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**BUSINESS POSSIBILITIES OF FINNISH PULP  
SECTOR IN VIETNAMESE MARKET**

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<p><b>Abstract</b></p> <p>Pulp and paper industry is a very important industry in many countries. The birth of paper was a mark of another level in science and technology, bringing human beings to new civilized era. Although pulp industry plays an important role in economy, its scale in Vietnam is considered small compared to many other countries. Pulp production technology is at a low level and has developed slowly. Moreover, the pulp and paper production process exhausts a significant amount of waste in solid, liquid and gas, which needs a high-tech process to reduce the pollution and be friendly with environment. Because of the current situation in Vietnam, paper and pulp industry is in transforming period with high potential business in pulp sector, which is demanding the developed science and high technology to meet industry requirement as well as environment issues. Therefore, this thesis is created to assist Finnish pulp and paper enterprises evaluate the potential of Vietnamese market in pulp sector.</p> <p>The objectives of the research are to evaluate the possibility for Finnish paper enterprises to operate technologies and equipment in pulp sector in the Vietnamese market, and to suggest these companies different market entry options to be successful in extending the business to target market. Due to the nature of the study, qualitative research is applied with the method approach is desk research where the secondary sources of data are used, and interview for primary source. In the theoretical framework, data are collected mostly from published sources such as books, articles and earlier studies. In the empirical part, data are collected from case studies, business online sources, pulp and paper industry online sources and Vietnamese government publications; and the information provided by an interviewee. The core content of the empirical part are the analyses of Vietnamese pulp market and Finnish enterprises. Additionally, pulp material function and on-going projects in Vietnam are supported along with competitor analysis.</p> <p>In conclusion, after analysing and synthesizing, the author suggests three market entry modes for Finnish enterprises to successfully extend the business to the Vietnamese pulp market, among which the cooperation with Vietnamese government institutions is a priority.</p>		
<p><b>Keywords</b></p> <p>Market research, pulp sector, paper industry, Finnish enterprises, Vietnamese market</p>		

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# 1 INTRODUCTION

## 1.1 Background

Pulp and paper industry is a very important industry in many countries. The birth of paper was a mark of another level in science and technology, bringing human beings to new civilized era. Paper is a multiple-function product which can be used in different fields such as culture, education, industrial and agricultural production and daily needs of people. Some civilization might be evaluated based on paper consumption per capita. Therefore, paper industry in Vietnam, having a long history of developing, is endowed significantly by Vietnamese government. (Habubank securities 2009, 2.)

Although pulp industry plays an important role in economy, its scale in Vietnam is considered small compared to many other countries. Pulp production technology is at a low level and has developed slowly. In Vietnam pulp production capacity meets only half of the demand for paper production. Therefore, the paper industry has always had to depend on imported pulp source. Moreover, the pulp and paper production process exhausts a significant amount of waste in solid, liquid and gas, which needs a high-tech process to reduce the pollution and be friendly with environment. According to the United Nations, Vietnam is one of the five countries that have suffered heavy casualties of climate changing. Therefore, recycling and reusing material in the industries become the urgent issues for Vietnamese government. Because of the current situation in Vietnam, paper and pulp industry is in transforming period with high potential business in pulp sector, which is demanding the developed science and high technology to meet industry requirement as well as environment issues. (Habubank securities 2009, 2; EnDev 2014.)

The reason why the author came up with the topic is that she has studied Pharmacy and Chemistry as the major in Vietnam and then studied International Business in Finland; moreover, she is very interested in forestry field. All the these factors influence her to combine what she has learned and what she is interested in. Even though the Vietnamese market is a potential market with heavy pulp demand, Finnish companies have to face with a lack of information how to turn potential into tangible business opportunity. This

thesis is created to assist these companies understand Vietnamese market background and general pulp situation to access to this challenging market. Last but not least, the thesis is the premise for the author to purchase her career in forestry field in the future.

## 1.2 Objectives and research questions

The primary objective of the research is to evaluate the possibility for Finnish paper enterprises to operate technologies and equipment in pulp sector in the Vietnamese market. The secondary objective is to suggest different market entry options to these companies to be successful in extending the business to target market. Because of these two objectives, there are two main questions proposed in this thesis.

**Should Finnish pulp companies extend the business to Vietnamese market? If yes, what kind of market entry option should they use?**

In order to achieve the objectives and find the final answers for two main questions, the following sub-questions are identified in Table 1.

Table 1: Research questions and sub-questions

Should Finnish pulp companies extend the business to Vietnamese market?	What is the situation of Vietnamese market?
	What is the possibility to develop pulp market in Vietnam?
	What are obstacles for foreign companies doing business in Vietnam?
	How does the Finnish pulp sector function?
	What makes the products of these companies competitive with companies operating in Vietnam?
What kind of market entry	What are the policy and investment in Vietnam?
	How do the on-going projects in pulp industry operate and succeed?

option should Finnish companies use to successfully enter in Vietnamese market?	Who are the most important competitors and who have the highest market share in Vietnam pulp industry?
	What is the best market entry option for Finnish companies?

### 1.3 Scope and limitations

First of all, as can be seen in the upper part of Table 1, the thesis is limited to pulp potential despite there are pulp, paper, board and other cellulose-based products in paper industry. Secondly, it focuses on giving Finnish companies a view of Vietnamese paper market, especially in pulp sector. Hence, those who want to extend their business to Vietnamese market need to carry out further research plan. The last limitation is that although the thesis is built as an implementation plan, it is limited to market entry modes, other factors such as finance, sales and marketing and supply chain management will not be included.

### 1.4 Theoretical framework

According to Merriam (1998), a theoretical framework articulates the theoretical stance that a researcher brings to their study. A theoretical framework is applied as a lens to provide structure to express relationships and interactions between key variables, constructs and phenomena (Wood and Palmer 2015, 35). In this research, the theoretical framework is built under the form of a market entry plan in which proficiency in analysing tools and market are critical. There is no specific field of knowledge mentioned. In reality, there are three main analysing tools which are PESTLE, Porter's Five forces and SWOT analysis. In macroeconomic point of view, PESTLE analysis of Vietnam is applied; while from microeconomic point of view, external analysis (Porter's Five forces) and internal analysis (SWOT) of Finnish paper enterprises are used in this study.



The theoretical framework of the study is illustrated in Figure 1 below.

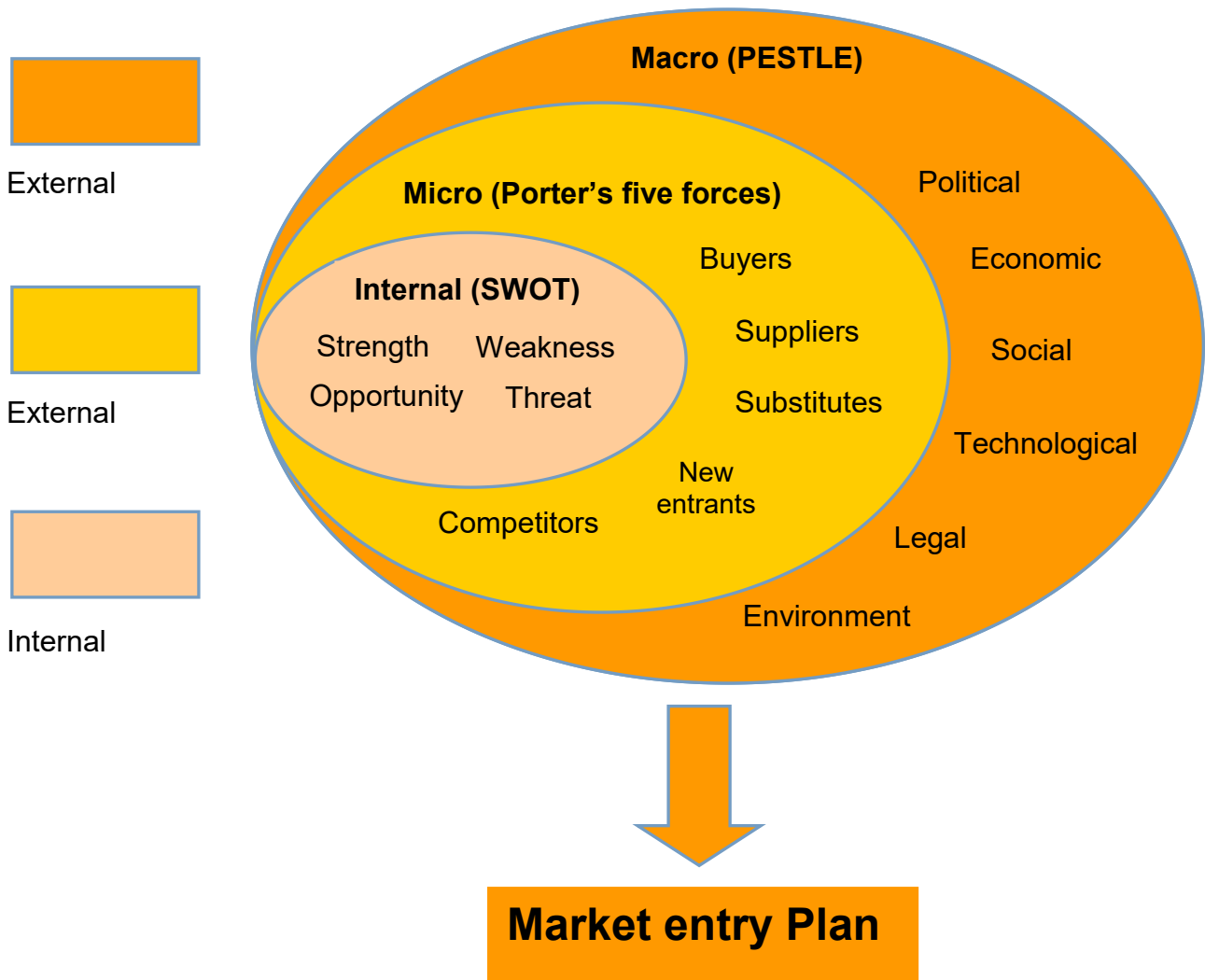


Figure 1: Theoretical Framework

## 1.5 Research Methodology

This chapter will focus on interpreting the research design with the methodology and techniques used in the thesis to achieve the objectives. The research method will be chosen appropriately with the suitable research approach to carry out a good quality of research study. Additionally, the way of collecting data and processing will be described to have a comprehensive plan and come up with the final results. After all, the chapter will provide an overview of program of research which guides the readers in the process of collecting, analysing and interpreting observations.

To be specific, suitable research methodology is designed as the figure 2 with Research methodology, Data sources and Data collection.

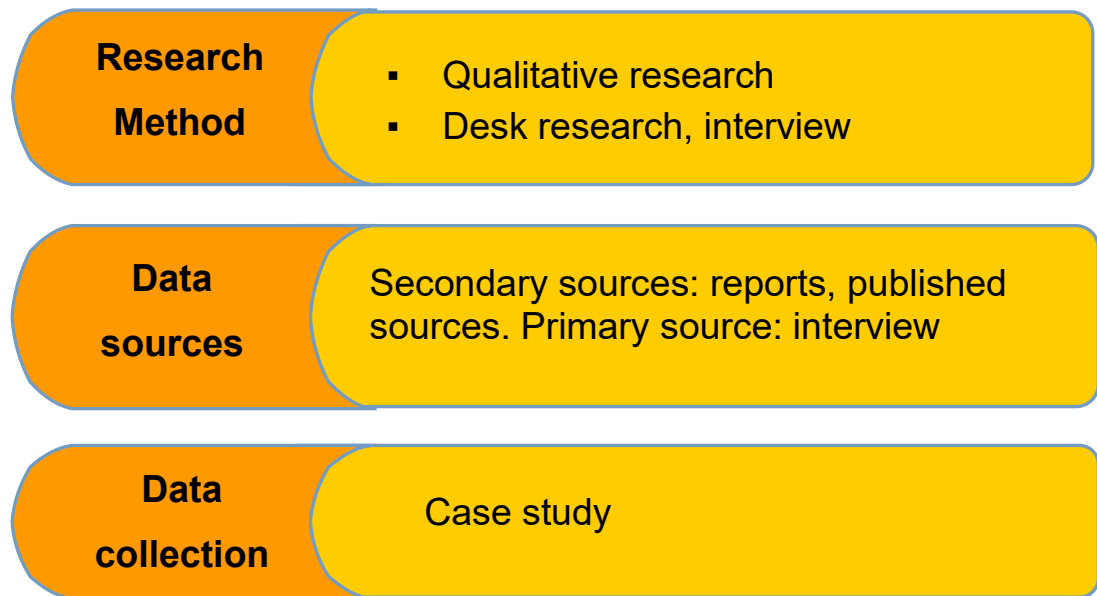


Figure 2: Research Methodology

### 1.5.1 Research methodology and methodological approach

Due to the nature of the study, qualitative method is the best method to examine the objectives of the thesis. The reasons for doing qualitative research and using qualitative methods are that firstly, the objectives of the research project will be partly based on background and experience of the author. Secondly, the research focuses on new business idea development, exploring market segment and investigating current or potential brand positioning. The methods apply well in this case for exploratory research, when little has been published on the topic. Lastly, the qualitative methods are suitable for studying organizations, groups and individuals.

The method approach chosen in the research is desk research which provides information from published sources. Desk research is a research technique which the researcher collects data from existing sources. Desk research is the collection of secondary data or data which can be collected without fieldwork from internal sources, the internet, libraries, trade associations, government agencies, and published reports. It is frequently carried out at the beginning of a study as a stage-gate to see if more costly primary research is justified. Desk research is considered as a quick and low cost technique with the mainly cost in executive's time, telephone charges and directories. However, if the researcher does not have the proper knowledge of how to research, it

could be completely waste of time and money. (Management Study Guide 2015.)

The second method approach used in this thesis is interview. The purpose of this method is to explore the views on specific matter, which provides a deeper understanding in regards to the field of research. The questionnaire used in this research is semi-structured, consisting of several key questions to define the areas to be explored. (BDJ 2008.)

### 1.5.2 Data sources

Data sources are the carriers of data (Ghauri and Gronhaug 2005). There are two types of data sources which are secondary and primary data. In this thesis, the secondary data are collected with literature sources which are earlier studies on and around the topic, including books, journal articles and on-line data sources for theoretical part. In addition, in empirical part, the primary data are collected from personal observations, unpublished source provided through face-to-face interview.

The key sources of desk research are published reports, articles and statistics. In the thesis, the basic data collected for PESTLE analysis, Porter's five forces and SWOT analysis part are from internet which is often free and increasingly available. It is called as online desk research. The researcher approaches to dig out the relevant information from internet in two ways, one is directly browsing the specific information from pulp and paper industry, for example saigonpaper.com (Paper cooperation in Ho Chi Minh city), vinapaco.com (Vietnam paper cooperation's website), congnghegiay.com (Paper technology website), vppa.vn (Vietnam Pulp and Paper Association's website), vietpaper.com.vn, forestindustries.fi, pulppapernews.com and from business sites for example vneconomy.com (Vietnamese economy website), vietstock.vn (website of stock statistic in Vietnam), vinanet.vn (Vietnamese business website), vinachem.com.vn (Vietnam Chemical Corporation's website); then extracting the information out of these sites. Secondly, using the various search engines like google.com, yahoo.com, infoseek.go.com, altavista.com etc, for modulated searching (Management Study Guide 2015).

Moreover, the data can also be collected from government published data, which is related to social, financial and economic aspects. In the thesis, to

analyse PESTLE, government published data is used, for instant gso.gov.vn (General Statistic Office of Vietnam), nhanhieuviet.gov.vn (Ministry Industry and Trade's website).

Additionally, researcher also finds information in reports from Vietnamese companies related to paper and pulp industry, such as from Habubank Securities, An Binh paper or Tan Mai paper company, etc. These information will be used for PESTLE analysis and Porter's five forces. Besides, researcher also seeks for Master Degree thesis in pulp and paper sector, which are *Đề tài Ngành giấy Việt Nam trước những thách thức hội nhập kinh tế khu vực* (Vietnam paper industry faces with the challenges in regional business integrated) of Bui (2013), *Tiểu luận Ngành công nghiệp Giấy-Bột giấy ở Việt Nam* (Pulp industry in Vietnam) of Hoang (2013), *Luận văn Xuất nhập khẩu giấy và bột giấy tại VINAPACO: Thực trạng và giải pháp* (Import, export pulp and paper of VINAPACO: Issues and solutions) of Nguyen (2013), or *Chuyên đề Giải pháp phát triển vùng nguyên liệu giấy đến năm 2020* (Strategies to develop paper material regions to 2020) of Pham (2014).

Last source of secondary data but not least, there will be books to define the way how to research and enrich the information which is more academic and trustful for analysing tools. For example, the books for research orientation are *Business Research Methods* of Krishnaswami and Satyaprasad (2010), *Research methods in business studies* of Ghauri and Gronhaug (2005), or *An introduction to qualitative research* of Flick (2009). There are also some books used for empirical part, for instant *Foreign operation methods : theory, analysis, strategy* of Welch, Benito, and Petersen (2007), etc.

Furthermore, primary data is provided by Mr. Phan Chi Dung, the Director of the Department of light industry, Ministry of Industry and Trade of Vietnam. This data is used to give the audiences the information about the situation of Vietnam Pulp and Paper Association (VPPA) and the pulp demanding of Vietnam paper industry. In detail, the researcher made an appoint Mr. Phan Chi Dung in January 14, 2016 in his office in Ministry of Industry and Trade head-quarter. The reason why the researcher planned to interview Mr. Phan because firstly he is the Director of Department of light industry, who controls and manages pulp and paper field; secondly Vietnam paper and pulp corporation which is the biggest paper corporation of Vietnam, supporting by

government is under the control of Department of light industry, so that Mr. Phan was an potential interviewee who could help the researcher collect more valuable and unpublished information of research filed; the last but not least, the researcher has a close connection with Mr. Phan, which is very important to do business in Vietnam, it helped the researcher could contact with Mr. Phan and get the information easier. To save the time of the interview and make it more efficiently, the researcher contacted to Mr. Phan through email before and sent him the questions that the researcher would ask in the interview. To be more specific, the questions asked during the interview are listed below:

1. How many projects have happened this year? With which companies, countries? What are they about?
2. How do you evaluate these projects? Are they effective? Do they help paper industry in Vietnam develop?
3. Which projects will be run next year? What is the target of VPPA when they run these projects?
4. What is the biggest problem of VPPA now in producing pulp?
5. What is your plan to improve it?
6. What kind of technology VPPA is using are from foreign companies? Which countries?
7. Would VPPA like to find partners who could provide you high technology?
8. Does the company mill have trade with Finnish companies?
9. Would you like to cooperate with Finnish companies to upgrade the technology?
10. Which companies in the VPPA need to import a large amount of pulp?
11. Which companies are potential to produce enough pulp for themselves and able to sell pulp to other companies?

### 1.5.3 Data collection

Data collection is a process of gathering and measuring information. The case study approach associated with descriptive or exploratory research with no restriction of areas is particularly useful when the concepts and variables are difficult to quantify and the phenomenon is difficult to study outside its nature setting.

After collecting data by desk research (secondary research), the researcher would analyse the data, generate, besides collect data from interview and observe them (primary research). The result of suggesting market entry modes would be based on the data collection from secondary and primary research.

To be specific, after analysing the situation of Vietnamese market in political, economic, socio-cultural, technological, legal and environmental aspects, the researcher continued to collect data of pulp sector in Vietnamese market by supplier, buyer, new entrants, substitutes and competitive rivalry; then collecting information about Finnish paper enterprises. By understanding the situation in the target market and potential of Finnish enterprises, the researcher could synthesize and suggest the most suitable market entry modes for these companies to extend their businesses to Vietnamese market.

## 1.6 Structure of the thesis

The thesis consists of eight chapters, basically being divided into theoretical and empirical part. Chapter One provides readers the general information about the thesis, including basic idea of the topic and research structure. The theoretical part can be found in Chapter Two where all applied theories and models are mentioned.

The empirical part is presented in Chapter from Three to Six where Chapter Three and Four analyse the target market to answer the first question of the research: "Should Finnish pulp companies extend the business to Vietnamese market?"; and Chapter Five and Six examine Finnish paper companies with their nature and competences, then suggest the market entry modes to answer the second question of the research: "What kind of market entry option should Finnish companies use to successfully enter in Vietnamese market?".

Chapter Seven presents the final results with the conclusion and suggestion for further study. The last part, Chapter Eight summaries whole process of the study.

To give the audiences a clearer overview of the thesis, the structure can be illustrated in Figure 3.

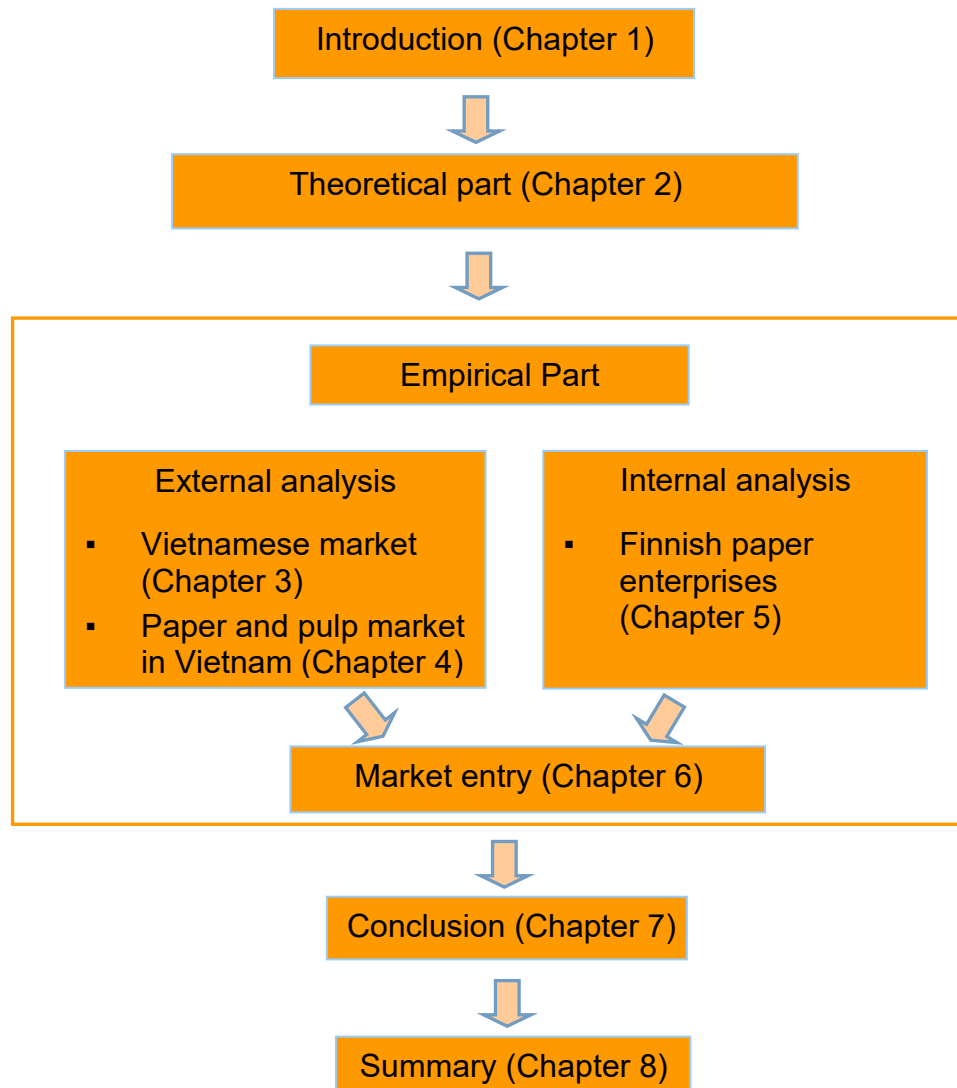


Figure 3: Thesis structure

## 2 ANALYSING TOOLS AND MARKET ENTRY MODES

### 2.1 Internal analysis

Business is war, only if does businessman understand his enemy and himself, he needs not fear of any battle (Vietnamese proverb). In order to enter the new market with full of challenges, it is crucial for the company to understand its own capabilities and competences. Therefore, internal analysis is the first

and the most important step that the company has to take before making any decision. In this thesis, considered as a most common and efficient tool, SWOT analysis is chosen to analyse Finnish pulp companies' abilities.

SWOT, which stands for strengths, weaknesses, opportunities and threats, is an analytical framework that helps the company face with challenges and find promising new market. Strengths and weaknesses include skills, expertise or technological know-how, particular organizational resources, competitive capabilities or potential advantages. Opportunities and threats typically stem from a company's external competitive environment. SWOT analysis gives businesses a unique way to evaluate their position. The outcome of SWOT analysis is to create solid action plan for addressing weaknesses and threads and to highlight and exploit the strengths and opportunities. (Goodrich 2015.)

In SWOT analysis, the aspects which can be mentioned in strengths of Finnish paper enterprises are outstanding technology skills, good relationship with customers, wide distribution channels, high economic of scale, reputed leading brands, good production quality and experienced long-term management. However, there are aspects which might be shown as weaknesses, for example there might be limited managerial skills and experiences, low customer retention, or it could be probably some operation problems and distribution network under-developed, or some companies could have poor market reputation, or they have poor implementation strategies. All of these strengths and weaknesses are internal analysis of the firms. (Essential Tool 2010; Itimes n.d.)

When the strengths and weaknesses are analysed, these enterprises would know what are their opportunities and threats when they extend their business to the target market. The companies could have opportunities in technology advances; product line has extension capacity to expand to meet changing customer needs due to high quality of production for instant; or the companies could take advantages from the target market where the market demand is increasing and they have opportunities to extend new market segments. Moreover, in the new market, they have ability to transfer skills and technological know-how to new products or business. Additionally, by discovering new market segments, the companies could remove the trade barriers, therefore they would have good prospects for further market



development. Beside the opportunities, there would be many threats for Finnish companies access to foreign market, for example, buyers are probably more aware of competitors' products which already match their needs. It could also be changes in demographics consequential impact on product demand; or foreign exchange rates and trade policies affecting overseas markets and value of income. In addition, there could be the increase in sales of substitute products. Furthermore, the market growth could be slower than production requirement or the companies could face with failure of new product delivery or poor product reliability. (Essential Tool 2010 and Itimes n.d.)

However, to avoid misconception of SWOT analysis, all changes of business situation and market conditions need to be considered to have better analysis results.

## 2.2 External analysis

After the first step of understanding the companies' business themselves, the next step is to have a deep look into the external aspects related to the market environment. The tools used for the external analysis are PESTLE analysis and Porter's five forces. These two tools will help the companies understand the target market through four main factors: customers, industry, competitors and environment.

### 2.2.1 PESTLE analysis

PESTLE analysis is an important and widely used tool which brings the companies a big picture of external environment, particularly as related to foreign markets. PESTLE is an acronym for the *political, economic, socio-cultural, technological, legal and environmental* factors. By using this tool to analyse market growth or decline, the companies could understand macro-environment to their strategy is aligned with the powerful forces of change which affects to the position, potential and direction of the business. Therefore, understanding PESTLE is critical prior to entry into a new country or region.

To be specific, political factor is the factor that takes into account the political situation of a country and the world in relation to the country. The elements which could affect the political aspect are ecological/environmental issues, current legislation, future legislation, regulatory body and processes,

government policies, government term and change, and trading policies. (Kachru 2005, 85.)

Economic factor includes all the determinants of an economy and its condition, for example, economy situation and trends, taxation specific to products, market and trade cycles, specific industry factors, customer/end-user drivers, interest and exchange rates. (Kachru 2005, 85.)

In socio-cultural factor, every country is different with a unique mindset which can impact on the businesses and the sales of their products and services. The elements which contribute into this factor are lifestyle trends, demographics, consumer attitudes and options, brand, company, technology image, consumer buying patterns and ethics/religious factors. (Kachru 2005, 85.)

Technology changes every minute, so that companies need to stay connected along the way and integrate when needed to understand how the consumers react to technological trends and how they utilize them for their benefit. Technological trends could be influenced by replacement technology/solutions, maturity of technology, manufacturing maturity and capacity, innovation potential, technology access, licensing and patents. (Kachru 2005, 85.)

In legal factor, legislative changes occur from time to time and many of them affect the business environment. For instant, if a regulation is set up for the industries, that law would impact all the industries and business. In another words, businesses also show the legal environment in its area. This factor includes international law, employment law, competition law, health and safety law, and regional legislation. (Kachru 2005, 85.)

The last factor in PESTLE is environmental factor, the location of countries influence on the trades that businesses do. It's shown in the way that climatic condition affect the trade of industries and the way consumers react towards a certain offering that is launched in the market. This factor includes environmental impact, environmental legislation, energy consumption, and waste disposal. (Kachru 2005, 85.)

### 2.2.2 Porter's five forces

The Porter's five forces tool is a simple but powerful tool for the companies before accessing into new market. By this tool, the companies can understand their power lies in a business situation, which includes the strengths of the companies' current competitive position and the strengths of the market that they are planning to access. (MindTools 2015.)

Five Forces analysis consists of five important forces which are supplier power, buyer power, competitive rivalry, threat of substitution and threat of new entrants. These elements determine the competitive power in a business situation.

*Supplier power* examines the role of suppliers who provide the input of the business such as raw material, equipment and labour. If the suppliers have bargaining power, they will exercise that power, sell their products with high price and squeeze industry profits. Supplier power is high or low depending on the uniqueness of input supplied, number and size of firms supplying the resources, competition for the input from other industries and cost of switching the alternative resources. (Riley 2015.)

*Buyer power* is a very strong force where the customers influence directly to the market. Powerful customers are able to exert considerable pressure to market and demand improved quality and lower prices. The factors which influence into buyer power are number of customers, their size of their orders, number of firms supplying the product, threat of integrating backwards, and the cost of switching (Riley 2015).

*Competitive rivalry* refers to the key competitors in the industry that provide the same or similar products/services. The business will be encouraged to engage in price, investment in innovation and new products and intensive promotion if there is intense rivalry in an industry. Competitive rivalry could be effected by number of competitors, market size and growth prospects, product differentiation and brand loyalty, the power of buyers and the availability of substitutes, capacity utilization, the cost of structure of the industry, and exit barrier. (Riley 2015.)

Substitutes are products or services that meet a particular consumer need but are available in another market. *Threat of substitution* affects the competitive environment and influences in the profitability because consumers can choose to purchase the substitutes instead of the companies' products. The threat of substitution can be shown in the extend to which the price and performance of the substitute can match the industry's product, the willingness of customers to switch, customer loyalty and switching costs. (Team FME 2015; Riley 2015.)

The number of new entrants in the industry will affect the market share. *Threat of new entrants* will be high if barriers to entry are low, and vice versa. Moreover, the position of existing firms is stronger if there are barriers to entering the market. The factors which influence into threat of new entrants could be investment cost, economies of scale available to existing firms, regulatory and legal restrictions, product differentiation, accessing to suppliers and distribution channels, and retaliation by established products. (Riley 2015.)

### 2.3 Market entry modes

To extend successfully the business to a foreign market, the companies have to choose a right entry mode, which will depend on the internal and external analysis. In this thesis, the major market entry modes analysed are classified into three groups: Contractual Modes, Exporting and Investment Modes (Welch et al 2007, 4).

To be more specific, in Contractual Modes, there are Franchising, Licensing, Management Contracts, Subcontracting, Project Operations and Alliances. Franchising means the company sells rights to an existing model of business to another businessperson or company. Licensing means the company gives another company permission to manufacture its product for a specified payment. When the foreign company has no clue about the export market, they could use the Management Contracts mode to acquires operational management services from a domestic company. Subcontracting means the company hires individuals or companies to help perform some activities such as services, R&D, manufacturing, accounting, advertising or legal advice. Project Operations refer to the contract that the company purchases a project of full design, construct and equip a manufacturing/ business/ service facility. The last mode but not least in the list of Contractual Modes is Alliances in

which two or more companies engage in collaborative activity, while remaining as independent organizations. (Welch et al 2007, 4; Martin 2015; Entrepreneur 2015; and Wach 2014.)

Exporting Modes consists of Indirect Export, Direct Export, Cooperative Export. Indirect Export means the companies ship the goods and services to foreign market through intermediaries. Therefore, the companies use Direct Export mode when they don't have to ship goods and services through intermediaries. Another way of exporting is Cooperative Export where the company has collaborative agreements with foreign companies concerning the performance of exporting functions. (Welch et al 2007, 4; Global Negotiator 2015.)

Finally, Investment modes include Branch, Joint-venture Subsidiary and Wholly-owned Subsidiary. Branch is the creation of an organizational unit of the parent company on the foreign market, which is an organizational and legal part of that company. Joint-venture Subsidiary is the creation of a foreign subsidiary jointly controlled (minority and majority interests) by the parent company and a foreign partner. Lastly, Wholly-owned Subsidiary is the creation of a foreign subsidiary wholly owned (100%) by a parent company. (Wach 2014.)

### 3 VIETNAMESE MARKET

This chapter is divided into three main parts. The first part is the overview of the target market - Vietnam and the general PESTLE analysis of Vietnam. The second part will give the audiences the detail PESTLE analysis. In this part, in every factor, there will be analysis of general information of the country, how these factors affect the business aspect, especially the pulp sector. In the end, the trade between Vietnam and Finland will be mentioned in the last part.

#### 3.1.1 Overview

Vietnam is the easternmost country on the Indochina Peninsula in South-east Asia with approximately 331688 km<sup>2</sup> in area. The country is bordered by China to the North, Laos to the Northwest, Cambodia to the South-west, and the East Sea to the East. It is the world's 13<sup>th</sup>-most-populous country with approximately 90.5 million inhabitants (2014). The official national language of

Vietnam is Vietnamese, a tonal monosyllabic language of the Viet or Kinh which is the ethnic group constituted nearly 85.8% of the population. Various other languages are spoken by the rest of 53 Vietnam's minority groups. Vietnam has 58 provinces, of which the biggest city is Ho Chi Minh city with approximately eight million people (2014); and the second one is Hanoi, the capital of the country, with approximately seven million people (2014). (Anthony 2011, 2.)

Vietnam has a long history. It originated in the Red River basin in the first millennium before Christ, then it was dominated by Chinese Empire for more than 1000 years until the 10<sup>th</sup> century AD (938). After that, the country was independent for around 900 years, until French colonized in the 1870s and 1880s. After gaining the liberation from the French, Vietnam was divided into two countries in the mid-20th century, with a Communist government in the North, and the Republic government supported by the United States in the South. This war between two sides has been called as Vietnam War, it ended with the victory of Communism in 1975. (Anthony 2011, 2.)

After the war, Vietnam had isolated itself and experienced an economic crisis in 15 years (until 1995) with the "seclusion" policy, which put the country on the brink of bankruptcy. Thus, the government decided to reform the economy by the policy of Doi Moi (renovation) in 1986, which helped the situation improve. Vietnam established a normal relation with the United States in 1995. Vietnam joined World Trade Organization (WTO) to be formally part of the economies of the world market in 2007. (Anthony 2011, 2.)

### 3.1.2 Political

Vietnam is considered as a country with stable political situation. Because of the history, Communism is one and only party which plays the central role in all organs of government, politics and society. A national congress of Vietnam's Communist Party is held every five years determining the country's orientation and strategies and adopting its chief policies on solutions for socio-economic development. In the 11<sup>th</sup> Congress of Vietnam Communist Party in 2011, Mr. Truong Tan Sang was elected to be the President of the Country - the head of state, and Mr. Nguyen Tan Dung was elected to continue the position of Prime Minister - the head of government. (Anthony 2011, 2-3.)

Due to the stable situation in politics, the investment environment is stable as well, which attracts foreign investors. Pulp industry in Vietnam needs the investment sources to upgrade the machines, technology and to learn from foreign investors the experiments of producing and managing. Thus, Vietnamese government encourages Foreign Direct Investment (FDI) mode for paper industry with many policies to attract foreign companies, engage the competitiveness of paper industry in the market. Moreover, in the 11<sup>th</sup> Congress resolution of National Party (2011), the government pointed out that developing of paper industry was to develop forestry, maintain the production, protect the environment and especially to succeed in restructuring in economic to deduce the poorness in remote areas. The government directed to build paper manufactures near material source areas to decrease the transportation costs, increase raw material quality and increase the price competitiveness. Additionally, the policy of joining ASEAN Free Trade Area (AFTA) of the government also brings the paper industry many opportunities and challenges. The opportunities are to have more markets in ASEAN area, therefore to learn new technology from other countries and encourage to develop the production to compete with other countries; the government also invests more in this industry. The challenges are that the scientific and technological level is lower than the countries' around, the price of paper is pretty high but the quality is quite low, which makes the local products have to compete intensively with other products from countries around. According to Mr. Bui Quang Vinh (2011) - the Head of Foreign Investor, Ministry of Planning and Investment, the demand of pulp and paper is significantly increasing, the government will encourage foreign investors to build factories in Lam Dong, Binh Phuoc and Nghe An. (Anthony 2011, 3.)

However, the situation of one party influences to foreign organizations that the government plays a big role in planning and governing, so that the foreign organizations would have to face with high governmental control when they enter to this market. Besides, according to the Corruption Perceptions Index 2014, Vietnam was ranked at number 119, corruption becomes the most significant political problem. Because of lack of knowledge in local customs, foreign firms are particularly vulnerable to administrative corruption. These firms are more likely to pay for a license or they have some trouble with

documentation and then pay more for procedures, even though it might be illegitimate and unnecessary according to the law. (UKessays 2015.)

### 3.1.3 Legal

As it is mentioned in the overview chapter, after launching the Doi Moi policy in 1986, then joining the WTO in 2007, the legal framework has been changed significantly to be more comprehensive. Especially, in the 1992 Constitution, the central task was to take economic renewal by building the multi-sector and multi-ownership market economy along the socialist orientation, open-door policy and international integration. (Anthony 2011, 10.)

Even though the laws and regulations are reformed to create a friendly business environment for foreign companies, there are still unclear legislations and proper legal framework because of corruption which blights all level of the Vietnamese government and judiciary. Within the Communism Party, there are factionalism and bureaucratic rivalries, nepotism and vast corruption. Moreover, private property rights are not strongly respected, and it could take years to resolve disputes. Additionally, the final authority of all the matters is Political Bureau, the constitutions for freedom of speech and the press have been never intended to be carried out, especially in the fields of human rights and land-ownership law. (The Hesitate Foundation 2015 and Anthony 2011, 10-11.)

From pulp and paper aspect, in the 11<sup>th</sup> Congress of Vietnam Communist Party held in 2011, the government pointed out that the developing of paper industry always went along with the developing of forestry; so that the government would run the project of economic restructuring that pulp manufacturers would be built near to material areas with the purpose of reduce transportation cost, improve the quality of input material, hence increase the price competitiveness. (Tai-lieu 2014.)

In November 18, 2014, Vietnamese Ministry of Industry and Trade approved development planning for paper industry until 2020 with five major targets. Firstly, industrial areas would be built in the provinces and cities where the industry has developed; while factories would be restructured to construct material handling system to handle the waste with large capacity; and technology and modern equipment would be supported to meet the



requirements of environmental protection. Secondly, strong production corporation with the financial potential, large-capacity factory, high quality products and high market competitiveness would be established to increase export capacity paper products to foreign markets. Thirdly, as it is mentioned before, material forest regions would be built to actively provide adequate and stable sources of raw materials for the production of pulp mills. Fourthly, by building material regions, the production corporations could use efficiently land resources, labour force, contributing to poverty reduction, economic and social development. From macroeconomic point of view, it could create more jobs and raise incomes of growers, especially workers from ethnic minorities. Furthermore, the rural infrastructure would be improved, constructed and developed to contribute to the strategy of building better-life countryside. The last target is to contribute to raising the proportion of forest cover, along with the national forest system protecting the ecological environment, minimizing the risk of climate change and preventing floods, droughts and soil erosion, and ensure sustainable development. (VPPA 2015.)

#### 3.1.4 Economic

Vietnam's economy has expanded rapidly after the policy of Doi Moi (1986). In more than 15 years, the growth rate stayed stably around 8% has attracted many foreign investors. The Vietnamese government has committed to economic liberalization and international integration. Restructure helped the economy to modernize, helping to produce more competitive, export-driven industries. Vietnam became an official member of the Association of South East Asian Nations (ASEAN) in 1995, and has concluded a cooperation agreement with the European Community. Vietnam also established the relationships with multi-national financial institutions such as the World Bank (WB), the International Monetary Fund (IMF) and the Asian Development Bank (ADB). Viet Nam has been participating in the ASEAN Free Trade Area (AFTA) since 1996 and became a member of the Asia Pacific Economic Cooperation Forum (APEC) in 1998. Vietnam became an official member of the World Trade Organization (WTO) on 11 January 2007 with the goal was to become an industrial and modern economy by stabilizing the economy, building world-class infrastructure, creating a skilled labour force, and strengthening market-based institutions. In January 2008, the country started

a two year term as an elected non-permanent member of the UN Security Council.

Because of the recent global recession, Vietnam's export-oriented economy has been affected with GDP annual growth rate less than the 7% during the last five years from 2011 to 2015 (Trading Economics 2015). Although the growth rate is not too high in this period, the GDP is still developing stably with GDP in 2014 was 171.22 billion USD. The Vietnam GDP is illustrated in Figure 4 and the Vietnam GDP annual growth rate is shown in Figure 5 for five years from 2011 to 2015.



Figure 4: Vietnam GDP from 2011 to 2015 (Adapted from Trading Economics 2015)

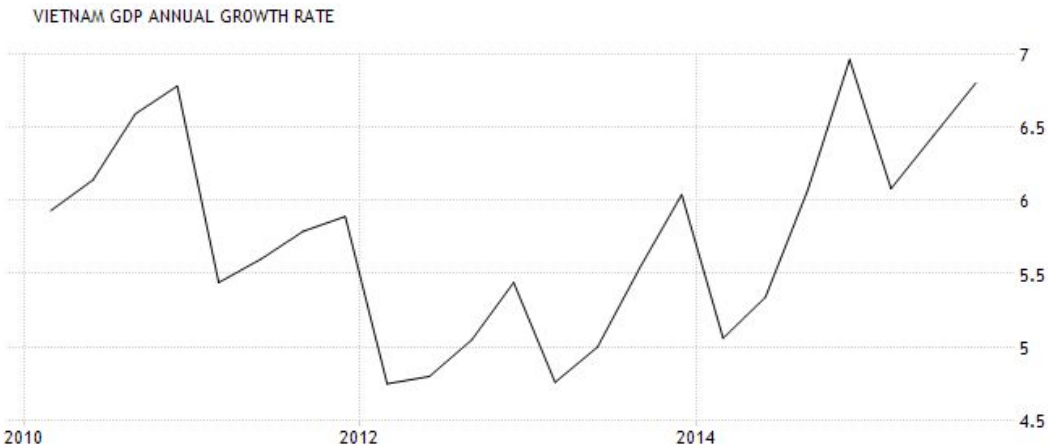


Figure 5: Vietnam GDP annual growth rate from 2011 to 2015 (Adapted from Trading Economics 2015)

Vietnamese government guarantees fair treatment for investors. Capital and other legal assets of investors will not be expropriated or confiscated by law or

administrative measures and businesses with foreign-invested capital will not be nationalized. Investment capital and profits, loan principal and interest, and other legal proceeds and assets belonged to foreign investors are allowed to be remitted abroad. Furthermore, expatriates working for businesses with foreign-invested capital or for a business cooperation contract are permitted to remit their income abroad. Vietnamese government respects intellectual and industrial property rights and the interests of foreign investors relating to technology transfers into Vietnam. (Academia 2011.)

Due to attractive condition, in 2014, Vietnam received 20.23 billion USD, approximately equal to 93.5% in 2013, there were 1588 new projects licensed in this year. Amongst many industries, agro-industry attracted foreign investment most with 774 new project licensed and 14.49 billion USD of investment (Nguyet 2014). Although the economy is developing fast, entry costs for investors are still low because of cheap labour costs. This makes the market become very attractive and lucrative.

Pulp and paper industry which belongs to the agro-industry is a potential industry in this internationally integration period in Vietnam. The industry needs higher technology and production level as well as higher quality to meet the increasing demand of paper products in daily life such as books, magazines, labels, packages, tissues, toilet paper, etc. Figure 6 below demonstrates the growth of contribution of paper industry in GDP from 1999 to 2010. After 2010, according to Vietnam Pulp and Paper Association, the demand in paper is stable but the paper companies starts to have more inventory, the market becomes more intensive competitiveness. Thus, paper industry has to face with new challenges. Mr. Vu Ngoc Bao, Vice President and General Secretary of the Vietnam Pulp and Paper Association, had said that over the past 3 years, Vietnam is a country constantly exporting the largest amount of wood-chips, the export volume was up to 6 million tons of wood-chips in 2012, equivalent to 2.7 million tons of pulp. The paradox was that each year Vietnam had to import more than 1 million tons of pulp and paper. Wood-chip export price of Vietnam to China in past years was only about 110-120 USD/ton, while the price of imported pulp inadequate was 900-1000 USD/ton. It led to the fact that foreign businesses are deluge pouring investment into Vietnam to produce pulp. (2013.)

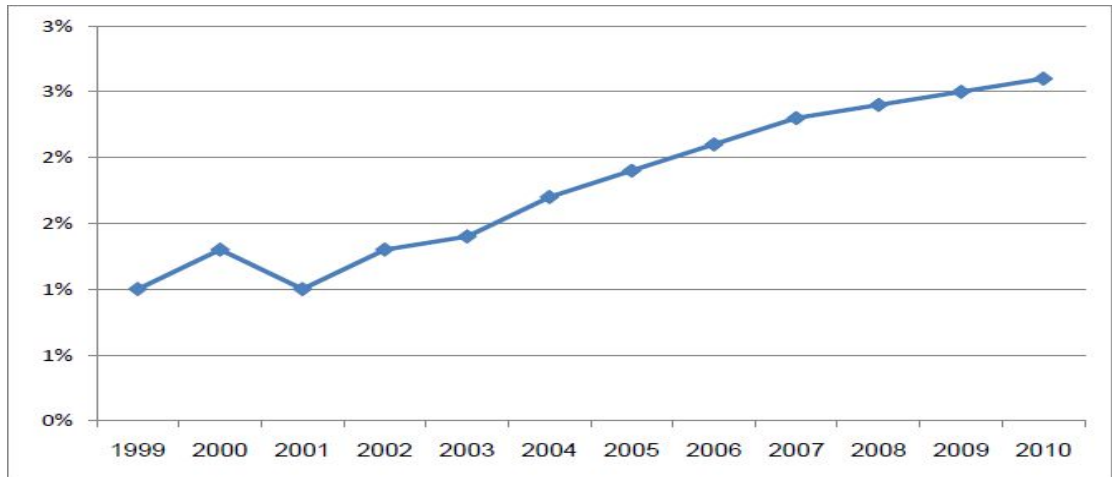


Figure 6: Contribution of paper industry in GDP from 1999 to 2010 (Adapted from General Statistics Office of Vietnam 2012)

Besides the positive sides in economy, Vietnam has faced with the big problem of inflation, which is holding back Vietnam’s economic development, lies in its banking systems. Figure 7 shows the inflation rate in Vietnam and Finland from 2010 to 2015. It is seen that after 2011, the rate of both countries had same trend of falling rapidly and the difference of the rate in these two countries is not big, which will affect the price of product positively when Finnish companies enter the business into Vietnamese market. However, the inflation in Vietnam is still quite high with the average inflation rate in 2014 was 4.1%.

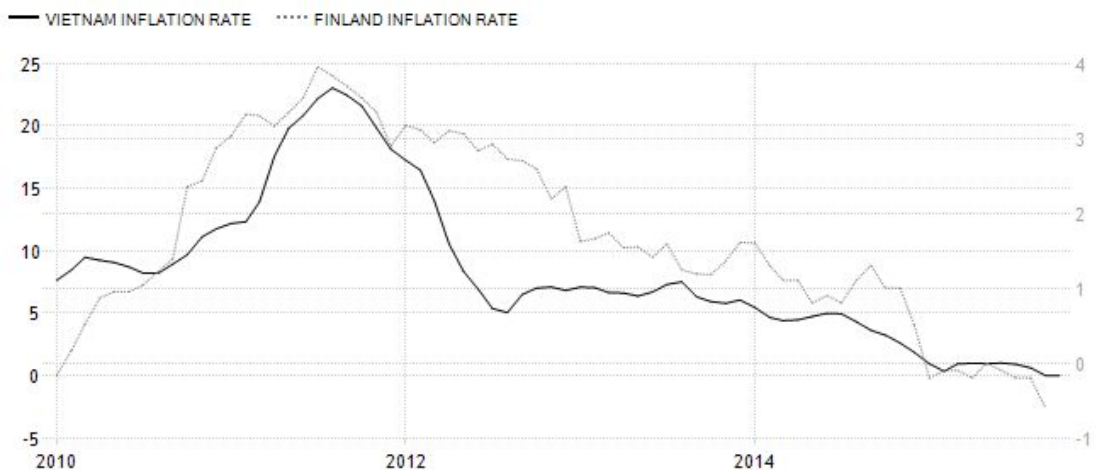


Figure 7: Inflation rate in Vietnam and Finland from 2010 to 2015 (Adapted from Trading Economics 2015)

In brief, in any manner, Vietnam’s economy is predicted to be experience an brighter situation in 2016.

### 3.1.5 Social and Cultural

The population is estimated of 90.5 million people (2014) with nearly 70% of the population living rural area, the majority of the population is under working age (15-65 years old) with 69.8%. Vietnam has a young population with a strong purchasing power. Vietnam is the only country in Asia to enter Top 3 of the 2012 Happy Planet Index (HPI) with the score of 60.4, announced by the New Economics Foundation (NEF) in June 2012. Vietnamese people are very optimistic to their future thanks to stable political regime, peace and economic growth. (Happy Planet Index 2015; Wikipedia 2015)

Even though Vietnam has abundant human resources (69.8% of population) with 1.5-1.6 million new entrants into labour market each year, Vietnamese labours have low skilled level with a big part of the population is in pass education level. The percentage of workers with technical skill in working age is 17.9% (2015) and of workers with high education is 7.3% (12.2014). However, the labour productivity is improving and developing. To be more specific, being calculated by GDP divides to number of working people in a year, the labour productivity was 1340 USD/person in 2005, 2350 USD/person in 2010, 3000 USD/person in 2012 and 3270 USD/person in 2013. In average, the productivity increases 3.7% each year from 2005 to 2014. The reasons of this low productivity are unprofessional training programs, poor technology and backward production. (Dang 2015.)

Vietnam has a rich culture which is influenced by the long history. Vietnamese culture has practised of Confucianism because of being colonized by China for a thousand of years and has experienced of Western culture because of being colonized by France for around half of a century and then by United States in Vietnam war. These factors affect how people communicate in verbal and non-verbal ways. By understanding this unique cultural and traditional values, foreign companies could build strong and successful business relationships with Vietnamese counterparts. Because of the culture, according to Hofstede's dimensions, Vietnam has high Power Distance with hierarchical structures are really based upon age and status, high Collectivism where people prefer to commit to be members of a group and low Uncertainty Avoidance where people take a trend of neutralizing in actions and relationships and do not seriously care about the future. Vietnamese people

prefer non-verbal communication, especially when they express certain feelings. However, because of the globalization, numbers of traditional values are fade away and the lifestyle starts to be westernised. In one hand, it could be easier for Finnish companies enter the business to Vietnamese market; and in other hand, the culture is mixed and it will take time to understand the culture deeply. In order to be successful in doing business in Vietnam, Finnish companies should concern about this factor to understand Vietnamese people, their lifestyle and behaviour. (My 2013; Le 2014.)

In Socio-culture, the aspects affecting directly paper industry, then pulp sector are popular size and customer demand. According to Vietnamese Corporation Paper, the usage of paper will increase stably by 10% each year. When the population increases, the paper need will increase as well, especially many kinds of tissues and toilet paper. In addition, when the perception is higher, people start to concern about environmental issues, the need of paper package, wrapping paper will be higher to substitute plastic bags to be able to reuse and recycle to protect the environment. (Tai-lieu 2014.) Table 2 will demonstrate population, paper consumption per capita and paper need per year in 2005, 2010 and predicted 2020.

Table 2: The development of paper demand in last 10 years and prediction in 2020 (Adapted from Tai-lieu 2014)

Year	2005	2010	2020
- Population (million people)	83	89	102
- Paper consumption per capital (kg/person)	9.4	14.5	33.6
- Paper need (tons/year)	781 000	1 286 000	3 420 000

### 3.1.6 Technological

In technological aspect, Vietnam is a rapidly developing country. In the 11<sup>th</sup> Congress of Vietnam Communist Party in 2011, the government started the strategic plan of economic and social development for period 2011 - 2020 with the main target of building infrastructure. Thus, to meet the requirement of rural industrialization and modernization, many express-ways have been built and the local transport network has been updated. After all, they are

connected to national system to reinforce the goods circulation. (Anthony 2011.)

Moreover, there will be a project created to narrow the gap of science and technology with the world in some key fields by 2020. The priority of the project is to enhance competence of scientists and related managers. Besides, the organization of training courses partnered with foreign competent partners is encouraged by the government. To be specific, science and technology will be renovated to sharpen the competitive edge of local products. Additionally, some prioritized areas of biotechnology, information technology, new materials technology such as nano technology, manufacturing technology and automation will be supported to purchase patents by the government. (Anthony 2011.)

From business point of view, technology is considered as weapon which helps the firms to compete with other firms, because technology is relevant directly to the cost of production and therefore the price of the products. The changing and developing of technology will give the firms new chances to enhance their business, yet it also brings threat to the other firms who have old and out-of-date technology. This will change the situation of the market. Then it will affect the target, decision and strategy of whole industry. To maintain the business well and take an important position in this fiercely competitive environment, companies have to predict the affection of changing in technology to apply flexibly into producing paper products. (Tai-lieu 2014.)

In Vietnam, paper industry is significantly concern in changing and renovating the technology in production. This is shown in three fields: producing pulp and improving bleach technology, improving paper production by using acid solution instead of alkaline solution in paper-machine, and measuring/controlling. Many factories have been renovated, restructured and rebuilt more spaciously and rationally. A lot of devices imported from foreign countries (mainly from China) are used in medium enterprises who still have backward technology. Moreover, big companies such as Bai Bang paper mill and Tan Mai paper mill provide Quality Control System (QCS). Furthermore, the establishing of wholly-owned companies brought the high technology to Vietnamese paper industry also, for example new inking system from Now Toyo Corporation. (Tai-lieu 2014.)

Even though the technology of paper industry has been invested and renovated to improve production, reduce the price and improve the quality of the products, it is still backward comparing to ASEAN countries. The big enterprises like Bai Bang, Tan Mai and Dong Nai are considered as the companies who have “modern” technology, but they are already 20 - 40 years old and they are still using technology from 70 - 80s. Therefore, the productivity is really low, which can be seen in Dong Nai paper mill: this company can only produce paper of 2.6 meters width with the speed of 200 meters/minute, while the new generation of paper-machine in ASEAN countries could produce paper of 10 meters width with the speed of 2000 meters/minute. As a result, in a minute, companies with new technology in ASEAN could produce 20 000 meters square of paper, while Dong Nai could only produce 520 meters square of paper, which means the productivity of Dong Nai is less than other ASEAN companies 38.5 times. Moreover, there is lack of manufactures producing raw pulp material, which leads to the situation that the amount of pulp provided is not stable. Consequently, the material has to be exported from foreign companies, which makes the price of local paper is higher than exporting paper. (Tai-lieu 2014.)

After all, the science and technology of paper industry in Vietnam is poor and backward; the paper quality is low while the price is high; the material and workforce are wasted. All of these factors make the local products less competitive in quality and price than the exporting products. Thus, to enhance the competitiveness, the Vietnamese paper industry needs to invest in both workforce and technology to improve the productivity.

### 3.1.7 Environmental

Vietnam is located in tropical area of Northern Hemisphere, in monsoon of South-East Asia with the typical inter-tropical zone is sunny, rainy and humid, which are advantages for the development of ecosystem. The country is made up of equatorial lowlands, high, temperate plateaus and cooler mountainous areas. The mean annual temperature is about 27°C in the South and 21°C in the far north. In addition, the country has diverse of wildlife with many precious fauna such as elephants, rhinoceros, tiger, leopard, black bear, snub-nosed monkey, crocodile and turtle. Forest in Vietnam consists of 2% of total forest in East Asia and Pacific. (Tai-lieu 2014 and Anthony 2011.)



From pulp and paper industry point of view, the climate in Vietnam brings many advantages. The mean annual rainfall is 1500mm - 2000mm, which makes the atmosphere reaches 85% of humidity in annual average, balancing the air condition and providing a huge amount of protein for woodland. This condition helps the crops grow well in quality and quantity to produce pulp for paper material. The area of plantation land for pulpwood is quite large: the forest acreage of Vietnam is 803 000 hectares, including 618 000 hectares of natural forest, there are 185 000 hectare of crops. This is rich input material for paper industry to explore and produce. (Tai-lieu 2014.)

Nevertheless, Vietnam is in top five countries most effected by climate change (EnDev 2014). The diverse wildlife is declining because of illegal hunting and pollution. Moreover, because of climate change, natural disaster and sea level rise, the weather is getting worse with flood and drought happening more frequently, the big amount of forests fires every year. The fact has shown that the natural disaster caused severe consequences for Vietnamese people as well as economy. In detail, according to General Statistic Office, in 2011, 257 people were dead and missing, 267 were wounded; nearly 1.2 thousand houses were collapsed and swept away; 391.8 thousand houses were submerged or damaged; more than 760 km of dykes, and the 680 km road motorized was busted; 867 power poles were broken or poured; nearly 54,000 hectares of rice and vegetables has been lost; more than 330,000 hectares of rice crops were flooded or damaged. Total value caused by natural disaster was approximately over 10 trillion VND in 2011 (about 450 million USD). (Anthony 2011.)

After all, Vietnam is facing with challenging situation in environmental aspect, which requires the country to have the national and urgent action to prevent ecological and hydrological catastrophe. (Anthony 2011.)

In conclusion, after being analysed PESTLE Vietnam above, the main points of every factor are summarized in Table 3. In this table, all of the factors such as political, economic, socio-cultural, technological, legal and environmental factor are pointed out generally with strengths and challenges which Finnish companies have to face with to enter the market.

Table 3: PESTLE Vietnam summary

	Strengths	Challenges
Political	<ul style="list-style-type: none"> <li>▪ One and only party with stable politics</li> <li>▪ Encourage to find foreign investment</li> <li>▪ Engage to integrate internationally in economy</li> </ul>	<ul style="list-style-type: none"> <li>▪ High governmental control</li> <li>▪ Corruption</li> </ul>
Legal	<ul style="list-style-type: none"> <li>▪ Changes to make the legal framework more comprehensive</li> <li>▪ Government launched the project to improve paper production</li> </ul>	<ul style="list-style-type: none"> <li>▪ Unclear legislation and proper legal framework for market economy</li> <li>▪ Constitutions for freedom of speech and the press of human rights and land-ownership law haven't been intended to be carried out</li> </ul>
Economic	<ul style="list-style-type: none"> <li>▪ Market-oriented economy since Doi Moi policy</li> <li>▪ Becoming industrialized and modern economy</li> <li>▪ High and stable GDP growth rate, high rate of export and FDI</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inflation</li> <li>▪ Pulp and paper market becomes more competitive</li> </ul>
Socio-cultural	<ul style="list-style-type: none"> <li>▪ Young population with strong purchasing power</li> <li>▪ Large size of population influences positively to paper need</li> <li>▪ Cheap labour</li> </ul>	<ul style="list-style-type: none"> <li>▪ Low skilled labour</li> <li>▪ Culture has big differences to foreign investors</li> </ul>
Technological	<ul style="list-style-type: none"> <li>▪ Improvement of infrastructure</li> <li>▪ Government focus on scientific and technological renovation</li> <li>▪ Establishing of wholly-owned</li> </ul>	<ul style="list-style-type: none"> <li>▪ Old and backward paper technology from 70-80s</li> <li>▪ Lack of raw pulp material providing</li> </ul>

	companies brings new technological generation	<ul style="list-style-type: none"> <li>▪ High price of producing, low quality and high price of paper products</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>▪ Diversity of ecology and hydrology</li> <li>▪ Diversity of wildlife with many precious fauna</li> <li>▪ Good weather condition to plant crops and pulpwood</li> </ul>	<ul style="list-style-type: none"> <li>▪ Natural disaster, climate change and sea level rise</li> <li>▪ Decline the diversity of wildlife because of illegal hunting and pollution</li> <li>▪ Many forests are burnt every year, which damages to paper material</li> </ul>

### 3.2 Trade between Vietnam and Finland

Since January 25, 1973 Finland and Vietnam established diplomatic relations, enjoying the traditional relations of friendship and cooperation in various fields. Over 40 years, the relationship between Finland and Vietnam is matured and widened. Since 1973, Finland has assisted Vietnam with about 400 million USD, especially in water, forestry and clean-tech. Finnish know-how was contributed significantly in development of water supply systems in Hanoi and Haiphong, Vietnam. Additionally, the trade cooperation between two countries is not only in clean-tech but also in anti-corruption work, development of the private sector, green growth to limit the effects of climate change. (Vietnam Business Forum 2013.)

According to Tran Ngoc Liem (2013), deputy director of the Vietnam Chamber of Commerce and Industry (VCCI) in HCM City, even though bilateral trade of two countries was still modest, the business communities of two countries planned to strengthen and enhance rapidly, increasing 40% of trade turnover from 210 million USD 2011 to 304 million USD in 2012 (Vietnam News 2013). In 2013, there were about 60 Finnish companies represented in Vietnam, Finland was ranked as 26<sup>th</sup> out of 96 foreign investors in Vietnam (Vietnam Business Forum 2013). Finland has imported from Vietnam the products of coffee, rubber, footwear, garments and textiles, fine arts, wood products,

plastics, bicycles and spare parts; while having exported to Vietnam the products of machinery, equipment, mass media products, garments and textiles, plastics, chemical products, electric equipment, components, iron and steel. In the end of 2012, beginning of 2013, Finland had eight projects in Vietnam, investing more than 336 million USD with the focus fields of garments, textile, and wood products, as well as fishery. According to Kimmo Lahdevirta, Finnish ambassador to Vietnam, Finland has developed environmentally friendly technologies to cope with climate change, this could help Vietnam to improve some environmental issues in business. Thus, there would be bright prospects for cooperation between two countries in forestry sector. In 2014, Finland's exports to Vietnam totalled some 80 million EUR (106 million USD - based on EUR/USD annual average exchange rate in 2014 from Statistic Portal 2015) and imports 151 million EUR (200 million USD), with the mainly exporting products are machinery, equipment, means of transport and forestry products and the mainly importing products are clothes, shoes and furniture. (VOV 2013 and Ministry for Foreign Affairs of Finland 2015.)

To strengthen the relation with Vietnam, in 2012, Ministry for Foreign Affairs of Finland made a development cooperation strategy in period 2013 - 2016. In the report, four objectives have been defined to achieve the development results. The first objective is "Increased openness and access to information, knowledge, and innovation for all". The second objective is "Enhanced green economy that creates entrepreneurial activity and decent jobs". The third one is "Improved sustainability, inclusiveness, equality and climate sustainability of the use and management of forest resources". The last one is "Sustainable and equal access to improved water supply and sanitation services". Finland has chosen two development results to support Vietnam: the first one is knowledge-based improvement by strengthening the technology and innovation system; and the second one is sustainable use and management of natural resources and improved climate sustainability by providing clean water and managing forest sustainability. (Formin Finland 2013.) Furthermore, according to Ministry for Foreign Affairs of Finland (2014), Vietnamese markets in information technology, the energy and environment sectors, water supply and sewerage, the pulp and woodworking industry, the forestry industry, the chemical industry and the education sector are potential for

Finnish enterprises, especially when the EU agreed on free trade with Vietnam in August 4, 2015. Minister for Foreign Trade and Development Lenita Toivakka said “The free trade agreement is important for Finland, it improves Finnish businesses' access to the market and strengthens their opportunities in Vietnam, which is one of the fastest growing economies in Asia” (2015).

In brief, there are some big projects that Finland has run in Vietnam so far such as “Capacity Building for Sustainable Development, Trade and Export Promotion for Members of Hanoi Women’s Association of Small and Medium Enterprises (HAWASME)” launched in 2010, to build the capacity for sustainable development, trade and export promotion for female entrepreneurs. Additionally, in July 2014, the project “Strengthen the capacity of Vietnamese enterprises exporting agricultural and fishery products to Finland and the Nordic market” was launched for the agricultural sector including fishery and agricultural products. In 2015, Finland has continued The Water and Sanitation Program for Small Towns (WSPST), Forest Management Information System Program (FORMIS) which will deploy modern solutions to manage forest information throughout the country, and The Innovation Partnership Program (IPP) for creative innovation. (VCCINEWS 2015.)

### 3.3 Trade development between Vietnam and Finland in forestry sector and technology in production

Since 1996, Finland has cooperated with Vietnam in forest sector. Forests’ role was believed to create livelihoods, and according to evaluation, forest projects supported by Finland had contributed in reducing poverty in Vietnam. Finland has created the Trust Fund for Forests (TFF) to support forestry sector with a multi-donor trust fund. Even though the TFF’s share of the total ODA (Official Development Assistance) in forest sector has remained low, TFF has provided extensive support for policy formulation and capacity development, having contributed to the development of the National Forest Strategy. Furthermore, Finland has supported Vietnam national forestry the information system to facilitate more transparent and sustainable forest governance, which is called as Forest Management Information System Program (FORMIS). (Formin Finland 2013.)

In 2015, Finland has increased cooperation with Vietnam in creative innovation. A conference was held by the management board of the Finland-Vietnam Innovation Partnership Programme (IPP) in Hanoi on October 1, 2015 to collect opinions on the future strategy of creative innovation sector which is always challenging for developing companies. Marita Meranto from Finland's Foreign Ministry pointed out that Finland has committed to continuing to support Vietnam in the field. Through IPP, Vietnamese enterprises have been supported to enhance creative innovation in production from Finland who has shared experiences. Hence, the trade cooperation between two countries is strengthened and transformed from official development assistance to trade and knowledge-based affiliation. (VOV News 2015.)

Moreover, from paper and pulp trade between Vietnam and Finland, the statics of exported paper in Vietnam has shown that in the first-half of 2015, amongst 18 foreign markets exporting paper to Vietnam, the amount of exported paper from Finland has grown dramatically by 59.15% increasing in quantity and 61.53% increasing in value, compared to the previous period. To be more detail, the amount of exported paper from Finland is 11.5 thousand tons, equivalent to 12.9 million USD. (Nguyen 2015.)

According to Phan Chi Dung, the Director of the Department of light industry, interviewed by author in January 14, 2016, the technology used in producing paper at the moment is mainly from Sweden, Finland and South Korea, India and China which have high technology level in paper field as well as technology in controlling and automating systems. Besides, there are some equipments and technology from Finland, which are used on production line. Every year, VPPA imports the equipments from Finland, and uses the services of design consultancy from Jaakko Pöyry of Finland.

#### 4 PULP MARKET IN VIETNAM

This chapter is basically divided into two big parts. The first part is to analyse buyers, suppliers, substitutes, new entrants and competitors in Vietnamese pulp and paper industry (Porter's five forces analysis). The second part is to give the audiences the deeper perception about pulp production situation in

Vietnam, which includes analysis of material, material regions, project to extend pulp production and the influences of production to environment.

#### 4.1 Porter's five forces analysis for pulp and paper industry in Vietnam

In the context of regionalization and globalization, Vietnamese government in the beginning tried to protect the paper local industry by setting the tax for pulp and paper exporting around 40 - 50% depending on the sort of paper. However, in 2003, import/export tax reduced by 20%, then when Vietnam joined AFTA in 2006, the tax reduced 0 - 5% more. It can be seen that the market condition in Vietnam becomes more and more attractive for foreign investors.

Before accessing the business to Vietnam, Finnish paper enterprises need to understand the affection of five forces: buyers, suppliers, substitutes, new entrants and competitors to plan the most effective strategies.

##### 4.1.1 Buyers

It has been seen that the customers in Vietnam prefer to use paper made by foreign companies because of the following reasons. Paper from foreign countries is produced by high technology, the paper width could be produced 10 meters with speed of 2 000 meters/minute, pulp is sprayed so evenly in pulp mill machine that the paper surface is smooth and glossy. In another hand, paper width made by Vietnamese companies is less than foreign companies 2.63 times with the speed is less than 4 times per minute. In another word, in a minute, with paper machine from foreign companies, 20000 meters square of paper is made, while with Vietnamese technology, only 1900 meters square of paper is made, less than 10.52 times. As the result, the quality and price of foreign products are better than local products. Because the pulp they could make meets only half requirement in producing paper Vietnamese manufacturers have to import pulp from foreign countries to have better quality and better price to compete with foreign products. (Tai-lieu 2014.)

After all, when Finnish companies start to do business in Vietnam, they would have advantage in reputation of "foreign products" in paper sector. Furthermore, in pulp sector, the Vietnamese paper companies have to import

pulp because they could not be able to produce enough for their demand and there is no company specializing in pulp business (Hoang 2013).

#### 4.1.2 Suppliers

In paper industry, the main material is pulp with the cost is 45% - 65% of total market price of a product. It means the controlling of input material resources will decide the productivity of producing process. Lack of initiative in planning and maintaining supply of raw materials is the issue of many paper companies in Vietnam now. They have to depend on foreign resources of raw materials. (Tran 2012.) Furthermore, because of backward science and technology, the percentage of fillers in paper of foreign companies is 40%, while paper of local companies is produced mainly by good pulp. There are much energy and material being wasted during the production also. For example, to produce one ton of paper, Viet Tri paper mill uses new technology which wastes only 300 meters cubic of water and the energy consumption consists of 7% of the total market price of a product; while with the old production line, it wasted 3 - 4 times and the energy consumption consisted of total more 2 - 3 times than the new production line. As the result, Vietnam has to import approximately 70% of pulp from foreign companies. (Tai-lieu 2014.)

As it is mentioned before, there are 803 000 hectares of pulpwood forest in Vietnam, out of 4.04 million hectares of planted production forest. The government is supporting the paper corporations to establish the material regions to use the forest resources in environmentally friendly and efficiently way. (Tai-lieu 2014.)

#### 4.1.3 Substitutes

The consumption of paper will affect directly to the consumption of pulp. In Vietnamese paper market, there are six main sorts of paper including newsprint, printing and writing paper, packaging paper, paper tissue, joss paper and other paper. (Habubank Securities 2011, p3.)

Newsprint could be substituted by on-line newspaper because of development of Information Technology, from communication tools' point of view, people gradually use internet to more often instead of buying newspaper, which is much cheaper and faster. Packaging paper could be substituted by nylon,



nylon bag, plastic bag ... in packaging, containing and wrapping goods. (Tran 2012.)

However, the products of printing and writing paper are still necessary for education, printing books and literatures, etc. because the education in Vietnam is still following traditional ways with a lot of writing and reading books, the education is still not upgraded enough to be able to provide comprehensive computer and projector systems. Besides, the need of paper tissue and toilet paper is increasing because of the increase of population. Joss paper is the largest exporting products in paper industry. (Tran 2012.) According to Dr. Vu Ngoc Bao (2013), Vice President and Secretary General of Association of Vietnam Paper and Pulp, said that Vietnam exports 70 000 - 80 000 tons of joss paper each year, mainly to Taiwan which is the biggest joss paper consumption in the world. Even though joss paper is the product that is cheapest, poorest in quality and the worst environmental pollution, the demand for this kind of product is still stable because of the culture in Eastern countries. In the Eastern culture, joss paper which is imitated as cash, house, car, clothes and many things else for death people, so that in the death ceremony of ancestors or relatives or members of family, people will buy them joss paper with the thought that in another world to give them the best condition and their ancestors would bless them and whole family. Nevertheless, Dr. Vu Ngoc Bao emphasized that joss paper consumption needs to be reduced to be friendly with environment. (Nguyen 2013.)

After all, the products from paper in the world as well as in Vietnam, especially for packaging paper are increasing because it is reusable and recyclable, concerned in the environmental aspect. It brings pulp mill manufactures opportunities to develop in producing paper products.

From pulp point of view, there is a alternative pulping method which is biopulping using certain species of fungi to break down the unwanted lignin. This method is very friendly to environment by using less sulphite and the materials used are not toxic. However, high technology is required for this method, which Vietnamese market is lack of it; so that this method is still not used widely. (Nguyen 2013.)

#### 4.1.4 New entrants

As it is analysed before, when Finnish paper enterprises do the business in Vietnam, new entrants that they have to concern about are other foreign companies who take advantages in high science and technology and use efficiently the cheap labour sources.

Currently, in Vietnamese market, there are some big companies with foreign investment such as NEW TOYO paper mill, the Japanese wholly-owned company, was established in 2000, they focus on producing paper tissue. Bai Bang paper company, the joint stock company with 30% of foreign investment, focuses in producing newsprint paper around 50 000 tons/year. VINA KRAF paper company, the Thai wholly-owned company, focuses in producing packaging paper. (Tran 2012.)

Although these companies who have foreign investment take advantages in technology, they all have the problem in pulp material resources, they have to export a big amount of pulp or use scrap paper to produce. (Tran 2012.)

According to Mr. Phan Chi Dung, there were many new paper and pulp manufactures established since 2014, which increase the production capacity to 43%, and the amount of paper output increased 18%. As the result, market competition is getting fiercer.

#### 4.1.5 Competitors

In Vietnam paper industry, pulp and paper companies are classified into two groups: paper manufacturing companies under the Vietnam Paper Corporation and paper manufacturing companies not belonging to the Vietnam Paper Corporation. There are about 145 paper company including about 100 company producing paper and 45 companies producing pulp and paper. Total paper output is 455 000 tons/year consisting 173 000 tons of companies under Vietnam Paper Corporation and 282 000 tons of companies not belonging to the Corporation. Pulp production is 200 000 tons/year including 114 500 tons from the companies under the Corporation and 85 500 tons from the rests. These statistics have shown that Vietnam paper industry is quite centralized, high level of consolidation, where the Paper Corporation produce main amount of paper. The local paper companies highly depends on

the Paper Corporation, the price of products also base on the price that the Paper Corporation offers. However, this consolidation makes the paper industry less competitive amongst local paper companies; so that the paper industry is not active even though the population is increasing, along with the demand of paper is climbing significantly. (Tai-lieu 2014.)

In the paper market, there are five biggest producing paper companies which are Vina Kraft paper company Ltd. located in Binh Duong with the main product is packaging paper; Tan Mai Joint Venture Corporation located in Dong Nai with the main product is newsprint paper; Vietnam Paper Corporation located in Hanoi and Phu Tho with the main products are printing and writing paper, paper tissue; Chanh Duong paper company Ltd. located in Binh Duong with the main product is packaging paper; and Saigon Joint Venture paper company located in Ba Ria - Vung Tau with the main products are packaging paper and paper tissue. (Tran 2012.)

Moreover, in pulp sector, there are eleven main pulp manufactures in Vietnam. Nevertheless, these manufactures only serve for their own companies to produce paper, which means they do not have any pulp business. Table 4 will list the main pulp manufactures with their capacity in tons in 2011.

Table 4: Main pulp manufactures in Vietnam and their capacity in 2011 (Adapted from An Binh Paper 2011)

Manufacture	Capacity (Tons)	Manufacture	Capacity (Tons)
An Hoa paper JSC.	130 000	Kinh Mon Pulp Mill	15 000
Phuong Nam Pulp Mill	100 000	Quang Binh Pulp Co.	15 000
Vietnam Paper Corporation	75 000	Lam Son Paper JSC.	15 000
Tan Mai Group JSC.	40 000	Muc Son Paper JSC.	15 000
Ha Giang Pulp Mill	20 000	Song Lam Paper JSC.	15 000
Hai Duong Pulp Mill	15 000		

## 4.2 Pulp production situation in Vietnam

This chapter show the deeper look in pulp sector in Vietnam. The aspects analysed are material, material regions, pulp projects and the production in environmental point of view.

### 4.2.1 Pulp material

The main material to produce pulp is cellulose derived from wood, non-wood. Materials from wood include broad-leaved trees and conifers; and materials from non-wood consist of bamboo species, agro-industrial production waste material such as straw, bagasse and waste paper, which have low production costs but not suitable for large-capacity plant material because these kinds are provided seasonally and difficult to store. (Habubank Securities 2011, p3.)

Pulp can be classified by producing methods: mechanical method, chemical method and half-mechanical method. Furthermore, it can be classified by the production process: bleached or unbleached. After all, to understand deeply in pulp sorts, there are some following terms used in producing paper. Bleached pulp is the pulp that is bleached during the process to reach the high standard whiteness. Unbleached pulp is the pulp that is not bleached during the process. Semi-bleached pulp is the pulp that is slightly bleached with low whiteness. Softwood pulp is made from softwood trees such as spruce, pine, fir, larch and hemlock. Hardwood pulp is made from eucalyptus, aspen and birch. Non-wood pulp is made from bamboo, bagasse. Mechanical pulp is produced from mechanical method. Chemical pulp is produced from chemical method. The last but not least, dissolving pulp is the pulp that is bleached in high alpha-cellulose. (Nguyen 2013.)

Production in Vietnam uses two main materials which are bamboo and broad-leaf fast-growing wood such as bodhi tree, eucalyptus, grease tree, acacia mangium and acacia auriculiformis, there are some insignificantly companies use bagasse. To produce 130 - 150 thousand tons of pulp per year, 700 thousand tons of material with standard humidity of 50% are used. If the forestry material increases 12 - 15 tons/hectare per year, and the amount of forestry material used in harvest period in Vietnam is almost 100 tons/hectare; the forest area exploited for paper industry is significantly. (Hoang 2013.)

Pulp from waste paper is more and more used to produce paper because of its cheap in transportation, purchasing and producing. In average, producing 1 ton of paper from waste paper could save 17 timbers and 1 500 litres of petrol, compared to producing from original pulp. Additionally, the cost of waste paper processing line is cheaper than original one. Besides, it contributes to protecting the environment, in average producing pulp from waste paper could reduce 74% exhausted gas and 35% waste water. However, the paper made from that kind of pulp has lower quality than from original one, thus this pulp can not be used to produce packaging paper which is required to be durable and tough. (Habubank Securities 2011, p4.)

The resources of waste paper are from collecting and importing. The main import sources are USA, Japan and New Zealand. The main collecting sources are from individual collectors and purchasers, cleaning companies and intermediary purchasers. Currently, there is no specialized waste paper collecting company, hence collecting and recycling are non-organized. (Habubank Securities 2011.) Furthermore, the government has not have any policy to encourage or any activity to organize in collecting waste paper, so that the percentage of collecting used paper in Vietnam is quite low by 25 %, while in Japan it is 61.4%, in China it is 31% and in Thailand it is 65%. (Nguyen et al 2013.)

In Vietnam, pulp production capacity can only meet half of production paper demand, so that paper industry always has to depend on import pulp. At the moment, there are only Bai Bang and Tan Mai paper companies could actively provide 80% of pulp need for their paper production. Moreover, there is no commercial specialized pulp production enterprises, there are only enterprises who produce pulp for their own needs. (Hoang 2013.)

#### 4.2.2 Pulp material regions

The pulp providing is quite low and uneven in Vietnam, the material is mainly in the North and Central of Vietnam but the biggest pulp manufactures are located in the South. As the result, the manufactures in the South are facing with the problem of being lack of pulp, and they have to import a big amount of pulp to meet the demand in production. The total forest area is 1548 thousand hectares consisting of natural forest, planted forest and barren hills, gathering

mainly in North-East and Highland areas. However, the material from natural forest is not fully used, additionally the barren hills are not totally cropped. (Hoang 2013.)

As planned, the material regions for paper industry is developed in six regions: Centre North, North-East, North-West, Thanh Hoa, Central Coast and North Highlands with a total forest area of 763 thousand hectares. The industry tries to reach the target of fully providing material for paper production of 1536 thousand tons/year in two main material regions: Centre North and Central Coast. (Habubank Securities 2011, p4.)

To be specific, Centre North is the potential and ideal region to expand the scale of pulp production. The geographical location is suitable for fast-growing photophilic species such as many kinds of acacia, urophylla eucalyptus and even Masson's pine. Bodhi trees can also grow in some areas in Yen Bai. In North-East region, to provide for pulp industry, there are mangium acacia, urophylla eucalyptus, bamboo and Masson's pine. In North-West, there are Masson's pine and many kinds of acacia. In Thanh Hoa, there is mainly *Dendrocalamus barbatus*. In Central Coast and North Highlands, there are many kinds of acacia and eucalyptus. (Pham 2014.)

#### 4.2.3 Projects to expand the scale of pulp production

In the last ten years, to solve the problem of being lack of pulp, there have been many pulp mills invested and established, for example An Hoa paper mill in Tuyen Quang, Phuong Nam paper mill in Long An, Thanh Hoa paper mill and two paper mills belonging to Tan Mai paper group in Quang Ngai and Kon Tum. However, these projects have not done in investing or have closed because of lack of wood material. (Thanh 2015.)

The project of Phuong Nam paper mill in Long An was invested about 1900 billion VND (approximately 87.15 million USD) in the beginning, then it was invested 2000 billion VND more (approximately 91.74 million USD) for technology. Its capacity was 100 000 tons of pulp per year with the main material is jute. Because of the problem in unstable input material, the paper mill was bankrupt after ten years. (Thanh 2015.)

The project of Tan Mai paper mill with the planning investment in the beginning is 5000 billion VND (~ 229.36 million USD) with capacity of 130 000 tons of pulp per year will be delayed until 2017 because of the problem in processing of documentation, even though all of equipments and facility were prepared in Dung Quat port. The project of Dung Quat ventured by JK Corporation (India) and Sojitz (Japan) and Vietnam Forestry Corporation have planed since 2013 but it has not been licensed yet. (Thanh 2015.)

It is seen that in paper industry planning strategy until 2020, the projects which do not have enough investment capital are licensed, while the projects prepared well are not approved.

Because of this situation, there are more and more foreign investors investing in pulp sector. In May 2015, the biggest packaging production Nine Dragons Paper (China) declared to invest in paper machine of Chanh Duong paper enterprise in Binh Duong with expected capacity of 500 000 tons/year. Beside, the project of Lee&Man Paper (Taiwan) is running in Hau Giang, and China Paper Corporation is planning to build the paper mill in Centre of Vietnam with the capital of 1.2 billion USD. The paper mill is expected to run in the end of 2015 with the capacity would be 600 000 tons/year. Furthermore, SCG Group (Thailand) will continue to invest in Vina Kraft joint-venture paper company (VKPC), joint-venture of Siam Kraft Industry joint-venture company (belong to SCG Group) and Rengo joint-venture company (Japan) in the ratio of 70:30, to develop double the production capacity in packaging paper. (Thanh 2015 and Nguyen 2015.)

According to Mr. Phan Chi Dung, there was no actual project going on in 2015, but in years later, paper and pulp companies belonging to VPPA have some projects to improve the production such as:

- Renovation project for cleaning and washing systems for brown pulp to reduce electricity and stream use;
- Renovation project control system QCS 02 of paper machine to be stable in product quality and optimize the production;
- New investment projects and installation of inverters for motor running partial loads of Bai Bang manufacture to save electricity;

- New investment projects in coal fired boilers (planned capacity of 100-120 tons of steam/hour); with the goal of improving energy efficiency, reducing production costs;
- New investment project recovery boiler - burning black liquor speciality from the pulp production process, with the targets of processing environment, recreating the chemicals used to manufacture flour, produce electricity, steam;
- Investment projects to expand factories to raise capacity to 17,000 tons of Sodium hydroxide, chlorine per year, with the goal of improving the efficiency of production of the chemical plant - the Vietnam Paper Corporation.

#### 4.2.4 Pulp production technology and the affection to environment

There are three main pulp producing methods currently used in Vietnam: chemical method, half-mechanical method and recycling method (from waste paper). All of these methods use much of chemistry and energy to produce the products that do not require high quality. The technologies used are sulphate pulp bleaching technology, pulp production technology of thermal mechanical method and caustic soda method or cold alkaline method. These technologies are outdated and they cause environmental problems. (Hoang 2013.)

According to Nguyen Trong Anh, Head of Environmental Department of My Xuan factory being part of Saigon Joint-venture paper company, the environmental standards and penalties in pulp production are very strict, but it turns out that it is not so helpful that more than 90% of paper enterprises have no sewage system or some just build the system to cope to the standards. (Datviet 2014.) The statistic has shown that the waste-water in pulp and paper factories in Vietnam has average pH indicator of 9-11(alkaline solution), index of biochemical oxygen demand (BOD), chemical oxygen demand (COD) is higher, possibly up to 700 mg/l and 2500 mg/l. Suspended solid concentrations are many times higher than permissible limits. Especially waste-water contains heavy metals, lignin (black liquor), dyes, sodium hydroxide and chlorinated polycyclic aromatic substances which are compounds with high ecotoxicity and carcinogen risk, very persistent in



environment. The amount of this waste-water could reach 4000-5000 m<sup>3</sup> per day, the index of BOD and COD is higher 10-18 times than permissible limits, which causes the environmental pollution seriously. (Habubank Securities 2011, 6.)

Let take Bai Bang paper mill as an example. Bai Bang is one of the biggest paper enterprises in Vietnam Paper Industry, which contributes 20 - 30% of pulp production in total. The main production methods used are alkaline methods and the main pulp materials produced are bodhi tree, eucalyptus, grease tree and acacia mangium (50% in total) and bamboo (50% rest). In alkaline methods, they use sulphite method, the producing solution of this method is the mixture of Sodium hydroxide (NaOH) and Sodium sulfide (Na<sub>2</sub>S). The black liquor after being heated is collected, concentrated and burned (not all of the factories do like this, there are some factories pouring the solution out directly). Approximately 55% material dissolved in the black liquor, then being burned, turns into Carbon dioxide (CO<sub>2</sub>). The pollution of this stage is from odorous gases, organic substances, alkaline chemicals and exhausted gas. (Hoang 2013.)

Moreover, the amount of chlorine using in bleaching stage for 1 ton of pulp is about 100 kilograms (activated Cl<sub>2</sub>). It means the amount of Sodium hydroxide (NaOH) used is 30 kilograms/ton of pulp. If 150 tons of pulp is bleached everyday, 15 tons of Cl<sub>2</sub> and 40 - 50 tons of NaOH are used and discharged, additionally 15 tons of organic compounds dissolved in the bleaching process is discharged along with waste-water. It is seen that the affection of this stage to environmental is significantly. (Hoang 2013.)

However, the thing is that Bai Bang provides quite comprehensive technology and equipment, compared to many other paper mills who use really unfriendly environmental technology. In detail, they use the production of making pulp from many different materials in Sodium hydroxide solution at high temperature (130 - 170°C), without collecting chemicals. After heating, all of black liquor is discharged into environment. With this kind of technology, the index of BOD and COD is very high, over the permissible limits. (Hoang 2013.)

Besides manufacturing technology with high pollution level, the waste-material treatment stage is quite limited. Bai Bang provides very basic system to treat

waste materials, but other paper mills have no such system, they only discharge the waste materials into water and air environment. After 35 years of paper industry development, Vietnam has to bear a serious environmental pollution. Furthermore, in this difficult situation in business and production at the moment, these paper mills are not able to invest in waste-material treatment systems as well as upgrade the production technology to reduce the pollution. Even though there were some enterprises invested from foreign investors to build the waste-material treatment system, they neither could not run it because of financial issue. (Hoang 2013.)

To give the audiences a clearer view about what kind of waste materials could be released during the pulp production by alkaline method, with Sodium hydroxide (NaOH) solution, Table 5 will illustrate the waste materials from every pulp production stage with its materials and methods used.

Table 5: Production stages, materials, methods and waste materials from every stage of alkaline method (Adapted from Pham et al 2013).

Stage	Materials	Method	Waste materials
Material preparation stage	Washing water	Peel, cut in pieces and grind the wood materials	Bark, wood chips, wood shavings, dust Biochemical and chemical oxygen, suspended solid
Heating, sieving and washing stage	Water, steam	Heat	Odorous gases, toxic chemicals, coloured waste-water, biochemical and chemical oxygen, and suspended solid
	Water	Sieve and wash	Odorous gases, coloured waste-water, biochemical and chemical oxygen and suspended solid
	Water, Chlorine vapour (Cl <sub>2</sub> )	Chlorination method	Chlorine vapour, coloured waste-water, biochemical and chemical oxygen, organic substances containing chlorine and suspended solid
	Sodium	Alkali method	Sodium vapour, coloured waste-water,

	hydroxide solution		biochemical and chemical oxygen, and suspended solid
Bleaching stage	Water and Calcium hypochlorite $\text{Ca}(\text{OCl})_2$	Bleach $\text{Ca}(\text{OCl})_2$	Toxic gas $\text{Ca}(\text{OCl})_2$ spared, coloured waste-water, biochemical and chemical oxygen, organic substances containing chlorine and suspended solid
	Water and Hydrogen peroxide ( $\text{H}_2\text{O}_2$ )	Bleach $\text{H}_2\text{O}_2$	Coloured waste-water, biochemical and chemical oxygen, and suspended solid, $\text{H}_2\text{O}_2$ vapour
Final pulp			

#### 4.3 The problems of VPPA in producing pulp and paper

According to Mr. Phan Chi Dung, VPPA has to face many problems in producing pulp at the moment. Production line and technological equipment at the Bai Bang are old and outdated; consumable supplies, raw materials, higher energy, maintenance costs increase, which can cause to potentially prone to breakdowns. Market demand consumption printing and writing paper continued to decline and toughly competed with imported paper which prices were reduced to expand market in Vietnam. Song Duong Tissue Paper is a strong competition in the market, price reduces, the phenomenon of counterfeit and pirate goods increase. Wood raw material prices increase continuously; the situation caused by the export of raw wood chips overheating; and proposed policies to encourage domestic processing and export restriction for exporting crude material. Energy costs in producing are high because in production line, most of the technology and equipment are outdated, which takes a large consumption of energy. Last but not least, the cost of annual maintenance of major equipment is high because of the devices of production lines were run into operation fore more than 30 years; on the other hand, supporting local technology could not meet the demand, so that the repair and replacement equipments are mainly imported.

## 5 FINNISH PAPER ENTERPRISES

### 5.1 Finnish paper mills

Finnish forest industry groups are among biggest forest industry companies in the world (Finnish Forest Industry 2013). In forest industry, the products of pulp and paper occupies two third of total value. The main sectors in pulp and paper industry are paper-board and packaging solutions where Finland is ranked as the world's 6<sup>th</sup> largest producer. About 60% of production capacity is in foreign markets. Finnish production facilities present in Europe, Americas and China. There are over 50 pulp and paper mills in Finland, with up-to-date operating models, cost-effective energy and climate and environment solution. The industry supplies steadily wood raw material in competitive costs, competitive and cost-effective logistics and transport solutions as well as uninterrupted manufacture and deliveries. (Businessscout 2011.)

There are eight pulp and paper companies in Finland, which are Ahlstrom, Metsä Board, Metsä Group, Metsä Tissue, Myllykoski Corporation (acquired by UPM-Kymmene), Stora Enso, UPM and Yhtyneet Paperitehtaat. Ahlstrom is a high performance fiber-based materials company which produce the products for clean and healthy environment, presenting in 22 countries, having 3 400 employees and the revenue in 2014 was 1 billion EUR; in pulp and paper sector, they focus on providing wall-coverings and food packaging (Ahlstrom 2015). Metsä is a Finnish forest industry group who uses the best renewable raw material in the world, presenting in 30 countries, having 9 800 employees and the revenue in 2014 was 5 billion EUR; their the core products are pulp, board, tissue, packaging and cooking paper (Metsä n.d.). Stora Enso is a leading provider of renewable solutions in packaging, biomaterials, wood and paper, presenting in more than 35 countries, having 27 000 employees and the revenue in 2014 was 10.2 billion EUR; from pulp and paper sector, they focus on publication and fine paper, packaging board (Storaenso n.d.). UPM is a biofore company which uses renewable wood biomass, presenting in 13 countries, having 20 000 employees and the revenue in 2014 was 9.9 billion EUR; in pulp and paper sector, they focus on pulp, publication and fine paper, newsprint (UPM 2015).

In this chapter, because Ahlstrom company mainly produces the products for clean and healthy environment, so that the researcher will focus on Metsä, Stora Enso and UPM pulp and paper mills.

## 5.2 External analysis

In this sub-chapter, Porter's five forces will be analysed deeper to give the Finnish pulp enterprises perception about the factors influencing the profitability in Vietnamese pulp market. Based on the Porter's five forces analysis in chapter 4.1, from Finnish pulp enterprises' point of view, bargaining power of buyers is determined as "low to medium", bargaining power of suppliers is "low to medium", threat of substitutes is "low", threat of new entrants is "medium to high", competitive rivalry among existing competitors is "low to medium".

### **Bargaining power of buyers: LOW to MEDIUM**

According to Ministry of Industry and Trade, there are over 500 paper companies with the total pulp production capacity is 437 600 tons pulp per year which meets half of paper production capacity demand, the rest of pulp are from importing, collecting waste paper and importing waste paper. However, the amount of waste paper collected is only 25%, which means the rest pulp source is mainly from import. There is no pulp mill with big capacity, which could produce pulp to serve paper production itself and do pulp business. (Thanh 2015.) When Finnish pulp enterprises do business in Vietnamese market, they will not have to face with high power of buyers (the paper companies). Not like paper industry where manufactures do not have their own distribution channel, hence the distribution system is controlled by outwork agents who buy or import paper production to do outwork and then sell it to consumers (Habubank Securities 2011); pulp industry highly demands domestic production to not be so dependent to imported pulp, which could influence positively to the price of output and help these paper companies to compete with foreign products.

### **Bargaining power of suppliers: LOW to MEDIUM**

The resources are from pulp material regions and waste paper. From pulp material regions, pulpwood is supplied by individual farmers, reforestation

enterprises and wood-chip manufactures such as PISICO and wood-chip manufactures in Dung Quat (Quang Ngai) and Ky Ha (Quang Nam). Because the pulp industry has not explored full of ability in forestry, there are more and more wood-chip manufactures established and the projects of reforestation have not worked very well, even though the area of forest is quite large, pulp industry is in the situation of lack of raw material. It is controversial that wood-chip are mainly exported because pulp manufactures are not able to produce that big amount of wood-chip, then these pulp manufactures have to import pulp from foreign markets. (Chu 2012; Vu 2013.)

After all, the advantage in this wood-chip situation is that there are many wood-chip manufactures, which makes Vietnam become one of the largest wood-chip exporter (Chu 2012). However, the disadvantage is that pulp manufactures in Vietnam are not able to use all of these sources because of lack of high technology. This disadvantage could be the advantage for Finnish pulp enterprises to use the wood-chip sources in Vietnamese market, then apply their high technology in pulp production.

#### **Threat of substitutes: LOW**

Pulp is the particular component in producing paper, there is no substitute product for this at the moment. There is only the method which could be changed to produce it. Besides the pulping method, there is biological method which does not use wood-chip, it is the use of micro-organism to process plant material, break down lignin and inorganic substances to obtain cellulose fibres. This method is encouraged to use because of its advantages in both economy and environment, but it also requires the high technology and it is still very new to pulp industry. (Kienviet 2014.)

#### **Threat of new entrants: MEDIUM to HIGH**

As it is analysed before in Chapter 4, there are more and more foreign investors running projects of pulp and paper in Vietnam. There will be Nine Dragons Paper (China) investing in paper machine of Chanh Duong paper enterprise in Binh Duong with the target of upgrade the paper capacity from 100 000 tons/year to 500 000 tons/year. Lee&Man Paper's project (Taiwan) is running in Hau Giang, and China Paper Corporation is planning to build the paper mill in Centre of Vietnam. Furthermore, SCG Group (Thailand) will

continue to invest in Vina Kraft joint-venture paper company (VKPC) to develop double the production capacity in packaging paper. (Thanh 2015 and Nguyen 2015.)

However, these projects have just started or they are still in documentation process. Vietnamese government is continuing support foreign investors investing in pulp and paper industry with the policies of FDI (mentioned in Chapter 3.1.4) and raw material region development plans (Chapter 4.2.2).

### **Competitive rivalry among existing competitors: LOW to MEDIUM**

From paper sector, there are over 500 paper companies, including many joint-venture companies with strong potential in capital, technology and production level. Moreover, the imported products have high reputation amongst consumers with good quality and competitive price. However, in pulp sector, there is no pulp business, which means all of pulp mills work for their own paper production. Finnish pulp enterprises could highly take advantage in this sector.

To have an overview, Figure 8 describe the Porter's five forces for Finnish pulp enterprises in Vietnamese market.

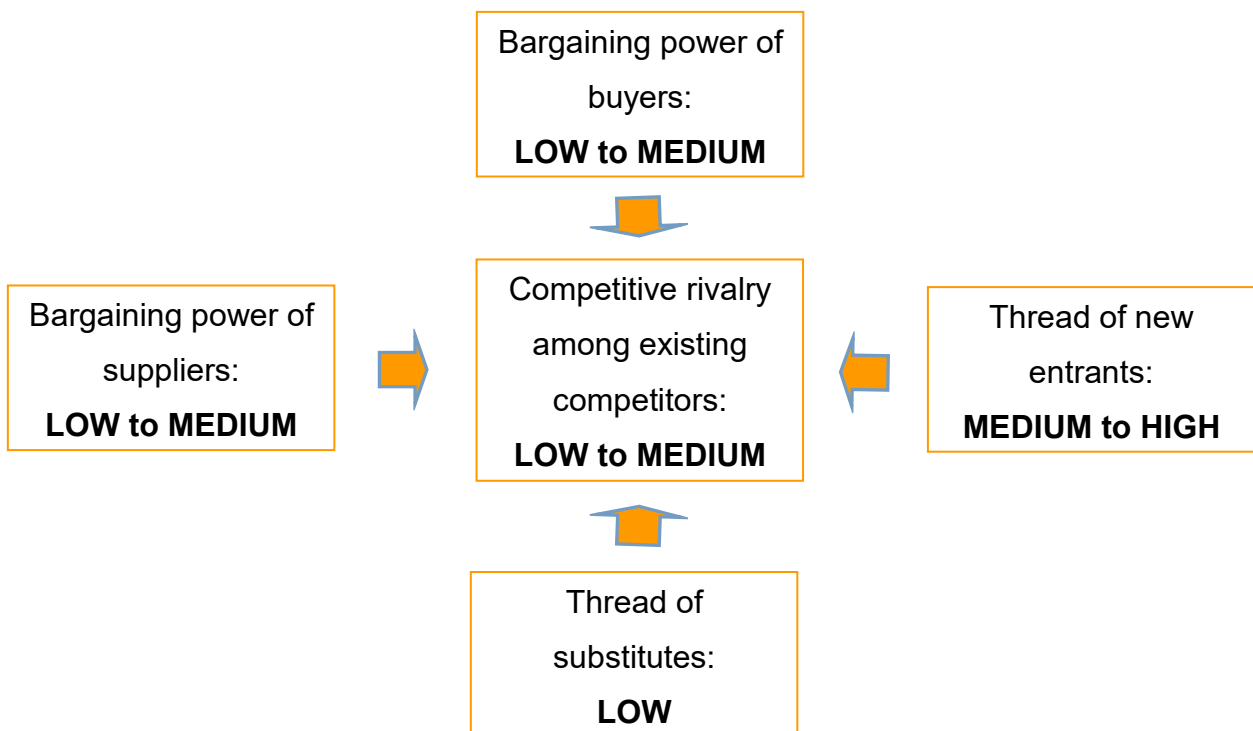


Figure 8: Porter's five forces for Finnish pulp enterprises

### 5.3 Internal analysis - SWOT analysis

In this sub-chapter, SWOT including strengths, weakness, opportunities and threats for Finnish pulp enterprises is analysed to give them a deeper understanding about their situation upon extending the business to the Vietnamese market.

#### **Strengths**

Pulp and paper industries have been the the foundation of Finnish exports with high reputation in the international markets. Even though the electronic media is unstoppable increasing, the demand of paper products still grows dramatically in developing economies. Moreover, because of environmental protection, the demand of packaging materials is also growing, gradually replacing the products that can not be recycled. (Finnish Forest Industry 2015.) The international status of Finnish R&D (Research and Development) in pulp and paper is very high, Finland is in the top five countries in product development and research in pulp and paper technology (Tutkijoidenyo n.d.).

Pulp and paper technology of Finland is at the forefront of international development (Pulpapernews 2012). For example, UPM innovates in bioeconomy to create new business opportunities in renewable and recyclable biomass. Thus, almost of organic production residues such as bark and wood residues, as well as fibre-containing solids from de-inking and effluent treatment, are used in energy generation at mill sites. The result is that approximately 90% of the production waste is reused or recycled. (UPM 2015.) Another example is Metsä Fibre, the company is a world-leading producer of softwood pulp, whose main brand is Botnia, with the main products are sustainably and cost-efficiently produced bleached softwood and birch pulps (Valmet 2015).

#### **Weaknesses**

The most important weakness of Finnish enterprises as well as oversea enterprises when they extend the business to Vietnamese market is that they are lack of knowledge and experiences in the domestic market (Bui 2013). Currently, in pulp and paper sector, there are only Finnish paper products imported to Vietnamese market and there is no Finnish pulp and paper



companies going business in this emerging market. However, three of Metsä, Stora Enso and UPM have pulp and paper mills in China which is such a big and competitive market; Vietnamese market could be the next potential one for Finnish companies.

Furthermore, products provided from Finnish companies have high price because of high technology production and the physical distance between two markets. Additionally, low training level will restrain the labours to approach Finnish advanced technologies. (Bui 2013.)

The last but not least, cultural differences and language barriers can cause the companies some trouble in administrative procedures, business negotiation and making business contacts, etc.

### **Opportunities**

As it is mentioned in Chapter 3.2, EU and Vietnam have agreed on Free Trade Agreement (FTA) since August 4, 2015, which strengthens the Finnish business opportunities in Vietnamese market. Besides, Vietnam and Finland are developing the relationship and many fields such as water treatment, information technology, and education, etc. The Trans-Pacific Partnership (TPP) would also further increase attractiveness of Vietnamese market was a target of investment. Thus, Vietnam's environment business is demanding, where expert and design services, better energy efficiency, information technology and automation are needed. Especially, there are also great demands in agriculture and forestry where growth in consumption and retail trade can open business opportunities for Finnish actor. (Formin Finland 2015, p62-63.)

In pulp sector, there is no player in the market where the Finnish pulp enterprises could take advantage in not taking threat from existing competitors.

### **Threats**

Because of lack of experiences in Vietnamese market, the first threat of Finnish pulp enterprises could be to find trustful local partners. Secondly, Finnish enterprises also have to face with threat from administrative system which is reported as high rates of bribery, bureaucracy, and corruption. Furthermore, Vietnam's general statistics system is unfortunately ineffective,

causing a lot of difficulties in collecting data; the E-commerce is not comprehensively developed, there are big companies' websites with lack of information and there are many pulp and paper companies who do not have their own websites. As a result, it is quite challenging to research the market properly. (Bui 2013.)

After all, strengths, weaknesses, opportunities and threats of Finnish pulp enterprises in Vietnamese market are summarised in Table 6.

Table 6: SWOT analysis of Finnish pulp enterprises

Strengths	Weakness
<ul style="list-style-type: none"> <li>▪ High reputation and good image</li> <li>▪ Innovative and friendly environmental technologies and high quality products</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lack of information and experiences in Asian market</li> <li>▪ High price</li> <li>▪ Physical distance</li> <li>▪ Cultural differences and language barrier</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>▪ Support from government and international integration</li> <li>▪ High demand in agriculture and forestry</li> <li>▪ No player in pulp market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Untrusted local partners</li> <li>▪ Hard to collect market data properly</li> <li>▪ Policy, regulatory and institutional barrier</li> </ul>

## 6 MARKET ENTRY MODE SUGGESTION

The theoretical framework of the research is built under the form of market entry plan. In this chapter, the author will suggest the suitable market entry modes for Finnish pulp enterprises; the other factors in market entry plan such as marketing and promotion strategy, distribution strategy and pricing strategy are not taken into account.

### 6.1 Suggestion 1: Alliance

Belonging to Contractual Modes, Alliance mode is suitable for the companies who market internationally, two or more parties build the relationship to pursue

a set of agreed upon goals while remaining independent organizations (Google Sites n.d. and Marketing Teacher n.d.). This mode is recommended for Finnish pulp enterprises who do not have much of experiences in Vietnamese market, they could make alliance with local partners, which helps them to understand the local culture, market, and ways of doing business. Moreover, the local partners are especially valuable if they have a recognized, reputable brand name or have existing relationships with customers and suppliers in pulp sector (2012books n.d.). Additionally, Finnish firms could reduce the cost of investment, both of costs and risks will be shared.

However, it is not really easy to choose a trustful local partner, Finnish firms must determine what value that the partner could bring to the venture in both tangible and intangible aspects. They might have to prepare to face with documentation issue such as the industrial license, foreign collaboration agreements, capital issues permit, import licenses for machinery and equipment, etc., which could be slow in being issued (2012books n.d.).

## 6.2 Suggestion 2: Joint venture subsidiary

From pulp sector, joint venture mode, which is an entity formed between two or more parties to undertake economic activity together, is the most suitable mode and high-recommended for Finnish firms because of the following reasons (Google Sites n.d.). Firstly, this mode is used effectively when the companies want to access to distribution channels, manufacturing and R&D (Marketing Teacher n.d.). Secondly, it is also useful for the companies who do not have much experiences in the target market, then they could be in joint venture with local companies. Besides, they could be in joint venture with other foreign companies who have better experiences to share investment and risks. Thirdly, they could even make an arrangement with the competitors to cooperate and improve the prospects of both businesses (The Hartford 2015). Moreover, many joint venture companies are successful and well-known brands in Vietnam for example Vina Kraft joint-venture paper company (VKPC), joint-venture of SCG Group (Thailand) and Rengo (Japan); and Tan Mai joint-venture paper company, joint-venture of Vietnamese government and Parson & Whitmore (USA).

Nevertheless, there are also some disadvantages that the control is shared by parties, which could cause some conflict. In addition, the companies might choose the unsuitable partners who do not provide enough leadership and support in the early stages. Furthermore, different cultures and management styles could cause the poor integration and co-operation. (Google Sites n.d. And RP Emery and Associates 2013.)

In brief, the companies could grow and expand their businesses successfully into new markets by using joint ventures, but this mode can be highly complex, and requires excellent relationships between the senior management teams of each partner. Thus, choosing a right partner is set as priority action, joint venture with Vietnam Paper Corporation (Vinapaco) is recommended for Finnish paper and pulp enterprises; because Vinapaco is under the control of Vietnamese government and have cooperated with many big paper companies, so that Vinapaco is the trustful partner that the Finnish companies will be supported by government as well.

### 6.3 Suggestion 3: Wholly-owned subsidiary

After gaining some experiences in doing business in Vietnamese market, Finnish pulp enterprises could consider to establish a new, wholly owned subsidiary. With this mode, the companies can have control of all their operation, it also brings the companies the highest profit if they are successful, especially in pulp sector where there is no player in Vietnamese market. Besides, Vietnamese government has announced some policies about FDI to encourage and attract foreign investors; so that the companies who plan to invest in Vietnam will receive support from government. However, along with high profitability, the investment cost and risk are very high; because of that, this mode is not recommended for the companies in the beginning stage of foreign market entry plan. (2012books n.d. and Basu 2015.)

### 6.4 Potential customers for Finnish pulp and paper companies

According to Mr. Phan Chi Dung, at the moment, none of pulp companies in Vietnamese market has ability to produce enough pulp for themselves and for selling to other companies in near future. Approximately VPPA imports about 20 000 tons of pulp per year.

Bai Bang pulp and paper company and Song Duong paper tissue company are two companies who have to import the largest amount of pulp every year, using about 20 000 - 27 000 tons of pulp per year.

## 7 CONCLUSION

The chapter is divided into three main parts. The first part will answer the questions and the sub-questions presented in the beginning of the research. After that, further research and study will be discussed in the second part. Then the evaluation of the reliability and applicability of the results, as well as the achievement of the objectives will be assessed in the final part.

### 7.1 The objective results

After all of the analyses and observation, the research questions and sub-questions are mentioned and answered in this sub-chapter. The result and main findings are concluded and summarized in Table 7 below.

Table 7: Research question result

Research question	Result
Should Finnish pulp companies extend the business to Vietnamese market?	
What is the situation of Vietnamese market?	<ul style="list-style-type: none"> <li>▪ Potential but not totally discovered</li> </ul>
What is the possibility to develop pulp market in Vietnam?	<ul style="list-style-type: none"> <li>▪ Supporting from government in technological and environmental issue</li> <li>▪ Increasing demand in pulp and paper sector</li> <li>▪ No player</li> </ul>
What are obstacles for foreign companies doing business in Vietnam?	<ul style="list-style-type: none"> <li>▪ Complex and slow administrative procedure</li> <li>▪ Unclear legal framework</li> <li>▪ Culture differences and language barrier</li> </ul>
How does the Finnish pulp sector function?	<ul style="list-style-type: none"> <li>▪ Innovative, high quality</li> <li>▪ Friendly-environment pulp production</li> </ul>

What makes the products of these companies competitive with companies operating in Vietnam?	<ul style="list-style-type: none"> <li>▪ High reputation</li> <li>▪ High quality</li> <li>▪ Upgraded science and technology</li> </ul>
What kind of market entry option should Finnish companies use to successfully enter in Vietnamese market?	
What are the policy and investment in Vietnam?	<ul style="list-style-type: none"> <li>▪ Government encourages FDI</li> <li>▪ Government launches the policy of restructuring material regions</li> </ul>
How do the on-going projects in pulp industry operate and succeed?	<p>Build pulp manufactures near material regions to increase the capacity:</p> <ul style="list-style-type: none"> <li>▪ Nine Dragons Paper invests in Chanh Duong paper mill</li> <li>▪ Lee&amp;Man paper build paper mill in Hau Giang</li> <li>▪ China Paper Corporation builds paper mill in Centre of Vietnam</li> <li>▪ Project of Vina Kraft to increase capacity of packaging paper</li> </ul>
Who are the most important competitors and who have the highest market share in Vietnam pulp industry?	<ul style="list-style-type: none"> <li>▪ In paper sector: Vina Kraft, Tan Mai, Vietnam Paper Corporation</li> <li>▪ In pulp sector: An Hoa, Phuong Nam, Vietnam Paper Corporation, Tan Mai</li> </ul>
What is the best market entry option for Finnish companies?	<ul style="list-style-type: none"> <li>▪ Alliance</li> <li>▪ Joint venture</li> <li>▪ Wholly-owned subsidiary</li> </ul>

In conclusion, Vietnam is a promising market for Finnish pulp and paper enterprises who have high reputation and high quality of pulp and paper products with clean technology. Even though Vietnam has plenty of raw material regions and the demand of pulp and paper is also increasing, the potentials are not discovered fully yet. Currently, there is no player in pulp

business, along with the condition and number of incentives offered by Vietnamese government in technology and environment, Vietnam is gradually becoming the investment destination for many foreign pulp and paper companies.

However, besides the promising aspects, there are also obstacles hindering the Finnish companies enter the business in Vietnam such as complexed and slow administrative procedure and unclear legal framework. Additionally, cultural differences and language barrier can cause a lot of trouble in penetrating the target market.

After all, by analysing and synthesizing the information from multidimensional sources, it is concluded that it is time for Finnish pulp enterprises to concern seriously and carefully to extend the business to Vietnamese market. Three market entry modes are suggested due to the observing and synthesizing the information. Nevertheless, this research is only about market entry plan, further studies such as researching about finance, sales and marketing, etc. should be carried out before the final decision is made.

## 7.2 Further research and study

This research aims to give the Finnish companies an overview about how potential of Vietnamese market is in pulp sector. Further studies could be carried out in order to create a more comprehensive plan to penetrate into the target market. The first recommendation for further studies is to provide the clean technology in pulp sector, especially when Vietnam is suffering seriously from climate change. Secondly, supply chain management plan could be researched to manage and reduce efficiently the cost of production. Thirdly, the biopulping method which could reduce chemical toxic in production should be deeply researched and developed as well.

## 7.3 Reliability and applicability of the results

The thesis is made being free of bias and distortion. In the empirical part, the situation of Vietnamese market in pulp sector is collected from published sources of government such as [gso.gov.vn](http://gso.gov.vn); business websites such as [vneconomy.com](http://vneconomy.com), [vietstock.vn](http://vietstock.vn); and pulp and paper websites such as [vietpaper.com.vn](http://vietpaper.com.vn), [pulpapernews.com](http://pulpapernews.com). It is also collected from master degree

theses related to pulp and paper sector and reports of paper and pulp companies. When analysing Finnish pulp enterprises, the information is from the enterprises' web-pages and the forestry industry's website of Finland which is forestindustries.fi. Therefore, it can be said that the research is a highly reliable and valid secondary reference for Finnish pulp and paper enterprises to expand the business to Vietnamese market.

## 8

### SUMMARY

The thesis is created to assist Finnish pulp enterprises in their decision if they should extend the business to Vietnamese market. The thesis started with introduction part where research background, research objectives and questions are given with research methods, scope and limitations, and thesis structure.

The thesis is divided into two main parts which are theoretical part and empirical part. The theoretical part is presented in Chapter 2 where the analysing tools and market entry modes are carried out under the form of market entry plan. In the empirical part which has four chapters, analysing tools are applied in practice. Chapter 3 and 4 concentrate on collecting information about Vietnamese pulp market and then analysing how potential it is; besides, material issues, on-going projects, and technology and environment related to pulp sector are among the most important aspects. Chapter 5 focuses on main functions of Finnish pulp and paper enterprises. To generalize the wider view of Finnish pulp and paper industry, the analysis of three main companies is carried out. Last but not least, three market entry modes are recommended in Chapter 6 as the result of analysing the Vietnamese pulp situation and Finnish enterprises' functions.

In conclusion, the thesis points out the potential business for Finnish companies in Vietnamese pulp market. Nevertheless, there are also some obstacles which could encumber the market potential. From the author's point of view, this thesis is supposed to be a secondary reference. Before making the final decision, the Finnish enterprises need to have more research and further studies.



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## LIST OF ABBREVIATIONS & ACRONYM




ADB	The Asian Development Bank
AFTA	ASEAN Free Trade Area
APEC	The Asia Pacific Economic Cooperation Forum
ASEAN	Association of South-East Asian Nations
EU	European Union
FDI	Foreign Direct Investment
FORMIS	Forest Management Information System Program
FTA	Free Trade Agreement
GDP	Gross Domestic Product
HAWASME	Hanoi Women's Association of Small and Medium Enterprises
HPI	Happy Planet Index
TFF	The Trust Fund for Forests
IMF	The International Monetary Fund
IPP	The Innovation Partnership Program
NFF	New Economics Foundation
ODA	Official Development Assistance
QCS	Quality Control System
VCCI	Vietnam Chamber of Commerce and Industry
Vinapaco	Vietnam Paper Corporation
VND	Vietnam Dong
WB	The World Bank
WSPST	The Water and Sanitation Program for Small Towns
WTO	World Trade Organization

## APPENDICES

















### APPENDIX 1. Vietnam's economic indicators

Overview	Last	Reference	Previous	Range	Frequency	
<b>GDP Growth Rate</b>	6.8 percent	Sep/15	6.08	3.14 : 8.46	Quarterly	
<b>Unemployment Rate</b>	2.36 percent	Sep/15	2.44	1.81 : 4.5	Quarterly	
<b>Inflation Rate</b>	0.34 percent	Nov/15	0	-2.6 : 28.24	Monthly	
<b>Interest Rate</b>	6.5 percent	Nov/15	6.5	4.8 : 15	Daily	
<b>Balance of Trade</b>	-200 USD Million	Nov/15	500	-3888 : 1444	Monthly	
<b>Government Debt to GDP</b>	50.5 percent	Dec/14	54.98	31.9 : 54.98	Yearly	

### APPENDIX 2. Vietnamese market

Markets	Last	Reference	Previous	Range	Frequency	
<b>Currency</b>	22539	Dec/15	22546	15002 : 22546	Daily	
<b>Stock Market</b>	566 points	Dec/15	562	337 : 641	Daily	
<b>Government Bond 10y</b>	7.06 percent	Dec/15	7.06	5.99 : 12.53	Daily	

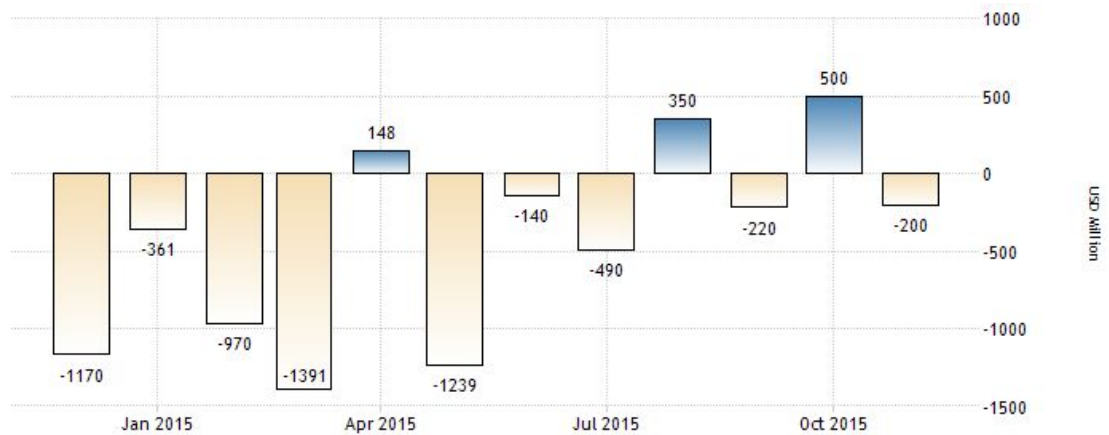
### APPENDIX 3. GDP of Vietnam

GDP	Last	Reference	Previous	Range	Frequency	
<b>GDP Growth Rate</b>	6.8 percent	Sep/15	6.08	3.14 : 8.46	Quarterly	
<b>GDP Annual Growth Rate</b>	6.8 percent	Sep/15	6.44	3.12 : 8.48	Quarterly	
<b>GDP</b>	186 USD Billion	Dec/14	171	6.3 : 186	Yearly	
<b>GDP Constant Prices</b>	1954503 VND Billion	Sep/15	1224878	480455 : 2695796	Quarterly	
<b>Gross National Product</b>	3433515 VND Billion	Dec/13	3102553	39284 : 3433515	Yearly	
<b>Gross Fixed Capital Formation</b>	938400 VND Billion	Dec/14	844475	5495 : 938400	Yearly	
<b>GDP per capita</b>	1078 USD	Dec/14	1029	263 : 1078	Yearly	
<b>GDP per capita PPP</b>	5370 USD	Dec/14	5125	1501 : 5370	Yearly	
<b>GDP From Agriculture</b>	464861 VND Billion	Sep/15	297697	15362 : 713381	Quarterly	
<b>GDP From Construction</b>	142603 VND Billion	Sep/15	85650	3432 : 209875	Quarterly	
<b>GDP From Manufacturing</b>	408426 VND Billion	Sep/15	262487	20005 : 687401	Quarterly	
<b>GDP From Mining</b>	268268 VND Billion	Sep/15	168808	8712 : 445373	Quarterly	
<b>GDP From Public Administration</b>	106138 VND Billion	Dec/14	94402	10 : 261439	Yearly	
<b>GDP From Services</b>	1155502 VND Billion	Sep/15	704664	39302 : 1708293	Quarterly	
<b>GDP From Transport</b>	81510 VND Billion	Sep/15	48117	3819 : 117474	Quarterly	
<b>GDP From Utilities</b>	173533 VND Billion	Dec/14	142616	2 : 173533	Yearly	

## APPENDIX 4. Trade of Vietnam

Trade	Last	Reference	Previous	Range	Frequency
<b>Balance of Trade</b>	-200 USD Million	Nov/15	500	-3888 : 1444	Monthly
<b>Exports</b>	14300 USD Million	Nov/15	14314	537 : 14481	Monthly
<b>Imports</b>	14500 USD Million	Nov/15	13814	740 : 14938	Monthly
<b>Current Account</b>	1267 USD Million	Jun/15	-1022	-10823 : 9471	Quarterly
<b>Current Account to GDP</b>	4.4 percent	Dec/14	4.2	-11.9 : 5.9	Yearly
<b>External Debt</b>	45243 USD Million	Dec/13	59133	10345 : 59133	Yearly
<b>Terms of Trade</b>	102 Index Points	Dec/14	99.94	94.81 : 110	Yearly
<b>Foreign Direct Investment</b>	7199 USD Million	Sep/15	2622	-2650 : 25791	Quarterly
<b>Crude Oil Production</b>	354 BBL/D/1K	Jun/15	300	125 : 415	Monthly
<b>Terrorism Index</b>	0	Dec/14	0	0 : 0.31	Yearly
<b>Tourist Arrivals</b>	733 Thousand Per	Nov/15	649	529 : 756	Monthly

## APPENDIX 5. Vietnam balance of trade



## APPENDIX 6. Vietnam foreign direct investment

