EFFECTIVE RISK MANAGEMENT STRATEGIES FOR SMALL-MEDIUM ENTERPRISES AND MICRO COMPANIES

A CASE STUDY FOR VIOPE SOLUTIONS Ltd.

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Abstract:

Micro, small and medium sized enterprises are considered significantly important to the growth of any economy. However, these businesses are vulnerable to risks, such as business risk, finding, budgeting, etc. The scheme to prevent risks of small businesses, nevertheless, is not systematically developed and performed.

This paper studies the risk management processes in micro, small and medium sized companies concerning project risk management. The thesis aims to build a model of project risk management as a effective solutions for small businesses. The research is based on a case company Viope Solutions Ltd in Helsinki, Finland.

This thesis reviews risks, process of risk management, the role of risk management in corporations, project risks and the management processes. Qualitative researches based on interview techniques were conducted to show the practice of project risk management in the case company.

Keywords:	risk management, risk, project risk management, operational performance, micro companies, small-medium enterprises, effective management
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FOREWORD

I would like to express my great gratitude to my family in Vietnam for their continuous support, not only to the completion of this thesis, but as well to every step of my life.

My special appreciation goes to Mr. Sveinn Eldon, for his enthusiasm and helpful guidance with my thesis.

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I hope that my work benefits Viope Solutions Ltd in their risks management procedures, and other thesis workers when carry out relevant research to mine.

Helsinki, 2013.

1. INTRODUCTION

1.1 Background of Problem

Risk is ubiquitous and spreads through every issue of life. To business sectors, unforeseen situations create severe loss exposures. Furthermore, to small-medium enterprises (hereinafter SMEs) and micro companies, where the capital background is not sufficiently strong, a catastrophe could likely lead to interruption in operational activities, financial loss, and bankruptcy.

According to Small Business (2006), there were more than ten thousands of self-employed workers went bankrupt. In the other hand, in 2010, 99.4% of all firms in Finland were SMEs while more than 83% were micro enterprises (OECD 2012 p.66). Given that the number of small businesses is increasing, the statistics number for financial loss or business failure will grow accordingly.

Therefore, managing risks to reduce and minimize the loss exposure is essential for every small business. Despite the necessity, many SMEs and micro companies rarely carry out detailed risk assessment and management strategies. It is due to the fact that engaging in risk assessment and management require a certain budget and human resource, which are limited in small enterprises. These companies' decision on how and what to invest in depends on the ongoing activities and on their financial status. Small scale businesses generally shift the process of risk management into project-based It is questionable that whether a traditional risk management plan or a customized project risk management would help SMEs and micro companies to reduce the losses, or would negatively weigh on their budgets.

This paper focuses on the risk management processes in small businesses, investigates main risk management terms and theoretical risk management models. This research is a case study for a micro company Viope Solutions Ltd. By examining the influence of the company's risk management strategies to its operational activities, and to the cash flow, the author expect to conclude a suitable and effective risk management scheme to the business scale of the case company.

1.2 Viope Solutions Ltd.

Located in Helsinki, Finland, Viope Solutions Ltd is a micro company with approximately 10 employees; includes full time staff, part-time employees, and interns. The company operates in the technology field with main products include eLearning solutions for educational institutions and individuals. (Viope, 2013)

Viope Solutions Ltd was established in 2001; however, the booming growth has just occurred since the last two years. As growth and expansion always go together with risks, a proper risk management strategy will help the company turn risks into chances of development.

1.3 Objective and Research question

The research aims of this paper are to study the state of risk management processes in a specific micro company, and to discuss the extent of an effective management strategy based on the discussed business scale.

Within this research, risk management is defined as the process of identifying, evaluating and preventing risks. The losses expose to corporate include financial loss, resource loss, operation inefficiency, and so forth.

The research questions established and to be studied on this paper are: How do SME and micro companies assess risks and implement an effective risk management strategy? The research finding is expected to contribute on a recommendation for the case company to develop suitable customized project risk management, as well as to introduce a guide for micro companies regarding project risk assessment and management.

In order to ensure the research area is studied in-depth, this paper presents the literature reviews on classification of risks and uncertainties, the fundamental risk management terms, SME business model, theories of risk management in SMEs, project risk management and how project risk management adapts to micro companies.

The research work is expected to benefit Viope Solutions Ltd, the case company in this paper, in improving their business operations. Together with other researches on the influence of risk management, this paper is also hoped to help with further researches conducted in relevant field.

2. LITERATURE REVIEW

2.1 Risks and Uncertainties

It is necessary to understand that "uncertainty" is a much broader term, while "risk" is just a part of "uncertainty". According to Frank Knight (2006), "risk" is the term used to describe cases of known probability, for example, a store can calculate the probabilities that the cashier might mistakenly check an order per every certain number of customers and hence the store account might lose some balance. Uncertainty is when you cannot calculate the probabilities or make any forecasted assumption. An example for uncertainty is to predict stock market price, for instance, fifty years in advance. Risks and uncertainties are often distinguished in the language of "statistical probability" (B. Ritholtz, 2012). Regardless of the different scope of these two terms, both risk and uncertainty might result in positive or negative impact to the business operation and require proper management.

Risks might arouse from uncertainties related to management, natural disaster, political affairs, and cultural factors. (Köster, 2009, p99). Classification of risks according to their influences or nature is the essential step to any risk management strategies (Wideman 1992, III-2).

2.2 Corporate Risk and Classification of Risks

Generally, risk is the possibility for danger, negatively unexpected circumstance to occur (Oxford English Dictionary, 2013). In most of economic publications, risk refers to the negative deviation from the plan (Maylor 2010). In finance, risk is related to the hazard towards an investment, or loan (Encyclopedia Britannica, 2013). In terms of corporate and business, risk is the possibility that an event, either expect or unexpected, may create an unfavorable effect on the organizations.

Corporate risks are classified by the impact they might create on different business operational activities. This means that a risk can be repeatedly divided into different classes.

Business risks, property risks, information risks, environmental risks, etc. are some common classifications. Table 1 below presents a variety of risk types faced by most organizations:

Table 1. *Common Business Risk Types* (David O. & Desheng W. 2008 p. 7)

External Environment	**Business Strategies & Policies**	**Business Process Execution**
Competitors Legal & regulatory Catastrophic loss Medical cost / utilization trends Customer expectations	Strategy & innovation Capital allocation Business / product portfolio Organization structure Organization policies	Planning Process / technology design Technology execution & continuity Vendor / partner reliance Customer satisfaction Regulatory compliance & privacy Knowledge / intellectual capital Change integration
People	**Analysis & Reporting**	**Technology & Data**
Leadership Skills / competency Change readiness Communication Performance incentives Accountability Fraud & abuse	Performance management Budgeting / financial planning Accounting / tax information External reporting & disclosure Pricing / margin Market intelligence Contract commitment	Technology infrastructure / architecture Data relevance & integrity Data processing integrity Technology reliability & recovery IT security

People want to avoid risk, however, the economy as a whole, encourages businesses to take risks. Business operations, the activities of extracting capitals from one source to other sources, literally mean taking risks for more profits. Moreover, taking risks in one way or another brings competition and innovation. Thus, risks are issues that needs structure management plans, to be understood, prepared for, and to be improved.

Risks or uncertainties have their own distinct characteristics which call for particular assessment and management strategies. The Global Risk Alliance (2005) discussed that there are three types of risks as in Figure 1 below.

Figure 1 Three types of risk and their management. Risk Management Guide for Small Business, by Global Risk Alliance. 2005. p10.

As risks are not likely equal, based on the frequency of happening, based on level of consequences, or base on the nature of risk. These are the common ways for risks to be classified. From likelihood point, risks can be named from likely risks; possible risks; hypothetical risks to imaginary risks; where losses can happen usually, reasonably, or be theoretically possible or even unlikely exist. In this paper, the author will investigate different risk types based on the nature of them. The discussion will involve hazard risk, financial risk, operational risk and strategic risks.

2.2.1. Hazard risk

Hazard risks are risk related to working environment, property, and natural catastrophe. Originally hazards refer to potential harms that can affect health and safety of personnel of property (The University of Newcastle, Australia). Besides common hazard groups such as physical, chemical biological, mechanical and psychological which arise from workplace premises and environment or work practices, risk can grow from uncontrollable factor like natural disasters.

It is commonly agreed to be employer's responsibility to fix hazards. Exposure to hazards in workplace does not always result in injuries or severe health effects. However, preventing hazards from happening ensures personnel to work under no pressure of being harmed.

2.2.2. Financial risk

Financial risk is a broad term covering many negative risks related to financing, for instance, liquidity risk, funding risk, interest rate risk, investment risk, pricing risk, credit risk, and so on. Financial uncertainties can return as favor for one business but loss for another. For example increasing in fuel price can plus the financial statement for a company that produce or supply fuels, but this price change can create huge extra costs for a transportation agency. The consequences and the exposure's extent an organization may suffer from financial risks depend on the scale of the company's financial transactions: how much of the borrowings in compare to its business scope (CPA Australia, 2006).

Financial risk management is considered a specialization of risk management. In addition to careful revise on business cash flow and operational forecast, management use hedging - including stocks, insurances, etc. – as a method for reducing risks in operations and other investments.

2.2.3. Operational risk

Operational risks frequently are summarized as human risks, due to the discussion that the human error leads to business operations failure. Nevertheless, operational risks include all risks that incur from organizations' internal activities involving people, products or services offered, operational systems, and external factors (Global Association of Risk Professionals, 2011).

Banking is the sector facing operational risks with most probabilities. The Basel II regulations (Basel Committee on Banking Supervision, 2004) listed seven categories of operational risks:

internal fraud; external fraud; employment practices and workplace safety; client, products and business practice; damage to physical assets, business disruption and system failure; and finally, execution, delivery and process management.

Even though banks and investment businesses are most vulnerable to operational risks, other types of businesses share a common threat from this kind of risk. Small day to day losses due to customer dissatisfaction or bad reputation can add up and cost any firms significantly damage. Some risks might be more sensational than others; however what matters is a strong and suitable management structure according to the selected operational risk methodology. Especially, a business manager needs to build a sufficient system of staff and resources, as well as provide an appropriate leadership behavior. In addition, monitor, review and update current management data and structure is a crucial step in managing operational risks (An Oracle White Paper, 2010).

2.2.4. Strategic risk

Strategic risks imply the probabilities of a loss arising from a poor strategic business plan, decision, or from the inconsistent and inappropriate implementation according to the plan. Strategic risks pose threat to earnings, capital availability and corporation's viability. Because strategic plans indicate the operation direction as well as framework, vision and objectives of an organization, the lower the probability of strategic risk stays, the stronger the organization is. Thus, boards of directors are focusing on how organizations identify, assess and manage their risks.

Strategic risk management requires concentrations on risks to shareholder value as the ultimate goal (Beasley, et al. 2008) while considering the effect of external and internal scenarios to the ability of organization to achieve its goals. Strategic risk management is a primary component of an enterprise risk management (ERM, to be introduced in the later part of this Literature review sector) process.

Understanding the strategies of the organization is the essential foundation step in a strategic risk assessment. The assessment process should continuously reflect the corporate model, and be supported by valid strategic risk profile, together with risk management communication and action plan. (Frigo M., et al. 2009)

2.3 Risk Management

Insurance companies have always been working with risk assessment and risk analysis to ensure their customer's businesses and their own profit stay on track. Nowadays risk management involves every type of businesses, from regulators, debt rating agencies, international conglomerates, to small enterprises. It is not only the Enron case, or the 2008 financial crisis that stirred the whole world, but further beyond that, losses from their own operations and collapses of other enterprises make managers change to lead carefully.

2.3.1. Risk Management in Organizations' Operations

Risk management is vital in securing the business's capitals and other properties. However, as discussed, risk accompanies with the business's opportunities to grow. Therefore, it is often emphasized in business strategies that risk management is not to prohibit taking risks entirely, but to understand the levels of risks, and to properly engage risks into development and growth.

On applying into operations, risk management contains a set of continuous actions: awareness, identification, evaluation, and development of risk management methods, decision making of suitable methods, implementation, and post management. While the workload increases, it is not necessary for the outcome to be excelled. The essence of risk management lies in the systematic flow of one step to another. Whilst the risk-taking behavior in corporates is encouraged, mistakenly identifying the manageable level of risks leads to inappropriate method, and finally to the loss in operation.

Risk management emphasizes the capabilities of a business to anticipate changes, not the avoid risk. Avoidance of risks means waiting for the event to happen then react to it, rather than prepare for the changes. In reality, many organizations choose to avoid risk, as in their simplest risk management strategy. In one hand, this strategy allows fully protection from particular losses. In other hand, this strategy deprives profit, and might cause another risk. (Biasi 2011 p.12).

2.3.2. Risk Management as a Process

Risk Management has been in discussion of scholars, researchers and business experts for a long time. According to a study of Southern Cross University, (2012), in the standard AS/NZS 4360:2004, risk management is defined as:

> the systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, analyzing, assessing, treating, monitoring and communicating.

There could be as many as possible aspects of risk management, in related to particular business sectors. Besides, financial risk management, David O. & Desheng W. in their book (2008, pp. 3) addressed risks emerging from accounting, supply chains, information system, and disaster management perspectives.

A traditional process of risk management following the guidelines of International Organization for Standardizations (ISO 31000:2009) involves 3 main steps:

- Establishing the context: this step involves identifying the entire possible field of risks and analyzing the relevant possible effects, and from there planning or mapping out the entire management strategy.
- Identification: after getting the context of possible business risks, the risk management will process to identify sources of the problems, threats, or risks. Choosing a right method to identify and analyze risks will help the preparation and prevention steps work better. However, the methods chosen are biased by cultural, organizational, politic and many other factors. Control solutions identification goes after the risk identification.
- Assessment: The final step consists of some sub-steps: establishing the likelihood and consequence descriptions, the risk rating index. Defining which consequences would lead to an extreme risk or just a general low level risk would generate an appropriate method of control. It is advisable to develop the risk management methods along with defining the level and consequences of the risks. The assessment process might

involve decision making process, especially in the case of high or extreme level of risk.

For the continuous growth and later references, organizations would expand the risk management process further to the step of monitor and post-process evaluation. Regularly reviewing the risks and update the definition or methods is essential to risk management, and to the successful operation of the business.

2.3.3. Enterprise Risk Management

As businesses grow periodically, relevant risks grow at the same rate, together with new field of risk management opens up. Thus, organizations' risk management adapts to the specialized risk by a more integrated approach: Enterprise Risk Management (hereinafter: ERM). The concept has been developed from the mid-1990s industry (David, O. & Desheng, W.) to meet the requirement of business growth and risk management. Stephen, D. (2001) extracted the Casualty Actuarial Society definition of enterprise risk management as:

> The process by which organizations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organization's short and long term value to its stakeholders.

While traditional risk management views risk as individual hazards, ERM puts risks in the context of business strategy, then build a portfolio of risk development. ERM provides base for risk mitigation and rational management. Traditionally risk management approaches the downside – possible losses from risk events whereas ERM scholars encourage management to recognize risks with both upside and downside factors (Investopedia, 2013).

When companies talk about ERM is when they manage risks following a framework, a tailored approach to identify, measure, respond to and prevent or monitor risks and uncertainties. The two most well-known ERM frameworks are which of Casualty Actuarial Society (CAS) and of Committee of Sponsoring Organizations of the Treadway Commission (COSO). The CAS conceptualized ERM as a means to increasing the organization's value. The process of ERM is recognized depending on the risk types: hazard risk, financial risk, operational risk and strategic risk (CAS, 2003). COSO ERM framework is categorized into components and objectives, with highlights lie in supporting the organization's strategy, ensuring effective and efficient use of resources, resulting in financial profit while complying with laws and regulations.

Figure 2 below reflects evaluation questions to address an effective ERM program through key ERM concepts. However different the framework management selects to apply, a risk response strategy usually involves: Avoidance – executing activities that lead to risks; Reduction – reduce the activities that lead to risks, or taking action to reduce the impact arise from risk; Alternative Actions – other steps to minimize risks; Share/Insure – finance risk or percentage of its through services; and Accept – no actions are taken against the risk (COSO, 2004).

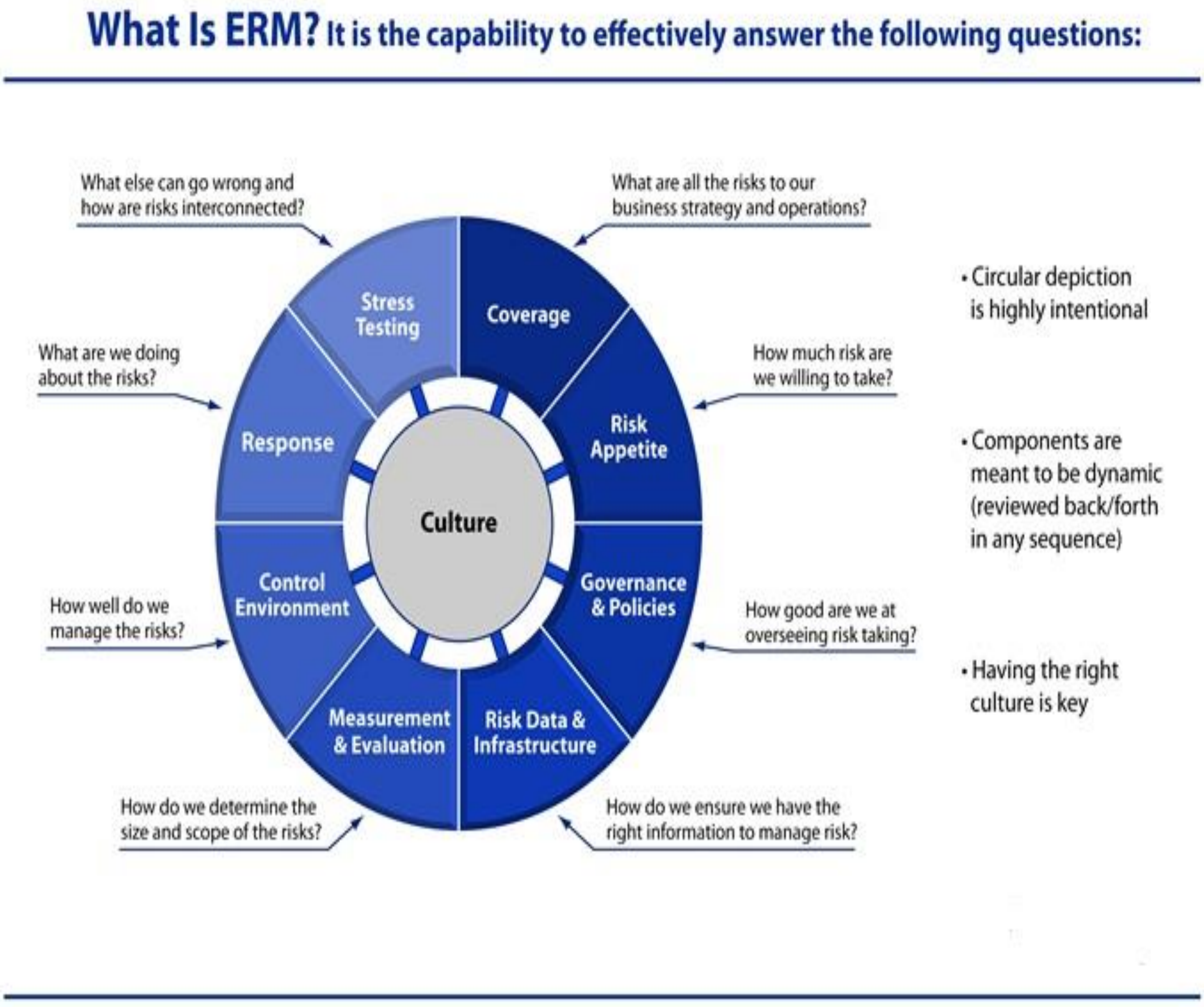

Figure 2. What is ERM? – ERM definition wheel. (Enterprise Risk Management Workbooks, The Risk Management Association).

Professional financial service firms such as Deloitte and many other provide wide range of enterprise risk management services to help organizations integrate risk management into their strategies. As mentioned, companies historically depend on purchasing insurance to stand against risks. Particularly in the U.S, many corporations are not active in presenting their risk profiles to stakeholders and society, if without an outsider's service. Nevertheless, it is always important that management themselves need to understand risks and uncertainties, to create a stronger persuasion to investors, and to save the organizations from heavy costs of insurance.

It is clear that ERM is recognized as a critical management issue, ERM tools and capabilities are enhanced by more and more companies (Towers Perrin survey No.19, 2008).

2.3.4. Insurance

There should be the understanding that risks could be managed and controlled but not totally eliminated. Thus even with the most thoroughly planned, evaluated and implemented risk management plan, errors can unexpectedly arise at some point of the process. One of the risk management techniques is risk transfer, which involves insurance.

Insurance is one solution of organizations to hedge against threats. To be insurable, the risks should appear to match several common characteristics (Mehr and Camack, 1976. p34). For example, insurers normally agree to contract homogeneous risks, risks that historically have large number of similar events, to ensure the claim costs. Insurable risks need not to be categorized as catastrophic, but have definite loss when measuring within particular time and amount, so that the impact of risk is measurable and the benefit of the insurance can be determined. In addition, one condition made to define insurable risks is that there should not be any acknowledgement by the insurance holders or relevantly of to whom the damage or loss may happen. Insurance companies typically are equipped with professional investigation staff to check on every claim and make sure the affair is not planned by the policy holder.

Doing business means being liable to risks, from slightly to heavily. However, it is not worth insuring against all uncertainties and risks. Although insurance provide compensation for losses, choosing to insure against risk or not and choosing what to insure are decisions that need carefully consideration from management. The cost from insurance – premium – might turn to be too costly, even larger than the expected revenue. In other words, property or assets can be under insured or over insured. Under insurance happens when the insured value of the property is less than in reality. If the property or assets or insured items worth more than the insured value, then it is called over insurance and the over insurance payments are wasted.

Insurance, if not in case of legally compulsory, should be the last method to solve a problem (Stanford risk management department, accessed 2013).

2.4 Small Businesses

2.4.1. SMEs and micro enterprises

SMEs and micro companies are business terms defining companies with number of personnel stays small, practically around ten contracted staff for micro entities, up to 50 workers as a small companies, and round at approximately 250 employees to be a medi-um-sized enterprise. The abbreviation "SME" is used internationally nowadays.

As in a report on new definition of SME, European Commissions specified that SMEs contribute a major source of entrepreneurial skills, innovation and employment (2004, pp.5). Accordingly, to be considered a SMEs, first the business must be considered as a legal entity, and then the enterprise will be assessed and levels by three criteria: staff headcount, annual turnover, and annual balance sheet (2004, pp.12-15)

As it is significantly concerned with the number of employees, however, clarifying the size of an organization by merely the staff number is vague. The key differences be-tween micro companies or SMEs and larger firms lie at various aspects:

- Decision making process. Larger corporations with their bureaucratic levels require considerable time for decision making process, in compare to speedy process of SMEs.

- Level of risk embracement. Generally, SMEs, especially start-ups or small business in an expanding stage reckon themselves as a risk. Thus, SMEs regularly confront risks offensively to grow; while larger firms take risk defensively, to ensure the operation strength.
- Resources allocation. When it comes to budget, every penny counts for a small company. Even though larger corporations are not always in better position with resources, their limits to allocate resources are more open than the capability of smaller businesses.

In discussion of risks, SMEs are regarded as open to risk taking, this is the reason why risk management in SMEs should stay focused by top leaders. The paper is going to defines several remarkable risks of SMEs.

2.4.2. Risks specify to small businesses

Every business need a strong risk management strategy, and SMEs and micro companies need even stronger risk management system. Due to limitations in size and capabilities, small businesses suffer from several extra risks, other than which mentioned in the first sector of this paper: Risks and Uncertainties.

- Business entity risk

SMEs or micro companies are often formed by partnerships or proprietorships, which hold a fact towards stakeholders and investors that this constitution of entity has higher operational risk rate for the lack of professionalism with only one or two key persons leading the organization.

- Human capital risk

Studies by Singapore Government (2012) and the Institute of Chartered Accountants in England and Wales (Alpa, et al. 2005) coincidentally prove that the most significant risk among small businesses involves human factor. High degree of employee turnover and shortage of know-how experts both result in wastage of manpower and additional cost of training. In long term, human factor will lower the productivity and affect the brand image of small businesses as an employer.

- Financial risk – in terms of costs, cash flow and leverage capacity

Regarding costs, any increase in expenditure is a pressure for small companies, who operate on a tight budget. Labor costs, fuel costs, marketing campaign costs in a competition, and so forth can thin the company budget margins.

Many SMEs and micro companies do not possess a sufficient cash flow as in plan. They rely heavily on ongoing operations to generate funds for the continuous activities. In bad circumstances where the need for funds is not well planned and cash generation does not following forecast, the business will run low on budget and might be stuck for the next upcoming projects. Operations from this point might turns into dead end.

SMEs and micro companies are stated as important players in the economies, thus banks and investors are convinced to lend and pour supports for them in expectation of high return rate. However, it is necessary that banks and investors keep the leverage capacity of small businesses in mind to responds effectively and sufficiently to just the needs, ensure possibility of debt return and an earning still left for those small businesses after paying debts.

- Competition and market share

Despite being important to economic growth, SMEs and micro companies stay at small scales, as the virtue of their business entities. Therefore, what they cannot avoid is tough competition among bigger corporations to gain a visible and profitable market share.

Undesirable events which lead to negative impact on business operations are numerous to list down and not all risks will fit into merely one category. Risks towards SMEs and micro companies can be categorized by the sources of risks as well: risks posed by customers, risks posed by suppliers, risks posed by staff, etc (CPA Australia, 2009). The importance is to identify and manage risks to minimize or eliminates any loss threats.

2.4.3. Risk management in SMEs

In a small work environment where every activity is wholly involved, directly affects each other and the business, management of one issue should go along and closely with the rest of operational issues. Risk management in a small business should not be an individual program but integrate with other management processes: business strategy planning, human resources management, financial management, and customer relationship management.

Due to the business scale of SMEs and micro companies, the organization owner will ultimately take responsibility for the risk decisions. The extent of efforts required for risk management depends on the complexity of the operational activities and the scale of the business. Non-employing businesses, with one or two owners as partners and employees at the same times, will not face a human resources risk as the same level as a micro companies with more than five staff.

Risk management for a business of any sizes relates to systematically assessment and strategic response to threats. By their nature, small business owners are frequently entrepreneurs, successful and optimistic entrepreneurs. They have the tendency to be confident based on their success in establishing and leading the business, and it might be common for small business owners to put risk management plans down the list of priorities. A research by the Institute of Chartered Accountants in England and Wales (Alpa, et al. 2005) show that expenditures for risk management of smaller businesses are considerably less than larger businesses. SMEs generally spend their budget on insurance and internal – external audits.

There are several approaches that SMEs and micro companies can choose to process risk management and reduce loss exposures. Kliem et.al (1997) prefers a four-step process: risk identification, risk analysis, risk mitigation and risk follow-up. A more common process is described by Hollman et. al (1984) (in Candice Lim, 2010) with five-steps. The process is illustrated in Figure 3.

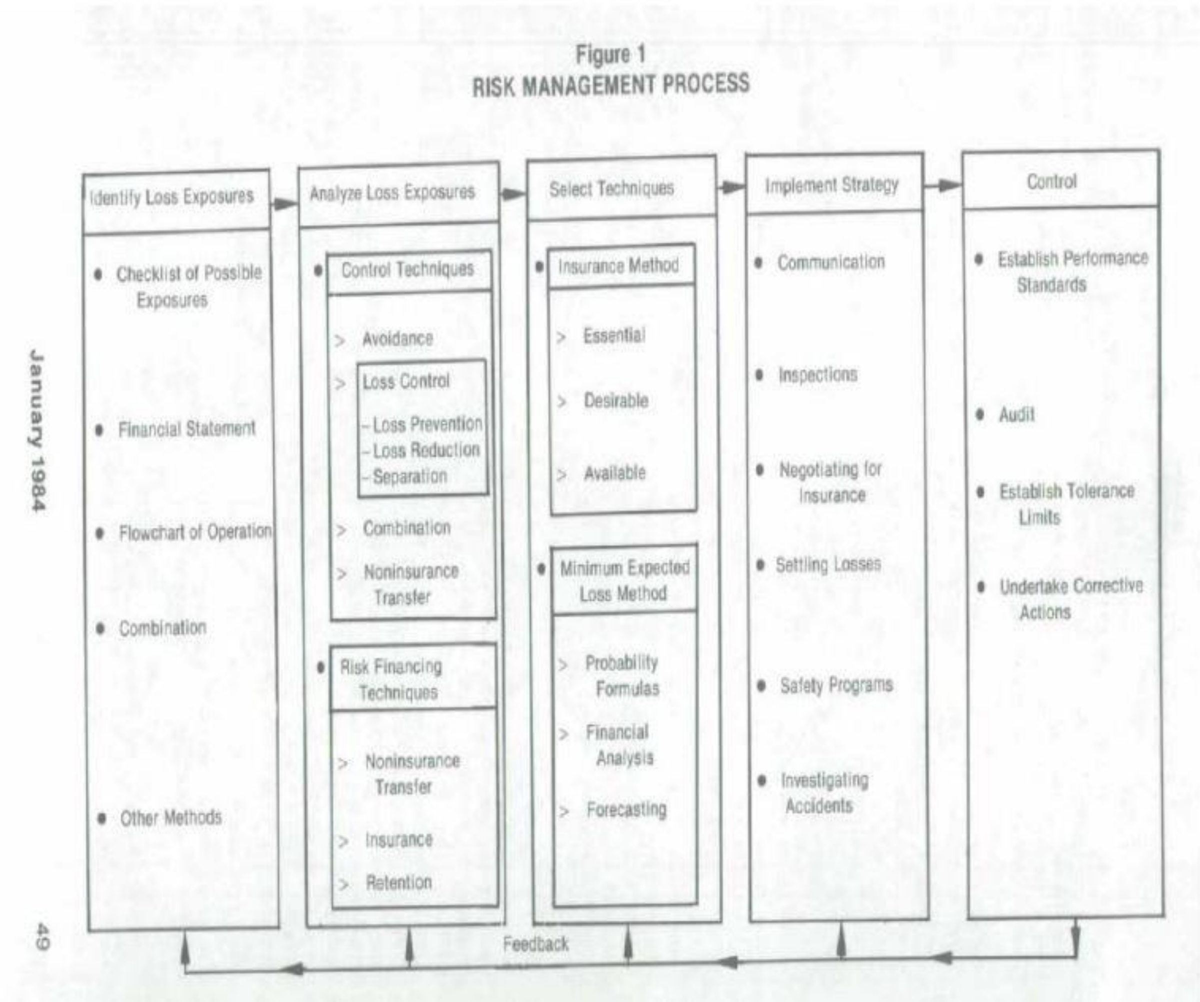

Figure 3. 5-step risk management process. (Hollman et. al, 1984, in Candice Lim, 2010).

2.4.4. Project Risk Management in SMEs

Size and management skills can be either advantages or disadvantages of SMEs. At the minus point, these disadvantages limit SMEs capability when exposing to risks (RS Raghavan, 2005).

As SMEs generally divide their operations and management by projects, it is recommendable to look at the common project risks and the definition of project risk management in SMEs.

Projects might run on long term or short duration. Long term projects encounter budget risks and uncertainties like market changes, governmental changes, or currency fluctuations.

Shorter projects require shorter time to operate, which means risks may arise from poor estimation of schedule and costs.

Köster (2009) suggest consideration of “local rules” when collaborating in international projects. One country has its typical business attitude and customs, which foreigners might not notice and cannot attempt to change either. For example, local authorities, regarding corruption, bureaucracy and language, might be obstacles for a contract to be signed.

Another factor can lead to a failure project concerning the attitude towards risk taking of SMEs. While needing to grow, SMEs may involve themselves in projects which are out of their ability. Overconfidence is a big challenge in project management (E. Russo, 1990).

Project risk management flexibly adapts to the scope of operation; whether it is long term or short term projects, alternative plans can be modified and adjusted (R. Wideman, 1992).

Project risk management is a measure of uncertainties within a projects schedule and an estimation of cost and budget (Chapman C. et al, 1996).

The benefits of project risk management for small businesses lie at the point of time and budget advantages. It is understandable why there are as many models of project risk management as general risk management schemes. Different models introduce diversifying steps and stages of project risk assessment and control. On the other hand, the various models practically maintain the same process of identifying, analyzing, responding, and monitoring risks.

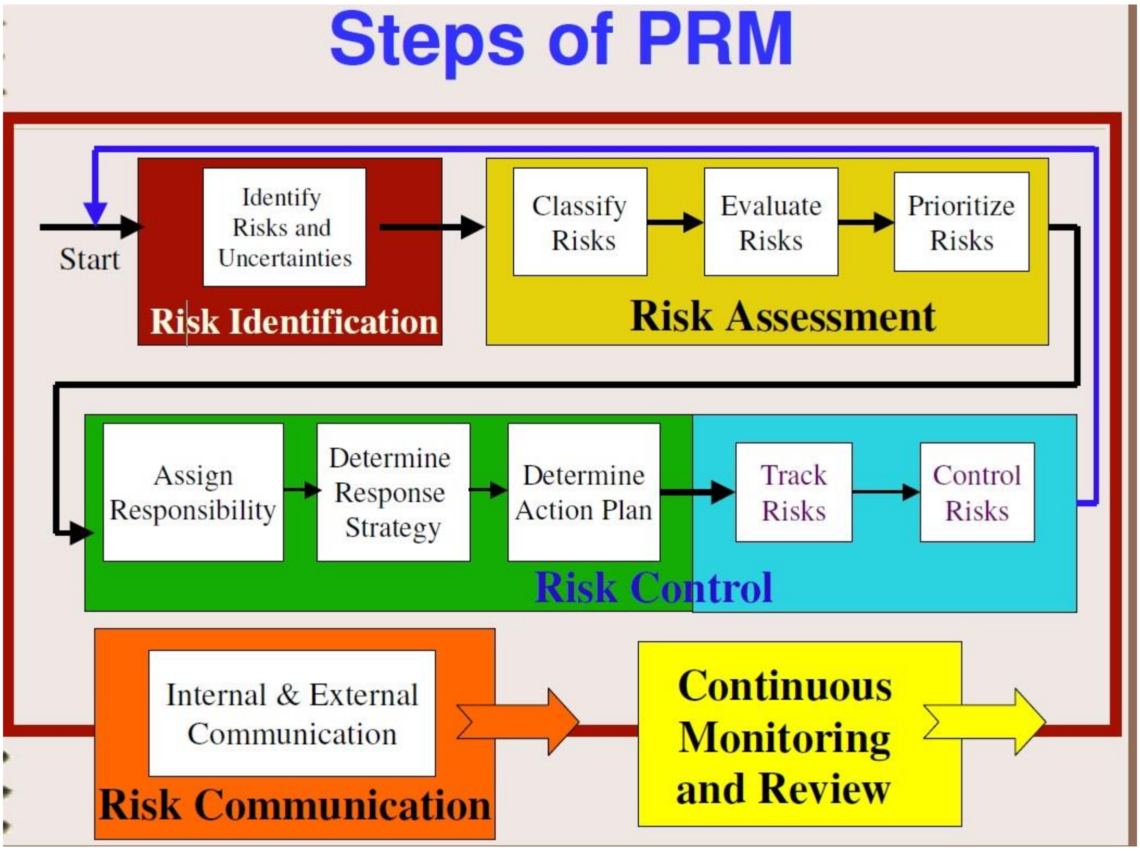

Figure 4. Process of Project Risk Management. (V Ho, 2003)

Figure 4 above is an example of a project risk management process with detail steps dividing into Risk Identification, Risk Assessment, Risk Communication, and Post-Risk Control.

In compare to a business strategic risk management scheme, there are two highlights in project risk management that make this approach more suitable for small businesses: the step of planning and identifying risks.

- Risk Planning

Instead of identifying risks as the first step, an adequate project management scheme should start with proper measurement of efforts and planning the assessment and control activities and schedule in advance. It applies also to general risk management, to measure and consider whether the benefits of implementing such a scheme will exceed the efforts and budget against the risks. Risk planning or risk management planning is recognized as major process (Gardiner, 2005. p163).

- Risk Identification

The identification of risks is the ultimate step that decides the end result of the management process. Management should review all the scenarios that may affect the objectives of the project with an open mindset and vision. One method to ensure sufficient risk listing is to screen through the phases of project life cycle (Chapman C. et al, 1986). Common projects cycle through 4 phases of conceptualization, planning, execution and termination; with sub stages and following steps. Referring risks to particular stages and steps will help the management process more efficient and simpler for both the boards of the staffs.

In a report concerning risk management by Harvard Business Review (2011), it is assessed that organizations with a CRO – Chief Risk Officer have considerably more extensive risk planning than other companies. This might be true when comparing large corporates together. Risk managers at small businesses might even not exit, as the management will carry out the risk assessment, at the same time with other management work. The keys to successful project risk management at SMEs and micro companies are to always embed risk management into project management, and to communicate about risks (Bart Jutte), which is a much easier step to be done at smaller than at bigger scale of operation.

2.5 Risk Management in Small Technology Firms

Due to the nature of this paper to act as a case study for a micro company in technology service sector, the author will shortly review literature concerning risks and risks management among small technology firms.

Nowadays, every business relies, more or less, on technology which duly connects with exposure to risk of technology usage. Compared to other small businesses, high-tech companies have stronger capacity for innovation, higher technology efficiency and, consequently, higher possibilities to expose to technology-related risks. Risks in firms providing technology products or services particularly involve intellectual property, asset and system issues.

While technology requires its own innovative operation systems, the need of manage those systems are equally essential. Equipment like serve and information connection systems should be regularly monitored, tested and backed up to ensure continuous transportation of information and technology products or services.

Key innovations are the soul of technology firms' operations. Leakage of confidential information will lead to violence of copyright from competitors or from customers; reputational damage and market losses. Technology firms should prepare to patent or register their inventions and products. Proper maintenance of technology output includes confidential agreement with employees and customers to avoid business material being stolen and leaked out.

A research paper by Liang Wenchao and Zhan Baochao of high-tech SMEs in China shows a range of other sources of risks expose to technology firms at initial period of business operation, including shortage in preparation for entrepreneurship establishment, capital, and internal management problems.

3. METHODOLOGY

3.1 Research Method

After determining the objective of this paper, the author has decided to adopt the qualitative method to support the research work. While quantitative method means measuring and using numerical data, qualitative method refers to collect and utilize non-numerical data. (Saunders, M. et al., 2009 p.151). Qualitative methods are used to gain insights of unstructured problems.

The nature of the research is to collect diverse data, and the research topic of risk management in small businesses is not structured as a hypothesis. In order to understand the influence of the company risk management towards the specific expenditures in the cash flow, as well as the management's viewpoint on applying those risk management strategies, the researcher believe qualitative method is more effective.

3.2 Research Strategy

This research concerns the operations of SMEs and micro business, where the management plans and strategies are sometimes made and confirmed without official papers or recordings. The researcher chooses the interview techniques for the purpose of data collection.

Interview technique is popular in qualitative research for its insights into the matter. Interview provides in-depth discussion between the researcher and the respondent. Semi-structured interviews are used to allow the researcher to flexibly bring up new questions during the interviews provided that those questions circulate around the set topics and the answers of the interviewees.

The author conducts an interview with the CEO Mika Lackman (2013) and with the Sales Manager Tram Nguyen (2013) of Viope Solutions Ltd. in order to study further the management perspective in implementing risk management plan. Two other interviews with CEO Riitta Varpe (2013) of Palta Oy and the Chairman of the Board Paula Salastie (2013) of Teknos Group Oy regarding risk management strategies in these corporations are carried out.

The gathered information is to compare the risk management differences in different scaled businesses.

Even though the interviews give the reactions and opinions of respondent on the topic, it is likely to make mistake in interpreting and analyzing data from the interview. So in conclusion, it is essential to prepare the topics well in advance. A frame of necessarily covered topics and precise questions are built thoroughly to ensure the best outcome of the interview and the research. The themes of the interviews involve the acknowledgement of risk and risk management from employee and employer views, the process of dividing risk management steps, and applicable techniques or models of risk management used within these organizations.

3.3 Creditability of Research Findings

3.3.1. Reliability

In research, reliability implies the possibility to come up with similar findings by other researchers. To ensure the reliability, researcher should schedule a structured interview, avoid bias in interpreting answers, and take care in analyze date.

The management of Viope Solutions Ltd gives full support to this research, so it is believed that major threats to reliability of the research findings are eliminated.

3.3.2. Validity

Validity essentially involves in the question whether the research internally and externally measures what was intended. (Chris,H. 2013). Internal validity implies the reliability of the study. External validity, given internal validity is approved, counts the applicability of the result to larger or different targets rather than the primary target of the research.

In the context that reliability is believed to stand strongly, the author look at the external aspect of validity. This paper is especially designed for the case company, however it does entails the situation of small businesses in Finland, and thus the applicability of research findings to larger group or other firms in the same industry is possible.

3.4 Limitations

There are several limitations and shortcomings of this paper. Setting and managing the interview appointments is a problem which leads to delaying in the schedule of the research. In addition, due to the short timescale of the research in regard with the research area, the author might not be able to study further in the field, which might bring a broader view to the issue. The researcher therefore chooses to limit the scope of the study by using one case company as target population.

Acknowledging these limitations, the researcher attempts to ensure the interviews' schedule, and to open further discussions at the end of the study.

4. RESULTS

In this section, the author presents the empirical data found with the mentioned research tool: interview. The risk management situation and strategy at case company Viope Solutions Ltd. are analyzed separately and in comparisons with the strategies of Palta Oy and Teknos Group Oy. Short introductions of Palta Oy and Teknos Group Oy are given to help audience understand further how differences in business scales and differences in risk management involve.

4.1 Case Company – Viope Solutions Ltd.

In addition to the short introduction of the case study Viope Solutions Ltd in the first sector of this paper, in this part the author will go into more details with the company characteristics, management methods, main business offers, together with a SWOT analysis of the company. The aim of presenting further details is to give readers clearer understand towards the case and the latter part of risk management within the company.

Information in this section bases on the interview with the company's chairman, from the researcher's point of view as an employee, and through company website.

4.1.1 Company presentation

Viope Solutions Ltd was established in 2001 in form of partnership. The business idea arose from researches done by the two co-founders in Lapperaanta University of Technology. Nowadays Viope Solutions Ltd head office locates in Helsinki, Finland.

With passionate about usability and efficiency, the company maintains their vision with technology field and provides products in the field. Targeting educational institutions Viope offers e-solutions for computer programming. Game development and mathematics learning tools and platform, together with recruitment tools for technology businesses. Viope products and services work online.

Having a strong ambition to grow globally, Viope Solutions Ltd has expanded their business internationally from 2011 with customers' database listing from a few European countries, to Nigeria, Ghana, to Singapore, Saudi Arabia, and to United States.

Viope Solutions Ltd co-founders are concurrently the management of the company: one are the chairman and chief executive officer, one are chief technical officer; simultaneously responsible for the strategic and technical management. Besides, there is one sales manager responsible for the sales and marketing issues in general.

4.1.2 SWOT analysis

SWOT analysis is the strategic and assessment technique to evaluate Strengths, Weaknesses, Opportunities and Threats of an organization or a project. In a SWOT analysis, the internal factors (S-W) and external factors (O-T) are specified to help management review the favorable and unfavorable possibilities that can influence the operations and objective achievement of organizations or projects. (Lawrence, 2009)

SWOT analysis of Viope Solutions Ltd:

- Strengths
  - The company is relatively small, as a micro company, so the flexibility and speed to change are highlighted.
  - Long history with the field. Since establishing, the company maintains in the field of technology with certain leads in development as well as possesses a broad network by time.
  - Small business scale with low labor costs. One part of Viope personnel is interns, and this help Viope cut part of salary expenditure.
- Weaknesses
  - Narrow cash flow and capital funding
  - Small human resources, which create difficulties and limits to the capacity. In addition, temporary interns and trainees as part of the staff consume time and effort for training.
- Opportunities

- Technology for education is a booming market recently, thus Viope has great potential to expand further domestically and internationally, with individual organizations or governmental-connected educated projects.

- Threats
  - Widely working on international markets brings an issue of legal and regulatory framework of different countries which can affect the operations oversea.
  - The boom of the market also leads to a threat of rising number of competitors, meaning threat of smaller market share.
  - With narrow budget, Viope has difficulties in continuously strike for innovations and creativity. They face the threat of not staying on technological edges in a long run with current situation of tight cash flow.

4.2 Risk and Project Risk Management at Viope Solutions Ltd

As stated in the method and strategy part, the research method of this paper is qualitative, based on interview. The interviews took place at Viope office, the first one with the sales manager was on May 3rd 2013, at 16.30 and lasted 15 minutes; the second one with the chairman happened on may 13th 2013, at 9:21 and lasted 49 minutes. Two interviews both cover these following areas: acknowledgement of company management style; awareness of risks and risk management strategy; and application of risk management techniques into the organization operational activities. Understanding fully these aspects is expected to help the author conclude an outcome for the stated research question. The research result will be presented according to the topics cover in the interview.

4.2.1 Acknowledgement of company management style

From the viewpoint of the company founder, the chairman is well aware of the business scale and how he and his co-founder decide on manage the operations would affect the expected growth. Viope Solutions Ltd is led permissively, where subordinates are involved in decisions making, and their opinions are respected similarly as the management board. The sales manager shares the agreement on her observation towards how other employee views. Even though there is normally no official introduction session or brochure of company leadership style, but the communication within the organization helps any new employee get the idea and acquaint to the management style: Leaders are available for discussion and open for suggestion.

4.2.2 Risks awareness and risk management

It is vital that the management acknowledge and understand risks within business operation. However, how the employees are familiar with risk topics and the term risk management rather puts more significant influence to the result of risk management procedures.

As agreed and discussed in the interviews, the risks concerning the interviews are purely business risks; hazards like natural disasters and environment changes are not included.

Viope Chairman explains that they split the operation into project and recognize as well as manage risks by project base. He discusses that risks awareness in the company depends on the departments and on the position of each individual within single project. One person in charge on this project can be the one following orders of another project. When people stays at leader position, they get the wholly view of planning and assessing risks, and the flow of information might turn to be missing for people who runs for few project at a time. The sales manager, for example, covers the sales activities and involves in marketing work for one or more project at the same time. She highlights one activity of Viope, a weekly meeting of the whole company, to summarize information from different sources and help people from different departments (sales, marketing, and technical) catch up.

The interviewees point out that a large percent of Viope human resources have education in business or management fields. Therefore they understand and are aware that risks exist in business operations of Viope. In other hand, weekly meetings or project meetings are solutions to communicate risks to the rest of personnel.

In both interviews, the researcher got the idea that Viope is managing their risks as project risk management. When evaluating the profitability and successful possibilities of a project, the management simultaneously brainstorms the risks that they have and what could be the positive and negative outcomes. Depending on the scale of the project and the funding ability for that one project, the willingness to take risks changes. Nevertheless, it is assumed that the company is more willing to start a new road, even with unknown risks, than bigger players at the same field.

Concerning project risks management, the interviewees were asked how they see the differences between enterprise risks management and project risks management; how often the risks and uncertainties repeat from one to another project. In summary, the respondents describe enterprise risk management is rather unfamiliar than project risk management due to the different in procedure. The company processes the risk management less formally, usually in the meeting of the management first, and then adding any possible risks within brainstorming sessions for project planning. Risks are looked at as both threats and opportunities. In case the risks are not severe and promise a change in future, they find a way to live with the risks and wait for chance to turn risks into developing opportunities.

Project risk management at Viope, according to the interviews data, is a three-stage process:

- Early stage – when the project is planning: Name and list down risks that could compromise the implementation of the project.
- Implementation stage – when the project is ongoing: Comparing the planned and the current process of project in order to draw out any unexpected risks occur along with the process. Evaluate the effect of those unexpected risk to the process implementation, and towards the expected project's goals. Apply modification or management actions to reject, reduce or transfer risks.
- Ending stage – post project monitor: Review risks and uncertainties that appear during project happening; refer to the early stage listed risks, report the non-expectation for later references.

The chairman of Viope concludes subjectively that although risk management within the company is not visibly structured, but the processes of controlling risk are tightly followed.

4.2.3 Risk management techniques and application

The issue with micro companies like Viope Solutions Ltd is that the limited resources: human, fund and time. These combining together prove that project risk management is more efficient than looking at risks from department to department, or from the head to the lowest subordinates.

However, there is one point still need to be considered whether it is advantages or disadvantages of small businesses regarding risk management: techniques and application. For this topic, the researcher raises questions concerning if theoretical methodology, scholars' tools or commercial services are used to assess and manage risks within Viope's projects. The respondent of this topic was the chairman of Viope Solutions Ltd.

The response was that no external services are used. The chairman had background in business and management, however he admits that his remember of theoretical methods for risk management was not clear. The risk management is dealt with by his experiences with previous projects; and the processes are spinning around the cash flow situation of Viope Solutions Ltd. They tightly follow and review cash flow for any decision making process, and the risks assessment and management are not exception.

The chairman agree on disadvantage of working under pressure of cash flow is the limitation in planning time and extra cost of efforts from personnel. However, he ensure that this strategy has been proved to be effective for Viope Solutions Ltd thanks the small and average scale of projects that they have been carried out.

When discussing about insurance as a mean of transferring risks to another entity, the chairman argue that the costs of insurance are believed to over value the project benefits, any those costs go beyond the company's capability. Even patenting their technology innovation, which in his point is a kind of insurance for intellectual property, is not worth the effort, energy and budget to pursue.

4.3 Palta Oy – Comparing Risk Management

4.3.1 Introduction of Palta Oy

Palta Oy is a company specializing in employment matters, especially social affairs and lobbying-related services concerning labor issues, for organizations in service sector. By 2012, Palta Oy has offered to more than 1700 organizations in service sectors operating in Finland with supports in industrial, labor-market policies and employment legal services. The company's income comes from membership fees and service-based fees charged on their members and customers. Palta Oy is a medium-sized business with approximately 50 employees; their office locates in Helsinki, Finland.

4.3.2 Risk management at Palta Oy

Financial risks, Human Resources risks, Political risks and risks of customers' expectations towards delivered services are the key issues at Palta Oy. The author asks for the most influencing risk at Palta Oy, however it is commented that those risks affects the companies in different aspect, and they require equal attention to follow and manage. Nevertheless, among them, political risks appear to influence the rests most significantly. Palta Oy works with legal issues and policies of employment area, one that receives often notice from the government, and from employee unions and associations. Political changes can pose a threat to the activities of Palta, for example lobbying for the benefit of the employers, directly affect the outcome of the work, and can lead to damage to company image if the services they provide are not successful, later pose a threat to financial situation of the companies.

When being asked on how familiar the managements as well as the employees are with terms of risk management, the interviewee from Palta Oy confirm the risk awareness level within the organization. This company uses reports from employees along with management assessment to manage risks. In these monthly reports, the staff note down their experiences with uncertainties during the past month, and forecast of risks that will rise up concerning their activities for the following month. The forecasted risks are rated by the employees by the level of frequency and consequences accordingly. Those reports are reviewed by the management board in order to supplement their strategies.

Palta Oy does not use any provided risk management services but adds risk assessment and mitigation plans to the tasks of management team. Palta CEO replied to the interviewer that the company follow ERM model to identify, evaluate and manage risks, depending on risk types.

4.3.3 Comparing risk management of Viope with Palta Oy's

One recognizable point in Palta Oy's risk management strategy that could be useful for Viope case is the use of risk report. In addition to weekly meetings and brainstorming sessions of each project, Viope could utilize this technique to gather staff's opinions of possibilities of risks and the consequences if applicable. The workload for managers can at the same time be reduced thanks to those reports.

The level of risk awareness in the two companies differs because of the models and techniques they follow. With the use of monthly risk report and ERM models, Palta's employees happen to acknowledge and understand risks deeper in a wholly view. In order to create sufficient risk report to management, their knowledge of risks, which might change among different risks types, are necessarily well-trained. Employees of Viope, in other hand, understand risks and get acquainted to process through sharing experiences and information. Their knowledge of risk management is, while practical, not systematic.

Palta process their risk handling using an ERM model, involves Establishing the internal context (by employee's reports) and external context (by management's measurement) in which this organization operates on. Understanding of the current operational conditions builds a frame of threats that poses to organizations' objectives. Those risks and uncertainties then are quantified and analyzed by the management board. They are afterwards responsible for making decision concerning risk assessment, risk responding, monitoring and reviewing procedures. These decisions are not informed to employees at the time they are made, but only included in the organization annual reports.

In another hand, Viope handle risk assessment with more involvement from employees, and the decisions making procedure generally also involves their staff voices. Even though there is no recognized model of project risk management as the CEO of Viope replies, their processes follow closely basic steps. Risk identification is done by the management when choosing the projects and by the employees when brainstorming projects' plans. In those brainstorming sessions, risk assessment step and risk controlling steps are performed together by project members: classify the listed risks, evaluate the upside and downside, and prioritize risks, also design response scheme and responsibilities of project members within. Risk assessment and risk controlling are carried out with consultancy from Viope CEO and CTO.

As a result of closer employee involvement, risk communication of Viope project management shows more advantages than Palta's application of ERM. Employees directly decide and deal with risk, so risk responding is more spontaneously at Viope Oy. In other aspect, Viope is a product supplier, while Palta Oy is serving customers with services, and they point out that publicity as well as human resource are risks that they prefer avoiding; thus the involvement of employees can be explained.

4.4 Teknos Group Oy – Comparing Risk Management

4.4.1 Introduction of Teknos Group Oy

Teknos is one of the leading suppliers of industrial coatings as well as consumer and architectural coatings in Europe. Teknos is a family-business, but has production and sales in many countries worldwide. It is a big organization with over 1100 staff (by end of 2012) and the turnover of Teknos group is EUR 250 million. Head quarter of Teknos Group locates in Helsinki Finland, with 6 members in the board. The number of members in the boards of different production plants in other countries varies.

4.4.2 Risk Management at Teknos Group Oy

With Teknos Group Oy, as they are bigger organization than Viope and Palta, the risk management gets more complicated. They divide the procedures regionally, where the process is continued to part into different departments' functions. The risks are classified by types, with the most influencing ones are human resources, liability, environmental, politics and market risks. The interviewee shares her point as chairman of the board that, since Teknos is a family business, the human resources are one of the key points in risk assessment. Management levels employees, as to distinguish from lower labor forces, generally have long history working with the company. Replacement due to retirement costs the companies training fee for new recruits, but also mutual understanding within work and contacts network are damaged. Besides, as this group has several offices in other countries where building network is vital for growth, changes in contact person can cost the companies huge loss.

Teknos Group outsources there risk assessment to KPMG. KPMG is a professional service companies in the field of auditing, tax and advisory. Teknos Group uses KPMG risk consulting services occasionally when there are certain important happenings within the business, for example change of generation in managing the business (from father to daughter or son), or when there are merger and acquisitions going on. Meanwhile when there is no significant need of the consultancy service, the risk management is carried out by Teknos board of management. The risks are assessed from each operating departing, to regional management team, and to the board of management at head quarter.

4.3.3 Comparing risk management of Viope with Teknos Group Oy's

It will be inappropriate to compare the strategy of Viope to Teknos Group because of their obvious difference in business scale. However, there is point that prove the use of project risk management is more suitable to small scale business than ERM or else.

There are specialized department in Viope and in Teknos. Viope has their technical, sales and marketing departments, while the names at Teknos can be a long list. Teknos applies risk assessment from department-based thanked to their risk management teams. Viope, in contrast, has no skilled and specialized risk management team. Recruiting such a team will not help the management but only increase the cost. Operating the risk assessment within projects Viope has is a good choice so that the responsibility of risk management can be shared by the project leaders with the management board. Project-base risk management processes, at the same time, bring better risk and management responsibility awareness to Viope employees than lower labor level of Teknos Group, for example the manufacturing workers whose involvement is relatively little due to the work of their higher management team.

Risk management at Teknos Group is categorically ERM, however, functionally and systematically ERM than the procedure at Palta Oy; and definitely in another extent when comparing to project risk management at Viope. Procedures at Teknos are taken with managerial and strategic decisions. The risk management at Teknos are most sufficient because they have a detail risk identification scheme and a complete risk assessment table covering the possible threats and opportunities, and also they manage to transfer the risk to another party along with business insurance. When taking business scale and financial capability into account of risk management, it is not necessary that Viope has less sufficient risk management strategies. Viope, likewise, goes through the risk management from management down to employees. Processes of the risk controlling, similar when comparing to Palta, engage more employee involvement into the procedures than Teknos.

4.5 Suggestion on Effective Justification in Project Risk Management for Viope Case and Other Micro Companies

It is clear that small businesses are struggling with the idea of risk management, even though they carry out risk assessment and controlling processes at some points during their operational management. Due to limited resources, micro companies divide their capacity by projects in order to achieve goals in a smaller and more adaptable scale. However, the limited resources such as business size, non-theoretically based management, and unsystematically structured strategies against risks; together with numerous external factors, cause severe failures for micro companies, in term of poor performance in risk management. This chapter, based on the research data and findings, covers suggestions for micro companies towards effective project risk management.

- Goals and objectives – information clarity

Small businesses have the assumption of low level of necessity to systematically describe or explain the visions and objectives of companies due to the impression that with their small human resources, it is easier for employees to quickly learn the ideas without the need of effort spending from management point. Nevertheless, for a micro company with approximately less than ten people, occasional training sessions would not consume much of financial resources while bring back foreseeable pluses. Clarify the goals of the company is essential part to achieve effectiveness not only in risk management but in the long run of operations as well.

Concerning project companies like Viope Solutions, project risk management should be the core of the company management. Conferences, seminars or meetings focusing on company's value and existing risks towards those values ensure understanding of the situations, of risk management terms; provide platform for employees to discuss and brainstorm improvements in the wholly business point or on particular projects.

- Leaders' requirement toward risk management

Effective project management and risk management within projects depends heavily on experiences of project leader, or in smaller business scale, companies' management. A company might employ diversifying projects to integrate different networks and utilize available resources. The broader fields projects can reach, the more competencies are required for managers. Management of project risks is based on experiences, but it also needs to be based on systematic methodology and a strong foundation of risks and project risks understanding. Parallel with training employees in terms of uncertainties and risk management, leaders of micro companies, who literally involve in almost every project, training for these leaders to fully understand the models in the trends of current risk management schemes is necessary and essential.

- Project risk management model

An effective project risk management is based on four phases of input, process, output and review (Wideman, 1992). Regardless of models that companies choose to apply to their risk management, there are certain factors that matter.

  - Attitude towards risks

There is a tendency in small business to take risks as opportunities to grow while ignoring evidence of failure. Small businesses like SMEs and micro companies seek support from bigger organizations or governmental sources, and use the support for implementing projects. With the view that their own resources are not damaged even in case of fatal project failure, they strike to take risks in hope of growing stronger. This is the case where management needs to carefully consider their attitude in choosing and taking risks. Overconfidence in capability is dangerous. When one project fails, it can affect the team's attitude towards other project, and in the worse circumstances, lead to further failure. Managers are challenge to judge the overconfidence and not let the risk taking jeopardize the success possibility.

- Communication about risks

A common reason for project failure is when project workers or even leader are not fully aware of existing risks. This could be the consequence of unprepared risk identification step, but could be the lack of communication or inappropriate project culture. Cases are that people involved in one project are not updated with information that arises along the implementation process.

To work against this issue, leader can apply sufficient and efficient channels of communication: reports, changes notice board, meeting minutes and discussion platform for staff.

- Prioritize risks

Looking at the case of Viope Solutions Ltd, they treat new promising projects equally for the sake of simplification in management and work flow. However, it doesn't deliver the best outcomes. Some projects are more promising than others and some projects have more risks than others. Projects and relevant project risks need to be evaluated and ranked. The criteria to prioritize projects base on its requirement in resources and the expected benefits. The criteria to prioritize risks are to evaluate theirs impact and the likelihood that risks will occur. Measurement and prioritization techniques should be used consistently.

- Plan and apply risk responses

As mentioned, the case company assesses and controls risks by experiences. However, even the most experienced manager can get wrong. Therefore the need to plan and outline in advance risk management steps is critical. A proper plan to work against risks should cover detailed information of risks, responsible person, costs and schedules of responses to different risks, as well as alternative actions in cases of change. Planning risks help save resources for unexpected events.

Viope Solutions Ltd spins their decision making around the cash flow, a process which usually requires additional time. In the respect of planning process for project and project risk management, estimation of time and schedule needs to be planned even at the very beginning of project consideration.

In summary, project risk management with proper implementation can assist the project success with huge benefit. It should be in the interest of business leader and project manager to evaluate and customize a suitable project risk management strategy for their project.

5. DISCUSSION AND CONCLUSION

The aim of this research is to design user-friendly comments and suggestions for SMEs and micro companies regarding project risk management, and specifically to be the case study for Viope Solutions Ltd. Company models, SWOT analysis, risk evaluation and assessment within the case company were investigated through interviews in order for the author to conclude on recommendations for Viope Solutions Ltd. In addition, literature review of related topics to risk management and project risks were presented to ensure in-depth understanding of the thesis background. The theoretical reviews, together with the author's knowledge of the case company bring a wider picture and allow the author to implement the interview and give recommendations. In the result section, the author makes several suggestions for the case company and other micro companies to implement project risk management effectively.

The researcher carries out interviews with management team from the case company, and with member of management board from two other organizations in order to gain broader data of risk management and to be able to compare and conclude suggestion for risk management at the case company. Viope Ltd., Palta Oy and Teknos Group Oy are three businesses in different sectors and have different scales: from micro company to a medium size enterprise, and to a large corporation size. The aim of the author when conducting the interviews with Palta and Teknos is to use collected data to reflect, compare and to conclude that the risk management strategy are to be justified by size of the corporations. Teknos Group Oy was the only interviewed audience that outsources their risk management to a service provider (KPMG). Nevertheless, the three companies at the same time use their own risk management source within the organizations. The risk management strategies are proved to differ from sizes of the organizations: detailed managerial processes are carried out in larger corporations like Teknos or Palta; whereas management of risks in small business like Viope is divided into single projects for ease of follow-up.

Due to the confidential issue, the researcher was not able to access Viope Solutions Ltd cash flow reports and financial statement to compare the outcome of projects with and without risk management. However, the given recommendations are trustfully based on the company operations and from the interview data. The result of this research is believed to be helpful for further researches in the field. For further researches, the author suggest deeper data collection concerning financial performance as the figures will help to clarify the outcomes of risk management strategies justified for different projects.

The topic of risk and risk management has become an unavoidable issue on the organization in the context of boomingly internationalized markets and in the era of increasingly diverse forms and processes of business operations. Risk is not new, but an integral part of the every organizational activity. Debates are primarily conducted for risks at corporate level. However, with the small and medium sized enterprise sector's growth and its impact on the society, risks management equally calls for attentions and strategies to this sector.

Project risk management is considered a suitable model for SMEs and micro to adopt and implement, thanks to the match in the nature of project risk management and the organizational operation style of small business.

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APPENDICES

APPENDIX 1 – INTERVIEW QUESTIONS FOR SALE MANAGER OF VIOPE SOLUTIONS LTD: TRAM NGUYEN

Date: May 3rd 2013, at 16.30

Duration: 15 minutes

Venue: Viope Solutions Ltd office (Helsinki)

Interview method: Prepare questions, note taking.

1. So, as the sales manager of the company, how do you assess Viope leadership style?
2. Do you ever feel like you are limited in making decisions concerning sales; or if you want to take away the chances of employees speaking up at some point, for some issues?
3. How do you familiar with risks of this company?
4. How about other employees, do you see their acknowledgement in term of risks and risks management?
5. Is it hard to manage one or two projects and then following closely other project s all at once?
6. Yes, I can see the point. Regularly meeting up and updating information with everyone, together with day to day open communication should work efficiently at small companies, with small number of employees.
7. Do you see any disadvantages in managing risks at project-base?

APPENDIX 2 – INTERVIEW TRANSCRIPT WITH CEO OF VIOPE SOLUTIONS LTD: MIKA LACKMAN

Date: May 13th 2013, at 9:21

Duration: 49 minutes

Venue: Viope Solutions Ltd office (Helsinki)

Interview methods: Prepared topics, audio recording.

Interviewer (Lap - L): *How about we start with the SWOT analysis? So, in your point of view, what are the strengths, weaknesses, opportunities and threats of the company?*

Interviewee (Mika - M): I think our strengths are the flexibility, speed, capability to change and other strength is the long history with the field. The next strength is ahhh… well let's keep those things first and let's come back to them later if there are.

Weakness is our narrow staff, and narrow cash flow and financial background.

Possibility is that the market situation in general is really booming up with this field. And other possibility or actually other strength is that our tool is in technical field, and technically ahead of others'. At the same time, threat could be that, with our narrow cash flow and narrow staff, we can't keep on having the technological edges. We have been able to create a lot of buzzes, from the game stuff, for example, with the game contest. Our threat is that if we cannot execute and use that flow what we have to benefit the cash flow. Threat is also that if somebody is coming from behind and going over with the technical issues, or with the market share. Because the market is now booming up and there will be a few key players. Opportunity is that we will become the key player, and our threat is that there's somebody with higher financial background, or higher supporting organization, they might go over us.

One threat for us is also that if we try to spread our efforts too widely, we cannot get any of them done well, but we end up to just upper average at all places.

L: *Yeah. If the market is too big and you cannot cover all.*

M: yeah, in a way that now we are talking about the game stuff, we are talking about the programming courses, we are talking about the maths, and… in a way all of those they have a different target of interest, or partly different end user and market. And at the same time we are also having a platform that can be generally used for anything; and then if we look at this as a matrix. From the other angle of this matrix, we have a global market: we are working with the African project, we are working with Saudi Arabia, we are working with Singaporean, we are working with the European. And in that sense, with the narrow base that we have, if we try to reach all of them at a same time, we might end up facing a problem of capability.

L: *Yes, I also think about that. We have different products: game, programming, math, and the recruitment. But somehow the recruitment one is left behind, cause we don't currently have the resources to develop to the market. So that is one of the issues.*

M: It's already an issue. But at the same time, we can look at the one as a risk or as an opportunity. What we do is we can let it live independently without pushing efforts for that. In longer vision of the company, of the products that we are providing, there are tools that might be combined together. So in that sense, it's wise to let it live independently. If there is a need or any experience for that, anyway it will not take much effort from us. And later on we can combine this Recruitment product back to the main business once the time is right and we have the resources. So we handle the risk by letting it be there and not cutting it totally. In 2 years, if we are stronger and our business is coming through, then it's time to combine.

Actually, we are letting the risk happen, but in a control that we use it once the time is right.

The same thing is part of the risk assessment. In general, if we choose only one channel of our products and concentrate on that, let's say Programming courses, a very narrow field. Basically we can be very successful of that field, and we can get the highest experience on the field. That could be possible, but with that kind of strategy, we have very high risk of ending at a wall where we cannot develop any more, or ending at a situation when somebody competes over us. In that sense, we have chosen to broaden our business with more products, for example the upcoming mathematic tool.

We are trying to open more roads to reach the higher-level of decision makers. Do you get what I mean?

L: *Yes. I'm building up the idea that, besides our main products such as programming or gaming subjects, more other technology product in line can help us utilize the customer database, the base that we have been building up until now, and grow bigger, or stronger. It could be a risk, but it's also an opportunity that we have decided to catch.*

M: Yes. We are spreading our market potential further by taking the newest product on board. The important point why we choose Mathematics as the new product is that our tool has been sold to so many groups of people but it never ends up to the leaders of the universities/schools. So now by spreading our service a bit, we are trying to getting closer to the top end decision makers.

L: *And the higher it can get, the broader the information will be spread around, meaning the bigger profit from sales we are looking forward to.*

M: Exactly. So as a manager, I see the choice of this mathematics tool as a new path, and as part of risk management, to work against the risk with only one main product.

L: *Besides the risks that arise from different single project, what about the most common issue of companies in technology field: intellectual property. How do you evaluate this issue in term of risk management?*

M: I split the issue with different type of problems. The first problem is that some other companies also in technology field get in with the speed and make the same product. With that one, in our level, you just can't do anything. We evaluate patent, but it really calls for a huge amount of effort, energy and expenditure to follow the patent issue. To the scale of our commercial activities, the outcome doesn't match with the input.

The game is different for big corporates like Google, Nokia, Apple when they have the capabilities to start the patenting work and follow up with the cases against infringement of intellectual property.

We believe that we can turn down the risks from same scale competitors by collaborations with them, so that we have a better developed product, and we reduce the competitors from the lists.

L: *Okay.*

Next, let's talk about the methodology, or consultancy service, or namely tools to evaluate, assess and manage risks.

M: I can say that we do not really use any specific kinds of those mentioned. The risk management requirement in our company is narrow. I might have had some relevant courses to risk management in the previous years, but I don't remember actually any theoretical base for that. Our risk management is coming up from the experiences. Been leading quite a few projects, working with different companies and partners, and experiencing with different fields of businesses, I rely on my own experiences, a lot. I kinda "smell" it when there's something up.

But we do handle risks in a way, that we very tightly follow the cash flow, for all the decisions. Even though we have a plan, a strategy to do something, when we have to decide some activities at certain time, we still never execute any decision before we check it through the cash flow, to ensure that we can carry that one. So that the main theme to handle the business risks and opportunities, in addition with the experiences.

L: *Yes I got that. But wouldn't it make the preparation time, the planning time for any activities be shorter, as you need to check through the budget of the ongoing projects and find a seat for the upcoming ones?*

M: Yes, the preparation time gets shorter, that's definitely true, and that creates some problems for other stuff to live with it, with limit in planning times. But once people are aware that this needs to come through with the cash flow, they still can follow the work with the times allowed.

L: *I also agree that once you work in an organization, you'll get acquaintance to the organization culture , for example how the decision are made, how it's based on, then you kinda just follow the working code.*

M: I feel that, comparing to bigger organization, the decision making process here is at the same time disadvantage and advantage. Disadvantage is definitely because of the timing, time for planning and preparation is shortened. Advantage is the flexibility, the creativity that often comes with a push of time. The end result might even be better.

L: *About project risk, or project risk management. You mentioned at one point that one risk of Viope is the lack of personnel. I understand that staff in a micro company can be multi-functioned, managing one project while supporting another project. So how and at what level are the staffs aware of risks from crossing project? For example one person might not be able to participate in the brainstorming sessions of two projects they are working with, if the sessions happen at the same time?*

M: The answer changes with each position of personnel I guess. For example with key person like the sales manager, she fully have the capacity to observe operations from different department, like sales, marketing and technical, and get to follow the happenings of different projects at one time. For other employees, some might not be able to understand why things are changed in particular way, because they just follow the orders and suggestions. This is a risk concerning the personal aspect. And the only solutions we have now is communicating: weekly meetings and memos of meetings to keep people up to date.

L: *Okay. So how do you see the difference of managing the business risks by wholly observation of the organization, and managing risks within and by projects?*

M: I think we split to recognize risks by projects and evaluate the risks within the project objectives first, then comparing those risks at a general level, through the cash flow and decide on the possibility to go further. I would say that depending on the size of the project, the margins of cash flow we have for one project, the willingness to take risks go up and down within the same rate.

L: *That illustrates for the discussions that smaller businesses are more willing to take risks than bigger corporates, and the willingness to take risks is the pushing source for the growth of one economy.*

M: I totally agree. At the first stage, the decision is whether to touch the market; then it comes how to attract the market.

L: *So the small businesses actually can be called the risk takers?*

M: In a way, yes. I have come to the point of acknowledge that even though from outside, it looks like there is no or little risk management, from the inside, the risks are fully controlled at every level of decision making.

L: *As the leader of the company and also the direct manager to almost every ongoing projects, and as you mentioned that you manage risks by experiences, have you ever been in the situation to find out a risk or an uncertainty that you hadn't expected at the starting point of the project?*

M: Yes that happens. Actually when there's any project we see as an opportunity for our growth, and if me and the co-founder, we do not sense any adverse or severe risk, and the required investment stays at a small amount, then we decide "let's take the first step to see how it turn out, and decide on what's next later".

L: *That's actually the idea of project management.*

M: Right. If I take the previous game contest as an example, there was uncertainty that we pointed out at the beginning of planning the project, and we were not able to calculate the level of that uncertainty. However during and after the implementation of the contest project, the uncertainty turned into losses, and definitely that was a risk we did not well recognize at the beginning. That was the experience and we now have one more risk to add into the list for the next time implementing the same project.

L: *Once again I have to say I agree that risk management comes from experiences mostly, and especially in the case of SMEs and micro companies.*

M: Yes, I assume smaller businesses are more or less "going with the flow" in term of risk management.

L: *Maybe the last question. Let's look at a way to secure the business. What is your point in insuring the business, or the projects?*

M: For the business, systematically it needs to be insured. For the projects, I don't fully know the packages that insurance firms offer, for example the minimum capital requirement for a project so that they would agree to insure. In another hand, I suppose for the size of micro companies like our, the scale of the project is not big enough, and the funding we have normally comes from supporting organizations, so insurance for project, in my point of view is costly and does not worth the expense.

L: *Do you have any comments and suggestions on the theme of risk management for my thesis?*

M: Not really. Only one notice that: you should state in your paper that the area of risk management that you research about is mainly business risks, but not natural hazards like some disasters, etc.

In case you have any questions concerning the topic and Viope, do let me know and I will try to help.

L: *Thank you, for now I believe I gather pretty much necessary information. Thanks again for your time and your help!*

APPENDIX 3 – INTERVIEW TRANSCRIPT WITH CEO OF PALTA OY: RIITTA VARPE

Date: 28th May 2013 at 19:00
Duration: 30 minutes
Venue: Mattolaituri coffee shop, Helsinki
Interview method: Prepared topics, audio records

Interview (Lap – L): *Can you introduce me with Palta Oy leadership style?*

Interviewee (Riitta – R): Yes. Palta Oy is a medium-sized company working with the employment issues among service sectors employers in Finland. We have roughly 50 employees at the moment. We have a management board including me and several other members with their own expertise fields.

L: *How is the term of risk management familiar to you and the management board?*

R: Risk management is one of the important tasks that we follow closely. I believe the management team as well as I can discuss risks and risk management in our organization confidently.

L: *How about your staff? How well do they understand the risks that the organization exposes to?*

R: The employees carry their part of risk management in a way that they fill in a report with detail of risks that they suspect to happen, and risks that have happened during the month, together with the consequences of those. By this means, we maintain an understanding of employees to risks of Palta, and also management get to know possible risks that we have not put on the lists.

L: *That is absolutely an effective strategy to manage risk: looking at the risks from the management down to the employees, and then taking the voices of employees into managing risks.*

R: Yes it is. The risk management process, I believe, is covered more detailed.

L: *May I ask the detail of these report, I mean the angle of risks and involvement that your employees need to put into the report?*

R: I have to say the information is confidential and I cannot share with you. However, I can share that we use a sign of risk rating, like the traffic light. That’s when there are no significant potential risks rising, the employees mark to the green light; when there are possibilities, but with low chances, of risks and uncertainties, with low influences to the organizations, the yellow light is marked; and when there are suspicion of dangerous risks, the red lights are used in these reports. The reports are summed up and submitted to the management board to review and make decisions or changes necessary to the risk managing process.

L: *After summarizing these reports and making risk management decisions, will the board inform the employees of those decisions or of the processes come after those reports summary?*

R: Usually, no. We keep the management and the decisions making process at the level of superior, not informing to subordinate allows us to secure from the risk of information publicity, which can pose a heavy threat to the organizational image. The employees, however, will be noticed of the risk management scheme in an annual basis, as these strategies are included in our annual report.

L: *Can you name some types of risks that exposes most often to Palta?*

R: I would say they are financial risks, human resources risks, risks from political issues, and risks from the outcome of our work comparing to members' expectations.

L: *If you have to choose among those risks, which one would you choose to be the one that needs most of management work?*

R: They are all equally important and it is not practical to choose one over another. These are in different types and we have to follow all of them. The financial risk is essential as without membership fee, we are not able to operate, as we don't have the cash flow. The human resources risk, in another way, is vital to our organization image: we work as consultants and policies makers for our members concerning employment matters, so if there are any issues concerning our organization's employees, we couldn't possibly convince our members and customers about our proficiency and professional services! Outcomes of services provided to members and customers work the same way, if there is no success, for example, in the legal services in court for our customers, we will have to reimburse the fee, and we will lose our position as well. Political risks, are hard to avoid, but we have to work with them, since we do lobbying activities with the employee union, for example.

Concerning our strategy, and reflecting in the model of risk management that we use, which is ERM, I would say the key one is political risks. They are always there, and they are rising up as of the work of those associations for employees, the trade unions, and from the government of course.

L: *You mentioned the ERM, Enterprises Risk Management. Is it done by your own organization or by outsources?*

R: Oh we manage the risks by our own, as you know, with our employees' reports and with the management work as well.

L: *I see. So how do the management divide the process, is it by types of risks, or by departments, or by projects?*

R: We don't really have separate department in our organization, except for the communication department. Otherwise we divide our organizations into groups of experts, and they corporate in different teams when working with different customers or cases. Anyhow, the risk management is decided by the types of risks that exposes to our organizations mostly.

L: *okay, I understand. Thank you for your answers.*

APPENDIX 4 – INTERVIEW TRANSCRIPT WITH CHAIRMAN OF THE BOARD OF TEKNOS GROUP OY: PAULA SALASTIE

Date: 3rd June 2013 at 17:00

Duration: 15 minutes

Venue: Teknos Group Oy Finland, meeting room at head office, Helsinki

Interview method: Prepared topics, audio records

Interviewer (Lap –L): *Thank you for your time today, and your help with this interview, Paula.*

Interviewee: (Paula – P): You're welcome.

L: *How are you, or the board, or the management teams in general familiar with risk management?*

P: Oh, risk management is certainly part of my daily tasks. Are there anything specific you would like to know e.g. safety of the work place, environmental issues, market research, property issues?

L: *Thank you. Firstly I would like to know about the common types of risks at Teknos.*

P: We are facing certain number of risks, such as the liability risks, the human resources risks, the environmental risks, political risks, market risks, and many others.

L: *For a big company like Teknos, there are definitely numerous risks to follow and manage. Do you have your own risk management team, or do you outsource the work the any service providers?*

P: We have both, actually. We use services of KPMG, and then we have our people who dealing with risks in each of our subsidiaries and in the board of management of course.

L: *With KPMG, do you have them assess Teknos risks in a period base, let's say yearly?*

P: Oh no, it is not so. We have the risk assessment carried out by KPMG mostly when we have big issues, for example, new market open or new plant purchasing. That depends on the happening of these events; it could vary from few months to 2 or 3 years. Meanwhile, we have our risk measurement and management done by Teknos people, and by me.

L: *I see. So how does the management process work? Is it based on the risk types, or by else?*

P: It depends on the departments. For example, with R&D department, the risks are assessed in a whole of the investment and the outcome of the research and products development. For others, we manage risks by the types and also comparing risks to different range of products.

That is to say locally or regionally, I mean if I talk about how risk management is done in Finland, or in Poland, or in Russia, or in other Teknos international offices. For me, as the chairman of the board of Teknos Group, I compare the risks frequency and levels among these production plants and make sure that the management in each place is done properly.