

CONTINENTAL WAREHOUSING

Case – Ab Etiproducts Oy

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The aim of the present research was to get a clear picture of the process of establishing a warehouse in another continent. The objectives are to find out what should be taken into consideration, what kind of problems might be faced and how it is possible to minimize the risks during this process.

The present thesis research is a qualitative research. Experiences in establishing a warehouse in Durban, South Africa, by the case company Ab Etiproducts Oy from Finland were used for this research. Specifically, on the basis of analysis and observations of the theoretical and practical data collected, warehouse process establishment was clarified and a process model was designed for further use of the case company. It is also expected and hoped that B2B activities and growing companies planning to go international would benefit from the thesis research.

The scope of the research was carefully narrowed down to keep the thesis research within the chosen structure, which are theoretical and practical issues related to the warehouse establishment and options for building a bridge for business from Finland to South Africa.

It was concluded that with careful planning, reliable logistics and efficient risk management, distance is not an obstacle but an opportunity.

Key words warehouse establishment, logistics, South Africa, Durban, company growth, expanding the business

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FOREWORD

Haluaisin kiittää yrityksen Ab Etiproducs Oy:n toimitusjohtajaa mahdollisuudesta tehdä kyseisen työn mielenkiintoisen reaalisen esimerkin perusteella sekä työn ohjaajaani ja muita lehtoreitani hyvästä ohjeistuksesta. Lisäksi haluan kiittää ystäviä, kollegoja ja erityisesti perhettäni siitä, että he ovat vahvasti tukeneet minua ja tehneet tämän työn valmistumisen mahdolliseksi.

I would like to thank General Manager of Ab Etiproducs Oy for the opportunity to do this work on the basis of interesting and real example and also my supervisor and my other lecturers for the effective guidance. Additionally I would like to thank my friends, colleagues, and especially my family for the strong support and for making this possible.

SYMBOLS AND ABBREVIATIONS

BL	Bill of Lading
CN codes	The Combined Nomenclature for customs purposes
CRMs	Critical Raw Materials
DAP	Delivered at Place
ETA	Expected date of arrival
FIFO	First in first out
ICC	International Chamber of Commerce
INCOTERMS	International Commercial Terms published by ICC
JIT	Just In Time Method
MRP	Material requirements planning system
REACH	Registration and Legalisation of Chemicals
SADC	Southern Africa Development Community
SMEs	Small and medium-sized companies
VMI	Vendor-managed inventory
WEF	World Economic Forum

1 INTRODUCTION

Innovation distinguishes between a leader and a follower

Steve Jobs

Innovation is a key word to the success. Innovations are changing people's lives and creating a space for the business and for the growth. Innovation always brings changes and a world full of changes creates an abundance of new opportunities. Because of globalization, companies are growing and expanding their activities beyond borders.

Competition is getting tougher and successful management should dare to be innovative and to create changes. In order to increase the business and to reach new customers and markets, producers look continuously for new usage and sales areas. Using benefits of latest technologies, increasing knowledge of the employees as well as outsourcing part of the business to professionals makes company stronger on competition arena.

Stereotypes are still present also in business. It is not common to look too far and, for example, for Finnish companies increasing of the business means normally expanding to neighboring countries such as Baltics, Sweden and Russia. Kuusela and Neilimo (2010, 115) creates a view about the internationalization target countries in Europe. Figure 1 shows that Scandinavia is considered as too cold, France is ruling the south and Germans are expanding to the east to Austria, Poland, Czech Republic and Hungary.

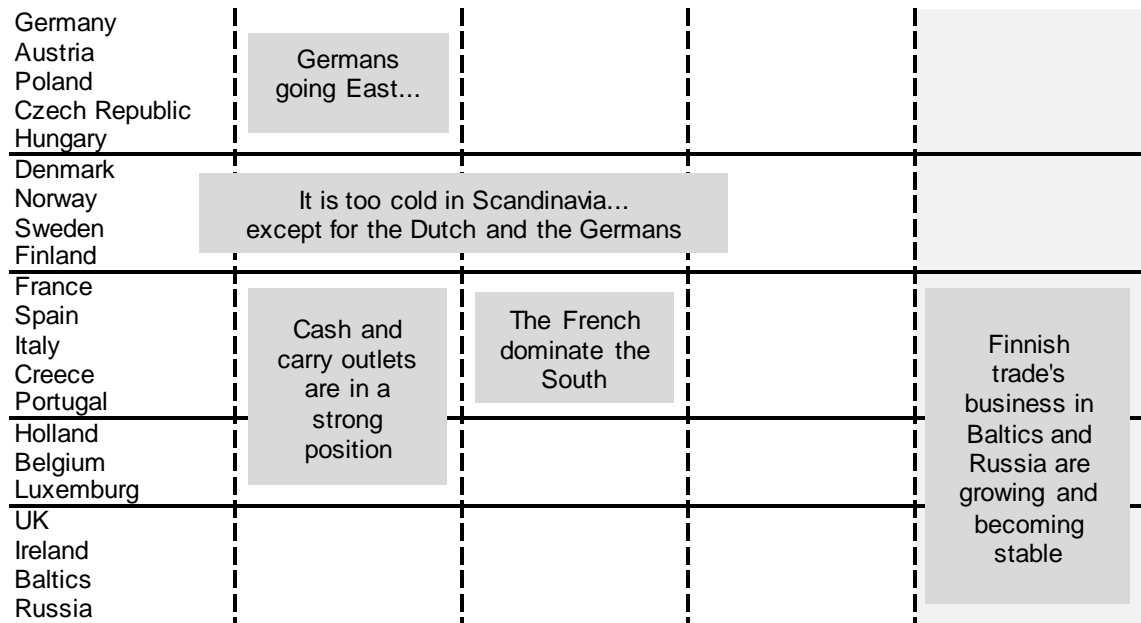


Figure 1. The internationalization target countries in Europe (Kuusela & Neilimo 2010, 115)

It is easy to see that internationalization target countries in Europe listed on Figure 1 are all from nearby and African countries as well as many other countries from different continents are missing from the list. From Finland South Africa is seen as an exotic country which is far away. Close distance is considered as more simple, safe and easy to handle. Therefore, today, on the kick-off meeting, South Africa is not the first suggestion of internationalization target country.

Because of the globalization, borders are not considered as obstacles anymore but rather as opportunities and new cooperation tools are developed for communication. Social media tools suitable for the internationalization are also widely used by many companies for the marketing. Many of them are free of charge and for example Skype or Whatsapp are very popular for the business communication in developing countries. Figure 2 shows that communication tools are available and it became easy to reach the trade partner from another continent.

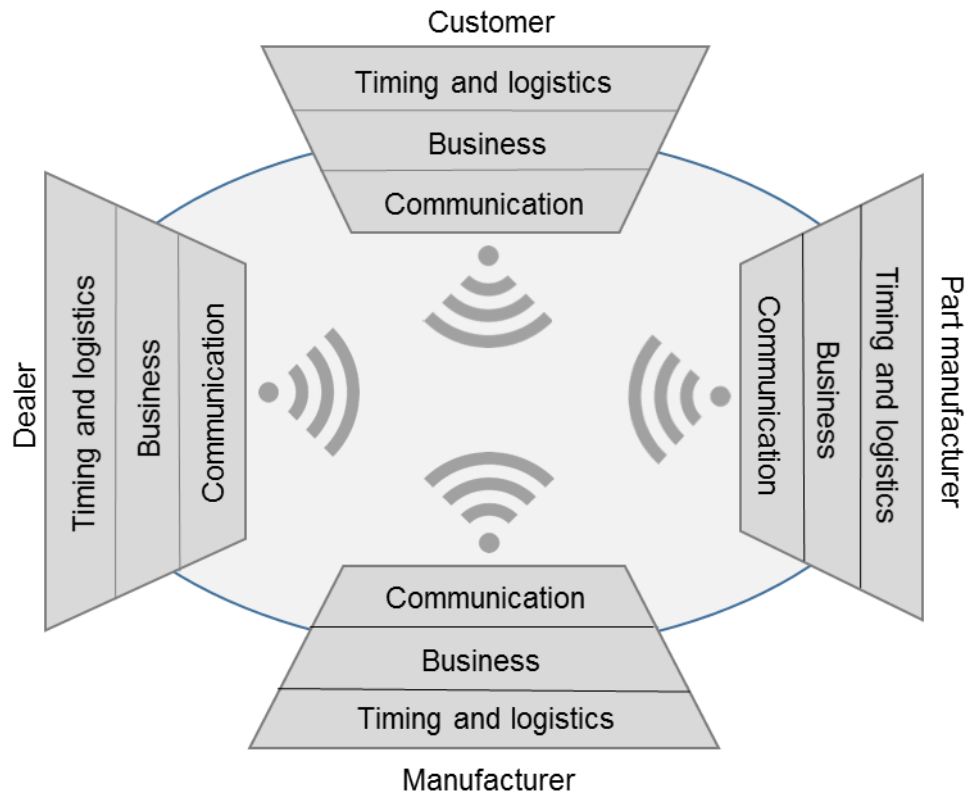


Figure 2. Internet connecting trade partners (Sakki 2009, 26)

If a company had a possibility to grow and the distance were not an obstacle, it is not sure that the company would be ready to check options and opportunities in another continent. Today, product supply to another continent can be as easy and simple as product supply to the neighboring country. If company management would be sure that on another continent, demand would be stronger and the benefit level would be higher, company management would evaluate this possibility and would be ready to investigate, to invest, and to make efforts in order to make it real.

Because of recent political turbulences and world economic crisis, doing business with neighboring countries might also face obstacles such as sanctions, lack of demand, and economic difficulties. During this challenging period it could be a good opportunity to seek for cooperation partners in developing countries. For many decision makers it seems clear now that business opportunities in India, China and on African continent have become increasingly attractive. Significant possibility for profits in agriculture may be found in Africa and

China is already taking this advantage. China bought about 12 million acres of land for large-scale farming operations in sesame, wheat, corn which at the end is shipped back to China (Dan 2015). According to Omondi-Ogao (2013), interest to the continent rich of resources is increasing and China shows stable efforts for investments, working force and the professionalism. Focusing on the growing areas such as African countries and establishing the warehouse in another continent might be a good opportunity to expand. However, it should be well planned and risks should be well evaluated. The main idea of the present thesis research is to encourage managers who are considering international business to look further beyond neighboring borders towards new goals, levels and achievements.

1.1 Problem definition and scope of research

The objective of this research is to understand the process of the warehouse establishment in another continent and to prepare a process model, which would simplify the process view and could be used by the case company in the future. The model includes steps one by one of the warehouse establishment process and it would evaluate the right timing for the action. It is expected that business to business (hereinafter B2B) activities and growing companies interested to start business in Africa may find the thesis research useful and, first of all, the thesis research is expected to be beneficial for case company future needs.

The present research tries to get a clear picture of warehouse establishment and to learn, what should be taken into consideration, what kind of problems might be faced during this process and how to minimize the risks and to start the business efficiently in another continent. This research is conducted in order to make it useful for the company's future needs. Therefore, the research also seeks to uncover potential directions, dynamics and solutions. A clear process instruction and useful ideas are expected to come out during the research, which would add value and efficiency to the process and possibly would be smoothly implemented into reality in the future.

As the thesis research topic is very wide, the scope of the research needed to be narrowed down closely to the chosen structure. The main topic to be analyzed on the general level without going too deep into the details. The reason is to avoid straining the reader with such details as CN codes, CRMs and REACH issues, packages, import and export statistics. The thesis research is expected to be essential, clear, informative, and consistent and to focus on the pertinent and relevant issues. The names of well-known international companies and partners of the case company are not given in the present thesis research because ideas, examples and experiences are analyzed on general level and because of the confidentiality reasons.

1.2 Overview of case company Ab Etiproducts Oy

The case study section describes the company Ab Etiproducts Oy, which decided to start business in Africa and after a while to open a warehouse in South Africa. Ab Etiproducts Oy is a subsidiary of a Turkish state-owned boron producer Eti Maden IGM, which is a world leader in producing boron minerals and chemicals. Ab Etiproducts Oy situated in Finland and it is responsible for sales and marketing of Turkish boron products in Scandinavia, Baltics, Poland, Germany and Sub-Saharan African countries. Ab Etiproducts Oy operates with strong logistics support including seven warehouses around the Baltics Rim., Indeed, the case warehouse was the first established warehouse in African continent. Following the market demand, the case company might open more warehouses in Africa. Ab Etiproducts Oy has specific activities and it is benefiting from its own large and unique experience in the chemical raw material sector. Further details of Ab Etiproducts Oy and its activities as well as of boron usage are discussed in chapter 4.

1.3 Research method

The thesis research can be described as a research development project, which includes description of the task, explanations, analysis and creating of new data and business development (Lapland University of Applied Science 2015b, 5). The present thesis research is a qualitative research. The main difference between qualitative and quantitative research is that the quantitative research data consists of numbers and qualitative research data may consist of observations and interviews. In qualitative research, the researcher is the instrument or the tool for designing, collecting, and analyzing (Warren 2008). Qualitative research aims to understand the research problem by collecting and analyzing the data based on the researcher's observations of people's behaviors with the aim of turning scattered data into a meaningful, clear, concise and unified entity of data describing the phenomenon being researched (Lapland University of Applied Science 2015a). In the present thesis research, the interview it is conducted and the researcher's personal experience and observations are widely used as research data.

The resent thesis research is based on empirical study, case experience and analysis. Observation and personal experience are strongly used as a support and combined with all the received data. Observation as gathering data by watching is considered as one of the central building blocks of much qualitative research (Harward University 2008a).

In observations, both the emic and etic approach are combined. Precise definitions of the concepts of emic and etic vary drastically across authors, but a basic understanding is as follows: an emic approach takes as its starting point the perspectives and words of research participants while an etic approach uses hypothesis, perspectives, and concepts from outside of the setting being studied. In taking an emic approach, a researcher tries to put aside prior theories and assumptions in order to let the participants and data "speak" to them and to allow themes, patterns, and concepts to emerge. (Harvard University 2008b.) Personal experience is used mostly to support an emic perspective.

Analyzed data and interview forms are attached as appendixes of the present thesis research.

One real warehouse establishment process will be presented as a case study. The case company is a raw material supplier and its product portfolio is rather specific. One detailed and impactful interview with General Manager of case company Ab Etiproducts Oy was made for the case study. The interview questions were specifically prepared with the intention to get a clear picture of the case company reasons to start activity in Africa. Answers to the questions allow to understand the process of moving forward with this project as well as to get an idea about the future plans related to company activity on African continent.

Marketing, financial and legal issues, sales and logistics are supporting each other while opening a business in another continent. The thesis research is focusing on logistics benefits and steps of warehouse establishment. The interview is conducted in written by email.

Geographically, the researcher frames the research to the business bridge from Finland to Africa. In general the research is considered to be suitable for establishing a warehouse in different places no matter which continent is in question. However, the focus is made on African continent as for the long run it presently seems to be a very potential place for the successful business.

2 CHANGES AND INTERCONTINENTAL OPPORTUNITIES

Speed is increasing and technologies are bringing about new possibilities. Because of the globalization, world business has expanded. The same way competition is tightening and companies have to become increasingly innovative and effective in all the aspects. One of the vital abilities is adopting company activity to the changing world.

In the change situation reasons and targets to be clearly indicated. It is important to think why the change is need, is it necessary, what are options, what is the goal, how it can be achieved and what will be different from now. (Luomala 2008, 4-5). For the present thesis research such information is interesting. If company management is considering going international, there must be a vision and specific reason behind such idea. Possibly company is very successful and needs to grow further, or company is stable and wants to try something new, or company is not doing well and considers that going international would help to find new markets and to ensure company's future. Even reasons and targets could vary, it is expected that in all cases solution might be workable, if well planned and evaluated. Change plan should include main actions and the schedule (Luomala 2008, 6). Figure 3 describes how to move forward from the idea to the successful change.

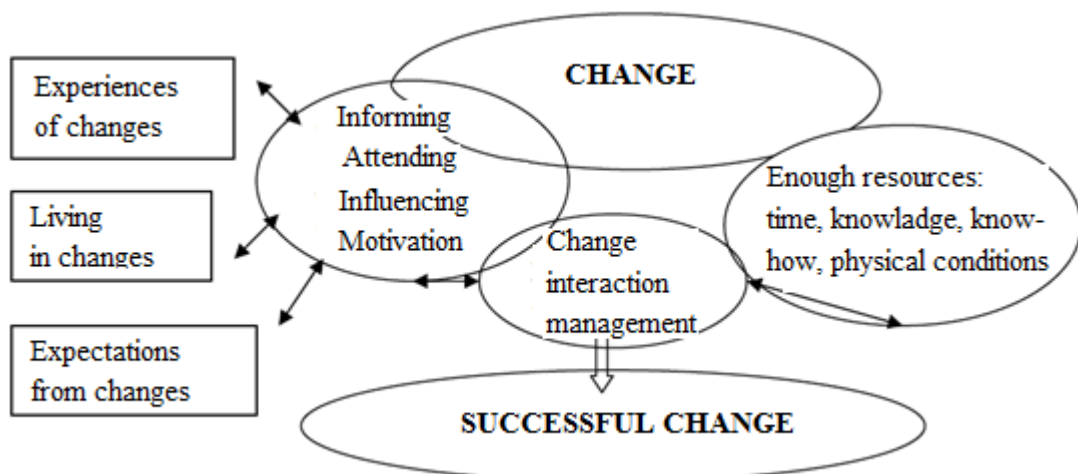


Figure 3. From the idea to the successful change (Luomala 2008, 14)

As it is illustrated on Figure 3, managing the change and turning it into the successful change requires skills, interactions, experiences and resources. Many

different resources are needed for successful change which are time, knowledge, know-how and physical conditions. Information flow, influencing, attending and motivation are in a close interaction with change management. Background and different experiences are playing an important role in the change process. Additionally, further expectations from changes are influences the change process. It can be easily concluded that people's skills and personality are playing an important role in this process.

2.1 Finland country profile

In order to have an equal and objective point of view about both Finland and South Africa, it was decided to use data from reliable source which is on another continent than countries in question. It was considered that Australia, as country from different continent, would provide equal data for both countries Finland and South Africa and therefore data from Australian official governmental pages was used for the present thesis research.

The Global Competitiveness Report provides worldwide competitiveness information of 144 countries (Schwab 2014). Both Finland and South Africa are included in list of countries which productivity and prosperity was evaluated. Countries global competitiveness index and stage of development of development can be seen in Appendix 1 and Appendix 2 and detailed indicators in Attachment 3. For the sake of equality, countries index information is used from the same source. Present source is also the most comprehensive assessment of competitiveness in its sector.

The Republic of Finland is a parliamentary democracy with a republican constitution, a member of the European Union since 1995. Finland is the most sparsely populated country in the European Union with population of about 5.4 million which is spread over 338,145 square kilometers. Finland is a bilingual country with two official languages Finnish and Swedish. Finland includes autonomous administrative province The Åland Islands. The capital of Finland is Helsinki (Austalian Government 2015a.)

Table 1 shows highlights about Finland and its competitiveness ranking among other countries. The best Rank is 1 (out of 144 countries) and the highest score value is 7 (evaluated level between 1-7).

Table 1. Global Competitiveness Index (Schwab 2014)

FINLAND		
Global Competitiveness Index		
	Rank (out of 144)	Score (1-7)
GCI 2014–2015	4	5.5
GCI 2013–2014 (out of 148).....	3	5.5
GCI 2012–2013 (out of 144).....	3	5.5
GCI 2011–2012 (out of 142).....	4	5.5
Basic requirements (20.0%)	8	6.0
Institutions	2	6.1
Infrastructure	19	5.6
Macroeconomic environment	43	5.3
Health and primary education.....	1	6.9
Efficiency enhancers (50.0%)	10	5.3
Higher education and training.....	1	6.2
Goods market efficiency	18	5.0
Labor market efficiency	23	4.7
Financial market development.....	5	5.5
Technological readiness.....	11	6.0
Market size.....	55	4.2
Innovation and sophistication factors (30.0%)	3	5.6
Business sophistication	9	5.4
Innovation.....	1	5.8

Finland is on the 4th position which is rather high. Finland has high scores for basic requirements and innovation and sophistication factors (6,0 and 5,6). Health and primary education as well as higher education and training are on the highest level (6,9 and 6,2). Comparably small are market size and labor market efficiency (4,2 and 4,7).

Finland has a strong position comparing to other Advanced economies (Figure 4). Finland is an innovation driven country.

Stage of development

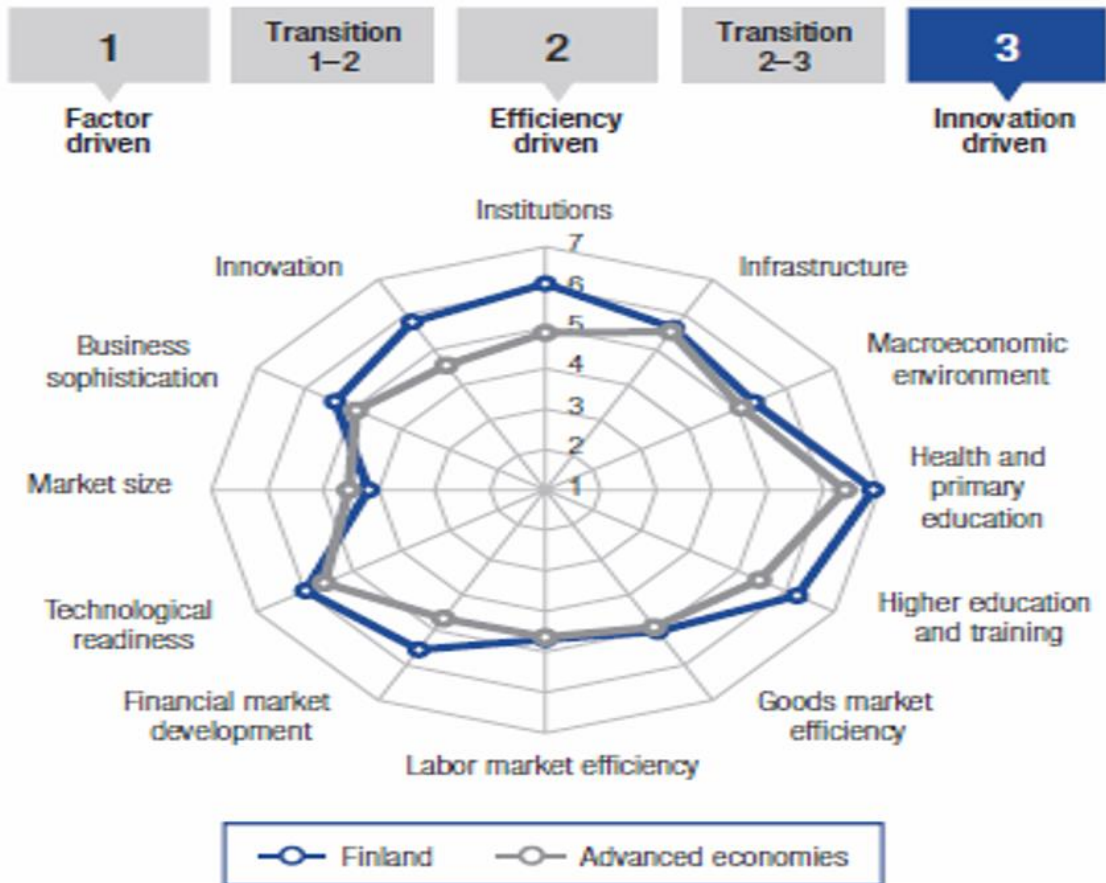


Figure 4. Stage of Development (Schwab 2014)

As it is illustrated on Figure 4, Finland has a stronger position than other advanced economies in Innovation, Institutions, Financial market and Higher education and training. Market size in Finland is smaller than other advanced economies. Labor market efficiency is on the same level with other advanced economies.

2.2 Finland beyond its borders

In Finland, the focus is on the knowledge, the know-how and on the innovational solutions. Even the product producing plants are moving slowly to

countries where working power is cheaper such as China, India or Turkey, Finnish company can be competitive in the global market by offering something special, by being a different in quality and innovations.

Australian trade commission (Australian Government 2015a) describes Business Culture in Finland as following

- Appointments to be organized well in advance.
- Punctuality is required.
- Greetings by handshake, stating first name and surname.
- Spot decisions are rare.
- For a first meeting formal business dress is most appropriate. (Australian Government 2014a.)

Finland has gained a good reputation in the world as a honest and reliable trade partner and there are many Finnish company brand names well known around the globe such as Rovio, Nokia, Kesko, Stockmann, Stora Enso, Fortum, Kone and others.

2.3 Finnish organizations supporting internationalization

According to the Ministry of Foreign Affairs of Finland the network of Finnish missions provides services to Finns and the Finnish society abroad operating with 89 offices (Figure 5) and among many others missions, they are also monitoring trade threats and possibilities and are involved in development of international cooperation. Some of services are meant for private people, some of them are especially for companies, which are seeking for the international success. (Ministry of Foreign Affairs of Finland 2015.) South Africa is not separately included to the list of Finnish long-term partner countries but Ethiopia, Kenya, Mozambique, Zambia and Tanzania are African countries included to this list.



Figure 5. The network of Finnish missions (Ministry of Foreign Affairs of Finland 2015)

It can be seen from the Figure 5 which shows a network map about Finland's missions around the world, that within Europe its activity is very strong and it is also well presented in America, Australia and African countries on Sub-Sahara area. It can be concluded that support for Finnish companies which go international is available for the above destinations.

The idea of the Team Finland is to promote Finland's external economic relations. Internationalisation of businesses is considered important for Finnish companies.



Figure 6. Services helps company to get to the world (Team Finland 2015a)

Figure 6 describes how services of Team Finland may help companies to get to the world. World is a big place and with the right partner it is easier to choose the right way to the success. The Team Finland offers information, tools and networks to boost the success of Finnish companies abroad and to promote

Finland's country brand. The Team Finland services include market opportunities, financing, networks, advising & training services (Team Finland 2015a).

As the threshold for internationalization, especially for SMEs, is often high, and lack of the information, knowledge and readiness might be the main problem on the way to expand the business further, Finnish government is lowers this threshold by public activities and promotes export and internationalisation such as Finpro. Finpro is public organization and it encourages Finnish companies to go international.



Figure 7. Finpro main activities (Finpro 2015a)

Figure 7 describes what kind of activities Finpro provides. Finpro organizes networking events, guides companies to business partners, associations, authorities, and provides companies with information on potential business in target markets, operating methods, legislation and regulations. This allows companies to operate faster in the target market. Finpro manages projects such as Cleantech Finland, Future Learning Finland and FinlandCare. Finpro is part of the Team Finland network and also it promotes tourism and encourages foreign investment (Finpro 2015a.) Finpro provides unique network support and helps Finnish SMEs to find opportunities abroad and to transform it into profitable business in the international markets. (Finpro 2015b.)

Finnpartnership provides Matchmaking Service and the PartnerSearch service helps companies and organizations in Finland and developing countries to find cooperation opportunities. External consultants may be organized to check the

backgrounds of the companies, also Finnpartnership organizes occasionally events to connect companies. (Finnpartnership 2015.)

As it was indicated in chapter 2.2, trump of Finland focus is on quality, knowledge and innovation and the most important Finnish funding agency for innovation, research and development is Tekes which is also a part of a Team Finland network. As African continent is considered by Tekes as continent of opportunities, in 2014 Tekes and Foreign Ministry have created a common BEAM project for cooperation between Finland and developing countries to improve innovation and business partnership (Tekes 2014.)

2.4 South Africa country profile

The African continent, rich in natural resources, enjoys increasing attention from the business world around the globe. Tourist-friendly South Africa is the most developed country in Sub-Saharan area (Figure 8) and may be considered as a gateway into Sub-Saharan Africa thanks to its well-developed banking system, infrastructure, and communications (Table 2).

Table 2. Global Competitiveness Index (Schwab 2014)

SOUTH AFRICA		
Global Competitiveness Index		
	Rank (out of 144)	Score (1–7)
GCI 2014–2015	56	4.4
GCI 2013–2014 (out of 148).....	53	4.4
GCI 2012–2013 (out of 144).....	52	4.4
GCI 2011–2012 (out of 142).....	50	4.3
Basic requirements (40.0%)	89	4.3
Institutions	36	4.5
Infrastructure	60	4.3
Macroeconomic environment	89	4.5
Health and primary education.....	132	4.0
Efficiency enhancers (50.0%)	43	4.4
Higher education and training.....	86	4.0
Goods market efficiency	32	4.7
Labor market efficiency	113	3.8
Financial market development	7	5.4
Technological readiness.....	66	3.9
Market size.....	25	4.9
Innovation and sophistication factors (10.0%)	37	4.1
Business sophistication	31	4.5
Innovation.....	43	3.6

Table 2 shows highlights about South Africa from Global Competitive Index and its competitiveness ranking among other countries. South Africa is on the 56th position and has moderate scores for basic requirements and efficiency enhancers (4,3 and 4,4). Financial market development, market size and goods market efficiency are comparably on the highest level (5,4, 4,9 and 4,7). Technological readiness and labor market efficiency are on comparably low position (3,9 and 3,8).

Figure 8 shows stage of development of South Africa among Sub-Saharan African countries.

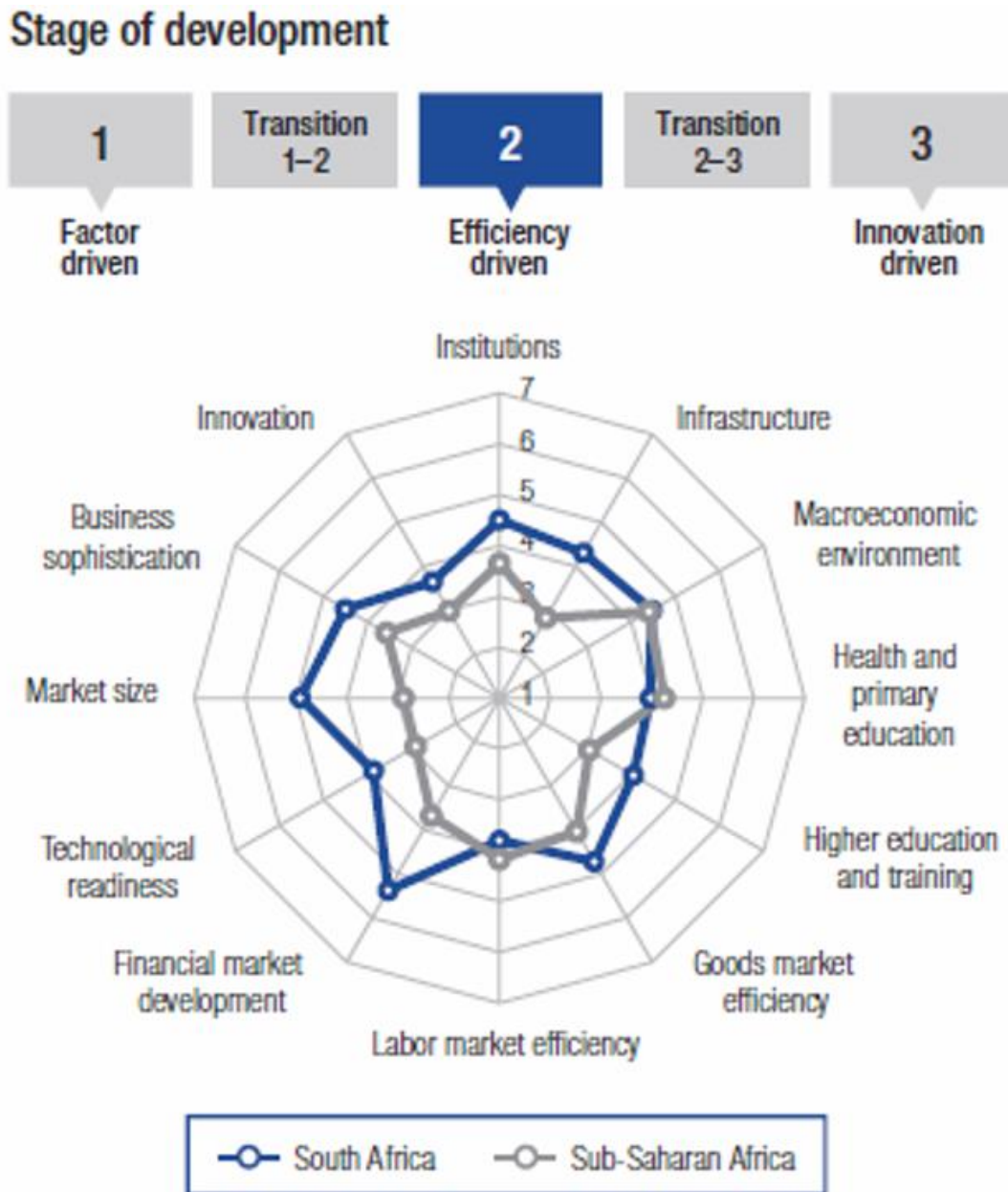


Figure 8. Stage of Development (Schwab 2014)

As it is seen, South Africa is an efficiency driven country, which is notably stronger than other Sub-Saharan African countries especially in financial market development, market size, business sophistication, institutions, infrastructure and higher education and training. Only labor market efficiency and health and primary education are lower in South Africa comparably to Sub-Saharan Africa.

2.5 South Africa beyond its borders

South Africa is 1 233 404km² in size country with three capitals which are legislative Cape Town, administrative Pretoria and judicial Bloemfontein. Since 1994, South Africa has had a democratic government. South Africa is well known for its agricultural products and minerals. (South African Tourism 2015a). The country owns a comparatively high level of infrastructure, transport, telecommunications and banking system and, therefore, it can be considered as the gateway into Africa. (Australian Government 2015c). South Africa is the part of the SADC which is Southern Africa Development Community (Australian Government 2015d).

Australian trade commission (Australian Government 2015d) describes Business Culture in South Africa as following

- Appointments are necessary. Most South Africans prefer a face-to-face encounter to a telephone call or email contact.
- Business meetings can be informal, but formal with government officials.
- Punctuality is valued but deadlines are often flexible.
- Security in areas of South Africa must be taken seriously.
- Decision makers are often centralized and organization structures tend to be hierarchical.
- The banking system is highly developed and starting a business is relatively easy. (Australian Government 2014d.)

The population in South Africa of around 50 million and there are 11 official languages. However, English is a second language to most South Africans which makes communication easy for the international partners (Australian Government 2014d.)

2.6 Logistics options in South Africa

Most of Africa's imports and exports are conducted by sea and there are many ports in Africa with cargo-handling areas and storage facilities. In South Africa, there are several ports and harbors with different facilities. Figure 9 shows real time traffic around Durban and other South African ports.

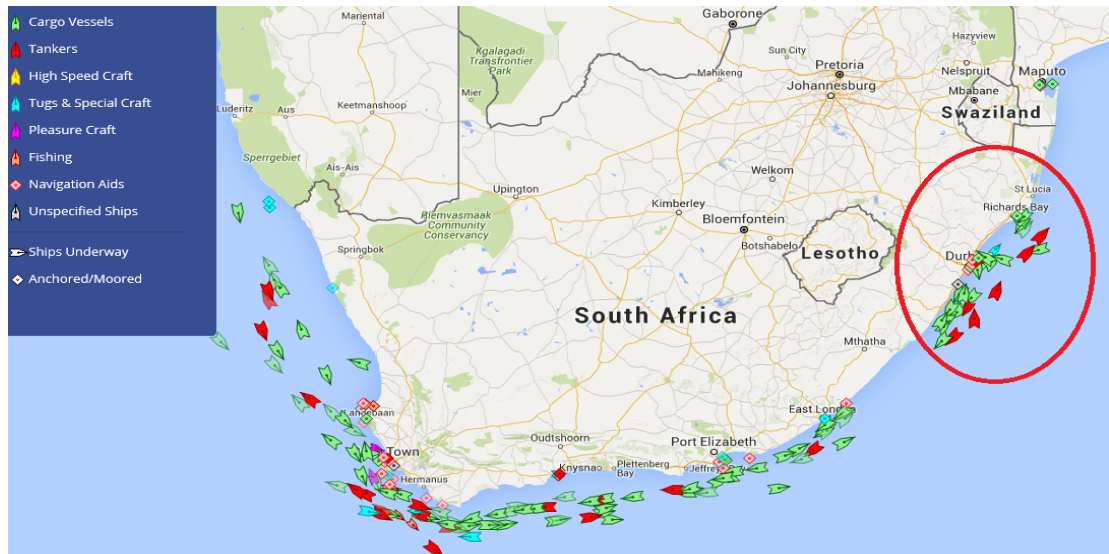


Figure 9. Marinetraffic around Durban and other South African ports (Marinetraffic 2015a.)

It is seen that traffic is very active generally in all South African ports and both pleasure crafts and cargo vessels are seen near the ports. Busiest ports seem to be Cape Town and Durban but also other ports are surrounded by vessels and crafts.

Figure 10 is a map of South Africa which indicates South African ports and terminals such as Saldanha, Cape Town, Mossel Bay, Port Elizabeth, East London port, Richards Bay and Durban. Transportation infrastructure in South Africa is well organized.

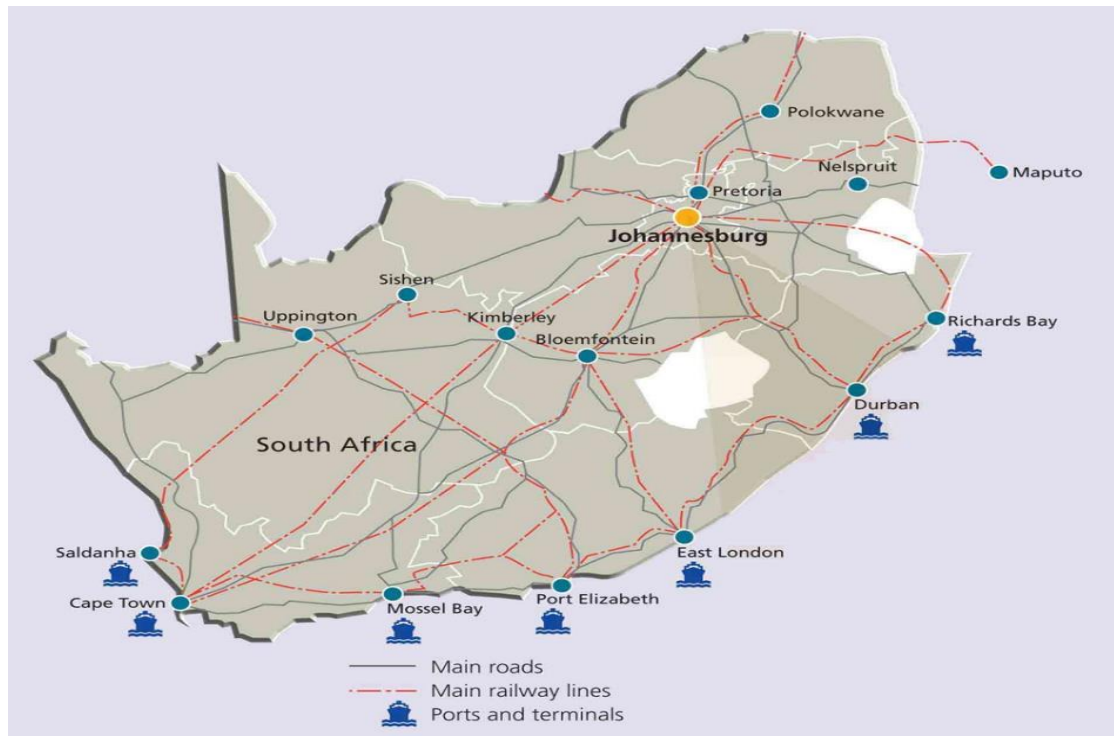


Figure 10. South African logistics options (City of Johannesburg 2015.)

It is seen on Figure 10, that there are roads and railway connections from every port to Johannesburg and between other bigger cities. Details of Durban transport corridors are shown in Appendix 4. Product received by containers can be further delivered by containers or by trucks and railway wagons. The loading capacity of cargo in South Africa into trucks are minimum 28 and maximum 34 tons (Durban port presentation 2015).

The port of Durban is the largest shipping terminal on the African continent and the most developed and the most active port of South Africa. Durban is the closest port to the South African major industrial zone called Vaal Triangle, next to the Vaal River which is South Africa's longest river after the Orange and is a key water source for the country (South African Tourism 2015b).

Figure 11 illustrates how well developed Durban port is. Entrance is easy and space in the harbor is used efficiently. There are still possibilities to develop further.



Figure 11. Durban port from the top (Durban port presentation 2015)

There is a good connection from Durban port to many destinations in South Africa and further which makes Durban port attractive from the point of view of the warehouse location. There are four corridor-mode combinations from Durban, namely two for road, one for rail and one for road/rail combination. Details can be seen in Attachment 4. It can also be seen from Table 3 that South African network is the most developed among its neighboring countries.

Table 3. Comparison of road and rail networks (ARD-RAISE 2001, 3)

Comparison of Road Networks, 2000

Country	Length of Network (km)			Road Density (km/km ²)		
	Paved	Unpaved	Total	Paved	Unpaved	Total
Botswana	4 343	14 139	18 482	0.007	0.024	0.031
Malawi	5 254	23 146	28 400	0.044	0.195	0.241
Mozambique	5 685	24 715	30 400	0.007	0.031	0.038
Namibia	5 250	63 258	68 508	0.006	0.077	0.083
South Africa	63 027	471 104	534 131	0.052	0.386	0.438
Tanzania	3 704	84 496	88 200	0.004	0.089	0.093
Zambia	Na	Na	66 781	Na	Na	0.089
Zimbabwe	8 692	9 646	18 338	0.022	0.025	0.047
Total	95 955	690 504	786 459	0.017	0.122	0.139

Source: *The World Factbook 2000*

Note: Na = Not available

Comparison of Rail Networks, 2000

Country	Length of Network (km)			Rail Density (km/km ²)
	1.067m gauge	Other*	Total	
Botswana	971	0	971	0.0016
Malawi	789	0	789	0.0067
Mozambique	2 988	143	3 131	0.0039
Namibia	2 382	0	2 382	0.0029
South Africa	20 995	436	21 431	0.0176
Tanzania	969	2 600	3 569	0.0038
Zambia	2 164	0	2 164	0.0029
Zimbabwe	2 759	0	2 759	0.0071
Total	34 017	3 179	37 196	0.0066

* Note: Relevant to the Tanzania rail network

Source: *The World Factbook 2000*

Table 3 shows that South Africa is not only the best for railway and road connections among its neighboring countries, but its networks are notably higher even comparing to total value of all neighboring countries. This is a good reason for the case company to establish a warehouse in Durban as location and networks provides access also to potential customers in the neighboring countries. Durban port remains open 365 days a year round the clock and the distance across the port is 21km. It is visited by 4 500 commercial vessels every year (South African Tourism 2015c).

3 LOGISTICS EFFICIENCY

The world becomes increasingly small, which makes people's lives increasingly interesting. Even traveling by plane has become budget, free WiFi-is available on many planes and "vertical seats" are considered by low-cost carrier to allow more passengers onto a plane and to cut ticket costs. Business world also has become small. Companies care about quality, responsibility and today the way of production is very important. Therefore the Code of Conduct is applied to suppliers in almost all international companies. Buyers are serious about quality and responsibility. Additionally, logistics faces transformation and distance has turned from the obstacle into the opportunity.

While companies are interested in new markets, logistics creates solution for new expectations and provides professional services and a stable bridge between continents. Case company did not consider option of own warehouse investment because of its policy to concentrate on its core business and to cooperate with professionals for warehousing, handling and transportation services. Indeed, it is proved that concentration on own business and outsourcing logistics to professionals can save time, increase customer service, decrease the risk margin and bring other benefits such as reducing cost, improving financial performance and customer service, improving flexibility, enhancing competitiveness, increasing market share and providing alternative logistics options (Waters 2009, 73).

There are many logistics strategies but the most important is to understand that it does not happen by chance, but needs careful decisions and finding the best balance to match what the organization is able to do and to what is the customers demand (Waters 2009, 73). Figure 12 describes the design and the position of the logistics strategy and underlines its general factors.

On Figure 12 it can be seen that higher strategies are above the logistics strategy. Management decisions and company higher strategies have direct influence on logistics strategy.

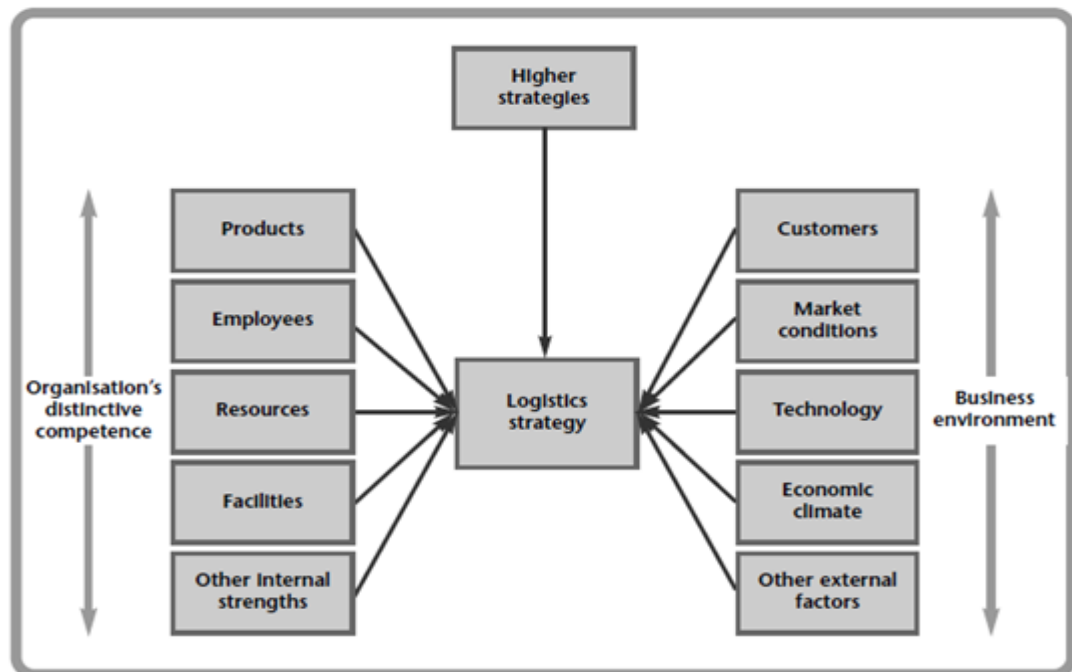


Figure 12. Factors in the design of a logistics strategy (Waters 2009, 74)

For the present thesis research it means that the case company management decision on company strategy to expand business to South Africa resulted improvements and changes in the logistics chain in the company. Durban warehouse was established as a result of the higher strategy like Figure 12 shows. Logistics is influenced by many internal and external factors. Logistics strategy interacts with almost every part of the business including customers, market conditions, technology, economic climate, products, employees, resources and facilities.

3.1 Location of the warehouse

The location of the warehouse have a significant role on the logistics chain efficiency and performance. The simplest way to find a suitable location is to calcu-

late by the formula the centre of gravity of supply and demand, which may also be improved by further adjustments (Waters 2009, 115).

$$X_o = \frac{\sum X_i W_i}{\sum W_i} \quad Y_o = \frac{\sum Y_i W_i}{\sum W_i} \quad (1)$$

where

(X_o, Y_o) are the co-ordinates of the centre of gravity which gives the facility location

(X_i, Y_i) are co-ordinates of each customer and supplier, i

W_i is expected demand at customer i , or expected supply from supplier i

Figure 13 is shows variation in transport cost with location. Combination of transport and operating costs against the number of facilities will turn into the pattern shown in Figure 14 (Waters 2009, 115, 122).

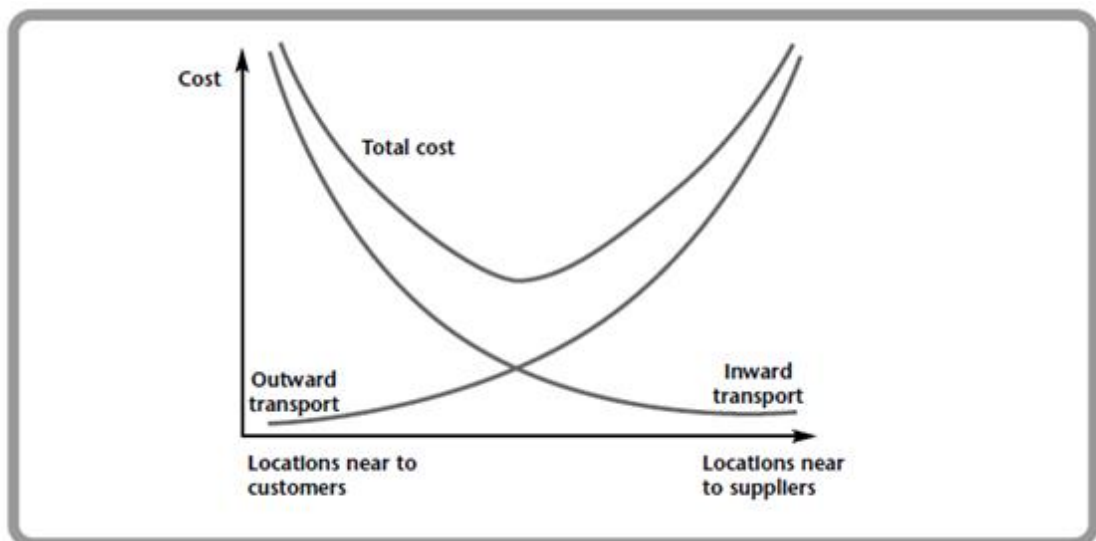


Figure 13. Variation in transport cost with location (Waters 2009, 115)

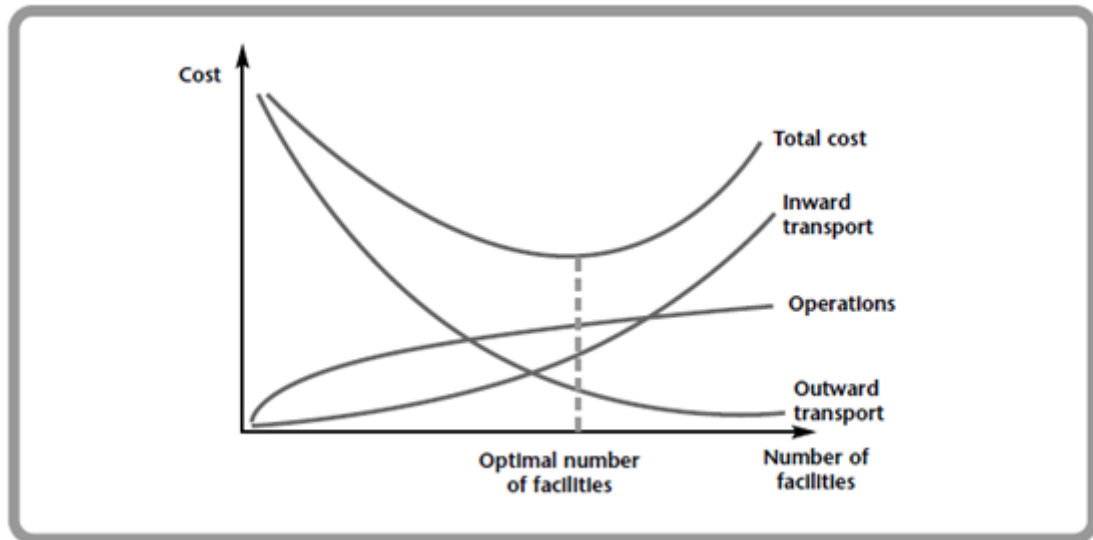


Figure 14. Optimal number of facilities (Waters 2009, 122)

From Figures 13 and 14 it is seen that location position of the warehouse near to customers or near to suppliers as well as number of facilities has direct effects on total costs. Accordingly, costs have an effect on company's competitiveness, and it is important to find the best suitable and cost effective location while warehouse establishment. Additionally, as market changes with time, it is important to make optimization of the existing logistics networks. Both above figures are good planning tools, indeed in practice they should be used in combination with other factors, such as management costs, communications, fixed costs, employment effects, customer service, information flows, and so on (Waters 2009, 122).

3.2 Logistics productivity

It is important to control and to measure the performance of logistics as efficient product flow control helps to achieve a combination of non-stop availability and cost effectiveness. Customer's demands are seldom stable, therefore projection takes time and efforts and measurement tools are needed. Good balance requires that all steps related to cargo movements are be synchronized, well controlled and well projected.

Logistics productivity is widely used measure of logistics performance. Total or more consistent partial (single) productivity can be calculated by total and partial productivity formulas (Waters 2009, 200-201).

$$\text{TOTAL PRODUCTIVITY} = \frac{\text{total throughput}}{\text{total resources used}} \quad (2)$$

$$\text{PARTIAL PRODUCTIVITY} = \frac{\text{total throughput}}{\text{units of a single resource used}} \quad (3)$$

Efficient projection based on combination of factors such as seasonal demand, early supplied product volumes, sector-base analysis, market and economic developments, potential customer's investment data etc., helps to improve operations, to optimize costs, and to increase company flexibility and reputation. Warehouses uses different performance measures related to the rate of stock turnover (Waters 2009, 203).

$$\text{Stock turnover} = \frac{\text{annual throughput}}{\text{average total inventory value}} \quad (4)$$

Stock turnover formula shows how quickly materials moves through the supply chain (Waters 2009, 203). Stock turnover is a very useful measure for the industrial warehouse such as the case company Durban warehouse.

3.3 Stock level control

Responsible supplier makes sure that its customers will have the product when demanded. For the industrial sector this is vital as plants are active 24/7. Figure 15 is shows general methods to measure the stock level control.

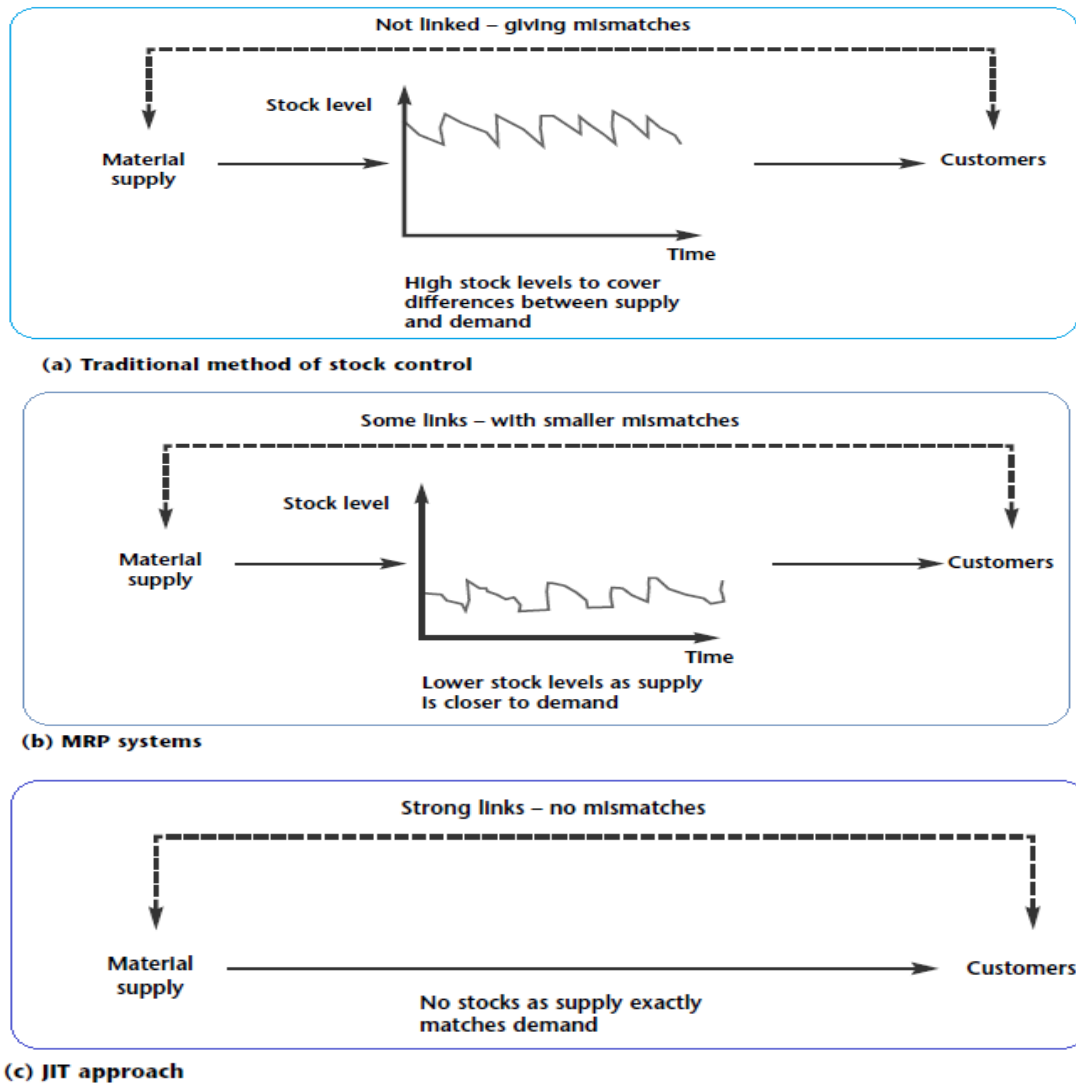


Figure 15. Traditional method of stock control, MRP systems and JIT approach (Waters 2009, 180)

From Figure 15 it is seen that MRP systems means is that stock level can be lower as supply is closer to demand and the just in time system organizes material to arrive when needed. The main goal of jit is the efficiency and to find the reasons for differences between supply and demand, and to find a solution to overcome the differences (Waters 2009, 181). Indeed, for the reliable supplier jit might be too risky if delivery time is long. The case company is highly customer oriented company and it operates with traditional method of stock control while buffer stock is able to cover its customer's regular demand for two incoming month and accordingly suddenly increased demand may be easily fulfilled.

Figure 16 shows that order size also has notable meaning on the logistics costs. Costs are different when order quantity is different. At some point of combination of factors it is possible to achieve minimum costs per unit time.

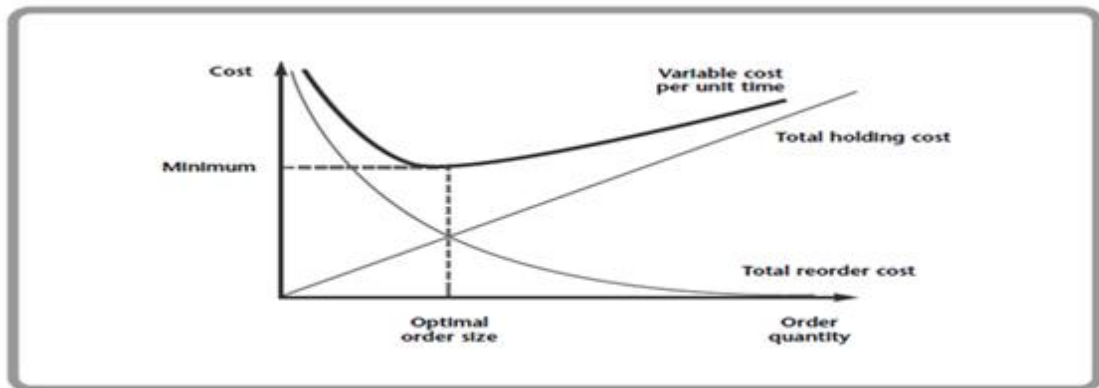


Figure 16. Variation of costs with order size (Waters 2009, 260)

Optimal order quantity can be evaluated by well-known methods of economic order quantity (hereinafter EOQ) and easily calculated by EOQ formula (Donald 2009, 260). This method can be calculated by formula.

$$\text{Economic order quantity, } Q = \sqrt{\frac{2RD}{H}} \quad (5)$$

where

D = demand

R = reorder cost

H = holding cost

In practice, there are at least several variations and extensions of this formula but always EOQ is an estimation as demand and expenses are often based on estimations or averages. In general calculation of EOQ shows the direction to minimize the inventory holding costs (Sakki 2009, 116).

Reorder level can be used to place orders at the right time so that a delivery arrives just as stock is almost out or closed to the settled safety stock level and can be calculated by formula (Waters 2009, 267).

$$\text{REORDER LEVEL} = \text{lead time demand} + \text{safety stock} = \text{LD} + \text{safety stock}$$

(6)

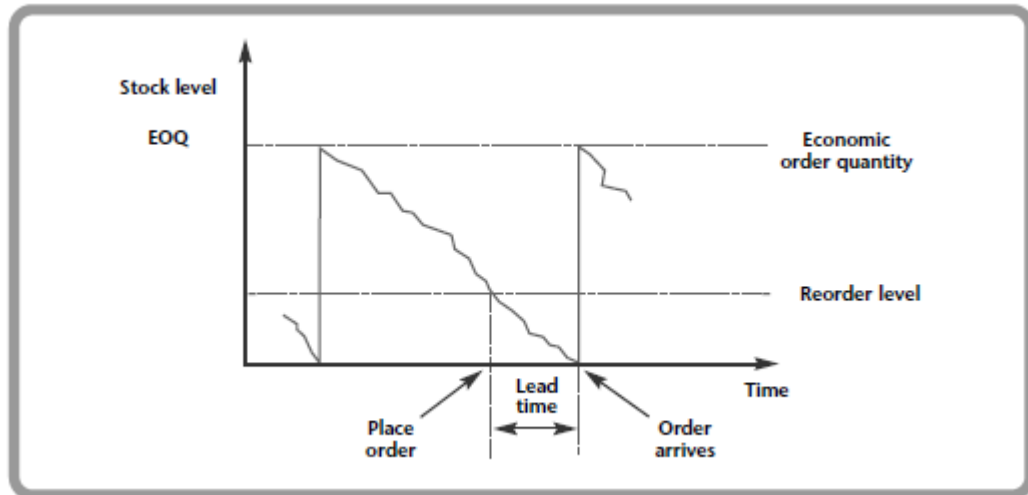


Figure 17. Reorder level (Waters 2009, 263).

Results of calculations of the reorder level and the EOQ by the formula can vary notably because of the safety stock size. The size depends on how important for the company is to keep the safety stock, what is the safety stock level and what is the worst case scenario and risks caused by the lack of the product (Figure 17). The case company operates with a strong logistics network and it is possible to transfer the product from one warehouse to another within reasonable time limit. However, reliable industrial supplier must fulfill customer's needs within exact time, exact day and exact hour.

Passive stock level which is also called safety stock or buffer, can be also optimized with help of different kind of ABC analysis and Xyz analysis. Passive stock should be calculated by formula as usually it comes out that passive stock is higher than expected (Sakki 2009, 104).

$$\text{Passive Stock} = \text{Real stock} - \frac{\text{Average Arrival Lot}}{2}$$

(7)

Passive stock can be kept to ensure the availability or it can include products which are not sold during the expected time.

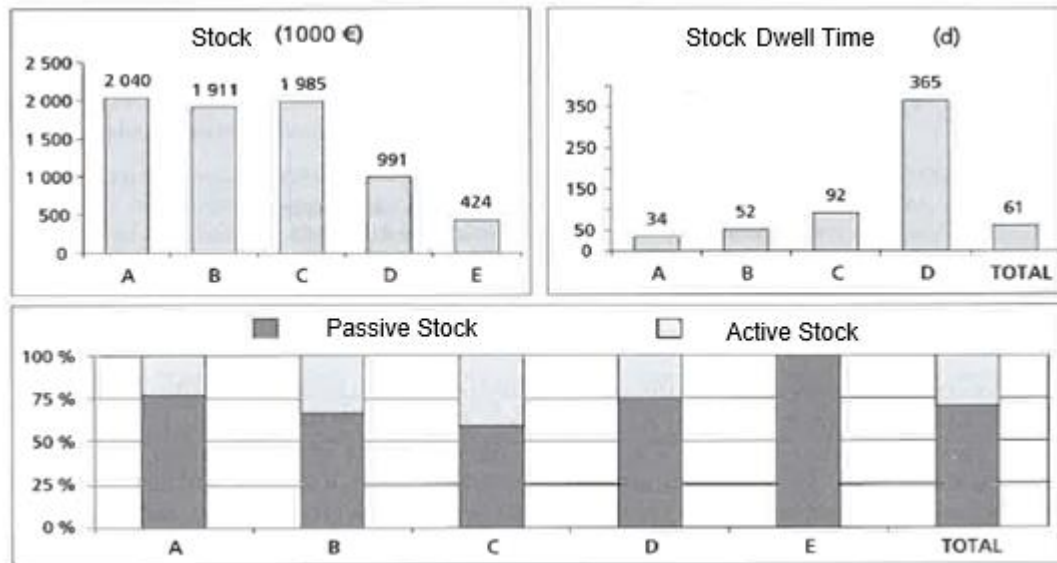


Figure 18. Stock breakdown. Passive stock is higher than active stock (Sakki 2009, 104)

According to Sakki (2009, 104), passive stock can be considered as a tool which brings about an additional value to customers. Indeed, it is normally higher than needed like it is seen on Figure 18. Therefore, it causes extra costs which could be decreased by better projection.

From all the above methods and examples it can be concluded that there are many various logistics measurement tools and the time of the logistics team spent on the detailed analysis will help to see the picture from different angles. This will help to choose the most suitable location for the warehouse and improve and optimize the existence warehouse efficiency. As a result logistics measurement methods and formulas will save a lot of time and costs of the logistics operations.

4 CASE: AB ETIPRODUCTS OY, BUSINESS FROM FINLAND TO AFRICA

Below information is combination of collected data. Key sources are Interview with General Manager of Ab Etiproducts Oy Mr. Ali Sapmaz (Appendix 5), personal experience and data and figures from the web sites and official presentations of Ab Etiproducts Oy and Eti Maden IGM.

4.1 History and background

Ab Etiproducts Oy is a subsidiary of Eti Maden IGM, a Turkish State owned Company, previously known as Eti Holding AS or Etibank. The Headquarters of Ab Etiproducts Oy is located in Espoo, Finland. Since its establishment, Ab Etiproducts Oy has gained a reputation as a reliable and competitive supplier of boron products.

In 1982, Turkish Etibank and Finnish mining and multimetal Outokumpu group established a joint-venture Ab Etiproducts Oy for marketing of Etibank's products on the Scandinavian market. In 1993 after Outokumpu's share were transferred to ETI group companies, Ab Etiproducts Oy is owned 100% by ETI group companies.

4.2 Production, products and boron usage

Turkey possesses roughly two thirds of the world's boron minerals reserves and is the largest exporter of these minerals. Borate production is concentrated in the western part of the country in Eskishehir, Balikesir, Kutahya and Bursa (European Business Journal, 26).

Eti Maden's production plants			
Bandırma	Bigadiç	Emet	Kırka
Boric acid plant	Concentrators	Concentrators	Borax pentahydrate plants
Sodium perborate plant (idle)	Grinding plants (ulexite and colemanite)	Grinding plants (ulexite and colemanite)	Borax decahydrate plant
Borax decahydrate plant		Boric acid plants	Calcined tincal plant
Boron oxide plant			Anhydrous borax plant
Agricultural boron (DOT) plant			
Glassy boron oxide plant			
Sulphuric acid plant			

Figure 19. Eti Maden's production plants (Industrial Minerals 2016, 35)

As Figure 19 shows, Eti Maden has many boron plants and also sulphuric acid plant for its own usage. Total production capacity of boron products in these plants is approximately 2,2m tpa boron products and Eti Maden has plans to increase its installed production capacity to 5.5m tpa by the end of 2023. (Industrial Minerals 2016, 35).

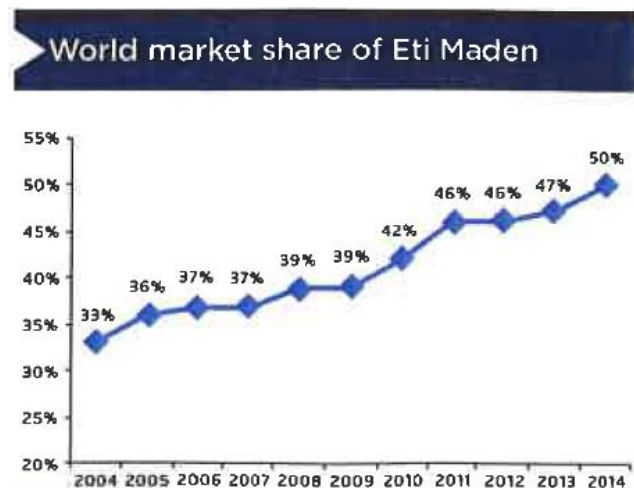


Figure 20. World market share of Eti Maden (Industrial Minerals 2016, 34)

Eti Maden IGM has the highest market share in boron business as shown on Figure 20. Turkey is the largest producer of natural borates worldwide produces for boron minerals and refined products as it is seen on the Figure 21.

Figures 21 illustrates production of boron by Turkey and by other boron producers. It is seen from Figures 20 and 21 that Turkey is on the first position since 2005.

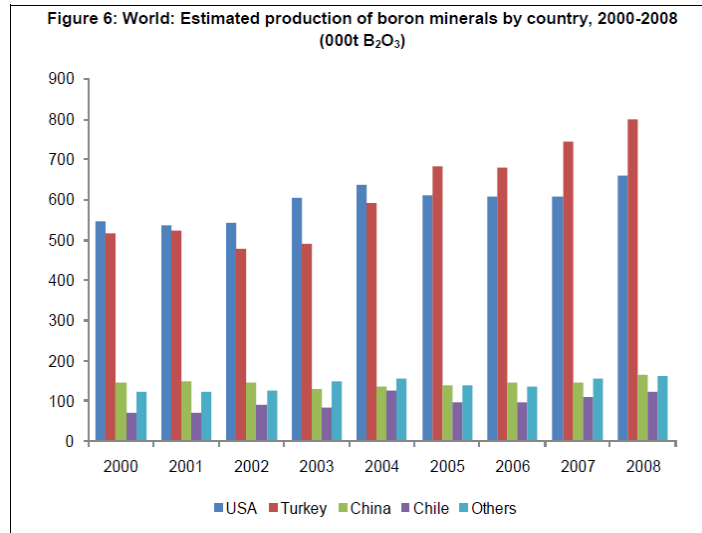


Figure 21. Estimated production of boron minerals by country (Global industry markets and outlook 2010, 47)

When Eti Maden became the leading boron supplier in 2005, it had a market share of 36%. Since then, it has continued to increase its share and accounted for 50% of the market at the end of 2014 (Industrial Minerals 2016, 35).

Turkey's boron operations are under control of Eti Maden IGM, which is Turkish biggest and oldest (established in 1935) mining company and is mainly involved in mining, metallurgical and chemical industries that are directly connected to its own mining operations (European Business Journal, 26). Eti Maden IGM produces a range of boron minerals and refined products and is recognized as a world leader in production and supply of boron products. ETI group product portfolio includes following main products

- Boric Acid (Normal Sulphate, Low Sulphate, Ultra Low Sulphate)
- Boron Oxide (Glassy and Porous)
- Etibor-48 (Borax Pentahydrate)
- Borax Decahydrate
- Etibor-68 (Anhydrous Borax)

- Etidot-67 (Disodium Octaborate Tetrahydrate)
- Ground Colemanite
- Ground Ulexite
- Granular 2-4mm Colemanite
- Granular 2-4mm Ulexite

Boron is called a vitamin of the industry as many different industries can benefit of even small addition of this mineral. For some sectors such as agriculture boron is essential. Boron consumption is around 4,1 million tons per year and consumption regions are seen on Figure 22.

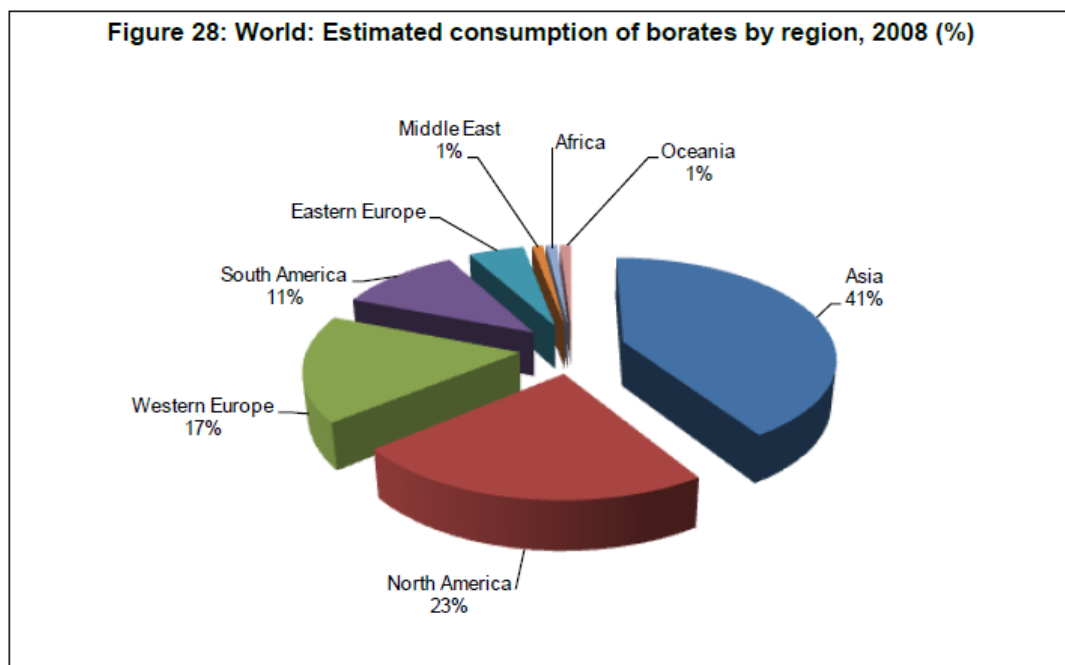


Figure 22. Estimated consumption of borates by region (Global industry markets and outlook 2010, 185)

Figure 22 shows that the biggest consumption for the boron materials are Asia, North America and Western Europe. In Africa consumption is small but it grows. Boron products have numerous applications in many industries. Figure 31 illustrates boron consumption by industry.

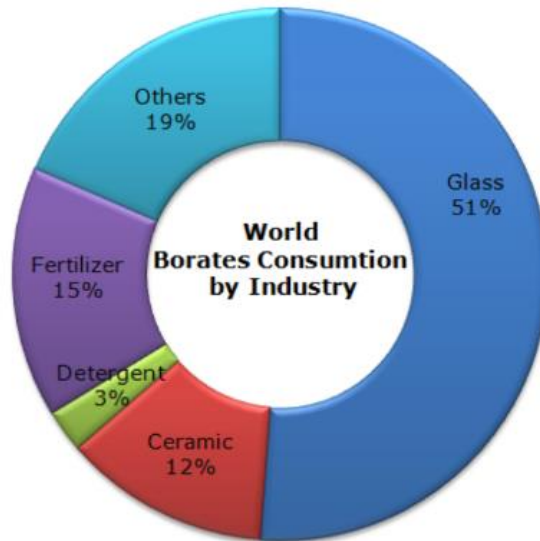


Figure 23. World Borates Consumption by Industry (ETI group official presentation 2015)

Figure 23 shows that 51% of the global consumption is supplied to the glass sector. Additionally, notable amount of boron is supplied to fertilizer, ceramics and detergent sectors. Below is detailed list of main sectors where boron products are used

- Glass, Glasswool, Borosilicate, Fibreglass

As a powerful flux it works by reducing melting point, improving viscosity, thermal expanding coefficient, and increasing breakage index, transparency and brightness, and heat resistance.

- Ceramics

Borates improve glazes by facilitating the production process; ensuring a good fit between the glaze and the item it covers;

- Agriculture

Boron is an essential nutrient for growth and development of healthy plants.

- Detergents & Soap

Boron is used as a cleaning and bleaching agent. It controls alkalinity of soaps and synthetic detergents; balances active oxygen; softens water; lowers the time and heat of the washing; and prevents the corrosion of the metal/machine.

➤ Metallurgy

Borates are used to reduce melting temperature thus to lower the energy costs, to increase fluidity, to increase hardenability of the steel and to reduce the corrosion of the refractory material in the furnace.

➤ Timber Preservation

Boron is as wood preservatives and as fire retardants.

And in many other applications such as Cellulose Insulation, Oil and Gas Chemicals, Adhesives, Abrasives, Chemical Manufacturing, Nuclear Reactions, Refractories etc.

4.3 Ab Etiproducts Oy's logistics

As it was indicated in earlier chapters, Ab Etiproducts Oy's sales and marketing territories are number of European and African countries. Ab Etiproducts Oy's mission is based on following six core pillars

- 1) to be leading borate supplier in its region
- 2) to provide customers with highest quality
- 3) to improve competitiveness
- 4) to coordinate an efficient basis between clients and producers
- 5) to enhance the motivation skills of employees through training and development
- 6) to promote the quality in order to maintain high standards in Ab Etiproducts Oy's activity (European Business Journal, 26).

From Figures 24 and 25 Ab Etiproducts Oy’s warehouses and the exclusivity countries can be seen.

Ab Etiproducts in EUROPE

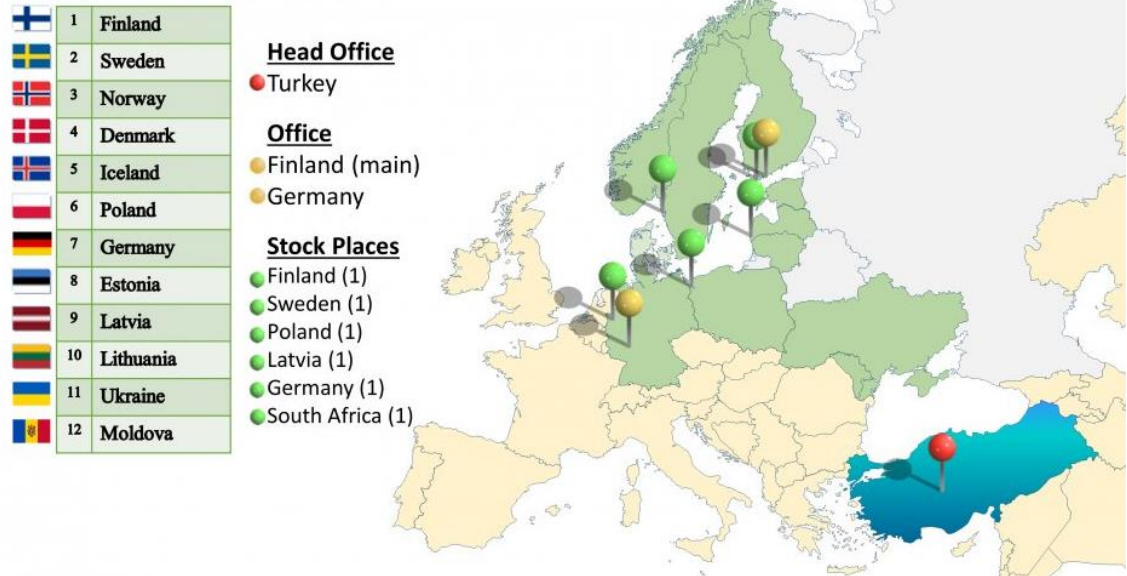


Figure 24. Ab Etiproducts Oy’s responsibility countries in Europe and warehouses (ETI group official presentation 2015)

Ab Etiproducts in AFRICA

1 Angola	19 Malawi
2 Benin	20 Mauritius and Comoros
3 Botswana	21 Mozambique
4 Burkina Faso	22 Namibia
5 Burundi	23 Nigeria
6 Cameroon	24 Republic of Congo
7 Central African Republic	25 Rwanda
8 Côte d'Ivoire (Ivory Coast)	26 Sao Tome and Principe
9 Democratic Republic of Congo	27 Seychelles
10 Djibouti	28 Somalia
11 Equatorial Guinea	29 South Africa
12 Ethiopia	30 South Sudan
13 Gabon	31 Swaziland
14 Ghana	32 Tanzania
15 Kenya	33 Togo
16 Lesotho	34 Uganda
17 Liberia	35 Zambia
18 Madagascar	36 Zimbabwe



Figure 25. Ab Etiproducts Oy’s responsibility countries in Sub-Saharan Africa (ETI group official presentation 2015)

From the point of view of the thesis research it is important to notice that Ab Etiproducts Oy is operating widely in Europe and has a large experience in the

international business as it is seen on Figure 24. Indeed, Figure 25 shows that Durban warehouse was a new experience for the company in African continent. To some African countries such as South Africa, Ethiopia and Ivory Coast boron products were supplied by Ab Etiproducts Oy in 2014 and since 1 May 2015 all above indicated 36 African countries were added to Ab Etiproducts Oy responsibility list. The warehouse in Durban was established and the first product arrived in and supplied from Durban in August 2015.

First of all, market mapping and analysis were made for African countries, economic data for each country was collected, import statistics for each country checked and compared. Additionally, Ab Etiproducts Oy cooperates with different associations such as Finnpro, Tekes, Universities, R&D institutions.

Aggressive marketing was applied and during one year Ab Etiproducts Oy gained a lot of new customers and notably increased its sales to these new territories. Additionally Ab Etiproducts Oy in April 2014 started a new ERA-MIN project with well-known South African research institute and expects positive results beneficial for the Ferrochrome sector, which would also increase case company presence in South Africa in the future.

4.4 Evaluation of container deliveries efficiency

Containers are very common transportation tool for many companies. Generally, it is more efficient and cost-reasonable to deliver the product by cargo vessel with bigger quantities but sometimes containers may be very reasonable if export exceeds the import. For example a lot of product comes from China to different countries and container companies are flexible with prices for empty containers which are on the way back to China.

Container company may include different services under the same delivery term. Additionally some of container companies provides more wide services (such as further inland transportation) which others may not have. In some African countries local state-owned container lines can be preferable.

In cooperation with professional container lines, it is possible to plan well container deliveries. It is easy to follow ETA date for the container by internet by container number or BL number and therefore it is easy to make all the preparations accordingly. Ab Etiproducts Oy has normally used 20' containers for its deliveries.

The main disadvantage of the sea transportation to Africa is long distance and long delivery period. And in spite of the fact that this is workable way of supply, 3-4 weeks delivery period + another few weeks - time which takes to proceed with the order and to load the product on the first available vessel is definitely too long time to wait for the customer. Weather conditions or some other unexpected issues may even extend the delivery period. As a customer oriented company, in order to improve the customer service and to gain more customers, it was decided to evaluate the option to establish a warehouse in Africa.

As most of customers of Ab Etiproducts Oy in Africa are situated in South Africa and import figures shows that there a lot of opportunities to increase the market share for boron products in this country, it was decided to establish a warehouse in South Africa. Durban was chosen because of its location closed to the South African industry and because it is the most developed South African port.

4.5 Warehouse as a solution

As a first step, pre-feasibility study was made in order to understand if the project of the warehouse establishment in South Africa is feasible or not. After this study it was determined that it is worth to establish a warehouse. Available warehouse options were checked and evaluated. The most suitable ones were chosen for further, i.e. face-to-face meetings and facilities to be observed. Ab Etiproducts Oy is doing business with professionals and all options and details were evaluated very carefully.

It was important to have bonded warehouse as at beginning stage the case company was not yet VAT registered in South Africa. Also it was important that warehouse colleagues are able to organize customs clearance on the name of the customer and have good connections with transportation companies for DAP deliveries. As product is very sensitive to water, warehouse had to be dry, covered, clean and separate for Ab Etiproducts Oy's usage only.

SWOT analysis, potential business growth and possible increased demand of Ab Etiproducts Oy's in the future showed, that it was important to learn the approach of the warehouse holders to increase with time space, services, handling and operational options and customs works and in general readiness to meet Ab Etiproducts Oy's further expectations. After insurance company approved the creditability of the potential partner, meeting concluded with Letter of Intention and later on all the details were discussed and the Agreement was signed.

Normally product to other Ab Etiproducts Oy's warehouses for example to Scandinavian countries is delivered by cargo vessels as quantities are notable and it is more reasonable to charter regularly a cargo vessel instead of hundreds of containers. But for Durban case, situation appeared to be opposite as cargo vessel insurance costs are very high. Therefore, as container option to this destination is more reasonable, it was decided to supply the product to the Durban warehouse by containers.

4.6 The process of the warehouse establishment in Durban

As Ab Etiproducts Oy is a supplier for different sectors. Product demand for some sectors such as agriculture is seasonal and for some others such as chemistry, glass or metallurgy, is rather stable, which was taken into consideration for the delivery plan. Normally in Ab Etiproducts Oy's warehouses at least two month safety stock is kept, but for Durban careful estimation was made in order to achieve efficient balance and ensure that present and also potential customers will be able to pick up the product smoothly and easily.

The main reason to open the warehouse was to encourage the industry and for customer oriented company it was important to ensure that customers will benefit from this project and will gain non-stop access to the demanded raw materials. Therefore in order to evaluate first warehouse order quantity, all present customers were questioned about their short term demand for the next few month and also own company projections and calculations on the base of the Ab Etiproducts Oy's IT system records were analyzed. For potential customers it was decided to deliver small amounts of each typical product to be able to start cooperation with potential customers promptly and to be able to react on new demand immediately.

4.7 How to choose the suitable option

As it was mentioned before, to enter the market and to establish a presence in the target country, it is possible to use an assistance of related organizations such as Tekes or Finpro. Intrastat data will also help to evaluate the market volume. After that, if there is enough volumes, it is time to analyze optimal location and requirements of the warehouse which would meet both – company's need and customer's demands and expectations. As it comes out of the interview with Mr. Sapmaz, for the case company (Appendix 5), after mapping the market it was decided to establish a bonded warehouse in Durban. Ab Etiproducts Oy used its long-term experience with its present bonded warehouse in Latvia, and naturally took into consideration South African local rules, permissions and other legal issues. As a second step, both options – cleared and un-cleared product were offered to customers. Ab Etiproducts decided to open an account in local South African bank and to proceed with VAT registration in South Africa. Ab Etiproducts Oy is VAT registered in different countries such as Poland, Sweden, Latvia and Germany.

There are different kinds of warehouses which depends on the ownership, location, structure, layout design and usage reasons. As warehouses are causes additional efforts and costs such as binding the financial capital, insurance

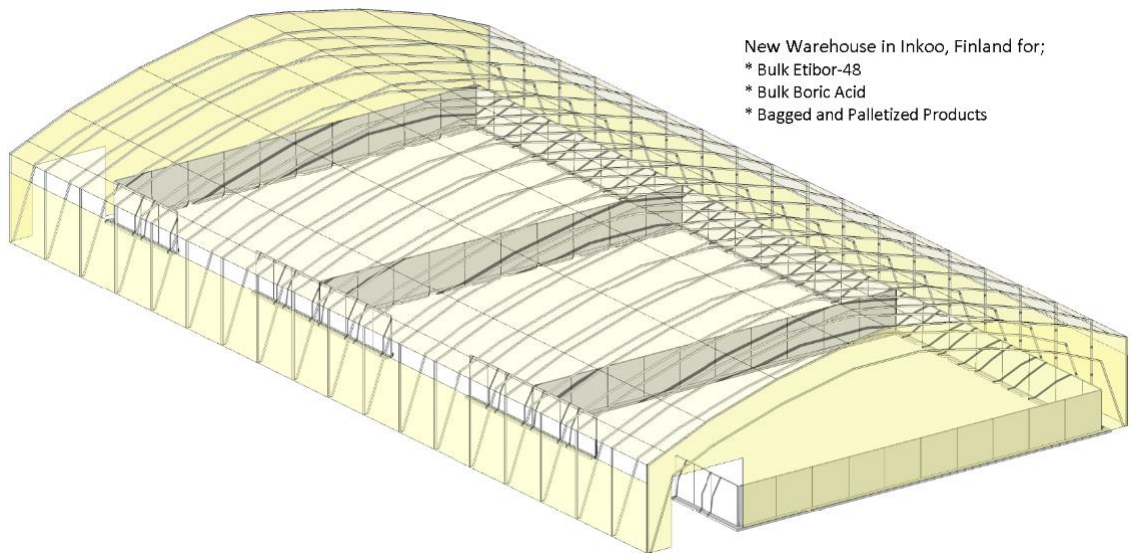
costs, risk costs, it is important to keep in mind the reason of the warehouse establishment during the evaluation process.

For Ab Etiproducts Oy the main reason was to decrease the delivery period (which is about 3-4 weeks on the sea plus order evaluation and waiting for the first available vessel) and to ensure non-stop product availability for its customers. Bonded warehouse was the most suitable option to expand the business in the South Africa before the VAT registration in this country is finalized.

For Ab Etiproducts Oy the important issue was that warehouse should be in the port for sea delivery easy access, the same time it should be covered and well insulated as product is very sensitive to water, it should have good road connection to be easily reached by customers and of course it should have suitable equipment to handle smoothly bulk products, big-bags and small bags on pallets.

Ab Etiproducts Oy's policy is to provide the best service to its customers. Ab Etiproducts Oy's partners are well-known local and international companies with good and trustful reputation and long-term experience. Own warehouse, vendor-managed inventory (VMI) option, leasing or consignment warehouse option in South Africa were not on the agenda as these options did not meet Ab Etiproducts Oy's needs and expectations. Bonded warehouse outsourced to professionals gives the company opportunity to launch the warehousing service relatively easily and to concentrate on its own business and to keep the service on the high level.

Figure 26 indicates several pictures of of Ab Etiproducts Oy's warehouse in Finland with covered loading corridor to ensure that moisture sensitive product can be loaded during any weather conditions and FIFO rules can be easily applied.



New Warehouse in Inkoo, Finland for;
* Bulk Etibar-48
* Bulk Boric Acid
* Bagged and Palletized Products





Figure 26. Pictures of Ab Etiproducts Oy's warehouse in Inkoo, Finland (ETI group official presentation 2015)

Figure 26 shows the frame of the warehouse, view from the outside and from the bulk loading corridor as well as facilities for big-bags and 25 kg bags. Warehouse is in the port. It can be seen that big-bags are not directly on the floor but on pallets in order to keep the product which is sensitive to water clean and dry.

As it is seen from the warehouse establishment process, Ab Etiproducts Oy checked several options before the right partner was chosen. Distance is far, therefore preliminary investigation was done first from the distance from Finland and later in Durban. As a result, the most suitable option was chosen, Letter of the Intention with the South African warehousing partner was signed as a first step and later on final Agreement was signed by the parties.

4.8 Risk management

Careful planning, wide-angle looking, investigation of backgrounds, partners with reliable reputation, good short-term and long-term strategy and smooth information flow are probably the most important issues during the warehouse establishment process which would prevent most of the unexpected developments. SWOT analysis and other earlier mentioned analysis would be a useful tool for the planning period.

In another continent, very possible problematic zone to be faced are mentality and cultural differences. People might have different ways of understanding the business and problem solving methods, unexpected behavior approaches, different personal space, looking at things, speaking, dressing, expressing themselves and interpreting the other person speeches and actions. Also expressions and pronunciation may vary from place to place even the language would be the same. All the above should also be taken into consideration. Also time related issues may vary rather much, for example in Finland it is common to highly respect partner's time and oral agreement has the same value as written one, but they might need more personal distance. In Africa people are very warm, open and friendly but there is an interesting expression called "African time" which means that it is better to double check the delivery time.

For the worst case scenario it is good to have plan A, B, C and further options. Force majeure is normally indicated in the agreement, but there are many other issues which are unexpected such as economic or sociopolitical issues, electricity cuts, currency risks, which could be unpredictable but may be manageable.

Efficient usage of technology will also decrease human mistakes and, as a result, the general mistake margin. Insurance companies and credit insurance may decrease notable part of risks for example credit insurance company would return 90% of the invoice volume in case if the customer did not pay for the product and insurance company would cover if product would get damaged during the transportation.

Safety, regular control, realistic projection and continuous market mapping will also decrease possible risks and costs of the warehouse. It is much easier than to prevent than to fix and different available tools and analyzing methods can help the efficiency.

4.9 Ab Etiproducts Oy's plans related to Africa

Mr. Sapmaz is satisfied with the decision to start business in Africa and to be in the right place in the right time. There are also expectations related an environmentally friendly project with South African research institute, which Finnish part is supported by Tekes. So in the future, depending on market demand and future company policy, Ab Etiproducts Oy might consider warehouses establishment also in other African countries such as Ethiopia and Ivory Coast.

5 ANALYSIS OF AN EMPIRICAL STUDY

During the present research process, a large scale of data was collected and it took some efforts to control and to squeeze it and to keep the thesis research within its frames and its scope. Customer, marketing, financial and legal issues are closely integrated into the logistics and a lot of valuable data of all above was available in a large scale. Because of this, analysis process faced different perspectives which at some point was necessary to limit, on the one hand. On the other hand, this fact may be considered as very interesting and encouraging for companies which have intention to expand to another continent. There is no need to re-create a wheel as all the information, guidance, assistance and experience is available from different sources and can be customized on the demanded level.

After all the less related issues were squeezed and cutted out, structure of the present thesis research became very transparent and after the description of task following two important topics were evaluated

- information of Finnish companies and institutions which can assist small and mid-size companies which go international as well as South African logistics readiness and availability for cooperation with foreign importers.
- theory and real case combination which was analyzed and concluded with positive outcome and possibility to apply gained results in the future. Ethiopia as rapidly developing Sub-Saharan country with high potential and opportunities and could be the next place to establish a warehouse.

One of the key sources for the present research is an interview with the General Manager of the case company which can be seen in Appendix 5, as well as well-known industrial and logistics related publications. The process of combining of the real case with theoretical part was meaningful, especially evaluation of the warehouse establishment process and ideas which could be used in this process. Personal experience and observations of the researcher with more than 10 years of experience in the case company and partly involvement in the

Durban warehouse establishment process were very supportive in data gathering and analyzing process. As a result, the practical and theoretical process of warehouse establishment in another continent were critically analyzed and visually implemented into the process model.

The main idea of the present thesis research came very strongly to the agenda during the analysis process. Usage of technology can accelerate the internationalization and strong logistics in combination with good planning is a key to the success. Distance is manageable. During the research the model of warehouse establishment process (Figure 27) was created on the basis of combination and analysis of the theoretical data and practical case company experience in the frame of the present thesis research. The model was created within the frame of the thesis research for the corridor from Finland to South Africa, but its idea may also be suitable for other warehouse establishment cases.

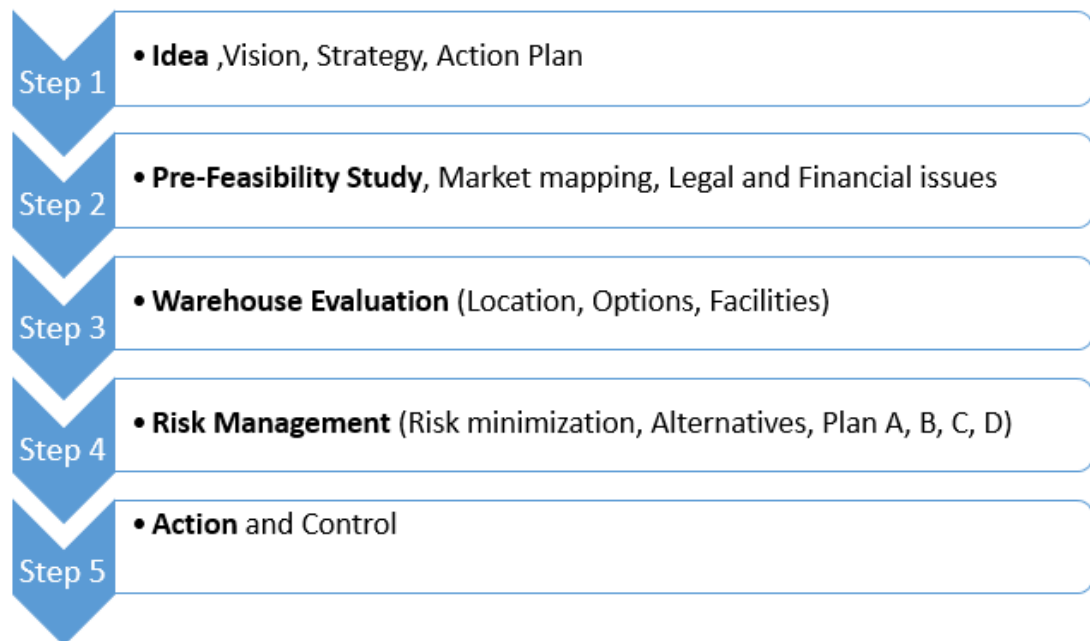


Figure 27. The model of the warehouse establishment process (outcome of the present thesis research 2016)

Model created within the present thesis research clearly reflects the idea that careful planning helps to bring positive results. Four of the five steps are related to planning and evaluations, i.e. the so called background work to be done within four steps. Indeed, only the fifth one which is the last one is an action.

While company makes the first step towards a warehouse establishment in another continent, it has idea and vision about how to proceed. On the basis of this vision, company management creates a strategy and an action plan. Action plan with expected deadlines should be confirmed on the first step.

Second step is pre-feasibility study and it includes market mapping, cooperation with partners such as Finnpro, Tekes or others, investigation of import statistics. Additionally strategy, expectations, legal and financial issues of the destination country to be checked.

Third step is evaluation of the warehouse location. Different options and facilities in warehouses which are within the demanded location to be checked one by one. As a result most suitable and reasonable warehouse will be discovered.

Fourth step is risk evaluation, minimization. Possible alternatives to be checked. This is needed to ensure that the company is able to move forward in spite of possible obstacles.

Finally, it is time to make the last important step which is an action. In practice this means signing the contract and sending the product to the new warehouse. This is the final step of warehouse establishment and it is time to say congratulations. Indeed, work has only started and further step is a warehouse management.

There is enough information to be used to expand the business abroad. There are organizations specified in this and their target is to help companies, which go international. Reliable information is available from many official sources. Therefore it is concluded that with careful planning success is achievable.

6 CONCLUSION

Continuous optimization and efficiency control are very helpful for growth and improvement of competitiveness. However, political, economic, social, technological and ecological unexpected developments might have a sudden but significant effect on the business. With such developments, change management becomes a vital part of the success. For example, for the time being there is a difficult economic situation in the world, including Europe. Therefore, emerging markets could be a good opportunity for the company growth.

During this research it also came out that for the competitiveness it is efficient to concentrate on own business and to outsource warehousing, transportation, handling and other logistics related issues to the professionals. Risk management and careful planning are a notable part of the process to expand the business activity to another continent. Some risks are easily preventable, for example partner creditability and reputation can be checked beforehand by credit insurance companies. Culture differences may be also included into the section of risk management as even the manner of speaking of the partner / subcontractor might be misunderstood and thereby, may influence the business.

Personal experience of the researcher was supportive and combination process of practical and theoretical data was finalized by the efficient outcome. Warehouse establishment model includes such steps as an idea, pre-feasibility study, warehouse evaluation, risk management and action. It was interesting to see on the model that most of the warehouse establishment process steps are preparations and only the last step is an action. Indeed, this outcome supports the advice of the General Manager of the case company which he said during the interview (Appendix 5): "Think and plan well before making actions. When you are well prepared – go forward" (Sapmaz 2015). Careful planning helps to realize necessary actions to be done and to minimize the risks.

Market demand in African countries and future company policy will show possibility for the case company to establish further warehouses for example in Ethi-

opia and Ivory Coast. This would give opportunity to expand the research and to implement present thesis research experience, collected methods, formulas, created model and other theoretical and practical data. Additionally, warehouse establishment in Ethiopia and in Ivory Coast would give possibility to compare processes in between and to distinguish similarities and differences of these parallel processes.

As a clear conclusion of the present thesis research, it can be seen that with the help of careful planning, logistics support and modern technology, intercontinental cooperation is manageable and even well supported. It is wished that data, collected and analyzed within the scope of the research as well as model of the warehouse establishment process created during the research analyzing process, will be used by the case company in the future. It is also hoped that theoretical and practical information collected during the thesis research would encourage the industry, especially small and mid-size companies to look further with a wider angel and to search for opportunities beyond borders.

BIBLIOGRAPHY

- Ab Etiproducts Oy 2015. Front page. Accessed 30 December 2015
<http://www.etiproducts.com/>.
- ARD-RAISE 2001. Southern Africa Transport Network: Comparative Transit Transport Cost Analysis. Accessed 1 October 2015
http://pdf.usaid.gov/pdf_docs/PNACN849.pdf.
- Australian Government 2015a. Department of Foreign Affairs and Trade. Accessed 30 September 2015
<http://dfat.gov.au/geo/finland/Pages/finland-country-brief.aspx>.
- Australian Government 2015b. Australian Trade Commission. Accessed 30 September 2015
<http://www.austrade.gov.au/Australian/Export/Export-markets/Countries/Finland/Doing-business>.
- Australian Government 2015c. Market Profile. Accessed 1 October 2015
<http://www.austrade.gov.au/Export/Export-Markets/Countries/South-Africa/Market-profile>.
- Australian Government 2015d. Market Profile. Accessed 1 October 2015
<http://www.austrade.gov.au/Export/Export-Markets/Countries/South-Africa/Market-profile>.
- City of Johannesburg 2015. Infrastructure. Accessed 30 January 2015
http://joburg.org.za/index.php?option=com_content&task=view&id=4667&Itemid=323.
- Dan, A. 2015. The Biggest Opportunity In Agriculture May Be In Africa, And China Is Seizing It. Accessed 15 January 2016.
<http://www.forbes.com/sites/danalexander/2015/07/09/the-biggest-opportunity-in-agriculture-may-be-in-africa-and-china-is-seizing-it/#249710f05c33>.
- Durban port presentation 2015. Internal presentation for the meeting between Durban port and Ab Etiproducts Oy. January 2015
- ETI group official presentation 2015. Internal presentation for the meetings between ETI group and its key customers. January 2015
- Eti Maden 2015. Front page. Accessed 30 December 2015
<http://www.etimaden.gov.tr/en/>.
- European Business Journal 2015. The World of Boron. Accessed 1 November 2015
http://www.european-business.com/ab_etiproducts_oy/portrait/.
- Finnpartnership 2015. Front page. Accessed 30 January 2015
<http://www.finnpartnership.fi/www/en/index.php>.

Finpro 2015a. About Finpro. Accessed 30 January 2015
<http://www.finpro.fi/web/finpro-eng/finpro>.

Finpro 2015b. Internationalization. Accessed 30 January 2015.
<http://www.finpro.fi/web/finpro-eng/internationalization>.

Industrial Minerals 2016. In with a bang. Eti Maden Isletmeleri Genel Mudurlugu (Eti Maden). January 2016.

Harvard University 2008a. Qualitative Research. Accessed 30 September 2015
<http://isites.harvard.edu/icb/icb.do?keyword=qualitative&pageid=icb.page340340>.

Harvard University 2008b. Emic and Etic Approaches. Accessed 30 September 2015
<http://isites.harvard.edu/icb/icb.do?keyword=qualitative&pageid=icb.page340911>.

Kuusela, H. & Neillimo, K. 2010. Kaupan strategiasaaminen. Helsinki: Edita.

Lapland University of Applied Science 2015a. Implementing the thesis. Accessed 19 December 2015
<http://www.lapinamk.fi/en/Students/Study-Guide,-Bachelors-Degree-Programme-Students/Thesis-instructions/Implementing-the-thesis>.

Lapland University of Applied Science 2015b Thesis guide for MBA. Accessed 30 September 2015
<http://julkiset.lapinamk.fi/DropOffLibrary/Lapin%20AMK%20YAMK%20opinn%C3%A4ytety%C3%B6pas.pdf>.

Luomala, A. 2008. ABC in change management. University of Tampere and SYNERGOS. Accessed 12 September 2015
<http://www.uta.fi/jkk/synergos/tyohyvinvointi/oppaat/muutoskirja.pdf>.

Marinetraffic 2015a. Live Map. Accessed 30 November 2015
<http://www.marinetraffic.com/en/ais/home/centerx:28/centery:-30/zoom:6>.

Marinetraffic 2015b. Live Map. Accessed: 30 November 2015
<http://www.marinetraffic.com/en/ais/home/centerx:-94/centery:64/zoom:2>.

Ministry of Foreign Affairs of Finland 2015. The network of Finland's missions. Accessed: 30 September 2015
<http://www.formin.fi/public/default.aspx?nodeid=49529&contentlan=2&culture=en-US>.

Team Finland 2015. Team Finland in brief. Accessed 30 September 2015
<http://team.finland.fi/en/team-finland-in-brief>.

- Schwab, K 2014. The Global Competitiveness Report 2014–2015. World Economic Forum. Accessed: 30 January 2015.
<http://www.weforum.org/reports/global-competitiveness-report-2014-2015>
- Omondi-Ogao, R. 2013. Point of view: Looking to the East. Accessed: 15 January 2016
http://maailma.net/artikkelit/nakokulma_katse_kohti_ittaa.
- Roskill 2010. Boron: Global industry market and outlook. 12th edition.
- Sakki, J. 2009. Supply chain management: B2B Making More from Less. 7th Edition. Helsinki: Hakapaino Oy.
- Sapmaz, A. 2015. General Manager. Ab Etiproducts Oy. Interview 14 July 2015.
- South African Tourism 2015a. Accessed 17 November 2015
<http://www.southafrica.net/za/en/guides/entry/South-Africa-at-a-glance>.
- South African Tourism 2015b. Accessed 17 November 2015
<http://www.southafrica.net/za/en/articles/entry/article-southafrica.net-vaal-river>.
- South African Tourism 2015c. Accessed 17 November 2015
<http://www.southafrica.net/za/en/articles/entry/article-durban-harbour-kwazulu-natal> (2015c).
- Tekes 2015. Team Finland Future Watch. Accessed 30 January 2015
<http://www.tekes.fi/ohjelmat-ja-palvelut/kasva-ja-kansainvalisty/team-finland-future-watch/>.
- Tullihallitus 2015. CN-nimikkeistö. Accessed 17 January 2015
http://www.tulli.fi/fi/suomen_tulli/ulkomaankauppatilastot/luokitukset/cn/index.jsp
- Warren, M. 2008. Qualitative Research in Education. Accessed 30 September 2015.
<http://isites.harvard.edu/icb/icb.do?keyword=qualitative&pageid=icb.page340273>.
- Waters, D. 2009. Supply Chain Management. An introduction to logistics. Lincoln, United Kingdom: PALGRAVE MACMILLAN.

APPENDICES

Appendix 1. Schwab 2014, Countries/economies at each stage of development

Appendix 2. Schwab 2014, Global Competitiveness Index and Stage of Development for Finland and for South Africa

Appendix 3. Schwab 2014, Indicators by pillars for Finland and for South Africa

Appendix 4. ARD-RAISE 2001, Durban corridors

Appendix 5. Pitchulina 2015, Interview with Mr. Ali Sapmaz, General Manager of the case company Ab Etiproducts Oy dated 14 July 2015

APPENDIX 1. COUNTRIES/ECONOMIES AT EACH STAGE OF DEVELOPMENT

Countries/economies at each stage of development

Stage 1: Factor-driven (37 economies)	Transition from stage 1 to stage 2 (16 economies)	Stage 2: Efficiency-driven (30 economies)	Transition from stage 2 to stage 3 (24 economies)	Stage 3: Innovation-driven (37 economies)
Bangladesh	Algeria	Albania	Argentina	Australia
Burkina Faso	Angola	Armenia	Bahrain	Austria
Burundi	Azerbaijan	Bulgaria	Barbados	Belgium
Cambodia	Bhutan	Cape Verde	Brazil	Canada
Cameroon	Bolivia	China	Chile	Cyprus
Chad	Botswana	Colombia	Costa Rica	Czech Republic
Côte d'Ivoire	Gabon	Dominican Republic	Croatia	Denmark
Ethiopia	Honduras	Egypt	Hungary	Estonia
Gambia, The	Iran, Islamic Rep.	El Salvador	Kazakhstan	<u>Finland</u>
Ghana	Kuwait	Georgia	Latvia	France
Guinea	Libya	Guatemala	Lebanon	Germany
Haiti	Moldova	Guyana	Lithuania	Greece
India	Mongolia	Indonesia	Malaysia	Hong Kong SAR
Kenya	Philippines	Jamaica	Mauritius	Iceland
Kyrgyz Republic	Saudi Arabia	Jordan	Mexico	Ireland
Lao PDR	Venezuela	Macedonia, FYR	Oman	Israel
Lesotho		Montenegro	Panama	Italy
Madagascar		Morocco	Poland	Japan
Malawi		Namibia	Russian Federation	Korea, Rep.
Mali		Paraguay	Seychelles	Luxembourg
Mauritania		Peru	Suriname	Malta
Mozambique		Romania	Turkey	Netherlands
Myanmar		Serbia	United Arab Emirates	New Zealand
Nepal		<u>South Africa</u>	Uruguay	Norway
Nicaragua		Sri Lanka		Portugal
Nigeria		Swaziland		Puerto Rico
Pakistan		Thailand		Qatar
Rwanda		Timor-Leste		Singapore
Senegal		Tunisia		Slovak Republic
Sierra Leone		Ukraine		Slovenia
Tajikistan				Spain
Tanzania				Sweden
Uganda				Switzerland
Vietnam				Taiwan, China
Yemen				Trinidad and Tobago
Zambia				United Kingdom
Zimbabwe				United States

APPENDIX 2. GLOBAL COMPETITIVE INDEX FOR FINLAND AND SOUTH AFRICA

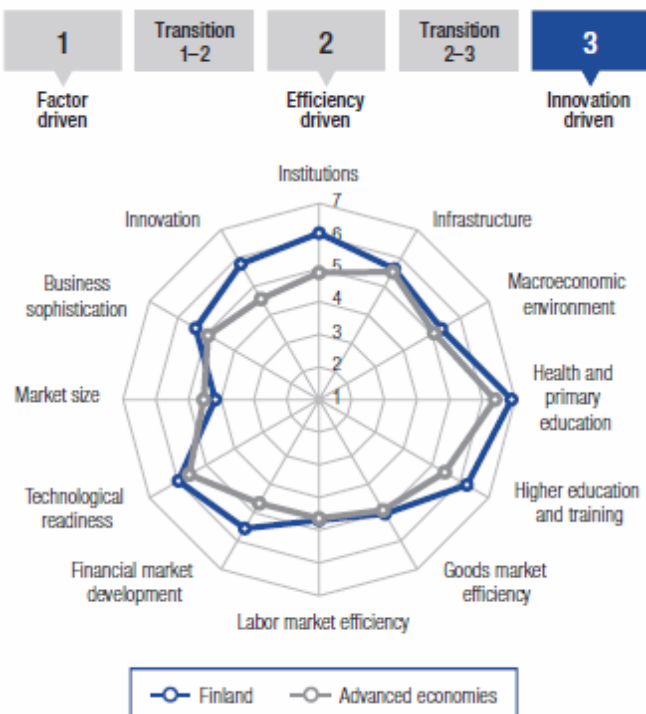
Appendix 3 1(3)

FINLAND

Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2014–2015	4	5.5
GCI 2013–2014 (out of 148).....	3	5.5
GCI 2012–2013 (out of 144).....	3	5.5
GCI 2011–2012 (out of 142).....	4	5.5
Basic requirements (20.0%)	8	6.0
Institutions	2	6.1
Infrastructure	19	5.6
Macroeconomic environment	43	5.3
Health and primary education.....	1	6.9
Efficiency enhancers (50.0%)	10	5.3
Higher education and training.....	1	6.2
Goods market efficiency	18	5.0
Labor market efficiency	23	4.7
Financial market development	5	5.5
Technological readiness.....	11	6.0
Market size.....	55	4.2
Innovation and sophistication factors (30.0%)	3	5.6
Business sophistication	9	5.4
Innovation.....	1	5.8

Stage of development

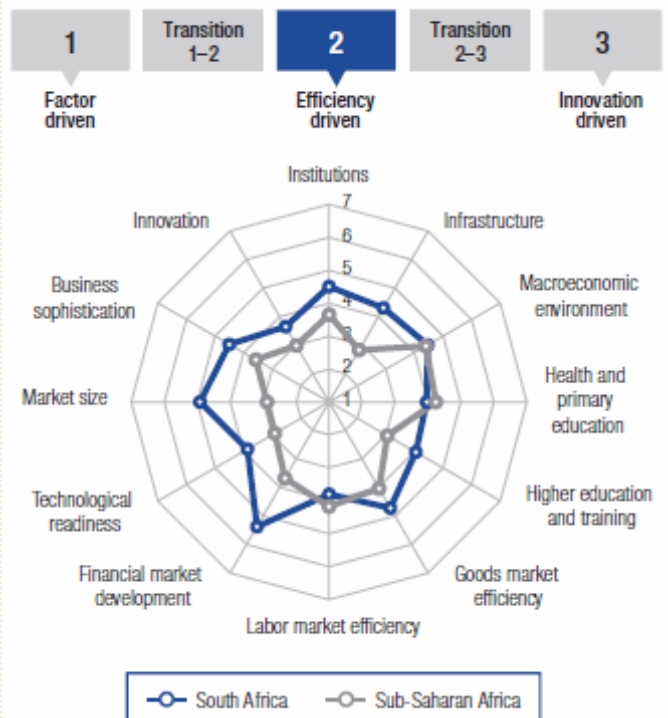


SOUTH AFRICA

Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2014–2015	56	4.4
GCI 2013–2014 (out of 148).....	53	4.4
GCI 2012–2013 (out of 144).....	52	4.4
GCI 2011–2012 (out of 142).....	50	4.3
Basic requirements (40.0%)	89	4.3
Institutions	36	4.5
Infrastructure	60	4.3
Macroeconomic environment	89	4.5
Health and primary education.....	132	4.0
Efficiency enhancers (50.0%)	43	4.4
Higher education and training.....	86	4.0
Goods market efficiency	32	4.7
Labor market efficiency	113	3.8
Financial market development	7	5.4
Technological readiness.....	66	3.9
Market size.....	25	4.9
Innovation and sophistication factors (10.0%)	37	4.1
Business sophistication	31	4.5
Innovation.....	43	3.6

Stage of development



APPENDIX 3. INDICATORS BY PILLARS FOR FINLAND AND SOUTH AFRICA

INDICATOR	VALUE	RANK/144
5th pillar: Higher education and training		
5.01 Secondary education enrollment, gross %*	107.7	14
5.02 Tertiary education enrollment, gross %*	93.7	4
5.03 Quality of the education system	5.9	2
5.04 Quality of math and science education	6.3	2
5.05 Quality of management schools	5.6	12
5.06 Internet access in schools	6.5	4
5.07 Availability of research and training services	5.9	6
5.08 Extent of staff training	5.3	5

INDICATOR	VALUE	RANK/144
6th pillar: Goods market efficiency		
6.01 Intensity of local competition	4.6	108
6.02 Extent of market dominance	4.5	24
6.03 Effectiveness of anti-monopoly policy	5.6	1
6.04 Effect of taxation on incentives to invest	3.9	48
6.05 Total tax rate, % profits*	39.8	76
6.06 No. procedures to start a business*	3	10
6.07 No. days to start a business*	14.0	69
6.08 Agricultural policy costs	4.0	51
6.09 Prevalence of trade barriers	5.1	8
6.10 Trade tariffs, % duty*	0.8	5
6.11 Prevalence of foreign ownership	5.1	44
6.12 Business impact of rules on FDI	5.0	27
6.13 Burden of customs procedures	6.0	4
6.14 Imports as a percentage of GDP*	41.2	84
6.15 Degree of customer orientation	5.2	26
6.16 Buyer sophistication	4.6	6

INDICATOR	VALUE	RANK/144
7th pillar: Labor market efficiency		
7.01 Cooperation in labor-employer relations	5.0	27
7.02 Flexibility of wage determination	2.4	143
7.03 Hiring and firing practices	3.5	99
7.04 Redundancy costs, weeks of salary*	10.1	38
7.05 Effect of taxation on incentives to work	3.6	73
7.06 Pay and productivity	3.9	73
7.07 Reliance on professional management	6.2	3
7.08 Country capacity to retain talent	5.6	54
7.09 Country capacity to attract talent	3.7	52
7.10 Women in labor force, ratio to men*	0.95	12

INDICATOR	VALUE	RANK/144
8th pillar: Financial market development		
8.01 Availability of financial services	6.0	10
8.02 Affordability of financial services	6.0	3
8.03 Financing through local equity market	4.5	21
8.04 Ease of access to loans	4.0	12
8.05 Venture capital availability	4.3	8
8.06 Soundness of banks	6.5	5
8.07 Regulation of securities exchanges	6.1	2
8.08 Legal rights Index, 0-10 (best)*	8	29

INDICATOR	VALUE	RANK/144
9th pillar: Technological readiness		
9.01 Availability of latest technologies	6.6	1
9.02 Firm-level technology absorption	5.8	10
9.03 FDI and technology transfer	4.3	87
9.04 Individuals using Internet, %*	91.5	7
9.05 Fixed broadband Internet subscriptions/100 pop.*	30.9	15
9.06 Int'l Internet bandwidth, kb/s per user*	172.2	15
9.07 Mobile broadband subscriptions/100 pop.*	123.5	2

INDICATOR	VALUE	RANK/144
5th pillar: Higher education and training		
5.01 Secondary education enrollment, gross %*	101.9	24
5.02 Tertiary education enrollment, gross %*	19.2	93
5.03 Quality of the education system	2.2	140
5.04 Quality of math and science education	1.9	144
5.05 Quality of management schools	5.2	24
5.06 Internet access in schools	3.2	117
5.07 Availability of research and training services	4.5	44
5.08 Extent of staff training	4.9	18

INDICATOR	VALUE	RANK/144
6th pillar: Goods market efficiency		
6.01 Intensity of local competition	5.5	36
6.02 Extent of market dominance	4.0	48
6.03 Effectiveness of anti-monopoly policy	5.1	14
6.04 Effect of taxation on incentives to invest	4.3	26
6.05 Total tax rate, % profits*	30.1	41
6.06 No. procedures to start a business*	5	32
6.07 No. days to start a business*	19.0	90
6.08 Agricultural policy costs	3.9	65
6.09 Prevalence of trade barriers	4.8	23
6.10 Trade tariffs, % duty*	6.0	76
6.11 Prevalence of foreign ownership	5.1	42
6.12 Business impact of rules on FDI	4.0	104
6.13 Burden of customs procedures	4.1	62
6.14 Imports as a percentage of GDP*	40.7	85
6.15 Degree of customer orientation	4.6	67
6.16 Buyer sophistication	4.0	31

INDICATOR	VALUE	RANK/144
7th pillar: Labor market efficiency		
7.01 Cooperation in labor-employer relations	2.5	144
7.02 Flexibility of wage determination	2.7	139
7.03 Hiring and firing practices	2.1	143
7.04 Redundancy costs, weeks of salary*	9.3	33
7.05 Effect of taxation on incentives to work	4.5	15
7.06 Pay and productivity	2.7	136
7.07 Reliance on professional management	5.5	21
7.08 Country capacity to retain talent	3.7	50
7.09 Country capacity to attract talent	3.9	39
7.10 Women in labor force, ratio to men*	0.77	84

INDICATOR	VALUE	RANK/144
8th pillar: Financial market development		
8.01 Availability of financial services	6.1	6
8.02 Affordability of financial services	5.3	21
8.03 Financing through local equity market	5.4	3
8.04 Ease of access to loans	3.5	32
8.05 Venture capital availability	3.2	37
8.06 Soundness of banks	6.5	6
8.07 Regulation of securities exchanges	6.4	1
8.08 Legal rights Index, 0-10 (best)*	7	43

INDICATOR	VALUE	RANK/144
9th pillar: Technological readiness		
9.01 Availability of latest technologies	5.5	39
9.02 Firm-level technology absorption	5.4	29
9.03 FDI and technology transfer	4.8	50
9.04 Individuals using Internet, %*	48.9	69
9.05 Fixed broadband Internet subscriptions/100 pop.*	3.1	89
9.06 Int'l Internet bandwidth, kb/s per user*	3.7	126
9.07 Mobile broadband subscriptions/100 pop.*	25.2	74

INDICATOR	VALUE	RANK/144
10th pillar: Market size		
10.01 Domestic market size Index, 1-7 (best)*	4.0	55
10.02 Foreign market size Index, 1-7 (best)*	4.8	59
10.03 GDP (PPP\$ billions)*	194.2	56
10.04 Exports as a percentage of GDP*	40.5	67

INDICATOR	VALUE	RANK/144
11th pillar: Business sophistication		
11.01 Local supplier quantity	4.4	96
11.02 Local supplier quality	5.5	9
11.03 State of cluster development	5.1	13
11.04 Nature of competitive advantage	6.1	4
11.05 Value chain breadth	5.0	16
11.06 Control of International distribution	4.8	12
11.07 Production process sophistication	6.2	3
11.08 Extent of marketing	5.1	26
11.09 Willingness to delegate authority	5.6	5

INDICATOR	VALUE	RANK/144
12th pillar: Innovation		
12.01 Capacity for Innovation	5.6	5
12.02 Quality of scientific research institutions	5.7	10
12.03 Company spending on R&D	5.7	3
12.04 University-Industry collaboration in R&D	6.0	1
12.05 Gov't procurement of advanced tech products	4.1	22
12.06 Availability of scientists and engineers	6.2	1
12.07 PCT patents, applications/million pop.*	286.7	4

INDICATOR	VALUE	RANK/144
10th pillar: Market size		
10.01 Domestic market size Index, 1-7 (best)*	4.8	24
10.02 Foreign market size Index, 1-7 (best)*	5.3	34
10.03 GDP (PPP\$ billions)*	596.5	25
10.04 Exports as a percentage of GDP*	31.3	92

INDICATOR	VALUE	RANK/144
11th pillar: Business sophistication		
11.01 Local supplier quantity	4.8	47
11.02 Local supplier quality	4.9	38
11.03 State of cluster development	4.2	44
11.04 Nature of competitive advantage	3.7	62
11.05 Value chain breadth	3.8	68
11.06 Control of International distribution	4.4	35
11.07 Production process sophistication	4.5	38
11.08 Extent of marketing	5.2	24
11.09 Willingness to delegate authority	4.5	27

INDICATOR	VALUE	RANK/144
12th pillar: Innovation		
12.01 Capacity for Innovation	4.3	35
12.02 Quality of scientific research institutions	4.7	34
12.03 Company spending on R&D	3.4	48
12.04 University-Industry collaboration in R&D	4.5	31
12.05 Gov't procurement of advanced tech products	3.0	112
12.06 Availability of scientists and engineers	3.5	102
12.07 PCT patents, applications/million pop.*	6.5	45

APPENDIX 4. DURBAN CORRIDORS

Road Transport*Durban –DRC border (via Beit Bridge)*

Durban – Johannesburg – Beit Bridge (RSA):	1113 km
Beit Bridge –Harare (Zimbabwe):	578 km
Harare – Chirundu (Zimbabwe):	354 km
Chirundu – Lusaka (Zambia):	135 km
Lusaka – DRC border (Zambia):	431 km
Total:	2611 km

Durban – Lusaka (via Plumtree)

Durban – Johannesburg – Lobatse (RSA):	841 km
Lobatse – Gaborone – Plumtree (Botswana):	672 km
Plumtree – Livingstone (Zimbabwe):	538 km
Livingstone – Lusaka (Zambia):	473 km
Total:	2524 km

Rail Transport*Durban – Lusaka (via Plumtree)*

Durban – Johannesburg – Lobatse (RSA):	895 km
Lobatse – Gaborone – Plumtree (Botswana):	625 km
Plumtree – Livingstone (Zimbabwe):	550 km
Livingstone – Lusaka (Zambia):	440 km
Total:	2510 km

Road/Rail Combination*Durban – DRC border (via Beit Bridge)*

Durban – Johannesburg – Beit Bridge (RSA):	1341 km	Rail
Beit Bridge – Harare (Zimbabwe):	369 km	Rail
Harare – Lion’s Den (Zimbabwe):	121 km	Rail
Lion’s Den Chirundu (Zimbabwe):	209 km	Road
Chirundu – Kafue (Zambia):	95 km	Road
Kafue – Lusaka – Ndola (Zambia):	396 km	Rail
Total:	2531 km	

Appendix 5 1(4)

COMPANY AB ETIPRODUCTS OY (4 pages)

Question 1.

Managing business in Africa from Finland sounds interesting. Where the idea of approaching African continent came from?

Answer 1.

We are international company and we operating globally, therefore borders are not obstacles but opportunities for us. The idea itself came from our international long-term customer. They have asked us to supply our product to their plant in Africa and it was probable the first time I thought "Why not?" about this continent. Africa is a developing continent with growing economy. We have applied to our parent company for exclusivity (at that time Africa was so-called grey area) and we have started our business successfully. At the moment we operate in 36 African countries. Doing business in Africa from Finland might sound interesting but is very manageable.

Question 2.

Have you had earlier experience of starting business in another continent?

Answer 2.

I have had a lot of experience in international business on different continents. But approaching African continent was new experience for me.

Question 3.

Which first steps have you made in order to implement the idea into the reality and how did you find first customers?

Answer 3.

First of all market mapping and analysis was made and import statistics for each country checked and evaluated. We had option to use Finpro services to enter the market but as a result we have managed everything by our own team.

Question 4.

Which logistic option did you use to supply product to your first customers in Africa?

Answer 4.

In the beginning we have used containers while shipping to Africa. For bigger quantities we had intention to use cargo vessels as we normally do for other countries. But due to commercial reasons and pirates, cargo vessels insurances are too high and in the time being it was more reasonable for us to use 20' containers.

Question 5.

On which stage have you decided to establish a warehouse in Africa and what was the main reason for this?

Answer 5.

After gaining notable amount of customers I came to the conclusion that it is time to improve our service by implementing better logistics and being next to our customers. Container deliveries are of course workable but delivery time (about 4-5 week) is too long time for the customer to wait for the products they need. When we speak about B2B, product availability is vital for our partners. The main goal of having the warehouse in Africa is serving present customers on the best possible way as well as gaining new customers. Internally this should decrease amount of documentation and paperwork and team will be able to use time more efficiently.

Question 6.

How did you choose the most suitable location for the warehouse?

Answer 6.

That was rather easy task. Our main customers (as well as many potential customers) are located in South Africa. We have evaluated South African ports and

we have chosen the Durban port which is the most developed and convenient for our business.

Question 7.

Which were your main criteria and demands for the suitable warehouse?

Answer 7.

As our company is not yet VAT registered in South Africa, it was supposed to be bonded warehouse. As our product is sensitive to water it was supposed to be dry and covered warehouse. Also as we expect that business will grow and with time we will need more handling, operational options, customs works etc., it was supposed to be flexible enough to meet also our further expectations.

Question 8.

Was it difficult to find of the right warehouse partner in Africa?

Answer 8.

It was not difficult but it took time. It is important to do business with professionals in their own activity therefore I have evaluated options very carefully. Also we have received approval from our insurance company for the chosen delivery and sales option.

Question 9.

How did you evaluate the warehouse capacity and product volume to be supplied to the warehouse?

Answer 9.

We supply our product to different sectors such as metallurgy, fertilizer etc. And it is easy to guess that demand is rather seasonal and this fact of course is taken into consideration while planning the stock volume. For the beginning I have made careful estimation but with time my intention is to have at least two month

safety stock in order not to have lack of the any products at any time as we do in other warehouses.

Question 10.

Are you satisfied with your decision and what are your further plans in Africa?

Answer 10.

Yes, it was good decision to start business in Africa. It is important to be on the right place in the right time. Future plans include more volumes and warehouses also in other African countries, for example Ethiopia and Ivory Coast might be candidates. Market demand will show the right direction.

Question 11.

Would you encourage other companies to start business in Africa?

Answer 11.

Nowadays I can hear more and more about Africa in news, projects etc. This year our company has launched an environmentally friendly project with African colleagues (Finnish part is supported by Tekes.) Also recently delegation from Ethiopia visited Finland and I had a chance to meet Ethiopian representatives personally. It is not easy to be a pioneer, but collecting the harvest is definitely worth these efforts. For some people it might be better to stay in the comfort zone. But for those who have ability to think widely with an open angel I would definitely advise to consider business opportunities in African countries.

Question 12.

What would be your main advises to the beginners who want to open business in another continent?

Answer 12.

Think and plan well before making actions. When you are well prepared – go forward. Yes, you can.