sections of the organization (O'Connell, 1999).

Wherever there are companies, there are cultures although those cultures are not the same, some of them are more powerful than others. Everyone has different background, different expertise; software engineers with extra education professional abilities will obtain specific values and standards in their practice (Madsen, 1997).

One of the most useful features of corporate culture is that a powerful and diversified one could be applied for all companies in terms of spreading corporate incentive, promptness, identification, unity and coherence as well as spreading the inclusion and cooperation inside the company further (Acevedo, 2012).

On the other hand, there are some adverse impacts of corporate culture. The possible malfunction of a powerful culture, an example was the failure of corporate culture in Lehman Brothers which led to the crash of the company in 2008 (Chu, 2018). Over-powerful cultures and their related inner management could drive person create uncontrolled request for themselves as well as become barriers to adjustment (Martin, 2005). Culture could also change corporate objectives as well as highlight standards of behavior and methods, led by the vanish of corporate original objectives (Marcuse, 2000).

#### **2.4 How knowledge administration is affected by corporate culture**

According to Madsen (1997), as an immaterial property, knowledge is the essential root of value and with the help of a strong culture, it could optimize the worth of staffs' knowledge properties. Corporate culture plays a vital role for the entry of an organization as it could improve the knowledge administration efficiently, in view of the fact that culture will identify if it should assist or obstruct the establishment of knowledge. Culture encourages intellectual participation, comprising individual and organizational understanding, establish and implement recent knowledge and the alacrity of swapping them. Many papers in the past suggested that in order to have an effective performance, culture must stimulate and make the most of its intellectual properties. And it is even more essential within the industry with knowledge-concentrated like IT (Acevedo, 2012). Consequently, the best knowledge administration approach must concentrate on reinforcing and nurturing corporate culture and release a culture which focuses on knowledge (Morey, 2001). Furthermore, this kind of culture is a critical supply and proof of corporate ability.

Eventually, the approach of raising implicit knowledge transmission is in accordance with corporate culture. Over the long term, the more individuals exchange knowledge, the more possible those organizations could measure their worth and recompense well-versed staffs. That's the crossover of knowledge and change administration. Asendorpf et al. (1996) claimed that knowledge can't be achieved by force, knowledge can only be transfer willingly and it has taken companies a while to understand that.

Some researchers investigated that connection via qualitative analysis (Harris, 2005). By conducting questionnaires and interviews, cultural elements like partnership, common faith, leadership and motivation are withdrawn in order to impact on knowledge administration in US firms. Knoblauch (2008) claimed that the level of cooperation, the essential of saving, focus on power and order, interaction model might clarify discrepancies between knowledge finding and model distribution.

On the other hand, some quantitative researches have been conducted in the past. Mingers (2008) investigated the execution of good approach of knowledge administration in terms of public tech innovations. The investigation figured out the importance of corporate administration and those who utilize tech will understand knowledge administration better. Most researchers claimed that culture has a double function. Some scholars reviewed the culture – knowledge administration connection by applying quantitative analysis. The outcomes of the review proved that in order to gain a successful knowledge administration and be able to evaluate the productivity and possibility of this administration, the corporate culture, framework, tech and attribute must be in line with the purpose and guidance of the organization. As long as employees are not willing to exchange knowledge, even if they are experts or what are their mutual objectives, knowledge administration in the organization will face challenges. Culture builds aspirations of manner but some of those aspirations give rise to adverse cooperation which could obstruct knowledge administration eventually.

#### **2.5 Values orientation theory**

After a quick examine of the related literature, the researcher found out that particular corporate culture is extremely essential for an efficient application of the procedure of knowledge administration. A good culture will highlight trade, faith, communication and imagination of knowledge which could be controlled effectively.

In other hand, there is not only one cultural categorization in a company. Different categorizations deliver diverse impacts on knowledge administration. According to the values orientation theory, Kluckhohn and Strodtbeck (1976) evaluated the impact of diverse cultural classifications on corporate administration process of knowledge. From the psychological view, this theory debated that value is the quality of incentive made by individual or cultural models. All organizational culture will confront to the same fundamental needs and must find solutions to settle those issues. These issues are divided into five types (table 1) and Kluckhohn and Strodtbeck (1976) theorized three feasible directions to each of these concerns.

| <i>Basic concerns</i>         |              | <i>Orientations</i> |            |
|-------------------------------|--------------|---------------------|------------|
| Human nature                  | Evil         | Mixed               | Good       |
| Relationship to natural world | Subordinate  | Harmony             | Dominant   |
| Time                          | Past         | Present             | Future     |
| Activity                      | Being        | Becoming            | Doing      |
| Social relations              | Hierarchical | Collateral          | Individual |

Figure 1. Values orientation theory overview

Kluckhohn and Strodtbeck (1976) stated that there are three ways of dealing with human connection: Individualism, collectivism and hierarchy orientation. Individualism vs. collectivism contrary terminates a permanence that demonstrates how people specify themselves and connections with other people. In more considerably individualistic communities, the concerns of individuals get more attention than those of the company. Individualistic communities set more worth on the essential of connections. With the individualism orientation, personal objectives are excellent to the company. In contrast, collectivism orientation focuses on membership rather than individual. Last but not least, hierarchy orientation concentrates on groups. Groups are graded into diverse ranks and the condition of each group is steady through time. This approach usually appears in software companies, and the impact of such culture and knowledge administration is usually compulsory (Hills, 2002).

## 2.6 Gap

Many researches in the past have only evaluated how knowledge administration is influenced by corporate culture, however, the literature still haven't figured out how knowledge administration is impacted in the IT industry (software companies) by affecting the direction of interindividual connections. By means of qualitative research on big software companies, plus interviews with those companies' leaders and several engineers, this paper is hoped to help to examine why various corporate cultures have diverse effects on knowledge administration.

## 2.7 Overview

Big software companies have been facing difficulties in terms of establishing and preserve big-scale cultural standards on account of their big volume and division, followed by a potential attrition of corporate culture. Gopalkrishna (2012) stated that big software companies have diverse market tendency. Nowadays, big software companies in Viet Nam are coping with muddled phase of transformation. In consideration of the foregoing, big software companies not only focus closely on knowledge administration scheme but also strongly apply it. Nevertheless, software companies haven't realized the impact of corporate culture. With most engineers, the more professional their firms become, the weaker those cultures are, followed by the collapse of inner competition, plus continuous liquidity risk, damaged the performance of IT knowledge administration severely.

Consequently, by conducting this case study of various software companies, the connection between corporate culture and knowledge administration in Ha Noi's big software companies will be looked into.

### **3. Research method**

Case study and qualitative method will be conducted to complete the research.

#### **3.1 Approach**

Hair (2007) stated that due the limitation of positivism in terms of satisfying the demands of public researchers, interpretivism had chances to nurture. Interpretivism suggested that public fact is based on human choice and it is biased. That model is also known as explanatory method (Kahle, 1990).

This research will conduct an explanatory method since it corresponds with this research's views. In the first place, knowledge administration is a procedure of communication between the company and the staffs; and engineers' value orientation will impact this procedure. There hasn't been any evident hypothesis in this research area. For the purpose of observing the effect, investigators must collaborate with these issues. Moreover, corporate culture is an ever-changing procedure. It includes not only the immediate communication between software companies and their engineers or between engineers, but also software companies/engineers and outer environment. Through this procedure, software companies and engineers must accommodate themselves with the alteration of inner and outer environment. The link between personals and corporates builds this procedure of alteration. This procedure contains figuring and knowing the issue in a public circumstance. With this alteration, engineers will approve diverse value orientations. Therefore, interpretivism will be implemented in this research.

Ontology is the explore of presence, pointing out the substance of reality and the gratitude of the world (Mills, 2000). Explanatory method and ontology will be used in this research as: Software engineers' understanding of corporate culture and how knowledge administration is affected by value direction, which includes the connection between the corporate and public environment. The research will evaluate how those diverse value direction support or impede knowledge administration in corporates. Due to the fact that each engineer has diverse perceptions of corporate culture, they will have diverse philosophies to the knowledge administration. This incentive includes diverse causes and objectives.

Epistemology is the study of nature and shape of understanding (Scheurich, 2014). The epistemology of this paper will investigate the impact of corporate culture to corporate staffs at big software companies, in terms of deliberate behavior. This research supports to explain the sense of engineers' behavior in terms of faiths, desires and purpose of individual behaviors. By conducting interviews, the research could gather information of corporate culture as well as knowledge administration, followed by the coding process of those data, which is the focus of hermeneutic method, additionally (Blumberg et al., 2014). By investigating this issue, we could figure how knowledge administration is affected by individual value direction, in terms of recent hypothesis of corporate culture. This paper will demonstrate the perspective of software engineers by evaluating and determining the link of concepts of corporate culture and knowledge administration.

According to Blumberg et al., (2014), there are two methods of research: inductive and deductive. The primary distinction of these two types is that meanwhile an inductive method is considered of the origination of new hypothesis coming out from the data, a deductive method is all about purposing and examining hypothesis. An inductive method normally makes use of questions to reduce the extent of the research, on the other hand, a deductive method always starts with a theory. This paper will combine those two methods. With the review of literature, the research figured out that the awareness of corporate culture is heavily influenced by morals culture and inconstants of engineers' value of the organizations. The investigation considers software firms culture as a separate unit, frequently counting on the appropriate companies. Due to the restriction of data, it couldn't clarify

how to impact knowledge administration. A demand for abstracting a new system of corporate culture inclusion in accordance with previous hypothesis and new information gathered the former hypothetical framework. This research will undoubtedly enhance the corporate hypothesis of organizations.

### **3.2 Methodological design**

Qualitative method shows the best impact when researchers want to gather information that concern about philosophy, incentive and belief (Yin, 1984). Researchers need qualitative method once the purpose is examined under statistical examination. Here are some justifications for choosing qualitative methods for the research:

- a. In order to conduct a qualitative research, the researcher has to communicate with candidates, deliver surveys, discover their philosophy and incentive. This paper focuses on figure out how culture impact interpersonal attitude and knowledge administration as well as creating a new significance
- b. It's not easy to research about cultural progress (McDowell, 2002) and qualitative method not only is a methodological topic but also is a hypothetical advancement demand. This paper focuses on awareness and clarification of public actuality of software engineers' perspective of knowledge administration.

Ananthan et al. (2010) claimed that research question must be in the line with the research strategy, the extent of current understanding in the are to be researched, the accessible source and time as well as the theoretical basis of the investigator. The most essential review is the ideal strategy for the research, no matter which strategy the investigator uses (Blumberg et al., 2005). According to Blumberg et al., (2005), when the researcher faces challenges of differentiating issues from circumstances, case study is an ideal choice of research.

#### Why conducting a case study?

According to Yin (1984), a case study method must follow those subjects: the focus of the research is to resolve how and why; the attitudes of engaged people of the research is uncontrolled and lastly, the research only concentrates on current problems.

The paper will focus on those questions:

- How do the distinctions in values, hypothesis, priorities of culture impact software engineers in terms of obtaining knowledge?
- How do the distinctions in values, hypothesis, priorities of corporate cultures impact software engineers in terms of seeking data, showing and exchanging knowledge?
- Are there any obstacles of culture in the knowledge administration in big software companies?

About the behavior control of engaged participants, in this research, the researcher doesn't rule any circumstances in which software engineers are influenced by corporate culture in terms of knowledge administration. The record of the study will be collected fairly and will not be affected by any individual purpose. Furthermore, it is impracticable to research the impact of technicians' value direction elements (autonomous variables) on subordinate variables (knowledge administration).

Additionally, the research issue is contemporary, and how much software engineers are impacted by corporate culture, which has an influence on knowledge administration and satisfy the last point of case study research.

#### Why conducting a multi-case study?

Case study methods have received a lot of criticisms due to the fact that this method is not as comprehensive as a research gadget therefore the structure of a case study research should be considered carefully. In accordance with diverse issues, a paper can be flexible between one case or multi case approach. One case study is suitable for a research which technical examination was already impracticable and portray an excessive case of coherent hypothesis. But the drawback of this approach is that it could not give an overall outcome. In contrast, multi case

method is preferred when research aim is to explain, create or examine hypothesis. Yin (1984) showed how to apply this approach: to forecast comparable outcomes; or to forecast relative outcomes for anticipated cause.

#### Why choosing big software companies?

Primarily, big software companies in Ha Noi (Viet Nam's capital) was picked. Via this research, more than 40 technicians will be investigated. After viewing the list of all big software companies in Ha Noi, six big companies have been chosen, they are FPT, CMC, Misa, Hanel, Hanoi Software JSC and Tinh Van (Figure 2). Moreover, after identifying the target firms, emails will be sent to directors of those companies and clarify the purpose of the research. For the purpose of relieving all interests of engaged participants of the research, research approach will be examined carefully to guarantee the anonymous of the study. Every participant will receive a copy of the research information in the end, discuss and apply the outcomes in order to evaluate the attitude and corporate movements, corporate culture and knowledge administration of their firms.

| Software companies | Number of employees |
|--------------------|---------------------|
| FPT                | 230                 |
| CMC                | 210                 |
| Misa               | 200                 |
| Hanel              | 180                 |
| Hanoi Software JSC | 160                 |
| Tinh Van           | 200                 |

Figure 2. List of software companies

### **3.3 Data assembly**

By using qualitative method, data assembly concludes notices, text or optical review and discussions (personal and group) (Duan and Chen, 2013).

Primary source of information is interviews for the majority of case study approach. In this research, semi-structured interviews will be conducted as engineers prioritize to apply an approach decent of comprehensive for the purpose of knowledge administration.

There are 2 phases of the semi-structured interview of this paper: pre-test and formal. For the first phase, each one chief from each firm and each one engineer of those big software companies are the subjects of the interviews. This type of interview will direct the survey structure and the research will adjust the improper issues. Secondly, the formal one will be carried out with chiefs and engineers of all six software companies via objective sampling. The aim of this kind of interview is to clarify the questionnaire outcomes more closely. In those interviews, all participants are allowed to act voluntarily, and all information will be secured. The limited time for each interview will last from 1 to 1.5 hours. In the interest of commanding all data, the researcher will make an interview manual.

By apply the case study method, information from variety sources can be utilized for data assembly and examination, followed by a succeed of dealing with research targets and issues. David (2006) suggested there are two sources of information that can be used for the case study methods: notice and record check.

| Company      | Participant level | Number of participants |
|--------------|-------------------|------------------------|
| Each company | CEO               | 1                      |
|              | Software engineer | 2                      |
|              | Assistant         | 2                      |

Figure 3. Interview design

Personals could be witnessed in an organic environment. Via this research, the researcher plans to come to all six software companies to meet their chiefs and engineers. By doing so, the researcher will have a better observation on their activities and other ones in their workplaces. Notices could be slightly distinct from the data that collected via interviews. According to David (2006), researchers create interviews, but notices include taking notes and filing activities without supervision.

The other source of information is record check. Just like any organizations, every software company has their own policies and with the acceptance from the chiefs, information will be gathered. Moreover, the researcher will ask for permission to access the record of messengers in their Facebook group chats.

By conducting case study method, the researcher will accumulate all information from several sources instead of examining them individually. Each information is a part of a bigger picture which could let researchers comprehend the entire issue. In view of the fact that all information is connected jointly in order to assist a more profound understanding, the accumulation will strengthen the research outcomes.

### 3.4 Data examination

With qualitative research, the assembly and examination of data is concurrent activity. The procurement and examination of data is iterative and active. Nevertheless, the examination process continues after finishing collecting data. Data examination is a complicated procedure that concludes shifting around between tangible information and synopsis concepts (Marshall and Rossman, 2016). After gathering all the data, the examination becomes more specific. The ultimate purpose of data examination is to comprehend data's meaning and to resolve research issues.

In the stage of data examination, there are two main keys to focus on:

a. Start examining throughout data assembly. When the data is not examined punctually, the quality of data is going to be stingy and confused (Marshall and Rossman, 2016). Assembly and examination of the data is a parallel procedure which can be broadened endlessly. Information will be soaked when the procedure of gathering data doesn't relinquish new info or the overall view of what is researched.

b. Data administration: Coding is an essential stage after assembling data, in accordance with any program that is important for the research, and in accordance with the hypothetical context that notify the research. Moreover, it is important to chronicle their ideas, reflections, suppositions and feelings in order to get ready for data examination stage.

Here is the process of qualitative analysis:

- a. Maintaining records and being systematized

No matter which qualitative method is being applied, maintaining records of information, notes or papers is essential. With both types of research – quantitative and qualitative, it is very important to keep a good record of

which could be scrutinized by other researchers. Additionally, it is crucial to guarantee that all saved records will be stored according to data protection legislations. This process includes careful digital marking, counterpart recordings, papers or texts. Every issue must be considered carefully when sketching research plan.

b. Translating data

Translating data is the process of taking notes of an interview (example in grounded theory-based research) or discussion. That's the full transcript of the discussion or the interview and it takes a lot of time. It could take even six hours for a one-hour interview to be transcribed completely and it will release a lot of texts. The researcher must verify all transcripts cautiously in tandem with the recording.

c. Utilizing software

Technology software has a big impact in terms of dealing with high volume of data, assist examination and assist interaction between research team members. Although Bryman (2007) stated that computer software is not an analysis tool for research purposes, but Paulus and Lester (2015) showed that "computer-assisted qualitative data analysis software" can help with qualitative research such as transcription examination, coding and text rendition, grounded theory methodology, etc. There are too many benefits of using this software, such as saving time, controlling high volume of qualitative data, enhance resilience, enhance validity and auditability of the research, etc.

d. Persistent comparison

Persistent comparison is a method in accordance with grounded theory. This method enables the researcher to determine the subjects that are essential. Participants must preserve an involuntary note which help an audit trail of the procedure of data assembly and examination. There are some stages in persistent comparison: Open coding; Progressive focusing; Applying the coding frame; Summarizing and interpreting the findings.

### **3.5 Validity and reliability**

Yin (1984) suggested some ideas to enhance qualitative research's permanence and here is how to apply those methods:

#### Construct

Throughout the stage of assembling data, using several proofs drags the researchers out of bias (Koutsourelakis, 2012). During the stage of data assembly, series of proof are created, and the researcher will record everything that happened in the interview (Diamantopoulos, 2001). Locating particular concepts to determine the extent of the research, checking the draft during the report writing stage, and enhance vague problems and quality.

#### Internal

According to Grbich (2013), internal validity is the fact about conclusion concerning cause-effect or informal connections. Therefore, this is only related in researches that aim to create a causal connection. And internal validity is an optimal choice for researches which evaluate the impacts of interferences. The primary issue in the internal validity is how can noticed changes assigned to interferences but not to other feasible reasons.

#### External

External validity is all about expansion (Wainer and Braun, 1988). Remind external validity makes reference to the approximate reality of suggestions, conclusions or outcomes. Therefore, this validity indicates to the approximate reality of outcomes. Moreover, external validity is the extent that its outcomes in the research might maintain for other people in different places and time.

#### Reliability

With the purpose of settling the organic validity of the research, information will be gathered from several sources (comprise interviews with software engineers, with the software companies and entry to appropriate papers and files). After this study is investigated, Yin (1984) stated that explanatory case studies are not able to use inherent validity. External validity indicates to the creation of a kind which abstracts the outcomes of investigation. In the interest of settling the issue of this validity, the paper will be using text duplication and hypothetical duplication rationale. With the software companies' case study, various features of those will be reflected for the purpose of creating comparable things, followed by diverse outcomes could be put in comparison.

According to Marshall and Rossman (2016), a more crucial issue for qualitative research to be resolved is "Are the outcomes persistent with the gathered data?". The reliability of the research is going to be depended upon two stages:

- Sketching a research plan
- The procedure of data assembly and examination is registered in detail as well as research outcomes are substantively registered
- All documents, notes and archives will be saved

### **3.6 Ethic**

In order to decrease natural problems in qualitative research, the researcher could acknowledge and utilize fixed ethical rules, such as autonomy, justice and beneficence (Bryman and Burgess, 1999). Ethic is the first priority of the research.

Autonomy: It is the capacity to believe, determine, and behave on the basis of a willingly made decision. Beauchamp and Childress (1979) detected two basic elements of autonomy: liberty and agency.

Justice: Hewitt (2007) claimed that the concepts of justice are clarified with regard to what is merited by each person, and to what each person is empowered, excluding bias and for the purpose of providing fair treatment. Participating this rule means delivering everyone an equitable sharing of benefits.

Beneficence: The rules of beneficence engage a responsibility to deliver benefits for participants and to equalize such benefits against dangers and demand that there is no harm and eliminate any possible harms for the participants.

### **3.7 Limitation**

The research will be carried out in Vietnam. Participants will deliver diverse outcomes when carrying out interviews. Moreover, the sample size for the research is quite limited and the interviews are carried out for employees of those big software companies. There is no guarantee for the possible reference relevance to small and medium-sized software companies.

## **4. Conclusion**

After revising the scholarly literature, the researcher found out that just a little number of researches investigating the impact of corporate culture to software companies in terms of knowledge administration. The ultimate purpose of this research is to figure out how corporate culture impacts the knowledge administration of big software companies. If corporate culture didn't help the knowledge administration scheme, that management will collapse. Scholars suggested that culture is a robust element in the procedure of scheme application. Indeed, a company's strategy will be applied successfully if that strategy is assisted by a deep and radical corporate culture. Corporate culture is stable and doesn't modify through times. Within a company with a decent culture, it allows everyone to share mutual values. Lowering insecurity as well as enhance corporate partnership are good methods

to establish an optimistic corporate culture. In the IT industry, it is hard to build up a culture which both supports the growth of software companies and workplaces that fulfil every member's desire. Instead of applying change, the first thing to do is determine their culture good or bad.

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(Next page for part 2)

## PART 2

### 1. Analogy

Qualitative and quantitative are the two most well-known kinds of research in the world. Even though there are some differences between these two types of research but there are still similarities between these methods:

#### Participants are required

With both kinds of research, the researchers do need raw data, normally by way of survey people. Each types of research will have its own types of participants. Qualitative research usually demands participants to take part in; in the other hand, quantitative research might be in accordance with numbers created from different trustworthy sources.

#### Tools of evaluation

Both these methods are utilized to evaluate the outcomes of data. Qualitative method concentrates on data that is delivered through talks and activities. E.g.: letting a bunch of college students listen to a pop song and asking how do they feel about that song (happy, energetic, inspirational, etc.) is a qualitative tool. On the contrary, after you collected all the data about what do they felt listening to that song, followed by counting all the results (1 felt happy, 2 felt energetic, 3 felt moody, etc.), so those statistics are the outcomes of quantitative research.

From the perspective of business management, qualitative data are as important as quantitative data, it hinges on what kind of information are you looking for. If you wanted to know whether the song affected those people, the optimal choice is qualitative method. On the other hand, if you wanted to know which feeling the song elicited the most, just go for the quantitative method.

#### They can be the root for each other

Looking the example above, we can realize that the quantitative data was only available after the qualitative data was collected before. These two types of research can be independent to each other, but they can work together to assist the research procedure.

### 2. Distinction

#### 2.1 Philosophy

These two kinds of research are relatively different in terms of philosophy and model, now the researcher will compare these two based on those two aspects below:

#### Ontology

Qualitative method states that knowledge is separated from intellectuals, but public created, and that reality is neither still nor settled. Due to the fact that diverse cultural organizations have their own reality based on their knowledge and experience, depends on each organization, there will be various clarifications and points of view for each circumstance or situation (Yanchar, 2006).

On the other hand, positivism is what quantitative methods make use of. Realism is the existing place of positivism. The rationale of distinctions between organizations with diverse characteristics clarify an activity (Yanchar, 2006). Realism indicates the perspective that the existence of things doesn't depend on the known. Consequently, researchers and detectable reality are not dependent to each other (Scotland, 2012).

### Epistemology

The epistemology of qualitative research is a subjectivism that hinges on the sensation of reality. The world exists parallel to human knowledge of the world. Human gathers knowledge by investigating and knowing the world of the matter, focusing to its idea and translation. Scholars can make clarifications in accordance with the understanding of interviewees. The research procedure is supposed to be introductory philosophy to a huge range (Ritchie, 2014).

On the other hand, quantitative research's epistemology is all about objectivism. It is believed that complete knowledge of matter could be figured out, according to positivists. Scholars don't exist parallel to the objective. Knowledge only survive in the object, meanwhile scholars intend to acquire this knowledge. Scientific pattern is the foundation due to the fact that scientific suggestions count on data and truths (House, 1991) and the research procedure is substantially analytical.

## 2.2 Procedure

With qualitative method, creating a literature is based upon other researches in the past, in order to determine multiple points of view. Under the literature, scholars will recognize research problems, create a new structure to solve those problems, followed by gathering and examining data.

On the other hand, with quantitative method, the research structure is directed by reading the literature of the topic, followed by shaping research questions and theories. With the purpose of checking theories, appropriate data are gathered and examined.

## 2.3 Sampling strategy

The sampling strategy of each research methods is essentially various. Qualitative method uses nonprobability sampling tactic and qualitative method uses probability sampling tactic to choose interviewees.

## 2.4 Method of evaluation

Descriptive and inferential are the two most popular approaches of quantitative data evaluation. Descriptive figures will allow scholars to understand the sensation of interest and utilize this knowledge to grade feasible causal systems, create theories, translate the outcomes of causal researches, recognize issues that need to be investigated. Inferential figures contain different statistical checks that scholars can utilize to deduce from data sample. Based on anticipated aim of the checks, those checks can be split into three fundamental types: examining distinctions, evaluating relationships and creating forecast. The determination of which type to be used, will be identified by research designs or questions (Allua and Thompson, 2009).

On the other hand, discourse review, narrative review, content review and grounded hypothesis are the four most popular approaches of qualitative data evaluation. Discourse review is applied to evaluate significance in research interviews, it evaluates how a person explains and understand himself/herself and the community (Mayring, 2000). Narrative review is related to the image of occurrences, by using this approach, scholar can examine the shape and content of data, and remove fundamental factors (Lobe et al., 2017). Content review is an experimental

method that obey the regulation of content evaluation and stepwise paradigm. Grounded hypothesis is an analytical approach that utilizes methodical process to enhance and cause a fact originated in real information (Burck, 2005).

### **3. Which method should be adopted?**

Both quantitative and qualitative is complex and there is no easier path to choose. Each method has its own pros and cons, and choosing which method depends on the purpose of the researcher. Quantitative method is primarily based on sensible review and take quantitative finding as a source to improve the trustworthiness of qualitative outcomes. But overall, the more popular method is still quantitative.

Another aspect to be considered is cost. With quantitative method, scholars need a big number of staffs, financial and physical intake, more people to take part in interview process in order to collect data and sample. That's why it is very hard to control and guarantee quality. In contrast, qualitative study only requires a person or a small-sized group in order to gather data. But it doesn't mean quantifying is complicated or describing is easy. It takes a lot of time and effort to follow case and watch participants in qualitative research; and it couldn't be successful without positive perseverance. Consequently, the more skills and knowledge the researcher has about pros and cons of each method, the more likely the researcher will be more comfortable in terms of settling practical research issues.

In this research, the researcher will use both quantitative and qualitative approach. First of all, the ultimate purpose of the research is to investigate the connection between software companies and value orientation of engineers, which demands many interviews with those companies' chiefs and staffs to gather data. Subsequently, the researcher will be able to calculate the impact of corporate culture to every single aspect of knowledge administration, using quantitative approach and survey. Moreover, combining both of these research approach can create triangulation. Triangulation means applying more than one research method to gather data. This will guarantee the validity of the research because of the diversification of data gathering methods. Denzin (2006) identified four fundamental types of triangulation: Data, investigator, theory and methodological.

Nevertheless, quantitative approach is more powerful in terms of determining elements and fusions of elements, in order to identify which approach is better. On the other hand, the experimental theory of qualitative method has three stages: elements, elements communication and mechanism. The best benefit of this approach is that it could settle mechanism's issue, as well as help the researcher to determine elements and fusions of elements. For that reason, the number of decent researches with the mixture of quantitative and qualitative (and others) is increasing day by day (Ochieng, 2009).

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