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An Internationalisation Strategy for an Engineering Firm

WITH A FOCUS ON THE LIGHT MANUFACTURING INDUSTRY IN SUB-SAHARAN AFRICA

Sebastiaan Blaauw |Msc Thesis Construction Management & Engineering at the faculty of Civil Engineering | October 2013

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PREFACE

Upon submitting this thesis I will hopefully conclude my time in Delft and finish my master programme Construction Management & Engineering.

After careful consideration of several topics that might interest and benefit Royal HaskoningDHV, TU Delft and myself, I had come up with three completely different alternatives to research. The three alternatives were “Research on communicating between stakeholders by the use of BIM”, “Difference between various project cost estimation models” and “Opportunities in Sub-Saharan Africa for engineering firms”. After consulting RHDHV and Construction, Management & Engineering it resulted in the latter alternative, which was eventually slightly modified to “An International strategy for an Engineering firm”. I would like to thank the coordinator of CME for this. He has made it possible for a student to choose between a wide range of topics for his Master thesis as well as making it possible for me to research a continent that has always interested me greatly.

I sincerely would like to thank the graduation committee to have made the decision to start this adventure with me and for their support and supervision over the past few months. A very special thanks goes to Hilde van Duijn, my supervisor within Royal HaskoningDHV, who has been the kind of mentor everybody should have at least once in their life and who was able to educate me on aspects pertaining to this research as well as teaching me a great deal about the practical work environment. I wish her the most of luck in her professional career. I would also like to thank the following people who were willing to contribute their valuable time by interviewing for this thesis: Wim Steutel, Tjerk van der Meer, Wil Duivenvoorden, Daniel Kamau, Suzanne Schoenmakers and Marten Hillen. And I also would like to thank Peer Gröning and Lars Crombach who had welcomed me as an intern at Royal HaskoningDHV.

And last but not least I would like to thank my parents for their support over the last few years, making it possible for me to combine two studies at the same time. I will be eternally grateful for what you have given me.

ABSTRACT

RHDHV (Royal HaskoningDHV) has noticed an increase in demand in Sub-Saharan Africa, concerning their engineering services on manufacturing plants. They are curious which country might be interesting for further business development as well as the appropriate entry method that would optimize the internationalisation process.

The internationalisation decisions that engineering firms have to make can be supported by alternative methods. To find the solutions to the familiar internationalisation questions “Where” and “How”, this research has come up with an Internationalisation decision framework that is formed by integrating some of these techniques. By answering the questions of RHDHVD on which African country is interesting and how to enter this country a case study will be performed to assess what types of techniques might be useful to come to such a conclusion. Every step in the process is defined by a decision.

During the creation of this framework information will be provided to Royal HaskoningDHV on the most attractive Sub-Saharan African country as well as a suitable form of entry.

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INTRODUCTION

RHDHV (Royal HaskoningDHV) is a Dutch, internationally orientated engineering firm that has been one of the many victims of the dramatically decreasing domestic construction demand, caused by the European economic depression that started in 2009. Like other western international engineering firms, Royal HaskoningDHV has been forced to seek more work and projects over the borders, as some foreign countries seem to show more promising trends. Currently the industry department of RHDHV is noticing an increasing demand in Sub-Saharan Africa and are wondering whether this growth is sustainable and which countries would be most attractive within this region.

According to numerous reports of trustworthy educational and commercial institutes, Africa is an emerging continent and consists of some hopeful countries. At this moment seven countries of the top ten "fastest growing GDP rate countries" are African countries (Ayogu, 2007).

Chinese (state) contractors seem to have been profiting from this situation for years already, as the trade between China and Africa grew from $10 billion ($10.000 million) in 2000 to $120 billion in 2010. The Chinese are mainly interested in the continent's natural resources and acquire them mostly in return for constructing Africa's much needed public primary works like road infrastructure, electricity networks, water networks and others (Centre-for-Chinese-Studies, 2006; De Lorenzo, 2007). The combination of this economic growth, population growth, availability of natural resources and public primary works will improve ground for national and international businesses and is already impacting a rapidly growing African middle class which has a higher demand for consumer goods than lower socioeconomic groups (Mckinsey-Global-Institute, 2012). The knowledge and experience of international engineering firms could be of great value to the African countries' further development in the consumer industry. This situation obviously presents a great opportunity for these firms to grow their existing markets in Africa or even create new ones. Unfortunately the continent is still plagued by political turbulence, corruption, lack of financial systems, lack of proper infrastructure and other types of risks that could discourage construction related companies to fully invest and conduct business in Africa. Despite these risks most of these companies are ready and willing to expand into more "risky" countries, due to heavy market losses suffered during the economic crisis. The engineering company is seeking an optimal strategic way to expand its market share and to create supply to fit this rising demand. It also wants to make the correct decision as to where to go to in Africa and how to enter the country.

But how will these vital decisions be made? Which methods will have to be used? How do these processes look? And can a robust framework be created to answer these questions in several regions, at any other time?

Not only will it be valuable to create this framework as a scientific contribution, it will also be important to contribute this research as an advisory tool regarding both potential countries and appropriate forms of entry to the Sub Saharan African market.

THESIS STRUCTURE

There are three types of strategic decisions that an engineering firm will have to make concerning internationalisation, namely 1) Why would the company internationalise, 2) In which areas does the company wish to compete and 3) How does it want to get there (Aharoni & Nachum, 2002; O. Andersen, 1997). These strategic decisions will further be elaborated in the literature overview but are important to form the structure of this thesis (Figure 1). The process towards the selected countries and entry strategies are important as academic value during this research and will be defined as an internationalisation decision making framework. By experiencing the case study that should result in a selected African country and a suitable entry type, the researcher will elaborate which methods should be used, when they should be used and why they should be used. With this information the decision making framework can be designed.

The structure of the thesis:

1) **Problem |** In this part the reason why RHDHV wants to internationalise will be explained, as well as the internationalisation decision making aspect, during the problem definition.
2) **Methodology |** How the research will be produced and which scientific methods will be used to answer the research questions will be covered in this chapter.
3) **Literature Overview |** Literature will be studied on strategy in general and international strategy and international decision making in specific.
4) **Results of the Case study |** In this chapter the internationalisation methods will be used and compared during a case study in which the goal will be to find out which country in Africa and what type of entry might be appropriate for the industry department of Royal HaskoningDHV.
5) **Conclusion |** The decision making framework and its results will be evaluated, discussed and concluded. Some limitations of the research will also be declared in this part.

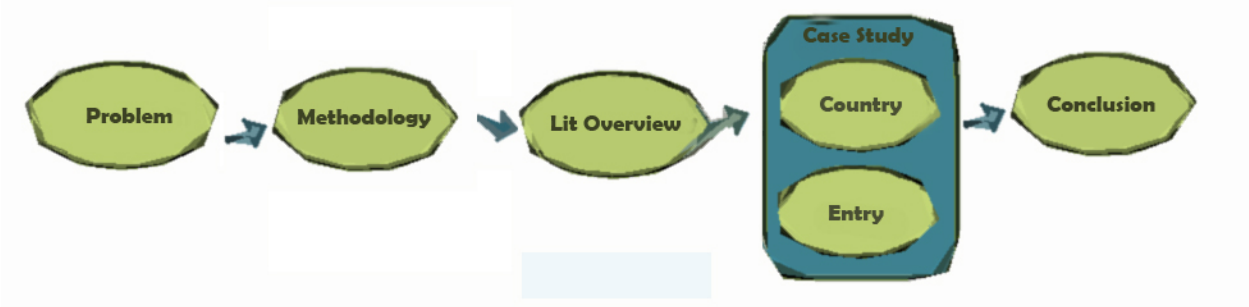


FIGURE 1 STRUCTURE OF THESIS

1 Problem & Scope



1.1 Defining the Problem 1: Royal HaskoningDHV

1.1.1 ORGANISATION OVERVIEW

Royal HaskoningDHV (RHDHV) is a new formed company that has recently been created by merging the organizations Royal Haskoning and DHV together. This merge was done to strengthen the companies to create more power, especially internationally. Both companies combined will be able to efficiently compete against larger international engineering firms like Aecom and Arup. On a national basis the new firm can now been seen as one of the biggest engineering firms, second only to Arcadis. In the light manufacturing industry it can be seen as a national frontrunner. Because of the merge, Royal HaskoningDHV has an extensive geographical coverage and can be a potential threat for international competitors.



FIGURE 2 GLOBAL POSITIONING RHDHV (RHDHV, 2012)

As can be seen in Table 1, the current turnover has almost doubled because of the merge, making RHDHV a more capital intensive company. Nevertheless the turnover and profit have decreased in 2012 in comparison with the

accumulated amount in 2011. This has several reasons. One is the common observation that merged companies start with somewhat weaker results as it takes time to transform two different entities into one well-integrated machine. Overall the declining domestic construction demand has probably the largest impact on the financial health of the company and is a problem that can be expected to continue for the upcoming years.

	2012	*2011*	*2011(Royal-HaskoningDHV)*	*2011 (RH)*
Turnover (€ mln)	702	737	425	312
Shareholders'equity	124	149	72	77
Added value (€ mln)	531	567	312	254
Net result (€ mln)	(19.9)	4.3	7.3	(3.0)
Employees	6905	7312	4276	3122
Countries	35		17	

TABLE 1 OVERVIEW ROYAL HASKONINGDHV(ROYAL-HASKONINGDHV, 2012)

Both former companies were organised by categories of clients. This means that the business lines are created by its clients operations. If a client would need the engineering of a construction product, one single division would be able to meet the demand in all its facets instead of an organisation whereas the pipelines would, for example, be designed by another department. This type of organization form has been transferred to the merged organisation in 10 so called "Business Lines (BL)" supported by the corporate Groups. One of these BL's forms a glitch in the system as this BL is organized by region, namely the business line: *Southern & Eastern Africa*.



FIGURE 3 BUSINESS LINES RHDHV (RHDHV.COM)



FIGURE 4 TURNOVER BY MARKET SECTOR (RHDHV, 2012)

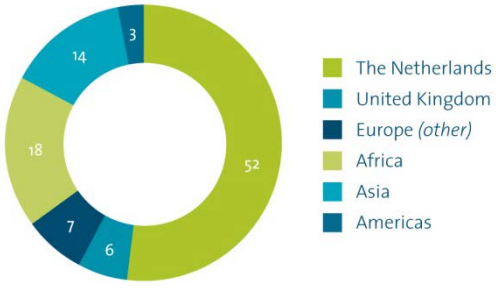


FIGURE 5 TURNOVER BY REGION (RHDHV, 2012)

The biggest BL in form of turnover within RHDHV is *Industry, Energy & Mining*. In this department mostly multinational clients are served in key markets as oil & gas, chemicals, energy, resource recovery, mining, heavy industry, manufacturing, pharmaceuticals, food & beverages and other type of consumer goods; providing multidisciplinary services ranging from industrial master planning, feasibility studies, consultancy, engineering and environmental services to full project and construction management.

A significant amount of this turnover is collected by an increasing demand for light manufacturing plant assets for multinational companies that are expanding in developing countries with their focus on Africa. In Figure 5 the

turnover by region is illustrated and shows that 18% of the company's sales are realized in Africa making it the most important foreign market.

This is why it is interesting to focus on the light manufacturing industry in Sub-Saharan Africa. The scope of the research will therefore be centred around the business lines *Industry, Energy & Mining* and *Southern & eastern Africa*, with particular interest on the entity *Industry and Logistics* (Figure 6).

1.1.2 ORGANOGRAM

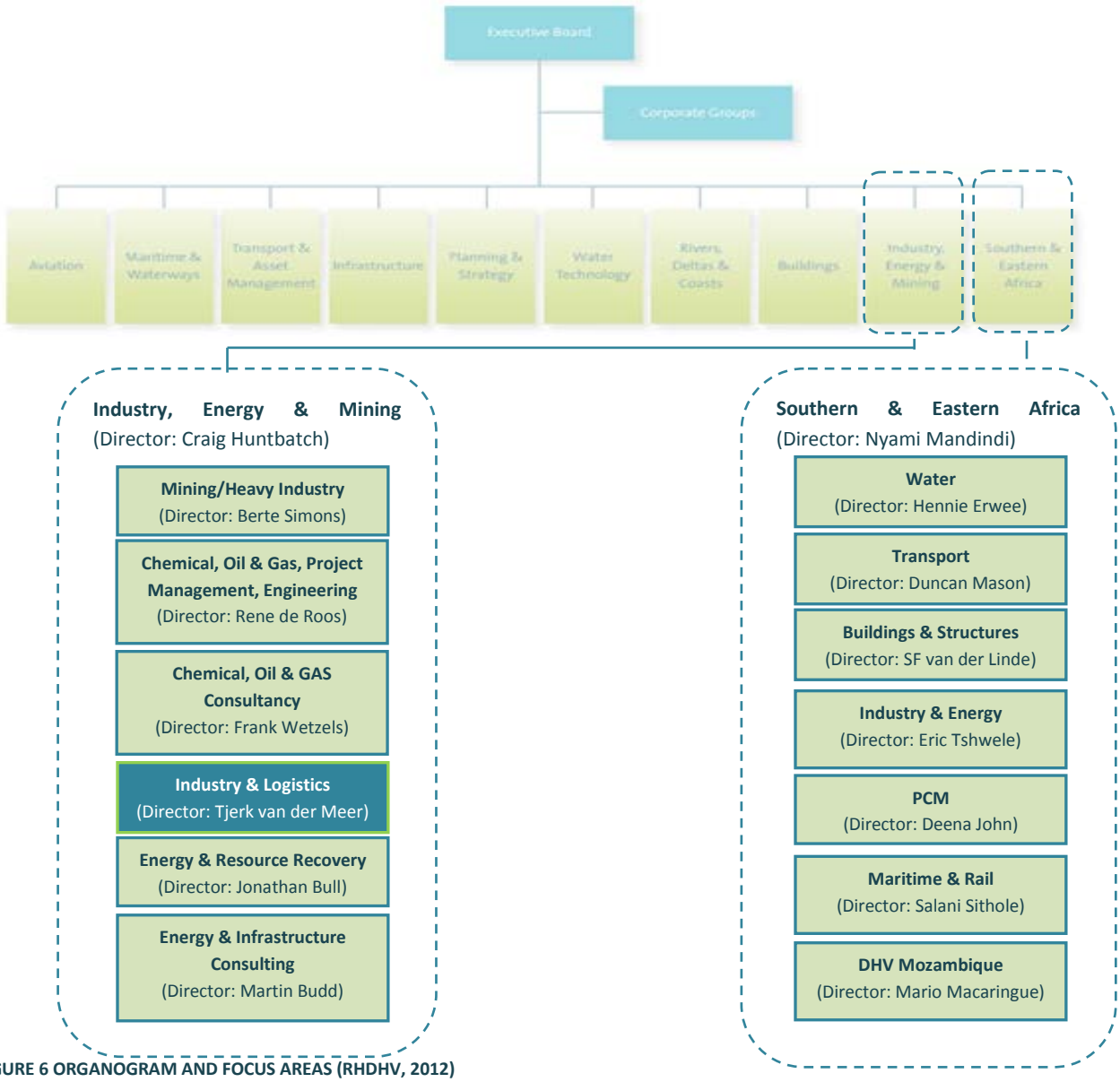


FIGURE 6 ORGANOGRAM AND FOCUS AREAS (RHDHV, 2012)

1.1.3 MISSION, VISION, GOALS AND STRATEGY

The mission, vision and strategy are important aspects for the internationalization of the company as these are the main factors that form integration between the different business units and its entire staff led by the upper management. It is with these ideals that you will be able to get a whole company moving in one direction. This internationalisation research and the up following should somehow align with the direction given by the upper management of RHDHV. That is the reason why these strategic principles are studied.

MISSION

The general mission of RHDHV is to be a company of people for people. In Partnerships with the clients, RHDHV creates solutions for the sustainable interaction between people and their environment. This mission could be seen as a moral business philosophy that implies that the company wants to act in a certain way to not only help itself and its clients but to contribute a significant proportion towards society and the global environment. Improving technological quality

VISION

The vision of the consultancy firm is to be a strong, global, independent engineering consultancy, sustainable and leading in their industries. They want to create an inspiring environment that they can be proud of and that others want to join. The vision of the business line is to become globally recognized as a leading technical consultant for *Industry, Energy & Mining*. The global recognition coincides with long term profitable business, stimulating and rewarding careers and to become leading in sustainability. Operations will be on a "client intimacy" business mode, focusing on key markets.

GOAL AND STRATEGY: BUSINESS UNIT INDUSTRY & LOGISTICS FOR THE AFRICAN MARKET

The goals and the strategies for Africa are to develop further market and partner research for this area and to set up a new unit when appropriate. Another goal is to set up permanent business development relations with RHDHV/SSI South Africa

In the mission, vision and business strategy the message given "from above" is quite clear. The emphasis lies in growing globally to become stronger and independent. This is definitely associated in focusing on developing areas, especially on Africa. The idea is to deliver the appropriate supply towards the growing African market by potentially acquiring a new local unit when and where appropriate. These ideas fit within the problem statement of this research.

1.1.4 PRIMARY OPERATIONS INDUSTRY AND LOGISTICS

The primary operations of the engineering firm are presented in this paragraph to attain a better perspective on what Royal HaskoningDHV is actually doing. The core of its business as well as the supporting units is presented in a value chain (Figure 7).



FIGURE 7 VALUE CHAIN RHDHV

The value chain shows the value transformation of a certain product or service from input till output. The core business of Royal HaskoningDHV is to provide multidisciplinary services ranging from industrial master planning, feasibility studies, consultancy, engineering and environmental services to full project and construction management for its clients.

As can be seen in Figure 7, this is initially done by gathering physical, regulatory and client requirements as operational input which is mainly collected locally. The actual operations, which are designing, research and engineering are often being processed in the Netherlands. The outputs of these operations are delivered to the client or the contractor in form of drawings or reports. Like any other company, the core business should be marketed by price, product, place and promotion. In this case the price is mostly set by attaining the scope of a project and how many man-hours are needed to gain a desirable result topped by a suitable overhead price. Unlike manufactured products, setting the price is a complex process, leading to a somehow less transparent system that is often confronted in the construction industry. The products are promoted intensively for higher credibility by creating project portfolios and are marketed globally. The service which RHDHV maintains after delivering the project differs per project and what is agreed in the contract. The firm often is engaged to manage or monitor the site during construction.

The value chain phases are bridged by communication between employees or teams. Although the phases are separable by location, this could drastically affect the process in a negative way. Operating some phases in another region can however be risk or cost effective when wages are, for example, lower in another country. In some situations it is even inevitable. This is an important aspect to analyse for the sake of the research as some operations can be internationalized and some might better be processed in the domestic countries.

PROJECT EXAMPLES

To create an image on what the light industry department is producing, some project examples are presented. This also shows what kind of clients you might expect in this industry. In the course of this dissertation some projects, countries, clients and competitors will be elaborated more thoroughly.



Client:	Heineken Supply Chain
Project:	Point Noire Bottling Hall Point Noire, Congo
Services:	Preliminary design for a 3,000 m2 bottling hall



Client:	Krones AG
Project:	Krones Sequelle Angola Total build surface: 100.000m2 Beverage production plant incl. can factory, glass factory, supporting facilities, canteen and administration building
Services:	Consultancy, Tender documents/ Contracts, Contract administration, Document review, Project Management

FIGURE 8 PROJECT EXAMPLES (RHDHV, 2013)

1.1.5 GEOGRAPHICAL ORIENTATION

At this moment, Royal HaskoningDHV has a large global coverage to efficiently operate in areas that matter. The company has offices over 30 countries worldwide and is also significantly spread over four countries on the African continent. According to RHDHV, the light industry department is also interested to extend its operations and entry types in Myanmar, Philippines and Malaysia. In Africa, Royal HaskoningDHV has 23 offices in South Africa. The South African entity was formerly owned by SSI, and is now employing around 1000 employees under the name of Royal HaskoningDHV. RHDHV also has some smaller offices in Ghana, Mozambique and Nigeria.

A stated before, the light industry and especially the Food & Beverage industry are experiencing a significant growth in Africa and that is why this continent should be monitored and studied on current development and further growth. According to the Business Line director's view, this continent could be very profitable in the near future. Potential settlements in those countries may be through exporting, alliances, partnering and/or acquisition.

1.2 Defining the Problem 2: Growing Africa

1.2.1 OPPORTUNITIES

The African continent is an interesting area to analyse for current and future investments. There are several motives why companies should be focusing on this continent. Some indicators are enlightened in this paragraph.

Growing GDP, decreasing poverty

The African continent's Gross domestic product (GDP) has been growing with an average of 5% the last ten years. Some countries like Angola, Namibia and Nigeria had average growths above 9% annually. Ghana even had a GDP growth of 14% in 2011 (UN statistics, 2013). Unfortunately these high rates still usually end up in small absolute GDP per capita. Nevertheless, growth has been observed in a constant pattern and the continent can be viewed as a more serious player every year, especially in case of the consumer goods industry.

The average GDP per capita has been growing for years now, which is usually a healthy financial aspect for a country, but if this GDP is mostly produced by Foreign Direct investments in governmental mining projects and if this equity is not equally divided, the citizen's poverty will remain. In Figure 9 and 10 it has been made clear that the average GDP per capita has been inclining for several years from earlier than 1980. The poverty however has only been declining since 1998 and has continued to do so over the last few years making room for the increasing middle class consumer that will be able to spend more money on consumer goods. This will attract more than a few multinational corporations which will have to build local manufacturing plants.

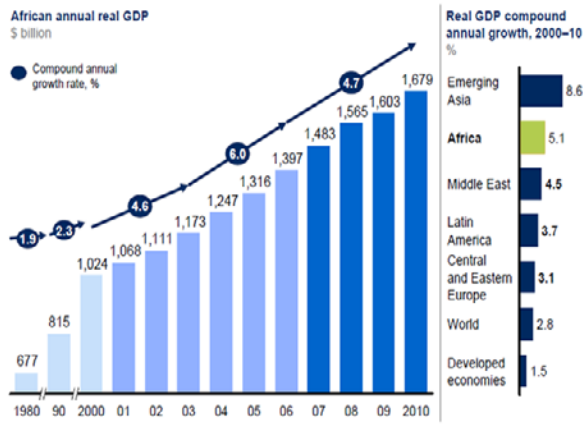


FIGURE 9 REAL GDP (MCKINSEY-GLOBAL-INSTITUTE, 2012)

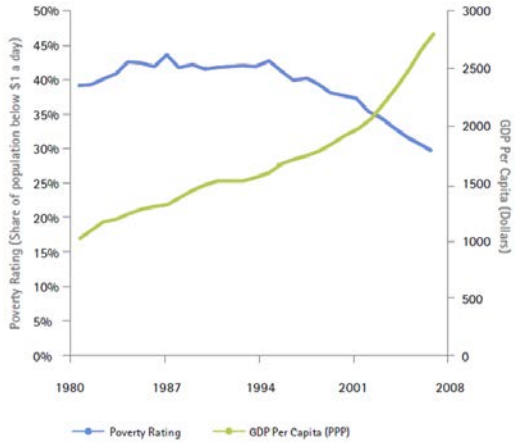


FIGURE 10 POVERTY VS GDP PER C (PINKOVSKIY & SALA-I-MARTIN, 2010)

Increasing Population and Rapid urbanization

In 2005, Africa had a population of more than 920mln people which increased to 1bln in 2010. The population is expected to increase to almost 2bln people by 2050. In the last five years Nigeria, Uganda and Ethiopia had a population growth of over 3% annually.

Furthermore Africa's economically active population has grown enormously the last few years, this in contrast to mature continents like Europe whose populations are aging and moving into dependent senior categories. This trend can eventually lead to increased demand for goods and services.

Africa's population is not only growing by numbers but it is also getting more urbanized. In the year 2000, only 35% of the population lived in cities. This is now 45% and is growing annually by more than 3,5%. Urbanization will

make services and products more accessible to consumers by improving distribution and marketing in form of sales, services and communications.

IMPROVING INFRASTRUCTURE AND TECHNOLOGY

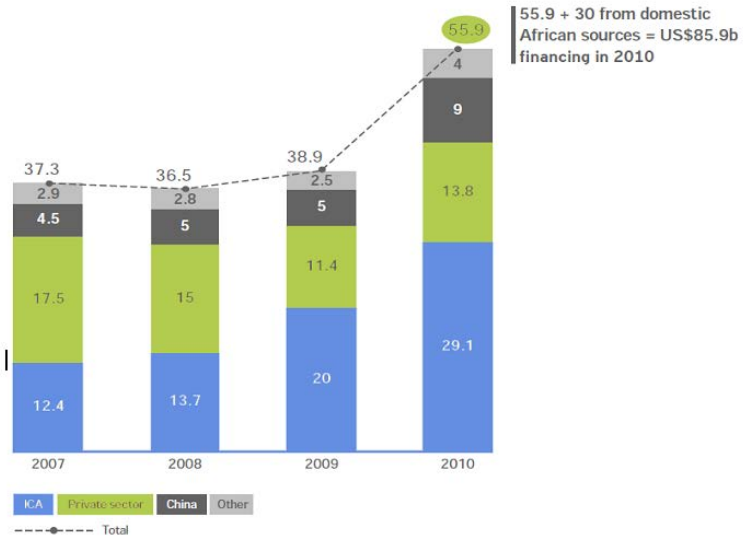


FIGURE 11 INFRASTRUCTURE (INFRASTRUCTURE-CONSORTIUM-FOR-AFRICA, 2011)

The infrastructure in Africa remains a big issue for various foreign companies and is often seen as the biggest barrier for businesses in Africa. Many companies need adequate roads for transportation of goods or construction materials and as a sophisticated distribution network to reach customers. Improving the current infrastructure network will have a great positive impact on the business development in Africa. In 2010 infrastructure financing grew from $38,9bln to $55,9bln in Africa with a $30bln extra from domestic African sources emphasizing the current growth in infrastructure network. The development of infrastructure can be a significant indicator of a country's future attractiveness.

Consumers in Africa are also becoming easier to reach due to a remarkable uptake of mobile services. By 2012 almost 50 percent of the African population owned a mobile phone, compared with 30 percent in 2008. Next to the growing telecom sector, there is an intensive development in electrical supply and water network. Large Chinese contractors have built dams in the past, mainly to supply the electricity for their mining sites and are now surpassing this demand to produce enough electricity for regional and local consumption as well. In Congo plans have been made to build a 50.000 MW dam which would supply several countries of power. To put it in perspective, that would be enough electricity to supply 7mln Dutch consumers.

Another barrier in Africa for further business development is the lack of skilled labour. Kenya is statistically one of the best educated countries in Africa which makes Kenya interesting for business development. One of the reasons that Kenya is better educated is the information availability in the form of internet. The first undersea cables to Africa were placed to Kenya. In Figure 12 the internet supply is shown and it is obvious that this new development could have a great impact on the quality of education in Africa.

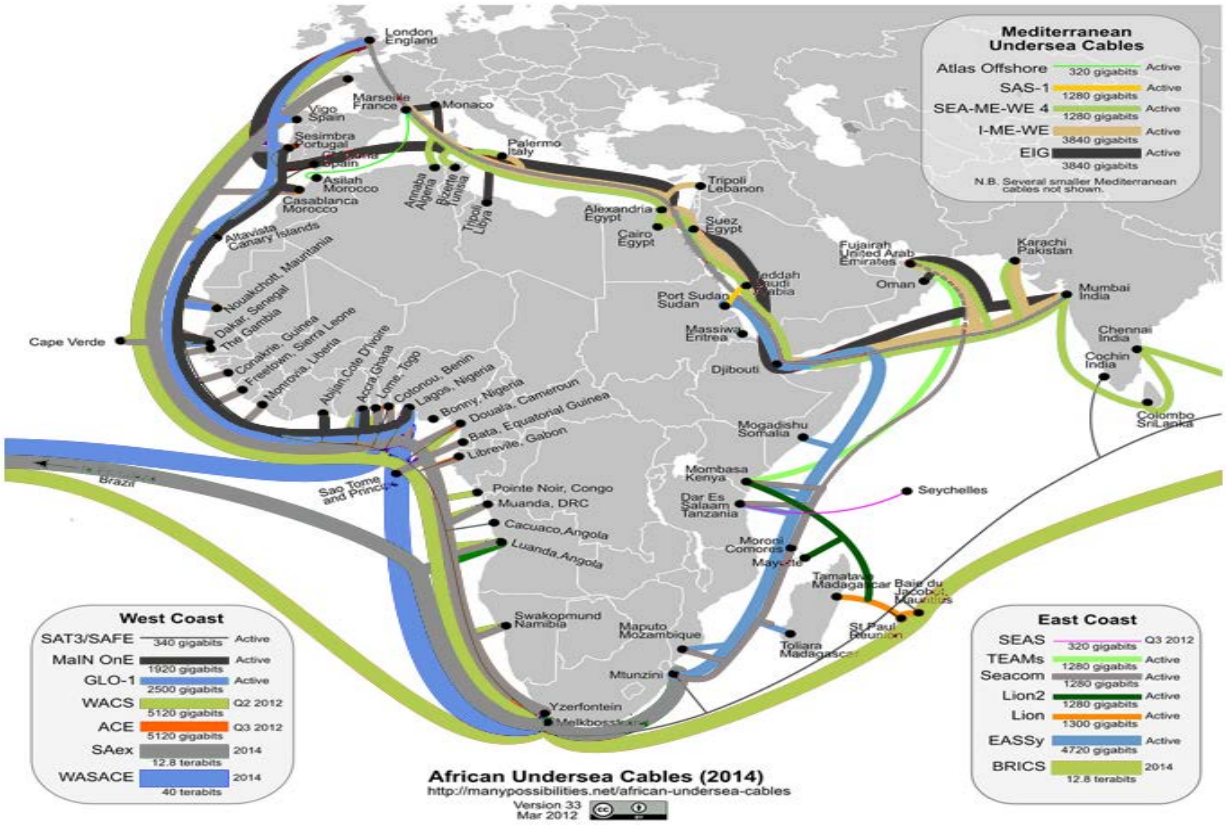


FIGURE 12 UNDERSEA CABLING IN AFRICA (MANYPOSSIBILITIES.NET, 2012)

OPENING MARKETS AND HEALTHIER BUSINESS ENVIRONMENTS

In the past, trade amongst African countries has been slowed by the hefty tariff barriers that countries imposed on imports. The global drive for border opening is forcing African countries to open their borders for imports to stimulate international and regional trade. Africa is currently fostering a number of formalized trade blocks that have been the catalyst for loosening trade restrictions between member states and the global economy in general (Figure 13). For construction companies this could, for example, mean a lot in the form of material and equipment import. This form of trade is considered to be the second degree of economic integration. If the economy will develop even further, trade in human capital won't even be an issue anymore and regional monetary currency can eventually be formed (Dalimov, 2009). The progress is illustrated in Table 2, though not all countries are adapting these new agreements for the better of the trade regions as they should.

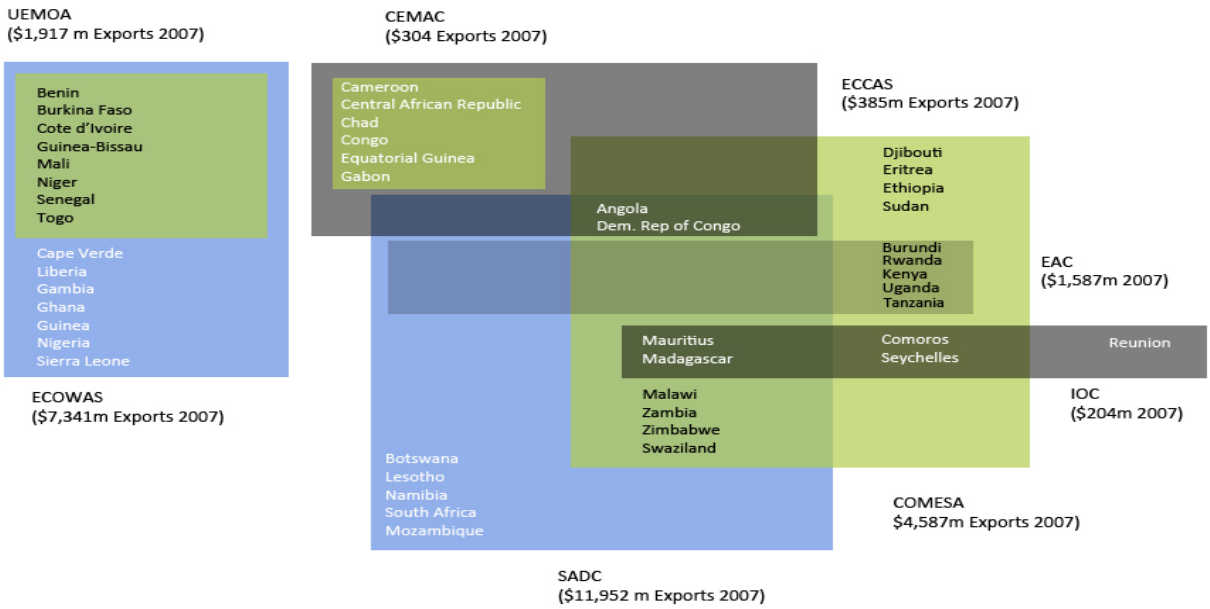


FIGURE 13 TRADE REGIONS (UNITED-NATIONS, 2009; WORLD-BANK, 2011)

Regional Bloc		Activities							
		Free Trade Area	Economic and monetary Union			Free Travel		Political pact	Defence pact
			Customs Union	Single Market	Currency Union	Visa-free	Border-less		
AEC		Proposed for 2019	Proposed for 2019	Proposed for 2023	Proposed for 2028			Prop for 2028	
CEN-SAD		In force							
COMESA		In force	Transition		Proposed for 2018				
EAC		In force	In force	Proposed for 2015	Proposed for 2013	Proposed			
ECCAS	CEMAC	Delayed	In force		In force				
	Common	In force	In force		Proposed	Proposed			In force
ECOWAS	UEMOA	In force	In force	Proposed	In force				
	WAMZ				Proposed for 2012				
	Common	Proposed	In force	Proposed	Proposed	In force	Proposed	Proposed	In force
IGAD									
SADC	SACU	In force	In force		In force				
	Common	In force	Postponed	Proposed for 2015	Proposed for 2015				

TABLE 2 AFRICAN ECONOMIC COMMUNITIES (UNITED-NATIONS, 2013)

Fewer conflicts, more democratic elections, higher economic growth rates and improved business regulation make Africa business-friendlier every year. This fact has been recognized by the World Bank's 2009 Ease of Doing Business report, which highlighted Africa as a continent that is making strides towards becoming a more business friendly environment.

Increasing Foreign direct investments, Chinese trade in particular

The trade between Africa and China is heavily discussed on moral grounds. Chinese state contractors are absolutely interested in the natural resources that Africa has to offer and Africa is interested in the wealth that China can bring them in form of infrastructure, electricity and other forms brought by civil engineering projects. Arguments against this trade, often discussed by western entities, say that Chinese contractors are only looking for their own interests, that they bring their own human capital and equipment and that Africans are therefore losing jobs. Facts are that a huge amount of jobs are currently created for the African population by these mega projects, that knowledge is shared, locals are educated by Chinese contractors and wealth is created in form of physical processed resources like infrastructure. This is done purely on business base and not in the form of aid, which seems to be a breath of fresh air for many Africans. Figure 14 shows the trade between China and Africa. At this moment this is a staggering amount of $170bln a year.

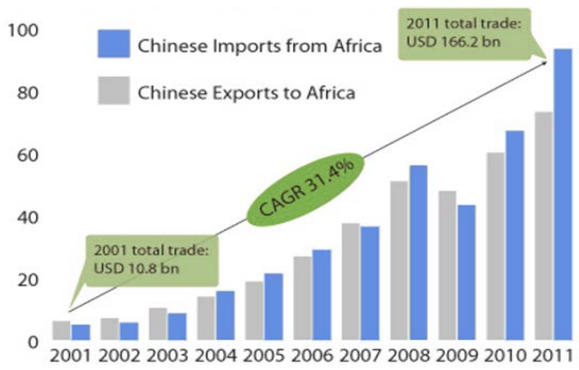


FIGURE 14 TRADE CHINA AFRICA (THE BEJING AXIS ANALYSIS, 2012)

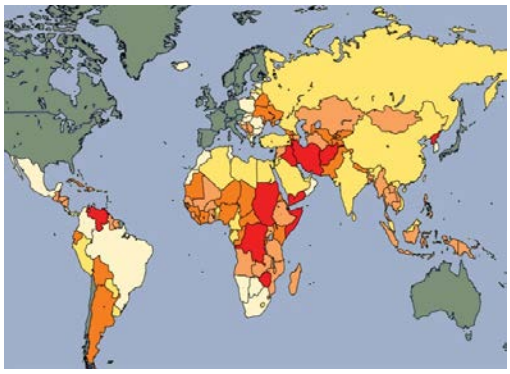


FIGURE 15 2012 POLITICAL RISK MAP (AON, 2012)

1.2.2 THREATS

The opportunities stated in the former paragraph can also be seen as a contradictive reaction on some of the threats Africa is still suffering from. These threats can be seen as a risk for the development in some African countries as well as a threat for the safety of projects and employees. These risks can heavily affect a project's budget and delay and should therefore be analysed for entry, development and project orientation.

Some of the common threats:

- Political-risk(Figure 15)
- Inadequate infrastructure
- Unskilled labour
- Corruption
- Unsophisticated
- financial systems
- Diseases
- Inequality
- Floods
- Hyperinflation

In many articles the risks have been elaborated on what they mean for projects and for businesses. To somehow relate to these risks and illustrate them as a day to day problem, news items of a random day are presented:

"Islamist Fighters Slip Back Into Timbuktu and Are Repelled by French and Malians Angola deaths after weekend floods"
"Attack targets Nigerian politician"
"Members of a Mozambican opposition party's militia killed four police officers in an attack to try to free party members arrested in a police raid on their headquarters."
"Kenyan Court Upholds Election of Candidate Facing Charges in The Hague"
"Voting Irregularities in Kenya Election Are Confirmed, Adding Fuel to Dispute"

The risks in Africa hugely affect the business environment and have been a barrier for further success for years now. If these risks would get less and businesses would find the right ways to mitigate those risks, they could successfully extend their markets to those countries. Some risks, like political stability, floods and corruption are hard to quantify, hard to predict and don't seem to get any better. But other risks like skilled labour, inadequate infrastructure and unsophisticated financial systems are definitely progressing. These changes will have positive influences towards international business development and might even affect the form of entry type a company would consider in African countries.

1.3 Defining the Problem 3: Internationalisation process

To know which countries might be interesting in Africa and how to enter these markets, are decision-making processes that can be approached in different ways. These processes are different for product oriented firms than service oriented firms. Engineering firms can be seen as an alien industry in contrast with the commonly known product based industry. First of all, its core operation is not easy to copy as every project has different requirements that make every product delivery unique. The operations are project specific as well as location specific. This makes it quite difficult to choose the right markets and entry types because of a wide amount and mostly unknown dependent variables.

The internationalisation of engineering firms has especially been hot the last few years since the rise of Dubai. They seem to have internationalized to a greater extent, as in 2009, the top 200 international engineering consultancies had export revenues, generated from projects outside each firm's respective home country of $52,5bln according to (Reina, Tulacz, & Schexnayder, 2010). By 2014, some estimates expect to see that number grow by over 20% (Datamonitor, 2010).

Despite increasing reasons and evidence of the internationalisation of professional services, like design and engineering firms, internationalisation has remained relatively under-researched in this sector, especially in comparison to the equivalent studies undertaken on manufacturing firms (Grönroos, 1999; Løwendahl, 2005; Merchant & Gaur, 2008; Warf, 1996).

It will be important during this research that the decision making methods towards internationalisation are considered to make a well founded conclusion for commercial and scientific contribution in this industry.

1.4 Defining the Problem: Summary and Scope

Problem Summary

According to the financial statement presentation of Royal HaskoningDHV's CEO, Bertrand van Ee, given on 13 February 2013, the company is suffering from a low demand in the domestic and western market. As Europe's financial health decreases as well as its project investments, Royal HaskoningDHV will have to continue developing its business in other countries and continents which could provide the demand that the company desires. The light Industry department within the firm has noticed a recent increase of demand in especially Nigeria, Congo, Angola and Ethiopia. The Southern- and East- African business line within RHDHV, which is located in South Africa has also noticed growth in Sub Saharan Africa and is interested in projects in countries as Mozambique, Kenya, Uganda and other members of the COMESA.

The positive changes that are currently occurring in Africa could be a catalyst towards further growth in for example the manufacturing industry but could also be a causal effect that is influenced by construction projects that have been developed by mainly Chinese firms. If Africa is creating its own sustainable wealth and value with the helping hand of Chinese firms, than it might have a brighter future than is expected. But we could also be discussing an artificial wealth that is temporarily being boosted by companies and countries that are interested in only natural resources. This could imply that the continental economy implodes if foreign direct investments would stop.

It is changing towards a forecasting issue only people can speculate about and as the famous saying goes: only fools claim to know the future. The positive macro-economic indicative statistics however, really do tend to sketch a bright future.

The discussed risks are mainly unpredictable. And although getting less, they keep being rather annoying issues which companies have to deal with. These risks should be identified well and eventually be mitigated in the right way for businesses, who could be interested to work in those "harsh" environments. The right internationalisation strategies could help firms along the way to Africa.

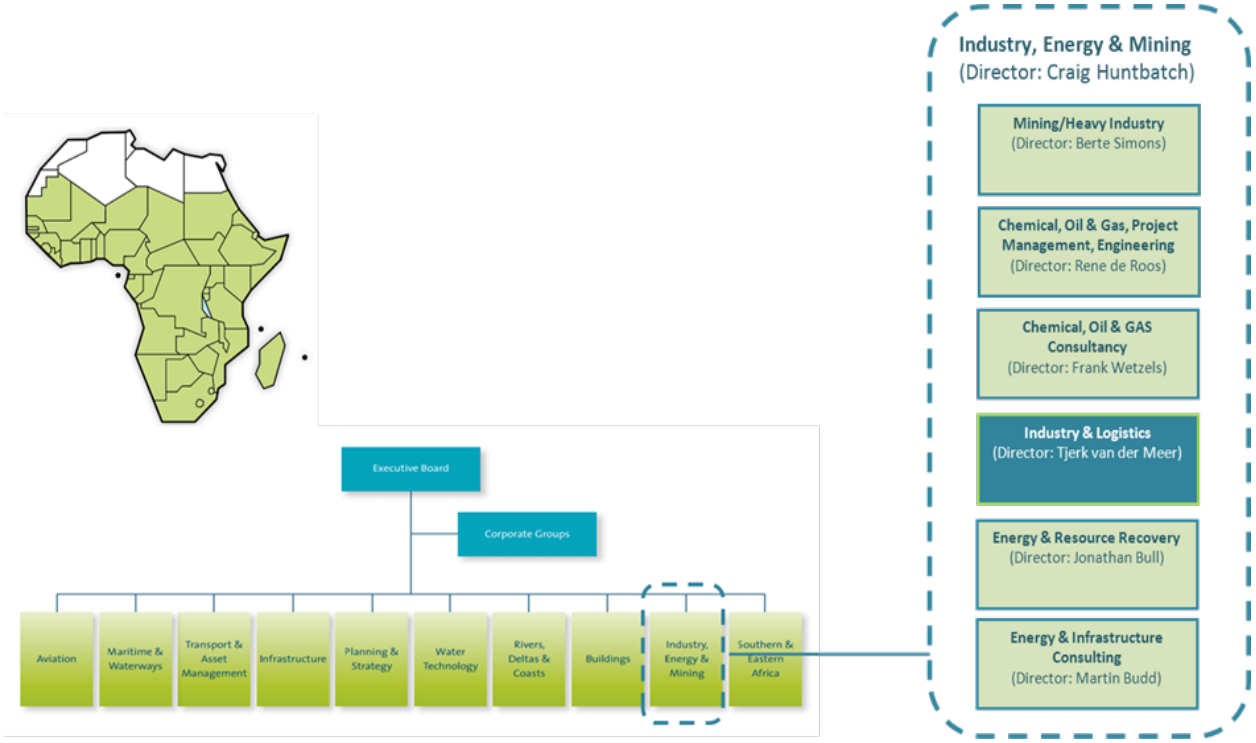
The main problem is the issue how engineering firms should select the right country for future business development and what their internationalising strategy will be. This process, in international engineering industries, is more often triggered on a contingent basis than in other sectors like for example manufacturing. In most of the cases this contemplates a temporary border crossing, based on the duration of a project. Long term presence will be more dependent on market performance rather than strategic vision and goals. In the 1990's a process towards permanent presence in new markets grew significantly because of several reasons:

- Dwindling size of some markets like Europe and Japan. Engineering firms are forced to find jobs elsewhere in the world.
- Continuous increase in demand in developing economies
- The emergence of innovative investment type entry modes, like specific types of mergers and acquisitions.
- The globalisation and global information sharing.

PROBLEM SCOPE

To research the way how an engineering firm could and should internationalise, the decision framework will mainly be focused on methods that stimulate choosing the right country and the right entry type.

The case study itself will be focused on Sub-Saharan African because of the interest in this area by RHDHV. And because of the importance of the food & beverage industry in Africa at this moment, the magnitude of the BL's turnover within RHDHV and the increasing amount of African projects within the department, the case study will be focused on the light manufacturing industry.



1.5 Defining the Problem: Research Question

Royal HaskoningDHV is interested in which African countries are attractive for the light manufacturing industry and how attractive they are. But the nature of the problem isn't finding the right region and appropriate entry strategy for business development. It is to find a method to practice this internationalising decision process. A more quantitative country selection method could for example be more effective than a qualitative approach, and if so, which variables could be interesting to select a country and an entry strategy? By creating a decision framework we will eventually be able to find the right countries and entry types.

The search to an appropriate Internationalisation strategy and the right decision making process lead to the following main question:

"How does a Decision Making Framework for the Internationalisation of an Engineering Firm look like, computing international market selection and selection of entry strategy?"

Scope Geographically: Sub-Saharan Africa
Scope Industry: Light manufacturing plant industry RHDHV

1.5.1 SUB QUESTIONS

1 Decision Making Framework for Market Selection and Entry Strategy

- Which country decision making systems are currently used and can be effective in the engineering industry?
- In which order should these methods be used?
- Can a dynamic country selection model be created and be used in multiple industries and multiple regions?

- Which variables are important for the entry selection decision making process?
- How would the appropriate entry type be chosen dynamically?

2 Case study

- Which countries in Sub Saharan Africa are interesting for an international engineering firm like RHDHV?
- What type of entry is suitable for this country and RHDHV?

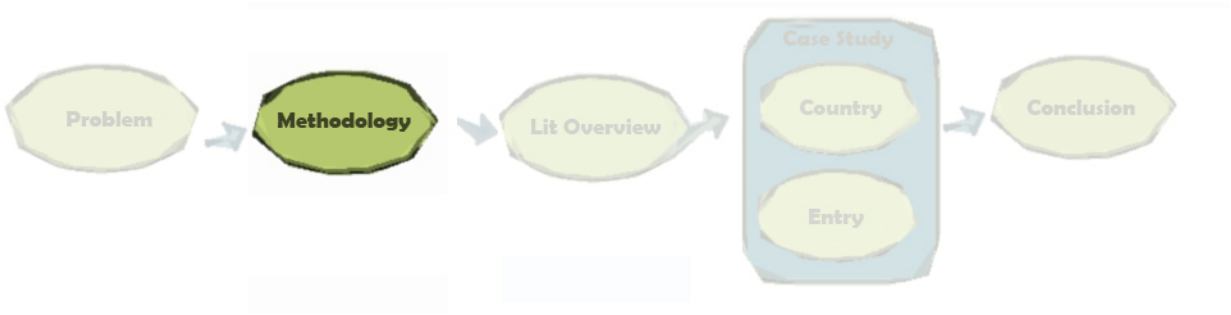
1.5.2 HYPOTHESES

1 Decision Making Framework for Market Selection and Entry Strategy

- H1. Experience and "softer" methods instead of statistical analysis might be more important when choosing the right country, especially in the engineering industry.
- H2. Less time consuming methods should be used in the beginning.
- H3. A more dynamic country selection model can be made by the use of statistical methods.

- H4. Political risk, cultural differences and demand prospects are the most important variables to decide the appropriate entry type.
- H5. The appropriate entry type can be chosen by scenario development for a more dynamic approach.

2 Methodology



2.1 Research Methodology

The research methodology interprets and justifies the techniques used for the collection, analysis and interpretation of data. There are several research strategies that are being practiced in scientific research projects.

The type of research methodology that is used depends on what has to be researched and is often related with how a research question simply starts. Like with how, what, who, when, where or how much.

Research can be categorized in exploratory or hypothesis testing (Philips and Pugh 2000). Exploratory research is used to tackle a new problem, issue or topic. With this type of research the idea cannot be formulated very clearly but is mainly used to develop new theories or design new concepts. Hypothesis testing can often be used to test theories of previously proposed generalizations. This is a methodology that is more likely to take place in a structured environment. For this thesis a decision making framework will have to be designed and a more exploratory way of doing research will therefore be required.

Many more categories or paradoxes and typologies are known and can be found in general or International management-related literature. Each type of research performs a process with a particular goal and should be selected according to the nature of the issues or questions to be addressed as well as the amount of previous research, the resources and the available time. Those are the most important criteria to choose the right research methodology upon (Hakin, 2000).

The research questions and its sub questions make this research by nature very brought. It can't be compared with a specific experimental research to test the strength of a new type of concrete for example. In contrary, this case runs through several aspects which will require more exploratory methodologies. Market selection and entry strategies for international engineering firms are still relatively untouched topics in the engineering field. Some theories can however be lend from general business and economics approaches. In the commencement of this study relevant literature will be researched to explore the topics and study the methods that can be used for the international decision making process. To actually test these methods out and understand their practicability a case study will be implied and interviews will be taken.

During the case study some different techniques might be used such as surveys and statistical analysis. But these are used to find an outcome on the application part, namely Where should RHDHV go to? And how should it get there?

The methods that are used for scientific research are desk research for the literature overview, a case study to design the decision making framework and interviews that contribute in the creation and verification.

2.1.1 DESK RESEARCH

" Desk research is a research strategy in which the researcher does not gather empirical data herself or himself, but uses material produced by others" (Verschuren and Doorewaard, 2011)

DESK RESEARCH IS CHARACTERIZED BY:

- The use of existing material, in combination with reflection
- The absence of direct contact with the research object
- The material is used from a different perspective than at the time of its production

There are also two different desk research variants that can be used in different situations:

LITERATURE STUDY

When carrying out literature studies the researcher is completely dependent on existing specialist literature. In the beginning of a research this type of strategy is often used to base your own research on relevant theories. This can clear out the fog that is often present before the research even starts and gives the researcher an idea on what is already studied and what not. This research project strongly resembles the case study where qualitative content analysis is used but can be even more abstract. It gives the researcher the opportunity to compare different theories that he or she can use in a further stage.

SECONDARY RESEARCH

To effectively use a secondary research strategy the researcher rearranges existing data and analyses and interprets this data from a different perspective. This requires the use of reliable scientific data. Most statistical material published each year by recognized research institutions meets these requirements, but it is absolutely vital that this data is well chosen and referred by the researcher.

REASONS TO CHOOSE DESK RESEARCH

This type of research has its advantages and disadvantages. The biggest advantage is that the researcher is able to use a large amount of data quickly. If there is no time for extensive data collection and another entity has already searched the data you need or some kind of substitutable data than this can easily be used. This could also be a disadvantage. If the researcher will use the data in a different context than it was intentionally created, it could eventually result in a misinterpretation. It is therefore important that the researcher defines the data well and discusses the use of it during the research. Another advantage is that if the researcher gets stuck in case of lack of data, it can find this data or substitutes in other studies. The risk of this is that the main objective of the research might change and forces the researcher to adjust its research questions. A consequence of the above is that the researcher has no direct contact with the research units. In the case of this study some risk statistics are obtained by other research entities and are not actually experienced by the researcher. Moreover, the researcher can easily misunderstand the practicalities of the theories and data found.

WHERE AND WHY DESK RESEARCH IS USED IN THIS RESEARCH

Desk research is intensively used during this research. Like most master thesis's, literature study is being processed in the beginning of the project. Different theories on the topic are studied well to find out which methodologies are usually used by engineering firms to target countries and entry types. These theories can then easily be compared with the current situation at RHDHV.

2.1.2 CASE STUDIES

" The case study is a research strategy in which the researcher tries to gain a profound and full insight into one or several objects or processes that are confined in time and space" (Verschuren and Doorewaard, 2011)

CASE STUDIES ARE CHARACTERIZED BY:

- A small domain, consisting of a small number of research units
- Intensive data generation
- More depth than breadth
- A selective, strategic sample
- An assertion concerning the object as a whole (instead of an object that is unraveled in observation units and variables, as it is the case in a reductionist survey research
- Qualitative data and research methods

There are also different case study variants that can be used in different situations:

THE SINGLE CASE STUDY

In this type of study only one case is thoroughly examined. This case however, does have subcases which can be compared with each other. If one would research a public administration system, which would be the case, he or she may conduct a study concerning the separate ministries or even the separate departments within these ministries as if they were individual cases. The ministries would be the observation units in this case.

THE COMPARATIVE CASE STUDY

This study can be distinguished from the single case study by the fact that several interrelated cases are compared instead of just one. In the hierarchic method, the research project is carried out in two stages. In the initial stage the separate cases are examined as if they belon to a series of single case studies. The cases should be observed in a structured pattern. This facilitates making comparisons in the second stage.

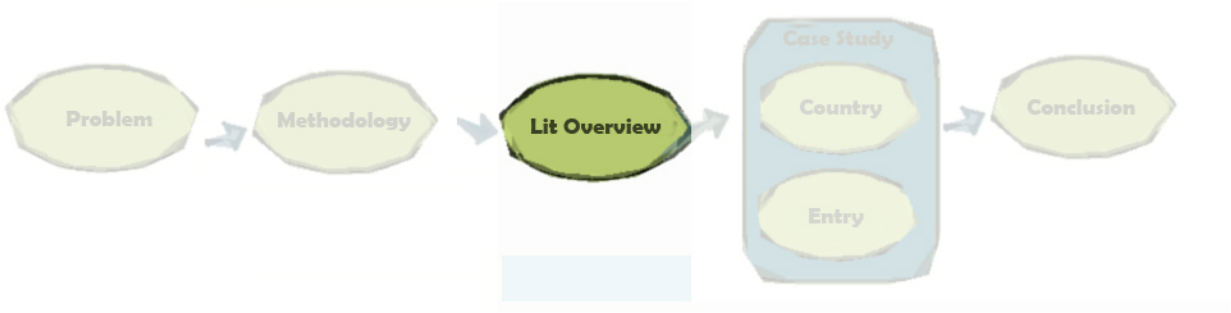
REASONS TO CHOOSE CASE STUDIES

Especially in practice –oriented research a case study has its advantages. An important aspect of this type of research is that it gives a good general picture of the research object making the researcher understanding the situation a lot better. Having a general picture can be advantageous during a research project aimed at changing an existing situation or analyzing a dynamic situation. A second advantage of a proactive oriented research project set up as a case study is that not much pre-structuring is required. It requires far less pre-structuring than a survey or an experiment and as they say, you will simply "go with the flow". Using this type of research in the beginning before actually stating anything might be a good strategy for your research. A third and final advantage of a case study from the point of view of practice oriented research is that the results will be accepted more readily by the people in the field than the results of a quantitative survey or a complex and often slightly artificial experiment.

WHERE AND WHY CASE STUDIES ARE USED IN THIS RESEARCH

The case study is the backbone of this research. The task of finding the right country for RHDHV to develop business and the right type of settlement will be used as single case study to find out which decisions have to be made and how they can be made.

3 Literature Review



3.1 Strategy Literature

Internationalisation of manufacturing firms is often characterized as companies moving through different stages in a strategic process to get to an end result (O. Andersen, 1997; Roberts, 1999). The so called Uppsala model that is used for manufacturing firms' sees firms starting with export and eventually grows through stages of increasing resource deployment in foreign markets. This transformation is developed after increasing knowledge in foreign markets and other more commercial reasons (Sharma & Blomstermo, 2003).

Roberts (1999) identifies five stages that service firms undergo. These stages differ from those of the Uppsala model. The export of services can for example begin as domestically located exports by serving foreign clients in the domestic market of the engineering firm. In researches about the differences between the internationalisation of engineering firms and manufacturing firms, client contact has often been observed as a vital factor for engineering firms (Erramilli, 1991; Løwendahl, 2005; Roberts, 1999). How an engineering firm internationalises in general and which steps it has to take are reported in this paragraph and are categorised as strategic processes.

There is no single, concise and universally accepted definition of strategy (De Wit & Meyer, 1998). But strategy has been viewed as an idea that sets a way that could adapt on multiple internal and external influences (Hamel, Doz, & Prahalad, 1989; Porter, 1979). Others also agreed that strategy can be identified as a process for longer periods of about five years in contrast with operational and tactical decisions that are taken for periods of weeks or months (Warszawski, 1996). Strategy is defined by Johnson & Scholes (2008) as:

"The direction and scope of an organization over the long term, which achieves advantage for the organization through its configuration of resources within a changing environment, to meet the needs of markets and to fulfil stakeholder expectation"

The international strategy towards Africa will have to take multiple internal and external influences into account and will have to be formed with a long term perspective of ca four years and longer.

Strategic planning process: rational or intuitive?

According to Chinowsky and Meredith (2000) the strategic planning process is a process combined by subjective judgement and objective analysis. In practice this can often be seen in the use of different systems like for example the monte carlo simulation model which can make some decisions for higher management easier by analyzing the chances of alternatives. Other processes like SWOT analysis and Porter models are used as analysis tools and many of them have been accepted as appropriate instruments.

The theory that implies that the planning process is a rational process as introduced by Alarcon and Ashley was criticized by other strategic theorist, such as De Wit and Meyer (1998). Instead of a linear process, they say that those strategies are formed incrementally through years of experimentation. The discussion grew towards a paradox between rational processes and more experience based processes (Price & Newson, 2003).

For the internationalisation decision making process of RHDHV the choice between rational/objective driven methods and the more subjective/experience based methods or the use of both methods should be a prominent consideration.

Wittington (2001) integrated two dimensions of strategy content and strategy process to map some schools of thoughts on strategy, see Figure 16. The vertical axis examines the degree of variation of strategic content, and the horizontal axis considers whether such content is derived from deliberate planning, calculation and formulation, or simply as an emerging product of accidents, chance, and social and organizational inertia (Cheah, Garvin, & Miller, 2004).

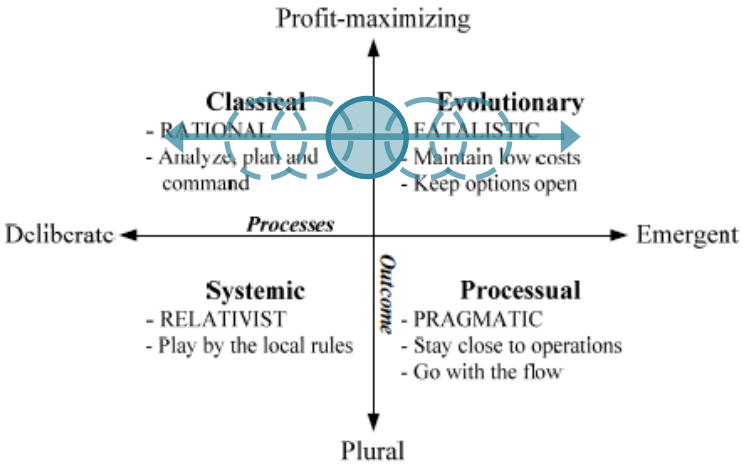


FIGURE 16 DIFFERENT SCHOOLS OF STRATEGIES (WHITTINGTON, 2001)

For this research this translates towards the decision maker that should choose to rationally calculate its chances and forecasts of several countries and entry types or to account his/her decision on more social experiences and feelings or the use of both methods.
According to RHDHV, most decisions are made in a more emergent way. The firm will often follow its client to a new country in a reactive way. These decisions are lightly analysed because this keeps the costs low and subjective experience has already been done during the project.

On the other axis lies a dimension which is already practically settled in this case. The internationalisation is mainly pursued to maximize its profit, although a potential global settlement is not solely for profit maximisation but can also be seen as an objective for several reasons like transnational job opportunities for its employees, a longer and better competitive position or even only to satisfy some of its long term clients.

3.2 INTERNATIONALISATION LITERATURE

Within the internationalisation of engineering firms there are three types of strategic decision that a firm will have to make, namely why would the company internationalise, in which areas does the company wish to compete and how does it want to get there(Aharoni & Nachum, 2002; O. Andersen, 1997).

3.2.1 MOTIVATION TO INTERNATIONALISE

The reasons for internationalisation of services are not always the same. It can for example be of a reactive nature as a client wants to develop in foreign countries, which makes it a great opportunity for the service firms to follow their client and actually move with them on project basis. The temporary internationalisation costs will safely be covered and the physical presence would make it easier to get to know the foreign country and its potential customers before actually opening an office there. Another motivation could be more proactive, demand driven and supply driven (Majkgård & Sharma, 1998). This reason emphasizes a long term competitive advantage by actively seeking new markets and clients. Another, more rarely, reason for an engineering firm to internationalise is the desire to increase aid agency work. Several companies started with aid projects and developed in these foreign countries by bidding on local projects.

For a lot of firms in western countries, the domestic industry conditions are initially the trigger to internationalise (even more). It takes individuals and their entrepreneurial spirit to actually execute it though. Depending on the organisations this is often initialized by business line management or higher management. Like stated before, for RHDHV it is vital to expand their market as the industry in the domestic market is highly decreasing and future prospects in this region are not compelling at all. Where RHDHV sequentially internationalized in a reactive manner in the past, it has showed the willingness and the need to now proactively seek new markets. This transformation is not only explained by the changing economic situation in Europe but according to Krull et al. (2012), during the lifetime of an engineering firm, the firm itself will transform within this strategic area as it grows. The several phases of the transformation are illustrated in Figure 17. As can be noticed, phase 0 starts with only focusing on the domestic market; phase 1, 2, and 3 are combinations of moreover reactive internationalisation processes; whereas in phase 4 and 5 increasing coordination of international business operations and a more proactive attitude is taken place. Phase 4 and 5 are based on seeking good or prospective markets and not solely on following the client. As globalization is rapidly increasing, foreign markets are also more easily reached. RHDHV's motivation to internationalise was extensively explained in Chapter 1 and will therefore not be elaborated further in this part unlike IMS and the entry mode.

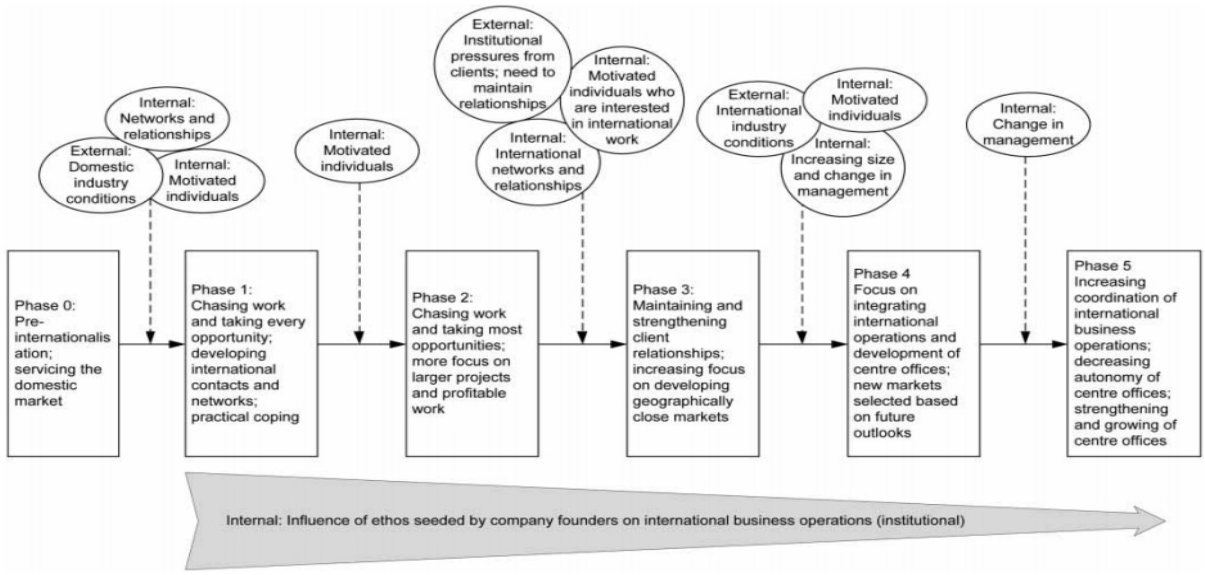


FIGURE 17 THE INTERNATIONAL EVOLUTION OF AN ENGINEERING CONSULTING FIRM IN FIVE PHASES (KRULL, ET AL., 2012)

3.2.2 INTERNATIONAL MARKET SELECTION

International market selection (IMS) has been defined as the process of establishing criteria for selecting markets, investigating market potentials and classifying them according to the agreed criteria (N. Kumar, 1994). Selecting new markets is often largely understood as an information-processing and optimizing problem (P. H. Andersen & Strandskov, 1997). According to the research of Krull et al. (2012), decision on entering a country by thorough markets analyses are typically not undertaken. Decisions are usually moreover based on individuals like business developers and their experiences, knowledge and ambitions to move to other markets. Market selections in phase two and three of the model created by Krull et al. (2012) (Figure 17) predominantly resulted from project availability and was mainly a result of client following strategies based on the network of long-term relationships that the firm used to mitigate risks. In phases four and five engineering firms look more proactively to prospective markets and their opportunities and whether these countries could be entered without a project or client at hand. These markets were often entered, based on the decision of a few individuals who perceived those markets as beneficial.

THEORIES AND METHODS

Andersen and Buvik (2001) have acknowledged that IMS, as a strategic process, can be done in a systematic way, a non systematic way and a relationship way. The systematic way implies that the decision maker will make its decision based on rational information. This will demand extensive research in finding market indicators that would be suitable for the firm or the industry. The non systematic approach will be based on intuition and a subjective opinion of the decision maker. The relationship approach is one often seen in service oriented firms like engineering firms. The relationships, especially those with clients, are probably the most valuable assets of the firm. It is therefore that the internationalisation towards specific countries is often regulated by the client or another important stakeholder that sees opportunities in that country. Tversky en Kahneman (2002) actually found out that human rationality is somehow limited because of static historic information that is used. This makes it a less dynamic method to base decisions upon. Intuition could therefore be more valuable because decision makers base their outcome on relevant and actual information.

Approach	Systematic	Non-systematic	Relationship
Decision problem	Selection of country	Selection of country	Selection of exchange partner
Level of analysis	The selling firm	The selling firm	The dyad
Purpose	Normative	Descriptive	Mainly descriptive
Decision-making model	Rational	Disjointed incrematalism	Bounded rationality
Marketing paradigm	Discrete transaction	Discrete transaction	Relationship marketing
Time horizon	Not specified	Not specified	Long term
Connections to other decisions problems	IMS treated as an isolated decision	IMS as a function of the firm's internationalization	Not specified
Information search	Extensive	Little/none	Limited
Type of information	Country-/market-indicators	Perceived psychic distance (subjective)	Perception of goal comparability, trust, and performance
Sources of information	Secondary data	Experiential knowledge	Business relationships-network

TABLE 3 IMS IN DIFFERENT APPROACHES (O. ANDERSEN & BUVIK, 2001)

Bouchet, Clark and Groslambert (2012) have identified several methods to assess country risk and opportunities. According to this literature it is important to know exactly what you are looking for in those countries and that the use of methods rely on the industry, type of firm, country, comparability scope, data availability etc. In different cases they advise to simply use ratings by organizations like Moody's or Fitch. In other cases qualitative research is valued by actually experiencing those countries. They also propose several econometric and Mathematical methods models that can be used like regression analysis, multi-criteria analysis and even the use of artificial neural networks. In Table 4 a couple of commonly used methods for IMS are shown and explained. Their ranking on objectivity is a rough indication and should not be considered as practicle reality.

Methods	*Information type*	*Objectivity*
Intuitive	Subjective	7
Physical experience	Subjective; Physical experience	6
Relationship	Stakeholder information	5
Qualitative	Less weighable information	4
MCA (Multi Criteria Analysis) by experts	Variables weighted by experts	3
Based on other organizations	Information found by others	2
Statistical/correlation Analysis	Weighted variables by correlation	1

TABLE 4 SEVERAL METHODS FOR IMS RANKED ON OBJECTIVITY

SERVICE SPECIFIC

In this industry it is important to know exactly what the client is going to do and how you can serve him before other consultants can. If you will be able to react faster on a job opportunity because you already have information about the location or a permanent settlement next to the job's location, you probably have a strategic competitive advantage. It is therefore important to have much information on clients their next move. In the country selection, study should be done on what drives the clients to go to these countries and which variables are important for them. Understanding what they want and what their plans are without actually asking this, should be considered as one of the few important factors for being granted a job or not. The market selection and its depended variables will be diverted by focusing on the clients of RHDHV and, maybe more importantly, the clients of its clients, who are processed food & beverage consumers.

What would this mean for the research? Well directly you could investigate indicators like the amount of foreign process manufacturing plants that are settled or build in a country, which can give a good representation of how the direct market for RHDHV is developing. This data can be obtained by, for example, analyzing the foreign direct investments in the food processing industry and explains the growth of processing manufacturers. This is quite interesting for the engineering firm because every soon to be constructed plant means a potential job for RHDHV.

Indirectly RHDHV could also be looking at other indicators which are directly important for their clients. In this case consumer behavior would for example be interesting as well as GDP per capita, House holding consumption, equality and other relevant variables.

PROCESS AND TIMING

According to Koch (2001) most models view market selection process as a composition of three stages:

- Screening: Based on macro level indicators (N. Kumar, 1994) and competitive rivalry (Johanson, Eriksson, Majkgard, & Sharma, 1997)
- Identification: industry level factors, barriers are identified.
- Selection of decision maker: firm specific factors like profitability and service compatibility are investigated.

Andersen and Bubvik (2001) have identified another process for IMS which is more focused on determining the important criteria and the integrated weights of these criteria. The process consists of six steps:

1. **Problem definition**. *Structure, define and isolate the problem.*
2. **Identify the choice criteria**. *Identify all relevant criteria or objectives.*
3. **Weight the criteria.** *Different values or weight should be assigned to the criteria*

4. **Generate the alternatives**. P*ortfolios of country-markets.*
5. **Rate each alternative on each criterion.** *The decision-maker is supposed to be able to assess the potential consequences of selecting each of the alternatives.*
6. **Compute the optimal decision**. *Several models could be used at this stage. A compensatory model (linear or non-linear) presupposes the ability to make tradeoff between different criteria, for instance to balance a low political stability against high product demand.*

Both researches agree on the fact that the process can be identified on a zooming in process where you start with a wide range of countries and you end up with a limited amount of countries. The process of Andersen & Bubvik (2001) will be important for this research because a significant amount of quantified data will be processed during the international market selection and because limited international market selection data for engineering firms, especially with the eye on the food and beverage industry, specific weights and criteria will have to be computed by methods as multi-criteria analysis and statistical analysis.

Variables

Variables or indicators are important elements to determine several trends. Some of those variables are quite general and can often be used in different industries such as macroeconomic, political and cultural characteristics (Bradley, 2005; Douglas & Craig, 1992; Root, 1994). Other variables are more market specific indicators such as market size, competition, channels of distributions and costs of operating in the market. The decision maker should be able to connect these objectives with several weights. It is the decision maker his or hers responsibility to objectively or subjectively decide which variables are more important than others.

To give an idea of common used variables, a short list of indicators that were important in a research of Tyler & Gopal (2010) on the future development of Sub Saharan Africa is presented in the list below:

- Rule of law
- Political stability
- Voice & Accountability
- Imports
- Food consumption/capita
- Internet users

3.2.3 MODE OF ENTRY

In the research of Krull et al. (2012) the allocation of domestic staff to a project site during the length of the project was the most common mode of entry for service orientated firms. Other forms of market entry were found during the research in phase 4. Joint ventures were formed or wholly owned subsidiaries were established without project work at hand. In this case again it was the motivated individuals who were willing to pursue an opportunity that brought them to other markets by joint ventures and own offices. At the end, important strategic moves that will evolve the company towards a more threatening player amongst its competitors are often made possible or initiated by an individual.

GENERAL ENTRY THEORY

There are a lot of different entry types, but the four most common modes are exporting, licensing, joint venture and sole venture (Agarwal & Ramaswami, 1992). Kumar and Subramaniam (1997) suggested these four different modes by a further natural hierarchy of subcategories with different risks and physical behaviours which is illustrated in Figure 18.

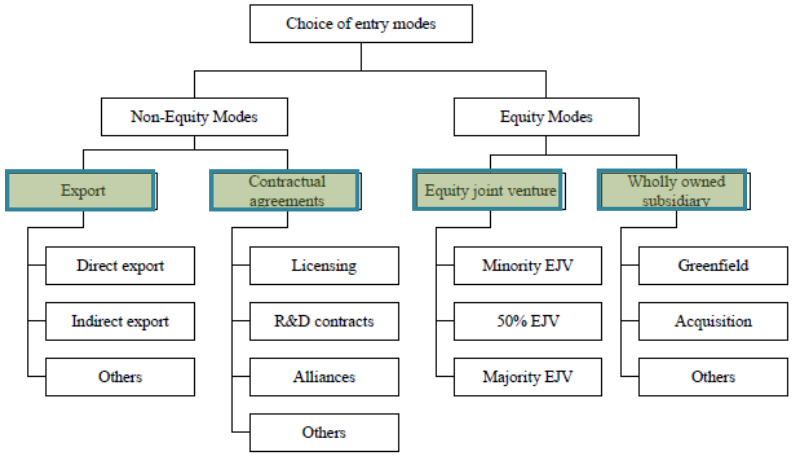


FIGURE 18 ENTRY TYPE HIERARCHY (V. KUMAR & SUBRAMANIAN, 1997)

Entry strategy selection is important because of the great financial resource commitments. Root (1987) based the entry type on the gradual incremental involvement approach, which contends that when the firm first enters an overseas market, a low resource demand and a low risk was desirable. As the firm would grow, it could take more risk and adapt its foreign settlement in another type. Another aspect than risk that could easily effect which entry type would be optimal is the transaction cost aspect. In this case the firm can, for example, settle more easily with an equity mode because they could perform activities at a lower cost in a low wage country. Agarwal and Ramaswami (1992) proposed three reasons to choose a specific entry type. The ownership advantages, the location advantages and the internationalizing advantages will affect the choice of entry mode. The internationalization strategy is heavily dependent on the type of entry made towards the foreign country. The strategy could start with exporting its product to help its customer expand in foreign countries and could eventually lead to other projects for existing clients and even to new (local) clients.

Export

Exporting a product or a service is currently the most common way to internationalise for engineering firms. As they have a lot of multinational clients that need the same service in other countries, the engineering firm will have to be able to provide this. This is often a temporary commitment in form of one project and is often engineered in the domestic country and will eventually be exported to the foreign country where the project is

managed and constructed. Exporting can usually be done directly and indirectly (e.g. Producer will sell its products via a local wholesaler).

Contractual agreements

A contractual agreement is a type of cooperative deal between different firms to share research or risks and/or resources for a temporary time span. Without actually sharing a legal entity, the companies usually have a temporary synergy which will improve both their functionality. The businesses could enjoy technology exchange, client exchange; local engineering licenses and the local entities could reduce risks for foreign companies who do not know the local business yet. This type of entry is often done before creating an own entity and in the engineering industry this is usually done in combination with a wholly owned representative office.

Joint Venture

Joint Ventures are usually created when a market has to be entered for the first time, risk or rewards will have to be shared, technology will have to be shared and/or government regulations have to be conformed. In the Thai entity of RHDHV, the company was for example not able to create a wholly owned subsidiary as the Thai authority has a strict 51% Thai share policy. Other benefits include political connections and distribution channel access that may depend on relationships. Such alliances often are favourable when: The key issues to consider a joint venture are ownership, control, length of agreement, pricing, technology transfer, local firm capabilities & resources and government intentions.

Wholly owned subsidiary

A wholly owned subsidiary includes two important types of strategies: Greenfield investment and Acquisitions.

A Greenfield investment is done by establishing a new legal entity out of nothing. The company will not be affiliated with other companies in form of any acquisitions. It is often very complex and time consuming in the beginning as you will have to find out everything by yourself but it is eventually possible to provide absolute control on the company and has potential to provide above average return. Despite the high risks due to realising demand, supply and time to acquire knowledge and expertise of the market, this type is often preferred in the service industries

"Wholly owned subsidiaries in form of Greenfield investments and expatriate staff are preferred in service industries where close contact with end customers and high levels of professional skills, specialized know how, and customization is required." (Hitt et al., 2009)

Acquisition is done by buying a local entity and has become a popular mode of entering foreign markets because this type of entry will generate immediately turnover, there will be an existing client portfolio and the local knowledge can be remained and is easily accessed. It is the fastest, and the largest, initial international expansion of any of the alternative. The acquisition is often done in a horizontal manner in this business, which implies that a targeted company will not be an actor in the same supply chain (e.g. supplier, client) but simply a competitor in one way or another that delivers the same services, or even better, some services that RHDHV might not possess yet, but what could strengthen them. Integrating two organizations can however be quite difficult due to different organization cultures, control system, and relationships.

Each of these entry types have different characteristics and can be categorized with different terms. Important characteristics are the amount of control, commitment, relational friction and risks of the different entry types (Anderson & Gatignon, 1986).

Entry Mode	*Form*	*Control*	*Relational Friction*	*Commitment*
Wholly owned Sub	Subsidiary	High	Low	High
Equity Joint Venture	Minority/Maj Ownership	High/Moderate	Low/Moderate	High/Moderate
Contractual agreements	Relationship	Moderate	High/Moderate	Low
Export	Exports	Low	High	Low

TABLE 5 ENTRY MODES EFFECT CONTROL, RELATION, COMMITMENT (ERRAMILLI, 1991)

SERVICE SPECIFIC

The service industry itself is not comparable with the manufacturing industry and that is why the difference between these two worlds has to be brought up as this could easily influence the form of entry type. There are a few aspects that should be realized when setting a service oriented firm apart from the manufacturing oriented firms.

First of all there is the high amount of contact between producer and customer. As the production of the product is often simultaneously processed during the use of the product, the customer or client has the ability to customize its product during the production. This is why the contact between the two parties is vital for the project. Another aspect that separates the service industry from other industries is the professional skills required that will be associated with significant physical and especially human investments.

A service industry can also be defined by its specialised know-how which can be useful in only a narrow range of applications and cannot be easily put to use elsewhere. This knowledge is very difficult to copy and can serve as a strategic competitive advantage.

Another important aspect to take in for an entry type study is the customisation of service orientated firms. The degree to which the service is customised to one or a few users is much higher compared to that of a manufacturing firm and will eventually also determine the nature and specification of the investments (Krishna, 1993).

<u>The way entry modes are started within the service industry</u>

According to Sharma & Johanson (1987) the internationalisation of technical consultancy is often developed by external relationships of individuals. In most cases engineering firms who would go to foreign markets because of their relationships with suppliers, clients or even competitors. In this industry the external relationships might be the most important assets a technical consultant could have and are the main source of potential sales for the near future, persisting the company's existence and are a mean to serve people in form of granting them solid jobs. These relationships are especially important during the business development phase but are even more applicable during the project phase where a high amount of communication between customer and consultant can be observed. It is during these sessions that other jobs will be granted, dependently on how former and current jobs are performed.

Engineering firms often start with exporting their product by having projects for domestic companies which want to expand internationally. As their clients manufacturing process will have to be constructed in other areas, usually they will follow their client to foreign countries. Starting only on project basis and eventually, depending on the amount of jobs in that area, settling by assessing a small whole owned subsidiary or by sharing the risk in form of a joint venture.

Root (1994) emphasizes on different methods according to the current life phase the business is in. The research shows that the company might start with following their clients and would be in a reactive state, waiting for projects to come until they would take a leap towards a foreign country. After more experience and especially a growth in capital and other form of resources, they could more easily take the risk towards interesting prospecting countries without having projects at that moment.

Internationalization of the value chain within the service industry

Ball et al. (2008) researched alternative ways service orientated firms could expand to other countries and he made a vital distinction. This industry actually has a different value chain than normal product oriented firms have.

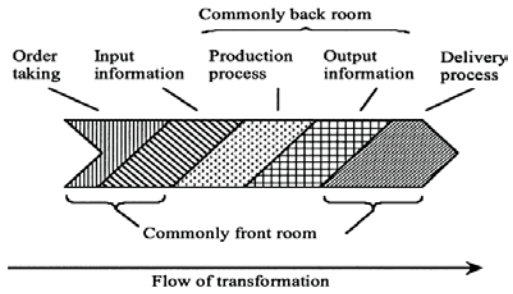


FIGURE 19 VALUE CHAIN (BALL, ET AL., 2008)

He based his research on this type of value chain and what different entry types would mean for this chain. It is interesting to see that the value chain does not have to be implemented in its whole form towards other countries but that the chain can easily be divided and be settled in different countries where these chain elements could efficiently be used as comparative advantage. As an example you might state that in some countries high detailed construction engineering cannot be performed as well and that this aspect should be computed in the home country. Information input and delivery could however efficiently be performed by the host country. So the choice can be made to separate these aspects by country. For multinationals this synergy could result in an absolute advantage. In Figure 20 several examples are presented of how this value chain could be implemented.

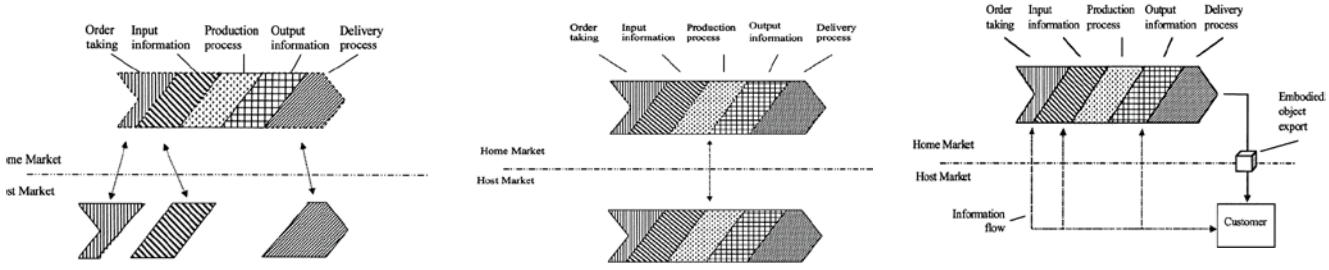


FIGURE 20 INTERNATIONALISATION OF VALUE CHAIN (BALL, ET AL., 2008)

In the internationalisation strategy of RHDHV this will mainly effect what type of human resources you will inhabit the new entity. This will probably start by vital roles like project and construction managers that have to be there for the order taking, input information and delivery process. Eventually this could evolve in engineering work as well which, in the beginning, can be provided by employees in the Netherlands or even in Vietnam, for example, where the wages are lower.

TIMING AND PROCESS

Not only the type of entry or the selected countries are essential when a firm wants to internationalise. The exact moment when the firm decides to step on foreign ground or when it decides to change its foreign entity is equally important. Internationalising to countries which are on the urge of civil war might for example not be the best of ideas. Another example is that competitors are already heavily settled in an interesting area and they might get ahead of you, negatively influencing the competitive environment, making it perhaps not worthy to even take this international step. In international market context, studies however suggest that early movers have higher failure rates compared to early followers because the early followers could benefit from the experience of the early movers (Mitchell, Martin, & Swaminathan, 1998; Shaver, Acs, Morck, & Yeung, 1997; Yan, 1998). But if the early

entrants survive, they attain high performance and endure more advantages than the late entrants (Pan & Chi, 1999).

As stated before, engineering firms usually start with an international project before settling in a country. The gradual process would be that a firm would start with exporting their service (Figure 21). And then it is quite common that the engineering firm will find partner up with a local company by contractual agreements or licenses that would effectively advance the project. After acquiring positive knowledge on the local market, its demand and cultural differences the firm might decide to implement a more permanent way to do business in this possibly fruitful environment. Settling in this area could cost a lot of money and could be a big risk. The cultural differences might be far-reaching in contract of those of your home country. If this is the case the firm could, for example, choose to do business with a local firm, by starting a joint venture. They could share the risk, the partner firm could help them with the cultural differences and the engineering firm could provide knowledge and resources and synergy could be created. As the years go by and the market demand increases, the engineering firm might decide to buy all shares of this joint venture to augment its profit.

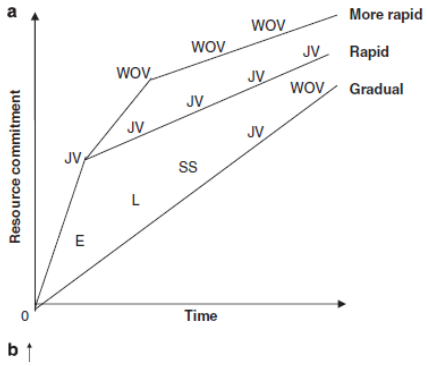


FIGURE 21 ENTRY PROCESS (V. KUMAR & SUBRAMANIAN, 1997)

Firms that are bigger in capital and in other forms of resources tend to take a bigger risk as they can afford it. After they targeted a suitable country, they immediately start a joint venture or a wholly owned subsidiary to be an early mover and enjoy all its advantages. If the country however will not provide them with enough work, this could lead to very high costs.

As a firm is functioning on a global magnitude and has offices in several countries, the firm might optimize its organizational form towards one that is benefiting from country's factors like low wages, low taxes or high demand. The firms could preferably operate one division of the engineering in one area and another division of engineering of the same project in another country. After achieving a joint venture or a wholly owned subsidiary and a certain level of organizational internationalisation, the firm should be able to divide its work in such a way. Next to the fact that this brings a competitive advantage as some work is efficiently or cost effectively produced in some parts of the world, it also spreads the demand risk. If, for example, region A has a low demand and region B has a high demand, employees of region A could work on projects for region B. The lack of immediate required human resources could also be solved easier this way.

VARIABLES INFLUENCING THE ENTRY PROCESS

Many entry decisions are based on some individuals that have been to the host country and have endured the different impressions of the country's business environment. In this practical process guts, feeling, intuition and a complicated integrated sensation of multiple variables are usually the trigger to decide whether a company should enter this country and how. To define these variables, several relevant researches have been studied. Chen (2008)) studied which variables would correlate with the choice of a company to stay for a more permanent duration or

not. The study did by the way not research what type of permanent entry is chosen, depending on these variables. The variables that he classified as most influencing towards a more permanent entry type are 1) Worsening home markets, 2) Long term orientated home countries, 3) entry restrictions form barriers, 4) bigger firms and 6) more multinational experiences.

His study also results in the theory that cultural distance has almost no effect on how permanent the entry type will be.

Tulder (2009) has also studied which variables may influence on how permanent a country would enter a host country. He found out that cultural distance was not significant and that political risk had a weak effect on the permanent stay. The most important variables were the governance quality, especially the regulatory quality, governmental effectiveness and the control of corruption. The multinational experience of the company was also very significant.

Another study has been done by Krishna (1993) that did not study the variables that might influence on how permanent an entry would be, but this research was investing what may lead to a more shared entry type like a joint venture instead of a wholly owned subsidiary. The entry type would be shared when 1) services are less separable, 2) the country risks are increasing and 3) the firms are smaller.

RHDHV (2013) confirmed the studies on the statement that cultural distance does not influence the entry type at all and that country governance, rules and barriers significantly do. The cultural distance does however drastically affect another part in the internationalization process. At the point that people are send on a mission, they will have to be selected to initiate the process in the host country to be representable towards local clients or potential partners, minimizing cultural distances might come in handy. The same can be said in a later phase when local future employees will have to be managed. They will work more efficiently if the cultural distance between the manager and them will be less. Choosing the right person or training them on those cultural differences might lead towards better relationships, leads and management.

Variables for Permanent stay	*Variables for Shared venture*	*Variables for Representation and management*
Worsening home market	Less separable services	Cultural differences
Entry restrictions form barriers	Country risks are increasing	Individual capabilities
Bigger firms	Firms are smaller	
More multinational experience		
Governance quality		
Regulatory quality		
Governmental effectiveness		
Lower Corruption		
High market demand		

TABLE 6 VARIABLES THAT INFLUENCE THE ENTRY STRATEGY

CHINESE ENTRY STRATEGIES TOWARDS AFRICA

Although the Chinese successes in Africa have mainly been in realising, mining and construction and not so much in consultancy engineering work, some entry aspects are interesting to study. The integration between the Chinese companies in Africa and the Government in China is however so close and so structured in form of subsidies and incentives, that using the Chinese internationalisation method as an example for how RHDHV is practically impossible without drastically changing the national government system. Chen and Orr (2009) have researched this exclusive government driven behaviour and have studied the way Chinese contractors are supported by their own government.

First of all there is a clear national "going out" philosophy that encourages and supports Chinese enterprises to invest overseas in order to promote exports or development of resources. This strategy was formally launched in a report to the 16th national congress of the communist party of China (2002). The MOGCOMM uses the construction industry as a central element of the going out strategy to develop and support international construction, establish and strengthen a financing system to support international construction and improve the size and competency of Chinese firms. Next to that, state owned and private contractors are encouraged by the state to pursue overseas projects, what is not usually done in the western world.

The field of players that are involved together with their relationships are illustrated in Figure 22. 1) The Chinese government organises and controls the outgoing strategy. 2) The China International Contractors Association coordinates, guides, consults and serves Chinese international contractors. 3) The Economic and Commercial Counsellor's Offices controls and coordinates the business activities of Chinese contractors in the host country. 4) China Exim Bank finances the projects that Chinese contractors pursue.

In Figure 23, Chen and Orr (2009) have illustrated what all these parties mean towards the beneficiary country. 1) The country and the Chinese Government enter into a framework agreement. 2) The Chinese Government nominates the China Exim Bank as the lender. 3) The beneficiary country and the bank enter into a loan agreement. 4&6) The country awards company license to extract and construct. 5) The Chinese mining company will provide payment in kind for financial loan towards the China Exim Bank. 7) The China Exim Bank provides financial loan for project construction. 8) The Chinese Government nominates CHINCA as the coordination agency which will 9) recommend qualified candidate contractors to the Beneficiary country. 10) CHINCA will eventually coordinate the Chinese contractors.



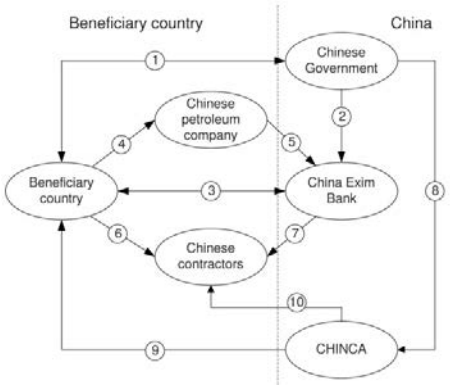


FIGURE 22 RELATIONSHIPS CHINESE INTERNATIONALISATION (CHEN & ORR, 2009)

FIGURE 23 INVOLVED PARTIES (CHEN & ORR, 2009)

The internationalisation process of Chinese construction companies is a well integrated network of different organisations. The Chinese government is the heart of this process, supporting financial, construction and political power to obtain resources, construct infrastructure and export its products which actually benefits the African countries for further development.

Other parts of the Chinese industry also benefits from the construction activities. The Chinese oil and construction companies often act as vanguard of Chinese business. Compared to western companies, Chinese companies offer more cost-effective equipment and solutions which is what is needed at this moment in these countries. Looking at the pattern of China's way to form alliances or joint ventures it is clear that:

- Chinese firms will link up with global operators to use their existing networks to sell their products and services and use them as a launch pad to penetrate new markets.
- Chinese firms link up with local companies to access political leverage to clinch deals in targeted countries

- Chinese firms link up with fellow Chinese companies to compete against foreign companies for contracts

This international integration strategy seems to work for most players and could therefore be a strategy that RHDHV could learn something from. Unfortunately it is not RHDHV that can do something about the interconnection of domestic authorities and organisations in the foreign countries, but the government that will have to change drastically by integrating these different organisations. What RHDHV can obviously learn from this is that it could link itself with a big player in the region to use them as a launch pad to penetrate the new markets as well as to connect with local companies to access political leverage.

COMMON ENTRY PROCESS FOR RHDHV

According to RHDHV, their internationalizing process is a process that is done differently every time, yet the internationalisation can basically be divided in two different forms. One form is the proactive strategic way where the company has the initiation to go abroad by searching for competitive advantages and observing economic opportunities. Another way is a more common way in this industry. Without taking too much risk the internationalisation of the firm is dependent on its client(s). When the demand starts rising in an area or if the firm is projected to work on a client's job for a long duration, the firm will consider allocating for a more permanent stay. These jobs can be granted by current clients that are themselves internationalising but they can also be collected by new relations as has been done in the past in Thailand which has resulted in a currently successful joint venture.

As we look at RHDHV we can take the internationalisation to Thailand and Myanmar as good examples for this distinction.

Chuchawal Royal HaskoningDHV is the present name of the branch office of Royal HaskoningDHV in Thailand. In the past this partnership has been created after some turns of relationship events. In 1969 the Dutch engineering firm De Weger (Now of Royal HaskoningDHV) International signed a contract for the design of the headquarters of The Bank of Thailand. This project laid the foundation of a fruitful cooperation between Mr. Chuchawal Pringpuangkeo, founder of Design 103, and De Weger Internationaal. In October 1974 Chuchawal – de Weger Internationaal registered its office in Bangkok, Thailand. Chuchawal – De Weger (CDW) during the years (1987-1997) established a solid base for industrial and commercial building design. The choice of a Joint Venture instead of wholly owned subsidiary cannot solely be acknowledged by the good relationship between De Weger and Chuchawal but is mainly because the authority has a Majority Thai Share policy. Foreign companies are only allowed to have 49% shares of a company in Thailand. In this example De Weger had a project before settling in the country.

Myanmar can also be an important example because the internationalisation process is happening right now. After a long time of political isolation Myanmar has decided to open its borders again. The macro economic opportunities are prosperous according to RHDHV and the competitive advantage could be of significant level. After having mapped out several competitors and clients, the choice was made to open a representative office over there without initially obtaining a certain key project that could provide turnover, making the stay worthwhile. In this case RHDHV chose for a more proactive attitude to increase its chances of being an early player in the market. The risks are however quite large as official turnover is not guaranteed.

In Figure 25 and Figure 26 these two methods have been systematically illustrated. The first figure illustrates a reactive process. The country selection is obviously not done in the first method and during the entry process the country check, mission to meet potential partners and timing are less critical than in the proactive method. The second figure is the proactive process where markets are thoroughly analysed and a mission is implemented to experience the country before opening something there.

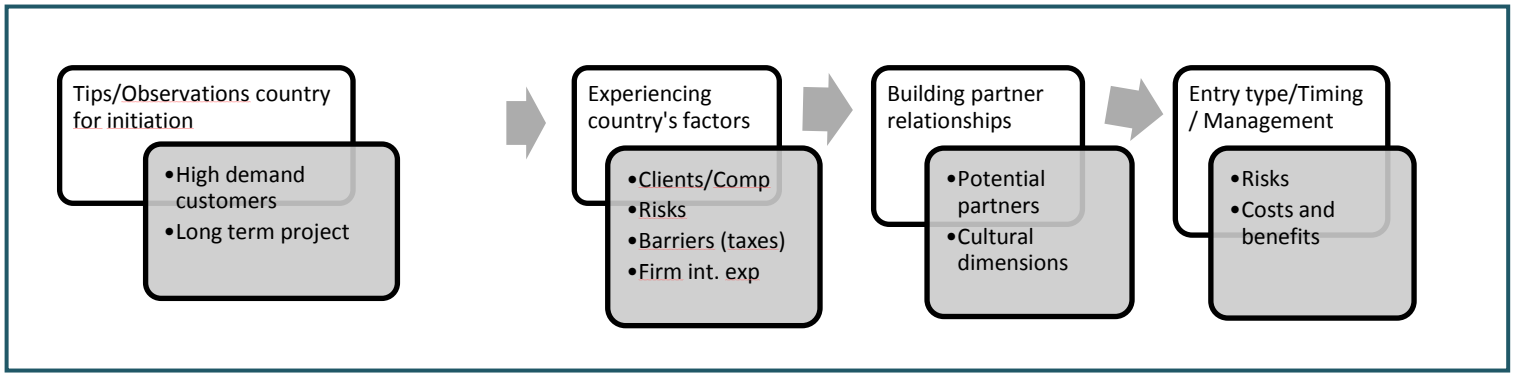


FIGURE 25 REACTIVE INTERNATIONALISATION

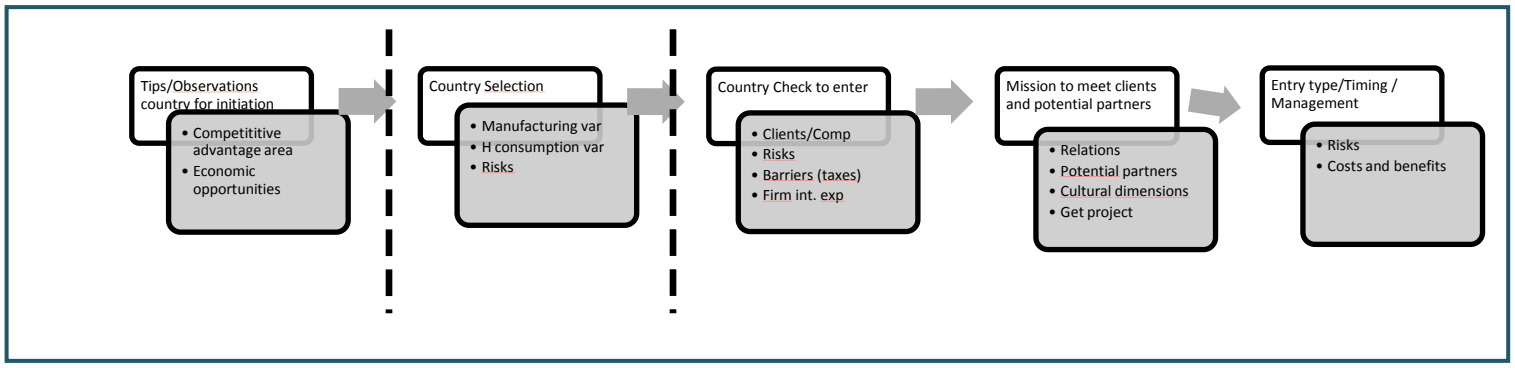
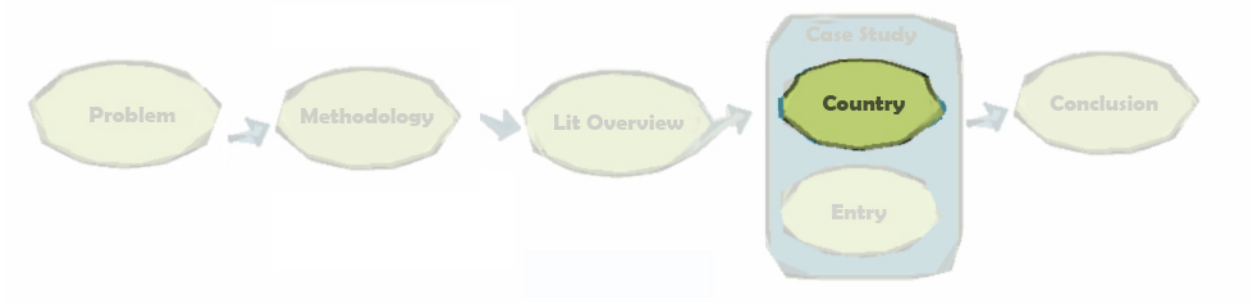


FIGURE 26 PROACTIVE INTERNATIONALISATION

Another important aspect on behalf of the entry strategy process according to RHDHV is the difference between the systematic theoretical approach and how this process is usually practiced in reality. In practice, the process is a lot more organic and is affected by a complex amount of variables which can trigger the experts to make certain decision based on so called intuition and experience. Nevertheless the process can be used as guide line.

4 Case study Africa IMS



4.1 SETUP OF THE PROPOSED IMS DECISION MAKING PROCESS

The goal is to conclude a limited amount of countries which can be interesting for a specific industry line. This should result in a country portfolio which indicates how attractive a country is and what a potential market it could be. As the literature review states, this can be done with the use of several methods and techniques.

The researcher has proposed some important criteria to value the different methods with. In Table 7 this proposal is illustrated with a ranking system per criteria. The used criteria are; resource commitment, relation with the specific industry, easiness of comparing data between alternatives and use of data for multiple goals.

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
Intuitive	Subjective	7	7	1	7	7
Physical experience	Subjective; Physical exp.	6	1	1	6	6
Relationship	Stakeholder information	5	2	3	4	5
Qualitative	Less weighable information	4	3	4	5	4
MCA by experts	Variables weighted by experts	3	5	2	2	3
Based on other organizations	Info found by others	2	6	6	3	3
Statistical/correlation analysis	Weighted variables by correlation	1	4	5	1	1

TABLE 7 IMS METHODS

Interesting regions in Africa, such as the Sub-Saharan Africa, contain a lot of countries. It would therefore not be efficient to analyse all countries in the same way due to the fact that some countries are obviously more interesting than others. The theory states, a "zoom in" process will have to be used. Another focus point, as stated before, is to identify the indicators that are relevant for engineering firms and, more in particular; the food and beverage processing industry. One will start by using less time consuming methods due to the fact that we will have to choose between many alternatives. In a later phase, as we have a limited amount of countries left, we will be able to gather more information about one specific country.

For this research the IMS will be done by the following methods:

1) **Based on other organisations |** This first step will be to study several reports of organizations about the prospects of the continent with the objective to restrict the country portfolio to an amount of 10-15 countries for further analysis. No definite industry specific variables will be used at this stage and easy accessible data that is produced by other organisations will be used to fasten the process.

2) **Qualitative Method |** The next step will be analysing the countries on a more qualitative way. This method is usually done in a later stage and should be according to the amount of resources put into this analysis as it takes quite some time to process all data in useful information. In this case however the researcher wanted to really get to know the countries before eliminating some countries simply on quantitative data. It is also a way to control if the qualitative reasoning and the subjective opinion of the researcher seems to approve with the quantitative and more objective reasoning. This was done by reading reports on what people experienced in those countries. They analysed the history line of the countries and got to talk to people who actually went to those countries. To obtain a certain connection with each country, the researcher read the news of those countries and studied films on the internet of each country. This was solely done to gain a more realistic vision of the countries. Unfortunately, yet obvious, it was possible for the researcher to actually experience all African countries by physically setting foot on land.

   Huge construction projects (especially road construction projects) will be analysed as well because, as stated before, infrastructure is the biggest barrier the continent is facing at this moment (Mckinsey-Global-Institute, 2012). If roads will be more actively developed in specific regions, this would probably have a great effect on their economy.

3) **Indentifying Variable |** Important indicators/variables will then be identified in this stage which could be used as dependent variables in the next step. As the theory by Andersen and Bubvik (2001) states, the variables should be chosen well to support its goal. These variables, yet not weighted, will give a general idea on the attractiveness of the countries.

4) **MCA by experts |** In the next step the markets will have to be assessed in terms of weighted opportunities and risks variables. The weights and causalities of the variables are mostly unknown for the light manufacturing industry in those countries; therefore two different methods will be used. The first one is the multi-criteria analysis (MCA) with the weights obtained by interviews within RHDHV. This method is slightly rational but the weights will be based on subjective experienced opinions.

5) **Statistical Correlation |** The other method will be a statistical and mathematical method. In this case multiple regressions or an artificial neuron network would be suited to determine the weights of the variables. Because one is trying to predict on an annual basis in comparison with a seasonal basis, the multiple regression method will be preferred over the Artificial Neuron Network; This is mainly used to find patterns instead of linearity. To find all individual correlations between independent variables (e.g. GDP, Political Risks) and dependent variables (e.g. future sales, industry demand) the Pearson's correlation matrix will be used and every relevant variable will be tested, on their significance. To actually define the future situation in terms of industry demand or future sales a multiple regression analyses will be used based on a couple of variables. These independent variables will be able to predict the dependent variables according to the model projected in Figure 27.

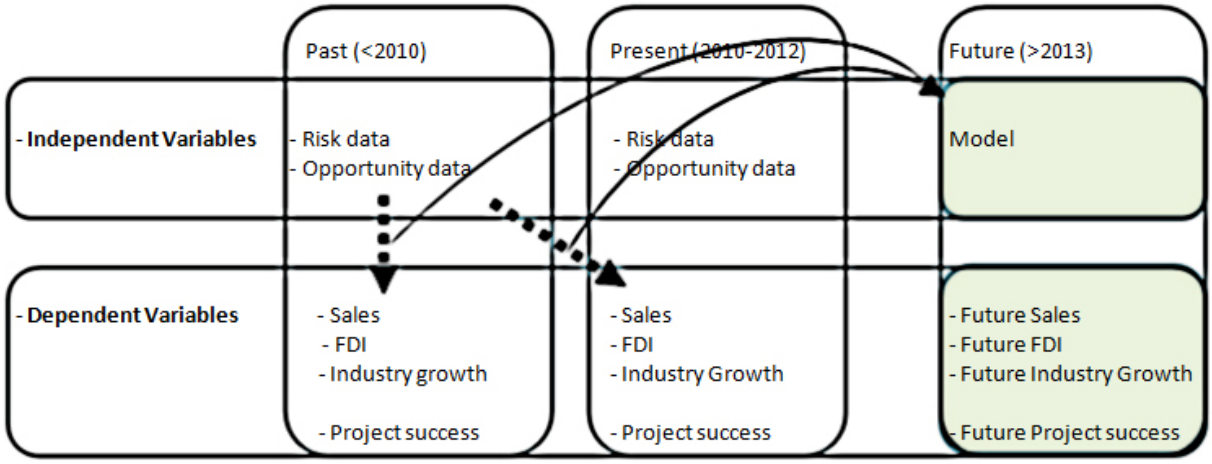


FIGURE 27 PROBLEM ASSESSMENT MODEL

Figure 27 illustrates that historical correlation will be used to predict what the outcome of the dependent variables will be in years to come. This is done by correlating past data of independent variables with dependent variables of the next year. This way we will be able to identify what independent variables of 2012 can mean for dependent variables of the year 2013 or 2014.

6) **RHDHV's fit |** The current offices and projects of RHDHV will be analysed to eventually select a single country.

The Following two steps can be experienced as IMS process as well as a Selection of Entry type process. For this research these two will be elaborated in the entry section because their role is more practical and needed as preparation of choosing the right entry type:

7) **Stakeholders |** After the most attractive country is selected, it will be verified by two other methods. The two methods are actually in between country selection and entry type selection. The country is checked to secure the selection; in addition information will also be gathered to decide the potential entry type. The first one is a more extensive review on the country itself focusing especially on the stakeholders in that country. The method is time consuming and that is why this can be dealt with at this stage as only one country has to be analysed. If the country does not fit the profile, another country will have to be selected. Information on potential customers implying the market's demand will affect the entry type.

8) **Physical experience |** The second method to "check" the country is by physically experiencing the country. This will also influence the entry type as contacts will be made, projects will try to be acquired and partners might be found.

4.2 RESULTS: IMS SUB-SAHARAN AFRICA & LIGHT INDUSTRIES

4.2.1 STEP 1: SELECTION BASED ON REPORTS BY EXTERNAL ORGINAZATION

Mckinsey (2012) has analyzed the countries on the total exports per capita and its GDP per capita vs. the economic diversification to identify whether a country is an oil exporter, if it's diversified or if it's in a transition phase. In this analysis we can see that some countries are interesting for specific industries and in specific time spectra. Businesses that are interested in retail and consumption goods would for example not be interested in Gabon but would look at more diversified countries. In this analysis the countries in transition would be interesting because of their economic growth and their diverse economy.

Countries which are interesting in The Sub Saharan African Region for its Oil exports are: Nigeria, Angola and Equatorial Guinea. In the transition phase every country could be of interest because of their high diversity.

According to Accenture(2012) some countries have great prospects for the near future. According to them Kenya, Ethiopia, Uganda, Nigeria, Ghana, Senegal, Angola, South Africa and Zambia are countries worth investing in.

According to the Frontier(2011), South Africa, Mauritius, Namibia, Kenya, Ghana, Swaziland, Ethiopia, Uganda and Rwanda are interesting countries in which business is done.

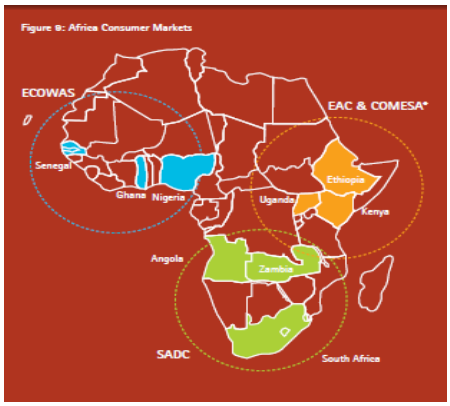


FIGURE 28 COUNTRIES THAT ARE INTERESTING FOR THE CONSUMER GOOD INDUSTRY (ACCENTURE, ET AL., 2012)

Rand Merchant Bank (2011), in a recent report entitled 'Where to Invest in Africa', says that consumer goods companies should look at the following factors when deciding where their goods should go: population size; forecast population growth rates; forecast per capita GDP growth rates; and urbanisation growth rates. By combining these variables into a single measure, RMB has created a ranking index of the countries with good prospects for the consumer goods industry. "This index provides us with a gauge of which countries rank the highest when all four measures are taken into account." Nigeria, Ethiopia, the Democratic Republic of Congo, Kenya and Tanzania have the most favourable macroeconomic backdrops for consumption growth.

Based on key economic drivers, client feedback and surveys, the EIU (Economist-Intelligence-Unit, 2012) identified 13 Sub Saharan countries which are interesting to invest in. These cities represent some of the best opportunities for growth but until now data has been lacking to support the case and strategy for market entry. Those countries include: Ghana, Nigeria, Angola, South Africa, Mozambique, Zambia, Tanzania, Uganda, Kenya, Ethiopia, Ivory Coast and Cameroon.

Looking at the consumer market, Sub Saharan Africa offers many opportunities according to Frost & Sullivan's (2012). They believe that mainly northern African countries will be interesting for this industry although some

countries in Sub-Saharan Africa deserve the same amount of attention. These countries are South Africa, Angola, Nigeria, Ghana and Kenya.

Ernst and Young (2012) brought out two relevant reports on investing and settling in Africa. The first one is a report that is appointed towards investors in all industries and trying to focus on the total investments in African countries and attempting to forecast these investments for the next five years and what this could signify to the individual country and Africa as a whole. This report takes many countries under consideration:

- Angola (Mainly oil, but growing middle class and demand for constructions and real estate)
- Cameroon (Maturing oil fields but high levels of human capital; 2011 $2bln announced in the food and beverage sector)
- DRC (High mineral reserves, but very risky)
- Ethiopia (Gold and possible oil reserves, high population but poor)
- Ghana (Plenty of minerals, gas and oil, less risky environment than neighbours, progressing infrastructure and plans to invest in healthcare and human capital)
- Kenya (diversified, well educated, growing consumer, new oil fields, unstable but getting better)
- Mozambique (oil, coal, tourism, infrastructure is currently heavily being constructed)
- Nigeria (oil and gas, growing consumer market, diversifying to very sector)
- Rwanda (politically stable but poor, could be a potential hub)
- Senegal (politically stable, available resources in form of minerals)
- Tanzania (well educated labour force, politically stable, gold reserves, renewable energy and communication development)
- Uganda (recent discovery of oil, mineral resources, well-educated labour force, low levels of bureaucracy, weak infrastructure, rising political tensions, small domestic market)
- Zambia (robust democracy, business friendly environment, copper, not very diversified but multinationals are already being attracted into other parts of the economy)

The second report was about the consumer market. In this market the most interesting countries for the near future are: Nigeria, Eastern Africa, Namibia, Zambia, Ghana, Rwanda, Mozambique and Ethiopia.

Outcomes

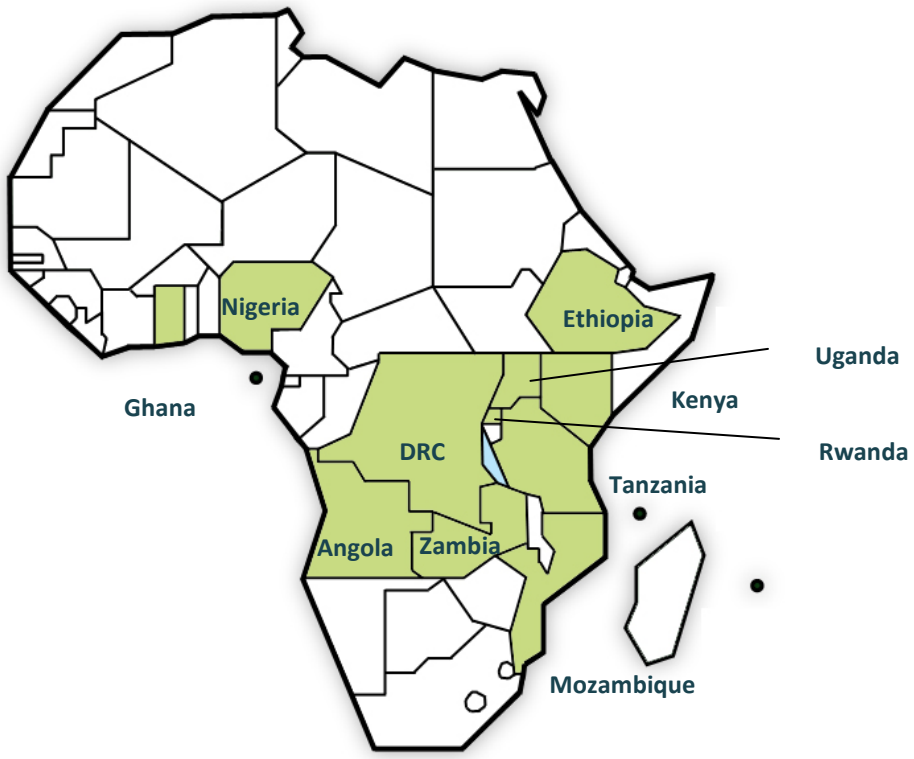
All the suggestions that the report individually made were put in a table and were summed up to a total to explore which country would be worth focusing on in the next stage.

	McK1	McK2	EN	Acc	Fro	RMB	EIU	Frost	E&Y 1	E&Y 2	Total
Angola	1	1	1	1			1	1	1		7
Benin											0
Botswana			1								1
Burkina Faso											0
Burundi											0
Cameroon	1						1		1		3
Cape											0
Central African											0
Chad											0
Congo											0
Cote d'Ivoire							1				1
Djibouti											0
DRC		1				1			1		3
Equatorial Guinea	1										1
Eritrea											0
Ethiopia				1	1	1	1		1	1	6
Gabon											0
Ghana	1		1	1	1		1	1	1		7
Guinea											0
Guinea-Bissau											0
Kenya	1		1	1	1	1	1	1	1	1	9
Lesotho											0
Liberia											0
Madagascar											0
Malawi											0
Mali											0
Mauritania											0
Mauritius					1						1
Mozambique	1	1	1				1		1	1	6
Namibia			1		1						2
Niger							1				1
Nigeria	1	1	1	1		1		1	1	1	8
South Sudan											0
Sudan		1									1
Rwanda	1				1				1	1	4
Senegal	1			1					1		3
Sierra Leone											0
Somalia											0
South Africa			1	1	1		1	1			5
Swaziland					1						1
Tanzania	1	1	1			1	1		1	1	7
The Gambia											0
Togo							1				1
Uganda			1	1	1		1		1		5
Zambia	1	1	1	1					1		5
Zimbabwe											0

TABLE 8 ANALYSIS EXTERNAL REPORTS

As a result of the report analysis, the selected countries include Ghana, Nigeria, Angola, Zambia, Mozambique, Tanzania, Kenya, Rwanda, Uganda and South Africa. Due to the fact that South Africa is a country in which Royal HaskoningDHV is already settled in, and are directly affiliated with the light industry market, further analysis on the country won't be necessary. It is quite obvious that most of Anglophone countries are selected instead of Francophone ones. This confirms the statement made by (Mundell, 1972) and (Assane & Malamud) that for many years the financial development of the francophone countries are seemingly much lower than their Anglophone neighbours. This has limited the economic growth of those countries.

We can conclude out of this simple study that other organisations are particularly interested in Kenya, Nigeria, Ghana and Tanzania. This is based on general attractiveness and not on the food and beverage industry specifically. In the next phase, the selected countries will be analysed further on their political, economic, social and technological situation. The different countries will then be compared on a set of relevant variables and risks.



Method Analysis

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
Based on other organizations	Info found by others	High	Low/medium	Low	Medium	Medium

TABLE 9 REPORT ANALYSIS METHOD TESTED

The data retrieved by other organisation as done in step 1 is a good way to start the IMS process to get an idea of the perspectives of other organisations. These reports are usually done by a professional team that invest a great amount of time to eventually conclude their selection. However, this data focuses on all industries or other industries than the industry the decision maker is studying.

The advantages of this method are:

- It is quick
- The data acquired by the organisations is professionally done
- It is relatively objective data

The disadvantages of this method are:

- It's not by definition related to the specific industry
- It is not linked with knowledge of experts in this industry

4.2.2 STEP 2 QUALITATIVE ANALYSIS / GET TO KNOW THE COUNTRIES

It is important for the researcher to have affinity with the countries in a qualitative manner. If in a later process the results of the quantitative study indicate one or several countries, the researcher should argue if these outcomes match the outcomes of this analysis. In this analysis small fact sheets will be used, a short history will be presented in form of a time line, the strengths and opportunities will be stated as well as the potential risks and challenges. A PEST (Political, Economic, Social & Technologic) analysis will be performed and some information about the consumer industry over the past 20 years will be shown in graphics to spot trends of some kind. An example of such an analysis can be found in Appendix A. The following paragraphs will give a summary of the analysed countries.

COUNTRIES

Nigeria

Nigeria's extensive oil reserves will continue to attract international funds and a large proportion of foreign direct investments will be concentrated in this country. Although these investments are for 80% in oil and gas, the economy is slightly diversifying and other industries (including the consumer goods industry) seem to become more and more interesting. Future FDI are estimated to be $23bln over the next five years. The population is growing drastically as well as the middle class rate which amplifies the consumer's magnitude. Financial institutes are improving the financial system which will progress the consumers buying behaviour. Unfortunately ethnic violence, terrorism and religious tension are very common in the country. The Boko Haram, a terroristic entity affiliated with Al-Qaida, is increasing its attacks and threatening the stability of large areas in Nigeria. These areas are settled in the north, making the south a more desirable area to do business. The major challenge for President Goodluck Jonathan will be to achieve economic reform while maintaining political stability.

This political unrest in Nigeria cannot be taken lightly as it remains a serious problem as well as the infrastructure deficit. However, Chinese construction companies are significantly trying to improve this.

Nigeria has the biggest population (163mln) of the selected countries. It has the largest GDP and is on top as a manufacturing nation. This makes Nigeria an extremely interesting country for Royal HaskoningDHV for several industries and especially in the light manufacturing industry. A big disadvantage is that the country is already top ranked by other engineering firms. All the biggest players are also interested in this country and some of them have already settled there.

Ethiopia

Although Ethiopia is a very poor country with a GDP per capita of only 365$ (Compared with $50,000 in the United States), research has indicated that this country is one of the fastest growing economies in the world over the past decade. Its gold mines and recently found natural gas reserves will attract significant amounts of investments over the next five years. The growth has been broad-based with the services and the manufacturing sectors growing at faster rates than the other sectors.

Poor levels of young human capital, underdeveloped infrastructure and high levels of bureaucracy are serious barriers to investment outside of natural resources that cannot be taken lightly. Ethnic and political instability with its neighbour Somalia causes much unrest against the border.

In 2011 Ethiopia sustained its high growth of the last few years but it's estimated that this growth will be less impressive in 2013. The agricultural economy is very important for the country. But as the country develops it is obvious that the agriculture is relatively getting smaller each year which can often be seen as a sign of economic development. The government is promoting a transformation program that should stimulate the high and broad based growth even more. So far the growth has not provided adequate employment for the young which will have to change in the future. Ethiopia also missed the skilled labour as shown in the low literacy rate. The wages are however extremely low and could therefore attract more manufacturers.

The country is ranked high in the easy doing business index meaning that it serves a relatively friendly environment to foreign investors.

Kenya

Kenya probably has one of the most highly developed economies in East Africa and is the most industrialised one. It has a relatively well educated and rapidly growing labour force and is often used as a strategic hub by multinationals looking to develop in East African markets. If a company in a light industry wants to offset more and wants to expand its sales to the East African markets it will probably do this in Kenya. However, its relative lack of natural resources may make it increasingly hard for Kenya to compete with its neighbours. Recent possible gas/oil discoveries in the Turkana region may change this. Like many other countries in Africa the immature infrastructure situation and high levels of bureaucracy are barriers to investment that need to be addressed and are actually being addressed right in this present situation. In the past, the country suffered from civil unrest but the new political situation should minimize this making the country a friendlier environment for companies to do business. The infrastructure is also affected by positive changes. A lot of road programs which are mainly financed by China, Brazil, Japan and the African development Bank and constructed by Chinese construction companies, are improving gateways towards neighbouring countries.

The manufacturing industry of Kenya is mainly focused on food processing. More than 60% of this industry is in the hands of foreign investors. The country has a relatively big consumer base and this will keep growing for the coming years.

Ghana

Ghana has a stable growing economy with a relatively high GDP per capita. The country has a substantial resource endowment in mineral, gas and oil reserves. The increasing oil revenues should indirectly boost other sectors like the consumer goods industry. Primary public work, like infrastructure and a hydro dam are currently constructed for the further development of the country. The country enjoys a stable political situation as well as a well-established democracy. The country should and probably will continue to invest a great amount of financial resources in infrastructure, human capital and a health system. The country is currently rated as one of the highest in the EODB (Easy Of Doing Business) index. The biggest issue of foreign companies would be the ability to get

credit, but compared to the other selected countries this is still far above average. The growing GDP per capita will create a higher mid income population which will indirectly boost the consumer goods industry. The country already has a high level of literacy and is well diversified.

Tanzania

Tanzania is also forecasted as a promising economy in the upcoming years. The country has a well-educated labour force and is politicaly stable as of this moment. Its reserves in gold will continue to attract investor's interest over the medium term driven by the rising price of gold that keeps increasing. The government's macroeconomic management of the economy will add to Tanzania's attractiveness. It is a low political risk zone and in the past few years the government has proven to spend quite a lot of time on infrastructure, especially on telecommunications. Unfortunately the country remains corrupted. An important aspect that cannot be denied in this country is the highway and rail way from all over Luanda (Angola), through Zambia towards Dar es Salam which is used by international entities to transport resources extracted in the west coast (mainly Angola), central Africa (DRC, Zambia, Malawi) towards the east coast to further continue as ship cargo towards eastern continents. The whole course of action naturally attracts many people and businesses. This specifically happens in Dar es Salaam.

Uganda

Uganda has a high population of 68mln people. It has a decent sized economy with good growth rates. The population seems to expend to urban cities although this urban percentage as of right now is the lowest compared to other countries. The economy is well diversified. Unfortunately corruption is pretty high in Uganda which makes doing business there less easy.

Rwanda

Relative to its African counterparts, Rwanda's resource endowment is a poor one; the country has no significant natural resource, and its labour force is small and poorly educated. But offsetting these negatives is Rwanda's institutional environment. The government has actively tackled corruption in recent years, and the business environment is extremely friendly. Significant investment has been made to improve infrastructure.

It is the world's top reformer. The operating environment has improved rapidly. It has a high population density and efficient government and has low crime and corruption rates. Manufacturers seem to be growing and mostly targeting domestic markets. Rwanda's improving business climate and less corrupt environment have made it a magnet for investors, its relatively high costs of doing business poses challenges.

Angola

The country received $58bln between 2003 and 2011. 80% of which went into the oil market. Angola is profiting of these investments and this results in a higher middle class. The infrastructure is still very weak and needs attention and the corruption is rather high. The FDI will remain high in the years ahead in form of an estimated $7,6bln per year for the coming 5 years, creating 30000 new jobs. This is a country that should be monitored. If the government will use its money wisely this will not only be an interesting country for basic construction but also one for the consumer market in the future. The Government is currently allocating more than 30% of its budget to social spending.

Mozambique

In 2011 there was a turning point in Mozambique's economy, becoming the first overseas export of coal, marking the birth of Mozambique as a world exporter of minerals.

Mozambique is a fast growing economy that is expected to have an annual FDI inflow of $1,4bln over the next 5 years. Significant improvements of education and construction have been observed. Many of those construction works are financed by multinationals. The country is well diversified which means that different markets like the consumer market can be interesting.

Construction Activities

All over Africa new construction projects seem to be developed more than ever before. Some of the projects are so big and in some countries the amount of projects is also so large that these projects might contribute towards a better future of a country. As was stated before, the Chinese have been operating in Africa extensively in the last few years. In the areas that they are settling, in search of minerals and oil, the Chinese are intensively constructing several projects to improve infrastructure in form of roads, electricity, railway & irrigation systems. In Figure 30 a map of Africa is shown including the most important construction projects that are, or planning to be, constructed by the Chinese. You can also see some of the major infrastructure projects in Africa. For Sub- Saharan Africa it is obvious that roads to and from the eastern coast are built and improved to serve as a distribution point where minerals can be exported towards the east.

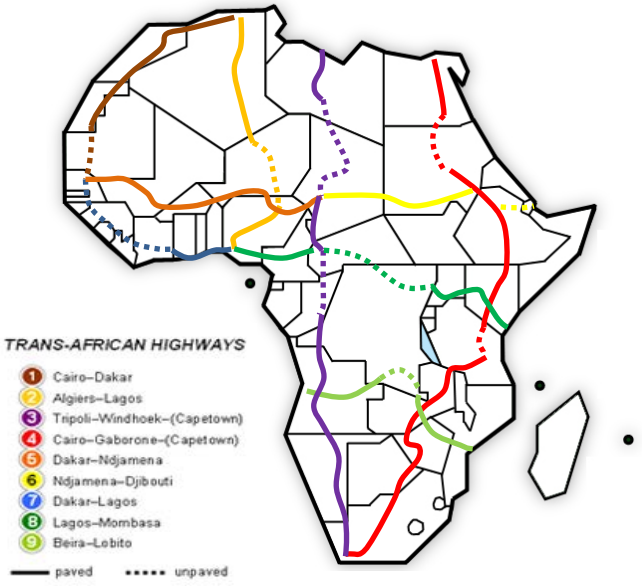


FIGURE 29 CURRENT ROADS (AFRICA.CHINADAILY.COM, 2013)

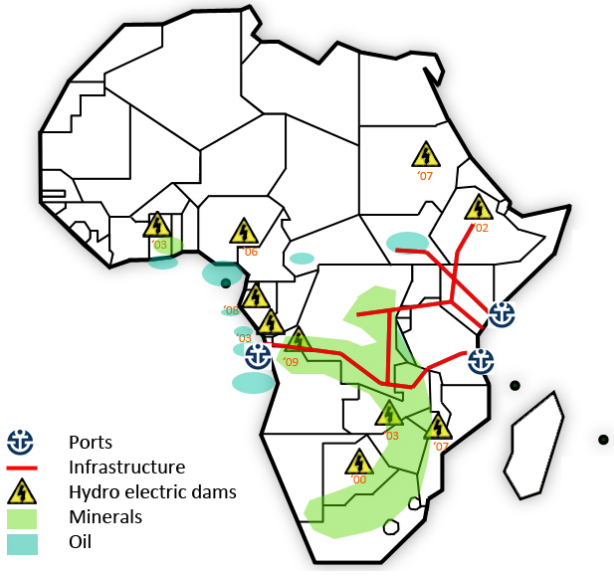


FIGURE 30 RECENT AND CURRENT CONSTRUCTION

Two of the most important infrastructure networks in Africa for the Chinese state are the roads and railways from Luanda(Angola), via Zambia to Dar es Salaam (Tanzania) and the network between Kenya, Uganda, Rwanda and Eastern Congo where major infrastructure projects are actively being constructed. These physical networks shouldn't be questioned by how important they are to the countries and its region. Kenya provides a regional headquarters for China's dealings with other politically unstable oil-rich nations in the region. It also includes a growing market for Chinese's exports, which have increased by 25% per year between 2004 and 2009, with China exporting more than 30 times what it has imported. China's road projects have carried support with the Kenyan Government, and facilitated the market entry of Chinese companies into the African country. It is unquestionably true that the Chinese are benefiting from this situation as they need the resources for their own growth, but their constructed networks will benefit the region in so many ways. Just think about how much transportation will benefit people getting to work, manufactured goods getting to customers and basic food products which will get to process plants in a fresh state instead of fruits or vegetables that have been rotting away in trucks for weeks.

According to Table 10 that is presented by Ernst & Young (2013) it is clear that Nigeria, Kenya and Mozambique are the Sub Saharan countries which show the most recent activity in infrastructure construction.

Country	*Sum of capital invested $bln*	*Numbers of projects*
South Africa	129,9	134
Nigeria	95,5	106
Algeria	87,2	34
Egypt	60,2	82
Kenya	32,9	60
Mozambique	32,1	31
Libya	20,7	29
Uganda	17,7	63
Tanzania	16,2	29
Cameroon	8,5	25

TABLE 10 INFRASTRUCTURE PROJECTS UP TO FEB 2013 (ERNST & YOUNG; 2013)

CLIENTS

RHDHV is dependent on a small amount of major clients. In the next chapter we will be analyzing these clients more thoroughly as we can assemble specific information about the clients in a country or a region instead of an entire continent. For now it is important to have an estimate on where these clients are operating in Africa. Figure 31 illustrates active Dutch companies in Africa. The amount per country forms the size of the yellow bubble. The figure shows that In Sub Saharan Africa, South Africa is the country with the highest amount of Dutch branches, consisting of 220 companies. Nigeria follows with an amount of 71 Dutch branches and behind them are Kenya and Ghana with 62 and respectively 30 branches. The figure is focused on all industries and not specifically the food and beverage industry. Figure 33 shows some of the most important clients of RHDHV in the food processing industry like Heineken and Nestle. Looking at the figure, one could say that it is obvious that Nigeria, Ghana, South Africa and Kenya are performing well.

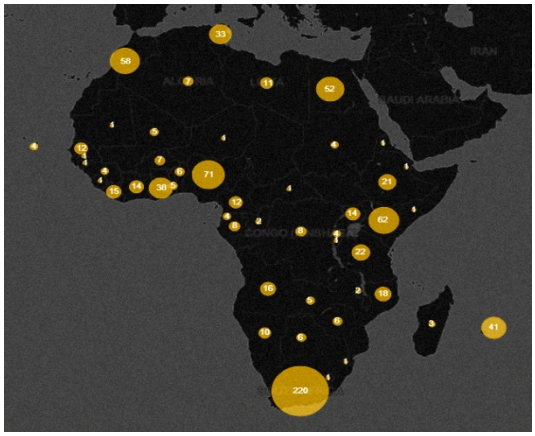


FIGURE 31 DUTCH COMPANIES IN AFRICA(FD, EIKELENBOOM, & GROOT, 2013)

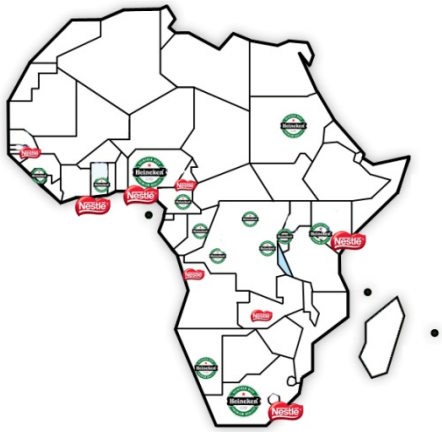


FIGURE 32 HEINEKEN AND NESTLE IN AFRICA

OUTCOMES

	Nigeria	Ethiopia	Kenya	Ghana	Tanzania	Congo	Uganda	Rwanda	Angola	Mozambique
Strengths	Largest Pop	Large Pop	Hub of East Africa	Business friendly	Large economy	Large population	Pop growth	Safe	High GDP	low political risk
	Fast eco growth	High eco growth	Infra potential	Resource wealth	Low political risk	Mineral potential	Oil prod 2015	Business environ.	Oil wealth	Links with South A
	Oil wealth	Low wage	Skilled labour	Safe	Port potential Dar es Salaam		Diverse		Good social progr.	Tourism
	High infra investment		High infra investment							High infra investment
	Many clients		Many clients	Many clients						
Weaknesses	Finance access	Low GDP/cap	Corruption	High property costs	low consumption	Political risk	Low urban %	high tax	Business environ,	Access finance
	Poor infra	Hyper inflations	Higher tax rate	High inflation	Access to finance	Lowest GDP/cap	High corruption	Access to finance	Inequality	GDP
	Political risk	Finance access				Electricity shortage		Low pop		

TABLE 11 COMPARE COUNTRIES ON QUALITATIVE INFORMATION

Looking at the table, it is obvious that as of now, the Nigerian market is seemingly the most interesting one for several industries. One can state that the extraordinarily big population of 163mln people is a very strong indicator for its food and beverage industry. The southern provinces are business environments that can be accounted to be relatively friendly. As the GDP per capita grows and the manufacturing production grows, this is probably the first country where a company would want to settle to sell their products or services. Other countries of high interest are Ghana and Kenya. Ghana is a country that is more developed than its neighbours. The country is highly diversified and is driven by consumption and a growing urbanizing population. The Ghanaian business environment is considered to be very friendly as the policy environment is decent, the financial sectors are well developed and electricity network seems to be stable. Kenya is one of the most important countries for the food and beverage industry. The country possesses a large population and economy; it is often seen as a hub to east Africa for many companies and is one of the most diversified countries of Sub-Saharan Africa. The infrastructure is decent, the property costs are the cheapest in Africa, the financial sector is well developed and most importantly the manufacturing sector is well developed. The political situation has been fragile for many years as the country is founded by many different ethnic groups but during the last election in April 2013, the country was happy to see that no major conflicts had risen. Another country important to acknowledge is Angola. This country is rapidly growing in terms of GDP because of its oil reserve. The country is spending a large amount of it towards social development of the country and it is therefore important that this country is monitored in the near future in its growth and development. Having a population of 20mln is significant enough and a GDP of $104bln (2nd highest of the analysed countries) even more. But as of this moment its business environment is of a very low one.

After having analysed all countries, Kenya Ghana and Nigeria are resulted as the most interesting regions for the light industry. Figure 30 is a good illustration to confirm the output of this qualitative analysis, proving that the countries Ghana, Kenya and Nigeria are most interesting to observe and might be at a lead to find clients, output services and possibly a good candidate to enter its country for a more permanent stay. All the countries are set on two dimensions that accord to two important variables in the food and beverage industry. According to Makki et al. (2009) important determinants of foreign direct investment in the food processing industry for developing countries are House holding expenditure per capita, GDP, wages and manufactured products without mining. House holding expenditure has been chosen on the Y axes, as this is a variable that can directly be related to the

consumer. On the x axes the manufactured goods are shown in $bln to illustrate the magnitude of the producers in this industry. The chart shows consumer behaviour vs. processed good production.

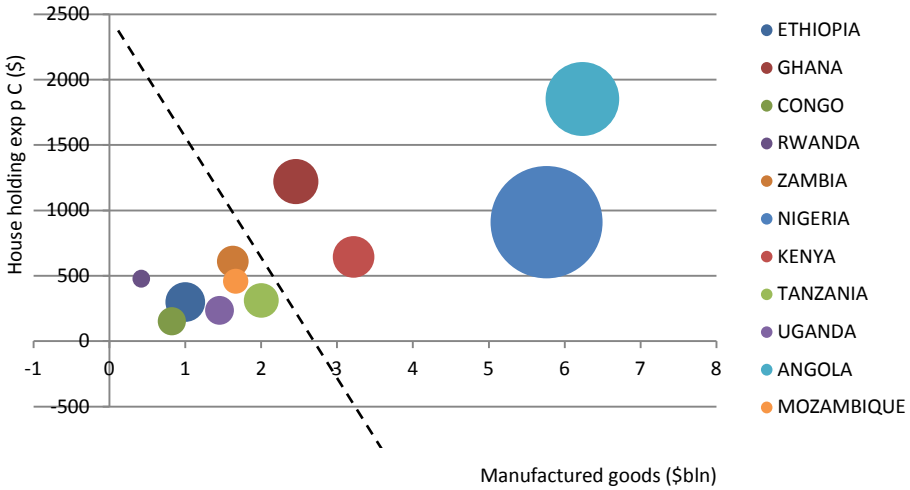


FIGURE 33 CONSUMPTION VS PRODUCTION (UN, 2012)

On the right side of the dashed line the prospective countries according to the qualitative data analysis are shown.

"Outcome: Ghana, Kenya, Nigeria"

METHOD ANALYSIS

This technique is used to get to know the countries and is based, not only, on quantitative information as GDP and populations but also on the qualitative information. With the use of interviews, reading what people have to say about the country and watching movies about the country, the decision maker can intuitively make a judgement based on this extra knowledge and experience. The qualitative method is vital as some of the information can be hard to quantify. With the use of this analysis it is possible to get a better understanding of its country, its history, and its political factors, it also includes some other important elements like construction projects that might shape the near or far future. Some of these factors can't be found in somehow more quantitative information. The downside of this method however, is that this analysis takes a significant amount of effort and time to come up with information that is useable to make a decision. If a business developer should have the task to embark on a market selection and would have to study several countries in a continent like Africa, he or she should not start with this type of analysis.

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
Qualitative	Less weighabel information	Low	High	Medium/High	Low	Low

TABLE 12 QUALITATIVE ANALYSIS METHOD TESTED

The advantages of this method are:

- You get to know the countries
- The statistical data can be put into perspective
- Data that cannot easily be quantified can be used
- Knowledge and experience of experts in the industry can be used

The disadvantages of this method are:

- Time consuming
- Difficult to organise
- Data cannot easily be compared
- Data cannot easily be used for other goals

4.2.3 STEP 3: IDENTIFY VARIABLES

As been stated in the former paragraph, some variables are typical in IMS and some should be chosen on the type of industry or department. A list has been made of potential important variables that could indicate if a country might be interesting or not. These variables will be weighted in the next paragraphs by several methods.

DEPENDENT VARIABLES

The best dependent variable to know RHDHV's success per country would be the actual sales per country over the years in the light industry department. Unfortunately this type of data is limited and will not cover the appropriate amount for a valid correlation test and regression analysis. So other dependent variables will have to suffice:

Foreign Direct Investments (FDI) inflow in food the food processing industry

Instead of looking at the actual sales of RHDHV in the food processing industry, it will be possible to gain an indicative variable of the potential market. RHDHV's main market and clients in this department consists of multinational food processing companies like Unilever and Heineken. The development of these companies in specific countries can be accounted as Foreign Direct Investments in the food processing industry. The bigger the FDI in food processing will be, the bigger the market for RHDHV will be and thus the increase in potential sales. The data of this variable is also quite limited for African countries, so data of other developing countries are also used to obtain enough cases. This was mainly found in statistics of the organisation for economic co-operation and development (OECD, 2013).

Variable defined as: FDIFOOD ($mln)

Beer production

The production of processed products could be a good indicator of the market potential for RHDHV. No other processed product is officially better accounted than Beer in these countries. Next to that, Heineken is RHDHV's biggest client in this sector, so this would seem appropriate to choose the production of this product as a dependent variable. If relatively more beer is produced in a country, the country would be more attractive for RHDHV's clients and thus RHDHV itself. The data is made accessible by the FAO. This is the Food and Agriculture Organisation of the United Nations.

Variable defined as: BEER (Tonnes)

Foreign Direct Investments (FDI) inflow

Not only do we want to know the market size of the processed food industry on its own, we would also want to know how attractive every country would be for all industries in total. The amount of investments created by foreign companies can be stated by this variable. The FDI is probably one of the most important variables for RHDHV, due to the fact that the firm is dependent on the foreign investments. Only a very slight part of RHDHV's sales are actually made by local firms. FDI is easily obtained by the World Bank, International Monetary Fund or the United Nations.

Variable defined as: FDI ($bln)

INDEPENDENT VARIABLES

Gross Domestic Products (GDP)

Gross Domestic Product is the market value of all officially recognized final goods and services produced within a country in a given period of time and is often considered an indicator of a country's standard of living. GDP is obtained by summing up the private consumption with gross investment, government spending net import/export. Some important variables around GDP will be GDP growth per 5 years and GDP (PPP) per capita which states the average GDP per person in a country adjusted on purchasing power parity. The growth of GDP is selected in a term of 5 years as this will give a stable growth perspective of a country. The growth in the African countries fluctuates too much per year and would result in inconsistency. GDP data is made easily accessible by the World Bank, International Monetary Fund and the United Nations.

Variables defined as: GDP ($bln); GDPC ($); GDPGR (%/5 years)

House holding consumption

HCE can be identified as private consumption. This is a very important variable in Africa. The GDP in some countries might relatively be big but if its wealth only benefits the government and not the consumers, no light manufacturing industry will become interested. The growth of this variable is also measured. House Holding consumption data is made easily accessible by the United Nations.

Variable defined as: HCON ($); HCONGR (%/5 years)

GINI index

Another important variable is the GINI index which measure how wealth is divided amongst its capita. The higher the GINI index, the more equal it is divided; 1.0 being the perfect equal situation. For example, Angola's wealth is unequally divided which means that although the country has a high GDP, most people remain poor and are not able to buy processed products. GINI data is made easily accessible by the World Bank.

Variable defined as: GINI (%)

Manufactured goods

It is also important to take in the supply of the consumer goods as an indicator. Manufactured goods data is made easily accessible by the United Nations.

Variable defined as: MANUF ($bln)

Population and Urbanisation rate

The population is an obvious important factor for the product demand. The urbanisation rate can give an indication on how many products will reach the customers as the products are more easily distributed in urban

areas than in rural ones. Population data is made easily accessible by the World Bank, International Monetary Fund and the United Nations.

Variables defined as: POP (mln); URB (%)

Paved roads

The amount of paved roads could be a cause or even a consequence of an increase in amounts of producers in the light manufacturing industry in the area. Paved roads data is made easily accessible by the World Bank.

Variable defined as: ROAD (%)

Use of mobile phones

The use of mobile phones might indicate the technological improvement of a country. This could correlate with the wealth of consumers or with the possibilities of distribution. Mobile phone data is made easily accessible by the World Bank.

Variable defined as: MOB (%)

Literacy

Literacy is usually used as a substitute indicator for skilled labour. Skilled labour could be a reason for a company to go to a country or not and can therefore be used as a useful variable. Next to that it might be useful for RHDHV to know where they could find useful employees. Literacy data is made easily accessible by the World Bank.

Variable defined as: LIT (%)

Ease of doing business rate

The variable Ease of doing business Total, delivered by the world bank, is based on a couple of sub variables like**: ease of starting a business, electricity accessibility, credit accessibility, property registration, trading across borders, paying taxes, dealing with construction projects permits** and **protecting investors**. These can also be considered being barriers for RHDHV or any other company to settle in a country or not. Ease of doing business data is made easily accessible by the World Bank, under the Ease of doing business entity.

Variables defined as: EODBT (Rank (1-185)); EOSTART (Rank); EOELEC (Rank); EOCRED (Rank); EOPROP (Rank); EOTRADE (Rank); EOTAX (Rank); EOPER (Rank); EOPROT (Rank)

Import/Export

The amount of export or import might also be an indicator once a company sells its products significantly to a specific country and if it should consider investing by Greenfield. Also the amount of time and the costs needed to import products might have an effect on how attractive food processing companies would define a country. Import/Export data is made easily accessible by the World Bank, International Monetary Fund and the United Nations.

Variables defined as: IMPEXP (%); IMPT (days); IMPC ($)

Political risk

The political risk which is also calculated by the world bank can be identified by six different elements. There are risks in **Voice and Accountability** (defined by military in politics and democratic accountability), risks in **Political stability and Absence of Violence** (defined by government stability, internal conflict, external conflict and ethnic tensions), risks in **Government effectiveness** (defined by bureaucratic quality), risks in **Regulatory Quality**, risks by

Rule of Law and order and risks in **corruption**. Political risk data is made easily accessible by the Political Risk Services Group, an entity of the World Bank.

Variables defined as: PRST (%); PRSVA (%); PRSSAV (%); PRSGE (%); PRSRQ (%); PRSRL (%); PRSCC (%)

Diversification

The diversification of a country might indicate that the country is more interesting for a wide variety of industries like the food and beverage industry as well as the mining industry. A high diversified country seems to attract more light manufacturing companies. Diversification data is made easily accessible by Mckenzie (2012).

Variable defined as: DIV (%)

Wage

The average wage in a country is important due to the fact that multinational food processing companies will have to hire a large amount of employees for their day to day operations. These employees will have a significant effect on the operation costs. The food processing company might try to locate its plant in a region or country where wages are lower. Wage data is made easily accessible by the World Bank, International Monetary Fund and the United Nations.

Variable defined as: WAGE ($/year)

	Nigeria		*Ethiopia*		*Kenya*		*Ghana*		*Tanzania*		*Congo*		*Uganda*		*Rwanda*		*Angola*		*Mozambique*	
GDP	**1**	413	**3**	94	**5**	71	**4**	75	**6**	64	**8**	25	**7**	46	**10**	14	**2**	115	**9**	24
GDPC	**2**	2578	**8**	1.093	**4**	1.710	**3**	1.871	**5**	1.512	**10**	373	**6**	1.345	**7**	1.282	**1**	5.920	**9**	975
POP	**1**	163	**2**	84	**6**	41	**7**	25	**5**	46	**3**	68	**3**	68	**10**	11	**9**	20	**8**	24
URB	**3**	50	**9**	17	**7**	22	**2**	51	**6**	26	**5**	35	**10**	13	**8**	19	**1**	59	**4**	38
EODBT	**6**	131	**5**	127	**4**	121	**2**	64	**7**	134	**10**	181	**3**	120	**1**	52	**9**	172	**8**	146
ROAD	**3**	20	**9**	4	**2**	23	**1**	28	**6**	15	**10**	2	**3**	20	**5**	19	**8**	10	**7**	14
MANUF	**2**	5,8	**8**	1	**3**	3,2	**4**	2,5	**5**	2	**9**	0,8	**7**	1,4	**10**	0,4	**1**	6,2	**6**	1,7
DIV	**9**	40	**7**	50	**2**	75	**4**	68	**5**	65	**8**	48	**1**	80	**6**	62	**10**	35	**3**	72
LIT	**8**	62	**10**	42	**1**	87	**5**	67	**4**	69	**5**	67	**5**	67	**2**	71	**3**	70	**9**	56
HCON	**3**	910	**8**	299	**4**	645	**2**	1221	**7**	312	**10**	152	**9**	236	**5**	479	**1**	1852	**6**	459
PRST	**9**	2,8	**5**	3,5	**5**	3,5	**1**	6,5	**1**	6,5	**10**	1,8	**5**	3,5	**1**	6,5	**5**	3,5	**1**	6,5

TABLE 13 VARIABLES

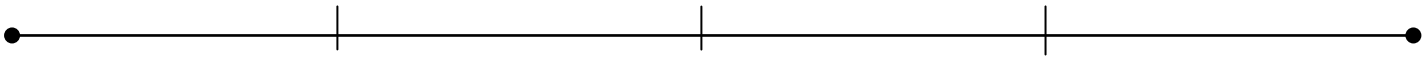
Some of the used variables are presented with their rankings in Table 13.

4.2.4 STEP 4: VARIABLES WEIGHTED BY EXPERTS

The data that is most commonly used to find out if a country is suited for business development can often easily be found in organized data bases provided by global organizations. In the previous paragraph it is shown that the data was accessible to draw certain conclusions. Which data should be used in particular and how much these variables should be weighted is the actual question here and is one that is not as easily answered. In the second step we used a more qualitative approach to obtain a perspective on the countries and to develop a judgment to improve the decision making process. In this paragraph a hybrid form will be used to calculate a weight on important criteria so that the countries can be selected on stronger argumentation. A multi-criteria technique will be used for

this method and the weights will be quantified by interviews. The interviewees are experts within RHDHV. Two interviews are focused specifically on the light industry department and one is focused in how every variable influences business development in the whole engineering industry. The criteria presented towards the interviewees are primarily based on the criteria which seem to matter in these industries according to Makki et al. (2009). Information will be obtained during the interview whether a variable will be relevant or not. The criteria will also be presented during the interview in a way as illustrated below. The entire interview can be found in Appendix B.

1	**GDP**	**3**	**Corruption**	**5**	**Skilled labour**
2	Population	**4**	Political risk	**N**	Etc…



Unimportant Important

The interviewee is asked to indicate how much every variable would affect their choice to do business in a host country and is asked to mark on a scale the importance of each variable; with the least important variable on the left end and with the most important variable on the right end.

The outcome for the light industry and all other industries are presented in Table 14. Political risk and population seem to be the most important variables for the light industry and the easy doing business rank seems to be the most important variable for all industries. The percentage mobile use under the population is the least interesting variable for the light industry and the urban annual growth rate is the least important variable for all the industries.

Variables	*Light Industry*	*All Industries*
GDP	0.60	0.50
GDPC	0.60	0.50
GDPGR	0.60	0.50
POP	**1.00**	0.60
POPGR	**0.85**	0.60
URB	**0.90**	0.20
URBGR	**0.90**	0.00
EODBT	0.45	**1.00**
PRSCC	0.80	**0.80**
PRST	**1.00**	0.50
FDI	**0.85**	**0.90**
MANUF	0.80	0.40
DIV	0.80	0.60
LIT	0.60	0.30
ROAD	0.80	0.40
MOB	0.00	0.30

TABLE 14 WEIGHTS OBTAINED BY EXPERTS (RHDHV, 2013)

The variables themselves will also need to be processed. However, the absolute magnitudes of the variables are not the numbers we are looking for. A GDP of $120bln can for example not be used in the same model with a corruption rate of 0,8. So the variables are also scaled between the worst and the best within a range of 0 and 1. As an example, Rwanda would thus have the lowest GDP ($6bln) and will therefore be related to a 0 for this variable and Nigeria would have the highest GDP ($240bln) and will therefore be related with a 1 for this variable. The formula used in excel is illustrated bellow.

$$Y = \frac{Variable\ X - MIN\ (Range\ Variable)}{MAX\ (Range\ Variable) - MIN\ (Range\ Variable)}$$

Every variable scale will be multiplied with every weight and will be summed up to conclude in a country grade.

$$Z = \sum(Y \times W)$$

Thus resulting in this ranking:

	Nigeria	*Ethiopia*	*Kenya*	*Ghana*	*Tanzania*	*DRC*	*Uganda*	*Rwanda*	*Angola*	*Moz*	*Zamb*
Light	**8.42**	5.02	6.03	**6.78**	**6.46**	5.09	6.00	5.73	**6.44**	6.41	5.77
All	**5.66**	3.48	3.98	**4.21**	**4.24**	3.64	4.03	3.57	4.10	**4.23**	3.77

TABLE 15 RESULTS IMS BY EXPERTS WEIGHTS (RHDHV, 2013)

Multi-criteria analysis is used with variable weights based on the perspective of RHDHV experts in the business development field, resulting in the countries Nigeria, Ghana, Tanzania Mozambique and Angola to be of utmost importance to the light industry as well as all other industries.

"Outcome: Ghana, Nigeria, Angola, Tanzania"

METHOD ANALYSIS

During the literature overview it became clear that the emphasis was going to lie on which variables would be important for further market selection. In this method the variables were weighted by experts within the department this research is assigned for. Although these weights were only valued by a low numbers of persons, which is further elaborated in the limitations; this was done by experts that have already made multiple comparable decisions as a profession in the past and present. Next to that, they are physically and mentally attached to this particular department in this specific industry. Nevertheless, their judgment can be subjective but it is the closest you might get to a practical opinion and is therefore valuable during the decision making process. The advantage of this alternative method is thus the practical input towards a country selection. The disadvantage is that every variable is variously weighted as this differs per industry and department and will therefore limit the amount of experts which are actually needed to amplify the objectivity. This gives more reason to use this practical, subjective method in an integrated model as is done during this research.

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
MCA by experts	Variables weighted by experts	Medium	Medium/Low	High	High	Medium/Low

TABLE 16 MULTI-CRITERIA ANALYSIS METHOD TESTED

The advantages of this method are:

- Experience and knowledge of experts are taken in
- Data is easily compared
- It is both subjective and rational

The disadvantages of this method are:

- You don't get to know the country
- Without realistic knowledge you won't be able to put the variables into perspective

4.2.5 STEP 5: VARIABLES WEIGHTED BY STATISTICAL CORRELATION

The wished appropriate turnover data of RHDHV's food and beverage department will unfortunately not provide the research with the right amount of samples. This makes it impossible to use statistical methods on the projects that RHDHV has done in combination with country variables. The turnover per area would be the perfect dependent variable for international engineering firms as we could calculate the exact correlation between some variables and RHDHV's sales. However, RHDHV's possibility is to use various substitutes that could also measure their potential success. Therefore instead of the actual projects being delivered over time, other potential success factors and market factors are selected; the first one being FDI inward in processed food. The biggest part of this type of foreign direct investment is created by multinationals who are interested in selling their products in some countries. Heineken, for example, is interested in Nigeria and has been developing breweries in that country which RHDHV designs. Indirectly FDI inward in processed food can indicate the potential market for RHDHV. This can also be explained by the character of engineering- or even a service firm like RHDHV that typically internationalises by "following the client".

Another dependent variable will be the beer production. It is quite easy to find production numbers in terms of first phase agricultural products. In this case RHDHV always designs plants for actual processing and the production of agricultural products. This is mostly done by farming, and not of an interest for RHDHV. The production of beer however is often done in a brewery and is therefore processed; a market which is more appealing towards RHDHV's interest. To measure a full scale model of all industries, FDI inward as a total is selected. This causality model is illustrated in Figure 31. The dependent variables Y will be tested on correlation with the independent variables X of the former year to implement a practical time lapse.

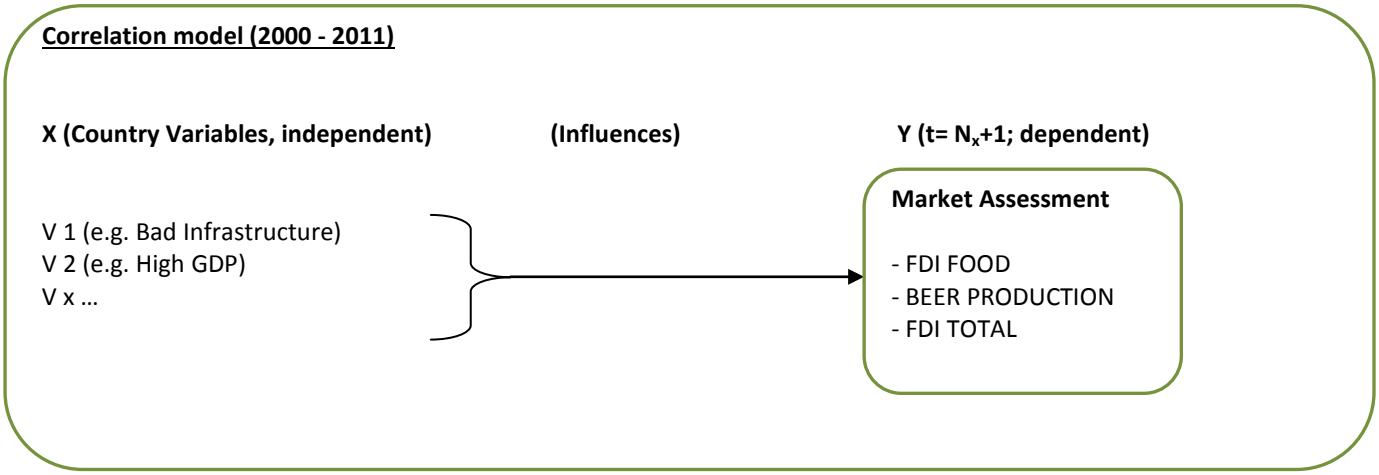


FIGURE 34 CAUSALITY DIAGRAM

Because more samples were needed of just the African countries themselves, the decision was made to observe the statistical results of more developing countries, spend not just over a year but over a decade.

The countries used are:

- Angola	- India	- Saudi Arabia
- Botswana	- Indonesia	- Senegal
- Cambodia	- Kenya	- Slovakia
- Cameroon	- Lithuania	- Tanzania
- Ivory coast	- Malaysia	- Thailand
- Croatia	- Mexico	- Tunisia
- Czech Republic	- Mozambique	- Turkey
- Congo	- Namibia	- Uganda
- Estonia	- Nigeria	- Ukraine
- Ethiopia	- Philippines	- Uruguay
- Ghana	- Poland	- Vietnam
- Hungary	- Rwanda	- Zambia

To find out which variables are of interest, monitoring for future development in different countries, a correlation has to be found between independent and one dependent variable. To measure an association between two or more variables containing ratio or interval data a “Pearson Correlation” will be used.

This will result in a linear correlation between two variables X and Y, giving a value between +1 and -1, ranging from respectively perfect positive correlation (+1) to no correlation(0) to perfect negative correlation(-1).

The correlation is defined as the covariance of the two variables divided by the product of their standard deviations as shown in this formula:

$$\rho_{X,Y} = \frac{\operatorname{cov}(X,Y)}{\sigma_X \sigma_Y} = \frac{E[(X-\mu_X)(Y-\mu_Y)]}{\sigma_X \sigma_Y}$$

All variables that are used in this model are stated in Appendix C. Some were not significant and were left out for further processing. The ones that are significant are stated according to the correlation matrix as shown in Table 17. It is obvious that GDP, Householding consumption, manufactured products and population are the variables that correlate better than the other variables with beer production and foreign direct investments. Ultimately, these are well known indicators that multinational companies use to choose whether to enter a market or not. The urbanisation seems to correlate quite well for the food processing industry as well as for the whole industry itself. This makes perfect sense as a higher urbanisation rate usually links with a stronger (technological) development and higher wealth. The amount and quality of the roads do seem to correlate with the total foreign direct investments, yet against expectations it does not strongly correlate with the light industry where distribution and transportation would have been thought to be one of the most important aspects of the industry. The ease of doing business ranking is of importance to all industries. The ease of getting credit and credit information is particularly interesting.

Criteria	*Light Industry*		*All Industries*
	FDI FOOD	*BEERProduction*	*FDI*
GDP	**0.49	**0.59	****0.85**
GDPC	0.04	**0.28	**0.34
HOUCONS	**0.51	**0.61	****0.81**
GINI	**0.57	0.12	0.01
MANUF	**0.40	**0.67	****0.70**
POP	-0.02	**0.33	****0.45**
URB	0.22	**0.31	****0.28**
ROAD	0.06	**0.26	****0.29**
LIT	0.08	**0.23	**0.20
EODBT	0.00	**0.21	****0.26**
EOELEC	0.14	**0.23	*0.12
EOCRED	0.25	**0.27	****0.38**
IMPORTT	-0.14	**-0.21	****-0.27**
IMPORTC	0.20	-0.51	**-0.23
PRSVA	0.21	**0.30	**0.24
PRSGE	0.04	**0.31	****0.36**
PRSRL	0.09	**0.24	**0.26
PRSCC	**-0.50	-0.06	0.10

TABLE 17 WEIGHTS OBTAINED BY PEARSON CORRELATION

**. CORRELATION IS SIGNIFICANT AT THE 0.01 LEVEL (2-TAILED)

*. CORRELATION IS SIGNIFICANT AT THE 0.05 LEVEL (2-TAILED).

The variables themselves are correlated with the dependent variables. The independent variables do however correlate with each other as well. To take these inter correlations into account, we use the multiple regression analysis to find out what this eventually means as an integrated effect on the dependent variables.

MULTIPLE REGRESSION ANALYSIS

The FDI in processed foods is a relevant indicator to predict the future potential demand of the food and beverage processing industry. To give an indication of what this FDI can become in the next year a multiple regression analysis is performed. The regression analysis can be used to find a correlation not only between two variables, but between several variables in a model. This type of statistical tool is also based on correlation between variances and can be explained by the formula presented below.

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i, \quad i = 1, \ldots, n.$$

B0 is the constant. This means that if every independent variables would be 0 , B0 would be Y. B1.xi is the value of the multiple regression of every variable. E can be thought of as all the causes of Y that are not directly included in the equation. More specifically, each case has an actual Y value as well as a predicted Y value with the predicted value generated by the regression line. The disturbance of each case is the difference between the actual score and the predicted score. When one thinks in terms of the scatterplot, it is the distance between the actual score and the regression line when representing the predicted scores.

In Appendix D the statistical results are projected in terms of the multi regression analysis.

Some models are created. One model will be used per dependent variables:

1) FDI Processed Food = -10011+251.23xGINI+14.228xROAD-416.5xWAGE+382.46xHOUCONSGR
2) Beer Production = -1538322.456 + 13915.082 x EDUC + 5.698 x GDP – 2662553.786 x PRSGE + 3502809.494 x PRS RL + 8848.036 x Road – 50.370 x GDPC
3) FDI Inward = -5222.8+0.033xGDP+46.3xTrade-407.167xWAGE+1061.259xHCON +4900.384xPS

	NIG	*ETH*	*KEN*	*GHA*	*TNZ*	*DRC*	*UGA*	*RWA*	*ANG*	*MOZ*	*ZAM*
FDI F (mln$)	$229	-$200	$215	$84	-$40	$117	$153	$310	$530	$154	$150
BP (x1000 Tonnes)	1.367	170	188	221	131	85	90	90	592	69	108
FDI (mln$)	$7.778	$1.030	$1.061	$1.602	$1.354	$1.449	$365	$220	$6.413	$1.315	$1.696

TABLE 18 MULTIPLE REGRESSION OUPUT FOR FDI FOOD, BEER PRODUCTION AND FDI

The data of the FDI in processed food industry was limited giving it a total amount of less than 40 samples. For a multiple regression analysis the number is of a quite low one. And as shown in the results, the predictions in FDI in processed food vary significantly between the two different models. The method that is used can be very interesting as the FDI in processed food industry is the variable which could identify how big this market is for RHDHV. Nevertheless, the data is too limited and it cannot be considered realistic. The other two models are much more reliable. Beer production is however more specific towards the Beer producing industry instead of the food and beverage industry as a whole. But it indicates a part of the processed food and beverage market which is the biggest market of this department within RHDHV. The FDI as a whole can be predicted by the other model.

VERIFICATION

If we would compare these figures with the predictions of the Ernst and Young report, most of them would coincide with the used second model. It must not be forgotten that no qualitative information was used in the model and that Ernst & Young's prediction are especially predicted by qualitative information. Ghana and Nigeria are both good examples of the major difference between the model created in this research and the prediction of E&Y. In Ghana's case the reason for this difference is the fact that big oil reserves are not yet extracted. In Nigeria the predicted $23bln is quite optimistic, although one can realise that in the past 5 years the FDI did not reach more than $8,5bln, annually.

	NIG	*ETH*	*KEN*	*GHA*	*TNZ*	*DRC*	*UGA*	*RWA*	*ANG*	*MOZ*	*ZAM*
FDI 2 (mln$)	$7.778	$1.030	$1.061	$1.602	$1.354	$1.449	$365	$220	$6.413	$1.315	$1.696
E&Y	$23.000	$1.200	$1.300	$5.000	$2.200	$1.100	$1.700	$450	$7.500	$1.400	$1.900

TABLE 19 MULTIPLE REGRESSION OUPUT FDI 2 COMPARED WITH THE ERNST & YOUNG (2012) REPORT

With use of a Pearson correlation analysis and the multiple regression analysis the countries Nigeria, Ghana, Kenya and Angola are concluded from this to be the most interesting countries for the light industry. In the case of how much FDI, in total, a country is estimated to obtain, Nigeria, Ghana, Angola, Tanzania, DRC and Zambia are considered the most interesting.

"Outcome: Angola, Ghana, Nigeria, Kenya"

METHOD ANALYSIS

The method is also based on the theory which implicates that finding the right variables would be the key to answer which markets would be of interest to develop a business in. In this method a mathematical correlation between independent variables and a dependent variable is calculated by the use of hand or preferably a statistical software program. This research suggests that the dependent variable should be one that would optimally elucidate the actual amount of projects the firm or department assigns. This would preferably be the turnover of a company or the department in a certain region. If these figures are not easily accessed or the sample size is unsatisfactory, one might be able to use a substitute which could define a market size of its customers in a country. In this case the beer production, foreign direct investments in foods and foreign direct investments in total are the variables that state what the potential market is for all industries as well as the food processing. A disadvantage could be the fact that right data can be hard to find and that this method can be considered as a complicated one. It would not be of any use to a decision maker who has different tasks than solely explore international opportunities. Another disadvantage by using this method includes that some independent variables could be insensitive to some more qualitative information like recently settled competitors or short civil wars which can heavily affect operations. The biggest advantage is that this data is usable for different goals, which makes it a good input for a dynamic model. If the correlations can be made, it will be possible to use these "weights" in different regions and in different periods. The data can also easily be used as input for other results. This will be explained as examples in the text box below.

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
Statistical/correlation analysis	Weighted variables by correlation	High	High	High	High	High

TABLE 20 STATISTICAL ANALYSIS METHOD TESTED

The advantages of this method are:

- Most rational and objective method
- Data process is dynamic
- Data is easily compared
- Data is easily usable for different goals

The disadvantages of this method are:

- You don't get to know the country
- Without realistic knowledge you won't be able to put the variables into perspective
- Complex method
- Might lead to nothing without the right data

A. EXAMPLE OF USING THE DATA FOR DIFFERENT GOALS

The earlier used risk variables, provided by the organization Political Risk Services and by the World Bank, indicate what kind of risks the country would be affected by. These risks also affect how construction projects are successfully executed in terms of time and budget. This information can be of valuable use for RHDHV when choosing a country. but it could possibly be of more use for RHDHV to inform its client about the potential risks and to base a contingency rate for projects in specific countries. According to Akintoye & Macleod (1997) risk can be calculated by by multiplying the risk frequency with the impact. In reality risks are calculated in a more complex way than this simple multiplication. Nevertheless, this system can give a simple indication for practical use.

The frequency of the risks can be found in the data delivered by the organization in public reports. The impacts on the projects however are not easily accessible as they change over time and per industry. Some of the impact information has been studied before in different researches and has even been specified with the focus on developing countries (Apolot, Alinaitwe, & Tindiwensi, 2011). Yet, research of impact of some specific risks, which are also used in the correlation matrix, are desired with the goal to use the same input variables to determine country attractiveness as risk contingency rates for time and costs. To find out what the impacts are of those risks a survey has been filled out by ca 70 people in the construction field. A digital survey has been created to find out if there is a significant mean impact per risk. This was done by: 1) assessing how much delays and cost overruns projects could encounter in developing countries in integer values, 2) assessing how much impact a risk will have on delays and cost overruns on a scaled value and 3) how much one risk would affect delays and cost overruns in integer values, which can be used as a benchmark to relate the other risks with. The whole survey is presented in Appendix E. The link was send to people within RHDHV, over linkedin construction groups and Google+ construction groups. A part of the survey is presented below.

1) *"What is the average difference between ESTIMATED and ACTUAL time and budget in DEVELOPING COUNTRIES (e.g. Nigeria, Thailand, Uruguay)? If for example the actual costs are 20% higher, please fill out 120%.)"*

   Timeframe% ☐ Budget% ☐

2) *"Please fill out how much each cause influences COST OVERRUNS, based on your experience and knowledge".*

	Low Influence	**High Influence**
Political instability	⟷	
Corruption	⟷	

3) *How much would inadequate infrastructure individually impact the timeframe and budget in percentage?*

   Timeframe% ☐ Budget% ☐

These are the results of the survey:

Questions	*Topic*	*Variable*	*Mean*	
Developed countries	Delays		111,153	%
	Cost overrun		110,064	%
Developing countries	Delays		159,487	%
	Cost overrun		142,948	%
Influence per risk on Cost overruns	Political Instability	PRSSAV	2,656	/10
	Corruption	PRSCC	3,421	/10
	Electricity - Inadequate	EOELEC	5,990	/10
	Infrastructure - Inadequate	ROAD	4,472	/10
	Credit inaccessibility	EOCRED	1,351	/10
	Unskilled labour	LIT	7,838	/10
	Inflation	INFL	5,307	/10
	Equipment - Inadequate		6,977	/10
	Materials - Inadequate		1,986	/10
	Scope miscalculation		9,040	/10
Influence per risk on Delays	Political Instability	PRSSAV	7,707	/10
	Corruption	PRSCC	8,748	/10
	Electricity - Inadequate	EOELEC	4,136	/10
	Infrastructure - Inadequate	ROAD	5,918	/10
	Credit inaccessibility	EOCRED	1,703	/10
	Unskilled labour	LIT	7,436	/10
	Inflation	INFL	1,618	/10
	Equipment - Inadequate		6,218	/10
	Materials - Inadequate		5,875	/10
	Scope miscalculation		6,147	/10
Consequence of inadequate infrastructure	On Time		119,935	%
	On Cost		110,064	%

It is calculated that with 69 samples, this test represents the population with 89% confidence. These figures can now be used in combination with the frequency data so that a form of construction risk can be calculated per country. This can be done in two ways because of how the data was collected. These two methods are explained in Appendix E.

Average Results:

	Nig	*Ethiop*	*Ken*	*Ghana*	*Tanz*	*DRC*	*Uganda*	*Rwan*	*Ango*	*Moz*
COST	143%	147%	135%	129%	132%	149%	138%	124%	150%	144%
DELAY	170%	168%	154%	150%	145%	187%	160%	140%	179%	165%

TABLE 21 AVERAGE COST AND DELAY

The results conclude that construction projects developed in Ethiopia, DRC and Angola will have the most unexpected extra costs caused by the risks. The construction projects in Nigeria, DRC and Angola will have the longest unexpected delays.

The results are definitely and obviously not precise, but they could give an indication on what to expect of construction project risks, their frequency and their impacts in Sub Saharan African countries, purely based on quantified information that can eventually also easily be used in other places in the world and for other goals.

B. EXAMPLE OF USING THE DATA FOR DYNAMIC OUPUT

Now we have obtained several results by different methods. The independent variables are all easily accessible on the internet and the weights were statistically quantified to know how much every variable would affect the attractiveness of a country in the food and beverage industry. These can now be used, together with the right correlations to obtain output for different regions during different periods, as well as to obtain less related output like the construction risk and delay per country. This would be the base of a country comparing tool.



FIGURE 35 SOFTWARE TOOL

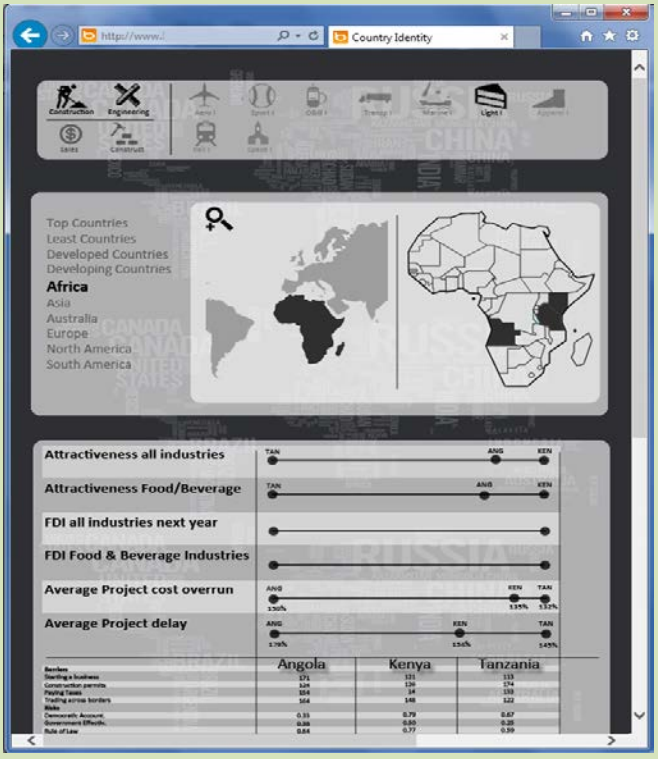


FIGURE 36 THEORATICAL WEBSITE

Most country comparing tools offer a ranking of several important indicators and compare countries based on these variables with each other. In comparison with other Country analysing websites this one would make use of weighted variables created by statistical analysis. Most organizations only show variables without weighting them (IHS.com, 2013) and some of them use weights, but are often intuitively chosen or set by the user.

This research has tried to find the appropriate weights to determine several aspects which can be used to compare countries upon in the Light industry and more specifically the food processing industry. All though the variables will change every year, the correlations/weights used to get the results can be used for several years ahead and this is why this model is dynamic. This chapter has shown how this can be done for one industry. If you would research this for other industries you will be able to create a more comprehensive country attractiveness model that can be used for several industries and other continents. An example of how this might look is illustrated in Figure 36.

4.2.6 STEP 6: CHOOSE COUNTRY ON RHDHV'S FIT

These various studies resulted some countries that are considered more interesting than other countries in Sub Saharan Africa. After concentrating on the 10 countries that were suggested as an interest by other organisations, they were then further analysed on qualitative information and quantitative information. As a result five countries were highlighted as being more prospered than others in the light manufacturing industry. These countries include Nigeria, Ghana, Kenya, Angola and Tanzania.

At this particular moment Nigeria is being considered, by far, the most important country in Sub-Saharan Africa. The country has an enormous population and, annually, it attracts a large amount of foreign direct investments. This is because of its large oil reserves and the fact that its country is diversifying and increasing its capacity in other industries, especially that of its light manufacturing industry. The most important clients of RHDHV in the light manufacturing industry (Unilever, Heineken, LÓreal, Procter & Gamble) are all heavily active in this country. GDP, House holding consumption and population are very important indicators, as concluded by the statistical analysis. This is mainly why Nigeria is considered to be this important despite the great political risks and the unsafe environment. Nigeria is the country where one can actually sale their products, the place where manufacturers will want to build their plants and where RHDHV could engineer these plants for them. RHDHV has already got an office in Nigeria, though this office is working for another business line. However, during this research it has become clear that the demand is significantly rising and that RHDHV is actively preparing to cover this supply by positioning more resources in Nigeria for the light manufacturing industry. But, since the next step of this research is to determine an appropriate entry strategy for a country it will be more interesting to select a country where an office has not been located by RHDHV. This will be an easier way to be able to determine the market.

The same situation will occur in Ghana. All though the country is considered very prosper in terms of potential demand and especially safety, an office is located by RHDHV. It is able to easily determine the market and could represent the business line to some extend which then will follow an increase in resources in the local office for the light manufacturing industry if there too was an increase in the amount of projects.

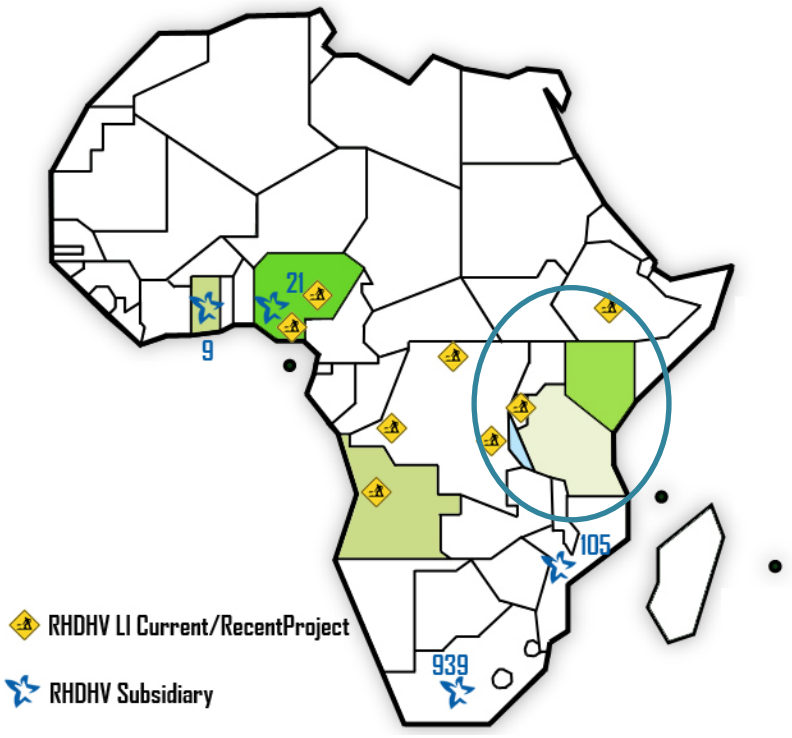
Angola is another interesting country. It is rapidly growing in terms of GDP due to its oil reserves. The country is spending a great amount of its reserves (20%) on social development and it is therefore important that RHDHV keeps monitoring Angola in its growth and development in the near future. The GDP, particularly per capita (highest of all the countries), will have to be taken seriously. The unfriendly business environment makes it difficult for businesses to continue developing themselves in the country. Risks and inequality make this even worse. RHDHV do have a quite big project near Luanda (on hold) which could be considered to be used as an opening by strategically entering the country at the right time.

The eastern part of Africa, legally known as the East African Community (EAC), consists of several prosperous countries according to the analysis. RHDHV is not yet settled in this part of the continent. The countries are said to be well integrated in, for example, the free trade of products and human capital. However, in practicality, people and businesses still need to pay for the trade of products and only Rwanda is allowing people in from other countries. If the economic integration eventually forms, RHDHV could easily work on projects in one country while being settled in another one within this community. But for now this might not go as easy as stated in numerous articles. The decision to enter a specific country in this region remains therefore important.

Kenya scores also well if we would take the general macroeconomic, political, social and technological factors into account. When it comes to the food and beverage industry Kenya can be considered to be far more developed than its neighbours. The distribution network is more developed as well as its human resource. The big players in

the food and beverage industry all have their head office in Nairobi and all see this country as a potential goldmine in this sector.

During the last phase of this dissertation research, the South African entity of Royal HaskoningDHV announced its interest in Tanzania and that it is definitely going to enter this market by the possibility of settling in Dar es Salaam. The entity will be active in different industries and as it has been made clear in this chapter, Tanzania is also very interesting if one would consider its port and the rising amount of (Centre-for-Chinese-Studies) FDI in this region as this is has become the gateway to the east for all the minerals that come from Angola, Zambia, Congo and DRC. As for the light industry department Kenya might have been a bit more attractive but at the end, the integration, synergy and cost saving aspects of joining the two business lines together could serve towards a more prosper future for the entire company. Clients, experiences and knowledge could be shared more easily this way. The emphasis of the next chapter will lie on the entry strategy towards Kenya.



5 Case study Africa Entry Strategy



5.1 Setup of the Proposed Entry Strategy

As Royal HaskoningDHV has not had the right opportunity yet to realise any projects in the very potential countries Kenya and Tanzania, this chapter will focus on how the light industry department of Royal HaskoningDHV could enter one of these countries by determining potential stakeholders beneficial for a good start up.

Kenya seems the most interesting and promising country in eastern Africa for the specific department of RHDHV, but as the South African entity of RHDHV are fairly definite with settling in Tanzania it is important for RHDHV to know if Kenya is still more interesting for the light industry department and whether it should settle in form of a wholly owned subsidiary or a Joint Venture.

Before entering one of these countries it is crucial to determine the potential clients, competitors and possible partners in the different countries.

In contrary to the theoretical research in the section International Market Selection, the research in this chapter is mostly based on knowledge from practice.

In the following paragraphs an entry strategy will be set based on a step-by-step process in order to decide a specific entry type. This begins with a country check and ends with a cost and benefit analysis of several entry alternatives

Created and selected Process:

1) **Stakeholders & Country Specifics |**The Process begins with a country check. The stakeholders will first be defined by clients, competitors and potential partners. These stakeholders could drastically affect the actual turnover of the company. Then the country specifics in terms of barriers that matter (e.g. Taxes, set up costs, etc.) will be analysed and compared with those of other benchmark countries.

2) **Physical experience in form of a mission |** In this phase the right person will have to be chosen on his or her skills and will have to be trained on cultural differences. Whether one or two persons will go and who might go are key questions during this process. The timing of the mission and the costs will have to be selected and calculated as well. During this step the employees that are physically present in the selected country will try to obtain key projects. This department usually uses the philosophy of obtaining a project after a mission before actually fully settling there. But sometimes, when the country's aspects seem really prosper the choice to enter can immediately be made.

When the country has physically been experienced and hopefully a project have been granted to the company, RHDHV will have to decide to 1) not internationalise in any form to the country as entering the country will mean more costs than benefit, 2) open a representative office, so that the costs remain pretty low but RHDHV can represent itself to acquire some projects or 3) make a decision to enter the country in a more permanent way, based on demand variables and risk variables.

3) **Demand and Risks |** As was stated in the literature, the most important variables to determine which type of entry types could be most beneficial are demand driven and risk driven. Depending on these two aspects a scenario analysis will be made so that some entry type alternatives can be

4) **Choice entry type |** The different alternatives that have been concluded by the "demand and risks scenarios" phase will be tested on cost and benefits so that a right choice can be made whether to 1) leave the country, 2) enter the country by a Joint Venture, 3) enter the country by a WOS (Greenfield or acquisition) or 4) stay a representative office

5.2 Results: Entry Strategy Kenya, Light industry

5.2.1 STEP 1A: COUNTRY CHECK STAKEHOLDERS

The objective of the mission (set in step 2) is to gain a personal physical perception of Kenya while creating opportunities to build relationships with clients, potential clients and potential partners. A certain amount of research has to be done before hand. Appointments will have to be made before going there, increasing the chance to actually getting leads and gaining business.

Next to creating the possibility of finding any leads it is also important that some potential partners are found. In the first phase of the internationalisation process it will be very likely that RHDHV will start with a representative office with the purpose of not assigning too much risk. RHDHV will not be able to fully produce the same kind of services as it does in the Netherlands without local licenses. Therefore the company will need to do so via a local partner. While being in the country to figure if the country might be interesting or not, the representative of RHDHV will also be going to the Dutch Embassy. The reason is the close relationship the embassy has with other businesses, especially Dutch businesses which are RHDHV's main clients. These analyses will be summarized in this paragraph but are completely elaborated in Appendix F.

CLIENTS IN EASTERN AFRICA

In the production industry some sectors are identified because of the wide range of different clients that RHDHV operates for. There are clearly prime sectors where RHDHV has a sound business proposition for.

Key target sectors would be:

- General Production & Manufacturing
- Fast Moving Consumer Goods
- Food & Beverages
- Electronics
- Pharmaceuticals
- Automotive
- Retail & Distribution

The clients can be divided by Key, developing and target groups:

Key clients:	*Target Clients:*	*Developing Clients:*	*Other Clients:*
Heineken	ABB	Colgate-Palmolive	Agrico
Damen	P&G	L'Oreal	Makro
Nestle	Continental	Kimberly-Clark	Mane
Pepsico	Michelin	Philips	Givaudan
Friesland Campina	A.S. Watson Group	MSD	Heinz
Krones	Unilever	NXP	Astra Zeneca
		Braun	Danone
		DSM	Mars
			SAB Miller

TABLE 22 CLIENTS RHDHV (RHDHV, 2013)

Firms in the service sector usually encounter the Pareto principle for sales that they make towards clients. This principle is also known as the 80/20 Rule, which states that roughly 80 percent of effects come from 20 percent of causes. In business, a common rule of thumb is that "80 percent of your revenue comes from 20 percent of your clients." While the mathematics may not work out to that exact ratio, the principle is quite true in this case. The largest client for this department is Heineken and most of RHDHV's jobs are granted by Heineken. Although this might be a big risk for RHDHV as sales are not evenly spread, the relationship between the two are interrelated for a long time and it is this trust between two parties that can actually secure business for RHDHV. The (potential) clients are elaborated in Appendix F.

COMPETITORS IN EASTERN AFRICA

The competition in this business line market can basically be broken down into two main sections:

- Direct Competitors (International Consultancy & Engineering firms)
- Indirect competitors (EPC contractors, Project management consultants, Local Engineering firms)

According to RHDHV the main competitors in the light industry sector all over the globe are:

- Aurecon, M+W Group, Ramboll, Aecom, Tebodin, Arup, CH2MHill, Bovis Lend Lease, Meinhardt, Beca, SNC Lavallin, PM group, NNE Pharmaplan, Alectia and Turner & Townsend

The competitors are analysed in Appendix F.

POTENTIAL PARTNERS

The potential partners are companies that are currently located in Kenya and can first of all provide help towards RHDHV by being licensed to perform jobs that RHDHV cannot do without a license like engineering work and construction management. If RHDHV starts with a representative office, it will have to build a strategic alliance with a certain partner. This partner should secondly be chosen on the future possibility for acquisition if demand rises and risks diminish. In that stage both companies could decide to join for a more permanent partnership or the partner could eventually join the RHDHV group. It is important that the partner is not too big, because of too much power and control. The company should however not be too small as it has to add a certain value. The company should have between 50 and 150 employees and should have an annual turnover of about $7mln. Another aspect that should be considered is that certain chains in the total value chain of RHDHV should be located on the site of the project. In particular project management and construction management should be conducted on site. The engineering work and the designing and drawing can be allocated in the domestic country or even somewhere else. The partners should therefore be able to provide for Construction Management and Project Management. The partners are only researched for the Kenya option. In Tanzania, our South African colleagues will form an own entity where the light industry department will receive enough support to function effectively as the entity will definitely affiliate with local partners itself.

Some potential partners are analysed in Appendix F.

OUTCOME

Clients Head office in Kenya	*Competition in Kenya*	*Competition LI not in Kenya*	*Potential partners*
Heineken	SMEC	SNC Lavalin (Equatorial G, Mad)	Mentor Mng.
Unilever	EGIS	Daral Handasah (ANG, GH, NIG)	Planning Systems Serv
Nestle	Louis Berger Group	Mott Macdonald (NIG)	Runji & Partners
Procter and Gamble	AECOM (recent via BKS)	Aurecon (GH, NIG, TNZ)	H young
Coca Cola		CH2M Hill (Not in S-S Africa)	GIBB
Pepsico (+/-)		Tebodin (Not in S-S Africa)	
		Worley Parsons (ANG, GH, NIG)	
		APEC (ANG, NIG)	

TABLE 23 STAKEHOLDER SUMMARY

The clients of RHDHV are obviously more focused on Kenya than the other countries in East Africa. The distribution seems to be better in this country, there is more focus on the food and beverage industry than other countries and business environment seems to be more comfortable. All major clients for RHDHV have their head office in Kenya but also have several plants and factories in the countries around Kenya. If we look at the competition we can see that other international engineering firms do not overwhelm the Kenyan engineering. RHDHV should however see

Aecom as a real threat in Kenya and Aurecon in Tanzania. Nevertheless, the region will have enough work for those few engineering firms if the demand is as high as many entities predicate. Waiting too long could eventually cost a lot, as others will have time to see the benefit of this market. Local engineering firms and potential partners in developing countries like Kenya and Tanzania often make a limited use of Internet as a communication tool and as a consequence, a somehow limited amount of potential partners have been found. It will therefore be important for the person who will go on the mission to actively ask, seek and check the potential partners on their reliability size and clients. During this research the most interesting potential partner found is Planning Project Management which has done projects for Coca Cola and GlaxoSmith Kline and is currently busy with a project for Pepsico.

METHOD ANALYSIS

In the engineering industry, the relationship with clients and partners is vital for good business and the existence of the company. This analysis is in one way a good system to check the country on these values in more depth than this was done during the IMS process. Instead of looking at the global coverage of one or two clients, all (potential) clients are studied quite well to gain a perspective on the possible demand. In the other way the information on clients could be leads to relationships when going there to experience the country. The competition is studied as well to see if this demand will not be shared with too many players in the industry. The potential partners are studied for joint venture or alliances perspective. The method is highly effective for engineering companies to check countries and to create leads, but is very time consuming per country. This is why this method is used in a stage that only one country is analysed.

Methods	*Information type*	*Objectivity*	*Resource commitment analysis per country*	*Related to specific industry & goal*	*Easiness of comparing data*	*Use of data for multiple goals*
Relationship	Stakeholder information	Medium	High	High	Medium/Low	Low

TABLE 24 STAKEHOLDER ANALYSIS TESTED

The advantages of this method are:

- The clients of RHDHV are essential, this is a good method to gather the specific information
- Creates leads for relationships

The disadvantages of this method are:

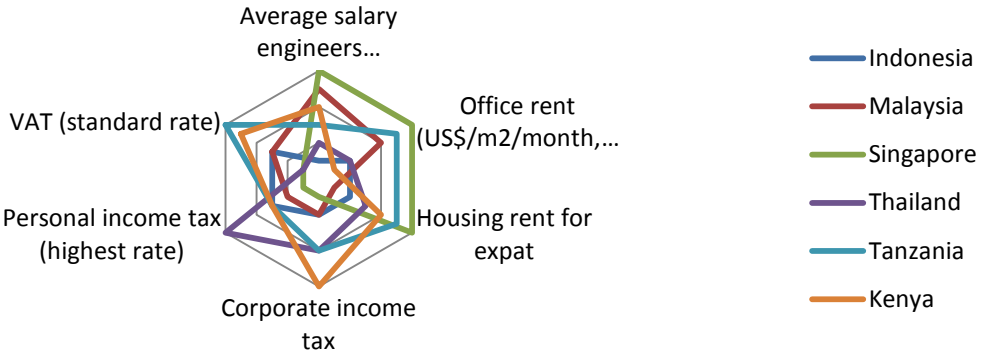
- Time consuming
- Data could be outdated and stakeholders are not transparent in sharing essential information

5.2.2 STEP 1B : COUNTRY CHECK TAX, PROPERTY COSTS, SALARY COSTS

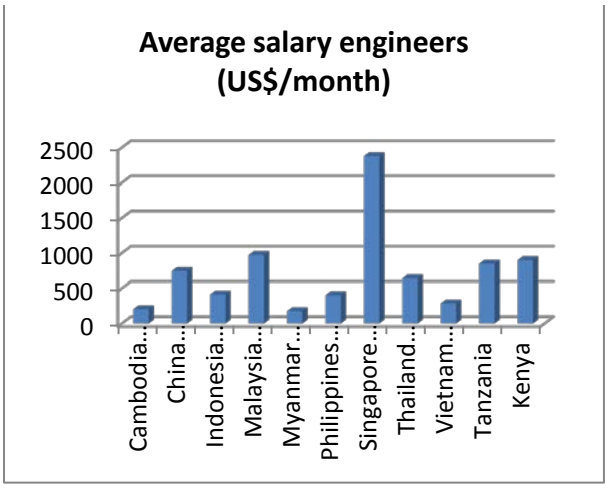
Some country specific aspects will have effect on the transition costs and operating costs of the newly created entity in the foreign country. If we eventually want to calculate the cost and benefits of different entry alternatives, these aspects will have to be analysed. In Table 25 different aspects like average salary of engineers, office rent, housing and tax are set up for the countries where RHDHV have their own foreign entities.

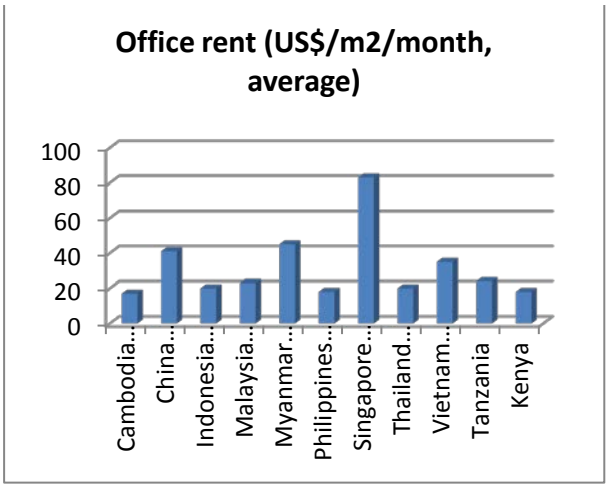
	Average salary engineers (US$/month)	*Office rent (US$/m2/month, average)*	*Housing rent for expat*	*Corporate income tax*	*Personal income tax (highest rate)*	*VAT (standard rate)*
Cambodia	204	17	1200	30%	5%	10%
China	745	41	2690	25%	45%	17%
Indonesia	414	20	2100	25%	30%	10%
Malaysia	973	23	1238	25%	26%	10%
Myanmar	176	45	2500	2%	2%	5%
Philippines	403	18	2618	30%	32%	12%
Singapore	2378	83	4806	17%	20%	7%
Thailand	641	20	2133	30%	37%	7%
Vietnam	286	35	2500	25%	35%	10%
Tanzania	**850**	**24**	**3000**	**30%**	**30%**	**20%**
Kenya	**900**	**18**	**2500**	**37%**	**30%**	**16%**
Average	**725**	**31**	**2480**	**25%**	**27%**	**11%**

TABLE 25 COUNTRY SPECIFICS RHDHV OFFICES (RHDHV, 2013; JETRO, 2012)



The average salaries of Tanzania and Kenya are not as expensive as in Singapore or as the Netherlands. But if we would compare these figures with Asian figures the salaries would be slightly more. The office rent is however quite cheap and fall easily in the same category as these Asian countries. Kenya and Tanzania state a corporate income of 30%. Kenya however has a corporate income tax of 37% for foreign companies. The personal income is 30% for both countries as its highest rate and is average compared with the other countries. The VAT in Kenya with 16% is lower than Tanzania but higher than Singapore, Thailand and Myanmar.





5.2.3 STEP 2: MISSION

The mission itself will be timed in a proper manner if it would be planned during an important conference or event that would attract more businesses in the specific industry. The mission as goal is to create relationships and to physically experience the country. This will be the first time that the selected country can actually be observed in real. More subjective and intuitive perspectives will be important during this stage and that is why it will be important to decide who is actually going to the appointed country, in this case Kenya. The person should be chosen on certain technical, relationship and should be trained on cultural differences.

PERSON

The person that will go on this mission should be carefully chosen. According to RHDHV he or she should be over 30 years old and should have the capability to be independent, flexible and proactive. He or she should not only be able to check boxes which are preliminary determined but should also be able to spontaneously choose a better path if there is one. The person should have relationship capabilities and should set its ears open for information of its environment. He or she should be able to represent the company but the person should also be capable to inform persons about a certain amount of technical content relating to the firm its core business.

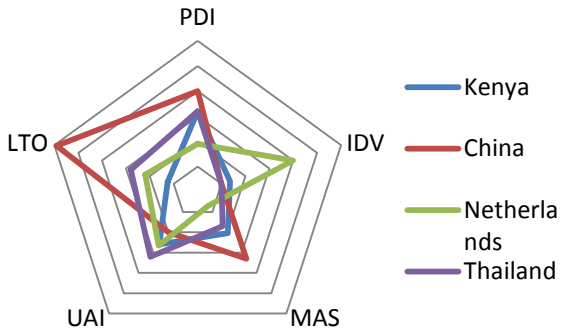
Another important aspect is to train this person on certain cultural differences. On this short mission it will not be a priority to select a person on these aspects but the person should be able to recognize those cultural differences and should be able to act in a certain way if he or she would find itself in an unknown situation.

Stepwise:

- Choose candidates that have successfully completed similar international assignments
- Prioritize candidates who are fluent in the language of the assignment destination
- Prioritize candidates with the technical knowledge as well as relationship capabilities
- Consider sending two persons instead of only one. Think of somebody of RHDHV Netherlands and RHDHV South Africa.
- Use intercultural adaptability assessment tools to train exploratory mission employees
- Provide a realistic Job Assignment Preview

CULTURAL DIMENSIONS (HOFSTEDE & HOFSTEDE, 2005)

The cultural aspects of the country should be acknowledged, as they are important aspects that could lead to better relations and management between foreign and locals. The person that will be sent on a mission should encounter some aspects on the situation by being educated on the cultural differences. Most of those training are based on theories of Geert Hofstede. Hofstede encountered five different dimensions that would separate countries on cultural terms. These dimensions are Power distance, Individualism, masculinity, uncertainty avoidance and long-term orientation, which are further explained in Appendix G. With these dimensions and experiences of other people, some communication tactics can be formed to effectively build up relations in Kenya.



	Kenya	*Tanzania*	*China*	*Netherlands*	*Thailand*	*Indonesia*
PDI	64	70	80	38	64	78
IDV	27	25	20	80	20	14
MAS	41	40	66	14	34	46
UAI	52	50	40	53	64	48
LTO	25	30	118	44	56	

TABLE 26 CULTURAL DIMENSIONS (geert-hofstede.com, 2013)

Here are some examples of how these cultural differences could be practiced in Kenya.

- Do not expect subordinates to take initiative
- Show respect to people you meet that are high up the ladder
- Note that people have huge responsibility towards their family
- Praise the team instead of individuals
- Help people understand the long term profitability
- Short term incentives will motivate employees more than long term incentives like bonuses or chance to promote in about five years or more
- Kenyans are multi-tribal; avoid talking about it because some people feel their tribes are stereotyped. It is not a good idea to talk about politics if you don't know the people well for the same reason.
- Talk about education if they seem to have a high education. Education is highly regarded.

TIMING

The mission should be organized around an event that could be important to encounter new relationships in the specific industry.

An example is the Kenya's premier Food, Hotel & Agriculture exhibition that returns to Nairobi from 04 to 06 October 2013. FOODAGRO AFRICA 2013 will showcase top products, equipment and machinery presented by exhibitors from over 20 countries.

Costs

The exploratory missions are commonly done with two persons instead of one for the obvious reasons of getting in touch with persons more easily. Two persons in practicality obtain better network results if they would attend a conference or meeting. Next to that the needed technical experience and relational capabilities could more easily be spread on two different people than finding both aspects in one person.

Kenya by two persons

Kenya will have to be explored by two persons. One person with a heavy salary and one person with a light salary will do the exploratory mission. The daily subsidence allowance depends on the country and is €300 a day per person. The budget that has to be cleared for this trip is €27,000. The costs before actually acquiring a project are estimated to be €46,200.

	costs	***activities***
Market analysis	€4000	Four days
Clients & Partner search	€ 3000	Three days
Exploratory mission 2p	€ 13.000	(5 Days) Salary 130*10*5*2
160/h= Heavy P	€ 3.000	DSA 300 * 5*2
130/h= Medium P	€ 4.000	Ticket *2
100/h= Light P	€ 27.000	
Proposals	€ 15.000	(2 proposals lost before win)
Total	€ 42.000	
+10% Contingency	€ 46.200	

METHOD ANALYSIS

By this estimation you can put into perspective how much such a mission can cost the company and how much resources are committed to take this step. It is obvious that such a process is not taken place early in the IMS process.

Methods	***Information type***	***Objectivity***	***Resource commitment analysis per country***	***Related to specific industry & goal***	***Easiness of comparing data***	***Use of data for multiple goals***
Physical experience	Subjective; Physical exp.	Low	Very High	High	Low	Low

TABLE 27 PHYSICAL EXPERIENCE TESTED

The advantages of this method are:

- The data gathered during IMS and the country check can actually be tested in practice
- The country is fully experienced by the expert´s perspective
- Actual relations can be made and projects can be guaranteed
- Risks can be understood and can be considered from RHDHV´s point of view

The disadvantages of this method are:

- Very expensive and time consuming
- Quite subjective: the person(s) concerned will have to be trusted on their opinion

5.2.4 STEP 3: CHOOSING THE RIGHT ENTRY TYPE DYNAMICALLY

If Kenya is found to be very suitable after the mission, but no projects are won, the company will probably start with a representative office in the country. This representative office has a limited degree of independency, as it is not licensed to perform most of the jobs an engineering firm should be able to do. To do this, the representative office starts by creating alliances with one or several local partners who could provide these licenses. These partners should already have been approached during the mission phase of the internationalisation process. The main goal during this stage is to grow and especially acquire some big projects that will sustain the office duration for a longer while. Putting your name out there by realising some key projects is such an example. Another method is by increasing awareness on the food and beverage market industry as a whole towards clients and governments. In developing countries about 80% of fresh basic food products is lost during its way towards processing, which is one of the main problems in the food industry. Transportation and technology improvements can help this; a larger percent of the transported food will be saved. This could be a message to attract clients and help them, the whole industry and the whole country for a more sustainable process.

If RHDHV would set its selling price lower than the cost price, it might even be more profitable in the long run in this stage. The person in charge in this phase is also someone who has to be carefully selected on technical, relationship and cultural capacities.

During the stay in form of a Rep office, RHDHV will acknowledge its business and market environment thoroughly before making its next move. It is often after a key project that an engineering firm decides to grow in another form of entry type.

The decision of choosing how to enter the country is not an easy decision. To improve this decision making process, several scenarios have been developed. The further success and typical transformation of the company in Kenya will be dependent on environmental and market factors and can be considered more as an event than a business procedure. According to Godet (2000), the dimensions that should be chosen for the scenario analysis should be the ones that have the most impact and would be the ones that are most unpredictable. Some variables have an effect on which entry type a company should choose in a country. The two most important variables are demand and the country its threats defined by the World Bank. There are threats in **voice and accountability** (defined by military in politics and democratic accountability), threats in **political stability and absence of violence** (defined by government stability, internal conflict, external conflict and ethnic tensions), threats in **Government effectiveness** (defined by bureaucratic quality), threats in **regulatory quality**, threats by **rule of law and order** and threats in **corruption**. Out of these risks government effectiveness, regulatory quality and rule of land & order are the most important ones. A successful entry and its specific form will be determined mainly by risks and demand. The demand in Africa also seems to be very unpredictable. This is why these two dimensions have been chosen as scenario dimensions. These scenarios can be used by the person who actually will go on the mission or by the representative office holder. Based on their experience in combination with these outputs they can select whether they want to permanently enter the market joined, or alone.

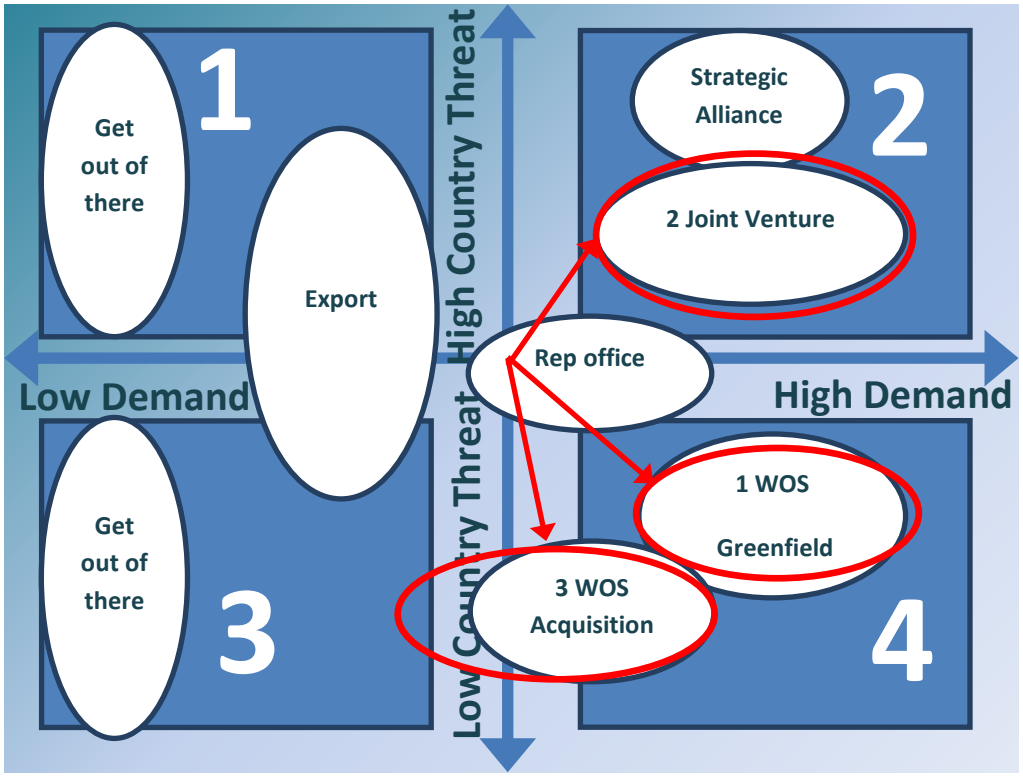


FIGURE 37 SCENARIO ANALYSIS

1 High Country Threat/Low Demand

The chances are slim for profitable business as a foreign entity. Don't invest in further growth of the entity if you started with a rep office. Even be prepared to end the representative office and acquire new jobs in the country solely based by operating in the Netherlands. Services will be exported out of Netherlands to the project site in Kenya.

2 High Country Threat/High Demand

If the country threat is quite high and the demand is as well, a Joint Venture could be selected as best way to operate in the country. All though demand is high and RHDHV would prefer to gain the profit solely, working together with employees and an organisation that has been operating a long time in this environment could diminish the risks to have negative effect on the profit and even the safety of the employees.

3 Low Country Threat/Low Demand

If there is no demand at all, it doesn't matter how comfortable the business environment is. The business will gain no turnover and it will simply be impossible to survive in this industry. If the demand is mediocre and the risks are low an acquisition can be a good option. In this way a starting turnover will be guaranteed together with a client portfolio. The initial 100% share buying could however be quite risky if the clients would for example leave the business if they find out that a Dutch company has taken over. Local employees can easily be kept together with their local knowledge and expertise. This means that the company doesn't suffer that much of a new environment because the local employees have been doing business here for years.

4 Low Country Threat/High Demand

This is the most desirable scenario for RHDHV. If the country threat is low and the demand is really high, the company might start up from scratch. This is often desirable for the company as they can influence the company without taken the old system into account, which can often be frustrating when acquiring a new company. As the demand is very high, the company could grow very fast. Starting from scratch is dangerous though because the local knowledge and client base is minimal.

Cost and Benefits Analysis of Alternatives under optimistic demand:

Three different forms of entity will then be chosen as alternatives to analyse further costs and benefits. These alternatives all differ from each other in form of initial start up costs, Risk costs of local knowledge, Turnover, Tax and the amount of employees and will be simulated with turnover and expense costs gathered from RHDHV's historical statistics and by interviewing experts on this matter. With this information we can simulate the estimated costs and benefits. These simulations are fully elaborated in Appendix H and are summarized in this paragraph.

1) Kenya Wholly owned Subsidiary Greenfield

In this scenario we will have to start with initial costs by a low level as this business will start with only 9 people in the beginning. The extra risks will have the highest level (10) as RHDHV will have to start on its own and will have to learn how businesses are done in this region. Off course the local staff will be able to help with that but in comparison with a Joint Venture or when you buy a local firm, you will have the biggest risk. This risk will affect the expenses by a percent of the turnover and will decrease every year, as the business environment will be experienced every year a bit more. The turnover in this situation is quite low in the beginning but will grow by a roughly estimated 80% a year. This will decrease eventually. With this amount of income, the company will easily be able to create jobs for more than 30 people at the end of 5 years. The company will be a foreign branch and RHDHV will have to pay 37% corporate tax.

2) Kenya Joint Venture 50%

In this scenario we will have to start without initial start up costs. RHDHV will have to buy 50% of the shares though. Companies in the consultant industry are averagely valued at 1.5 x annual revenue. In this case as RHDHV is seeking for partners that have a turnover of about $5mln and the shares bought will be a negative cash flow of -$3.75mln. The business will already have more than 37 people and two expats are installed immediately. The extra risk costs level will be relatively low as a lot of local knowledge will be remained. The turnover in this situation will start with the expected $2.5mln and because of shared client portfolios and a confident local client base this turnover will grow by a good rate of 20% per year. The taxes will remain low but the profits will have to be split every year. This might look profitable for five years, but this is a big loss if you could have had it all.

3) Kenya Wholly Owned Subsidiary; bought local firm 100%

In this scenario the entity will buy another company. The start-up costs of this process are more than the start-up costs of the other scenarios. Acquisitions cost time and resources. RHDHV will have to buy all shares, which will result in a negative cash outflow of -$7.5mln. Like the Joint Venture scenario, the entity starts with 39 people and increases to 61 employees with four expats after five years. The extra risk costs are percentually more than the

Joint Venture scenario as the former local owners will not direct the business with their regional business expertise. It will however be percentually less than the other wholly owned subsidiary scenario because some of the regional knowledge can be obtained through the different experts that were in the company before the acquisition. Like the Joint Venture the company starts with a turnover of $5mln but will only grow by 15% a year as some (local) clients will choose to stop doing business with the new company. The present value for 5 years is a bit more than the Joint Venture scenario. The present value for 10 years for example would however be significantly more than the joint venture if turnover increases. The turnover will not have to be split in half in this case.

Comparing the three alternatives

	WOSG	*JV 50%*	*WOSA*
Initial investment+ expenses for the first year	*-$350,000*	*-$4,200,000*	*-$8,500,000*
Profit first year	*-$50,000*	*-$1,700,000*	*-$3,800,000*
Expected Turnover growth	*Highest (Small turnover start) 80% in beginning*	*Medium (Keep clients) 20% annually*	*Lowest (Clients might run off) 15% annually*
Extra relatively Risk costs	*Highest (no local knowledge)*	*Lowest (High local knowledge)*	*Medium (Medium local knowledge)*
NetPresent Value after 5 years	*$1,800,000*	*$6,100,000*	*$8,300,000*
Breakeven point	*1.2 years*	*1.8 years*	*2.1 years*

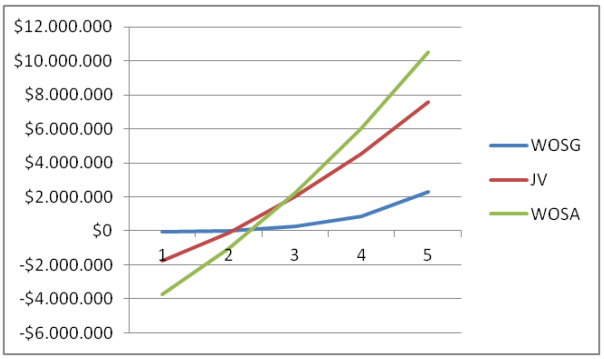


FIGURE 38 ACCUMULATED PROFIT

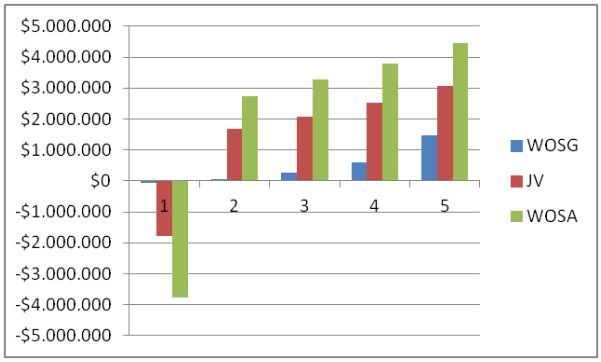


FIGURE 39PROFIT AFTER TAX

The first scenario, to start a company from start up is one that would be initially budgeted for $350.000 the first year. This depends obviously on how many people you will start with. But if you would start by internationalizing with mainly construction managers and project managers like the theory suggests, it is acceptable to allow the business to start with approximately eight people. Depending on how much turnover you will get in the next few years, the amount of employers will grow annually. This scenario demands the smallest investment and will therefore start with a small risk. It will take a while before the subsidiary will be able to get jobs from local entities and will depend on the clients RHDHV is familiar with right now. The other two options are much more aggressive. In this way a substantial investment has to be made, risking the initial investment by much more than the first scenario. However, the partners do already have a proven turnover and a client portfolio which will benefit RHDHV. If the demand will rise, which is very plausible according to the market selection, the JV or the WOSA options seem to be the ones that can deliver more profit in the first five to ten years. Another huge benefit with these two options is that the partner has a lot of local knowledge, which can be used in its advantage. The initial investment costs and the freedom to make decisions without regarding other stakeholders would be the main reasons to choose the wholly owned subsidiary from scratch instead of the other two.

COST AND BENEFITS ANALYSIS OF ALTERNATIVES UNDER A MORE PESSIMISTIC DEMAND (SENSITIVITY ANALYSIS):

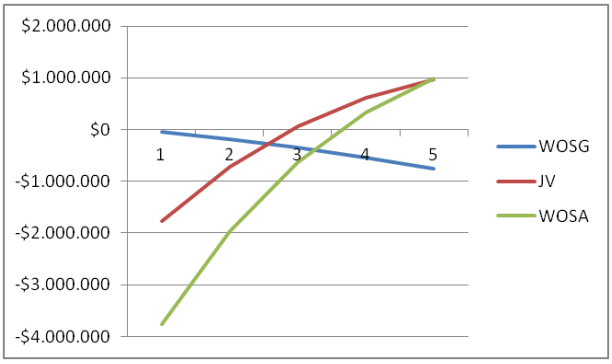


FIGURE 40 ACCUMULATED PROFIT

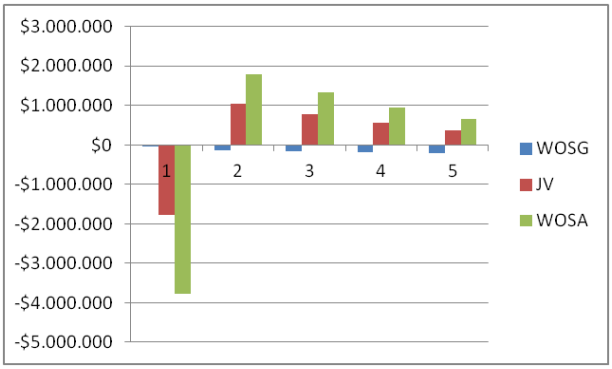
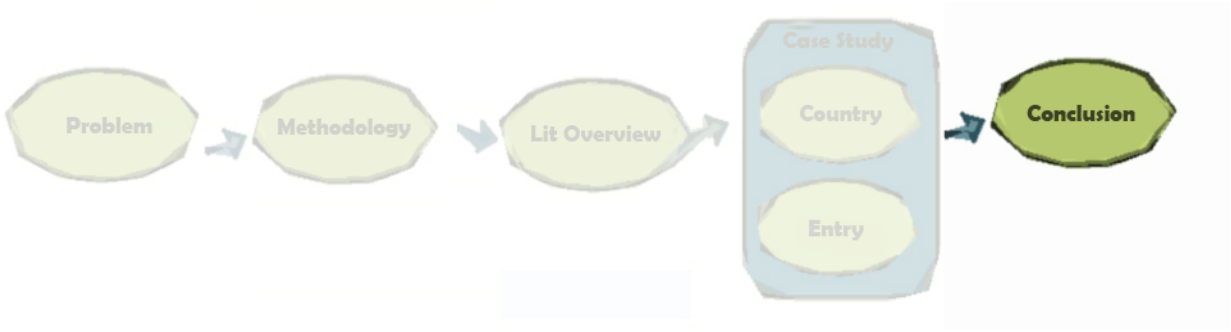


FIGURE 41 PROFIT AFTER TAX

In the more pessimistic scenario the demand will decrease by 20%. It is noticeable that the total expenses of a WOS from scratch for 8 employees are $350,000 annually. The company should therefore sale this amount as a minimum to break even every year. If this is not doing so like in this example, the company should reconsider to leave. The expenses for 40 employees under a joint venture are approximately $500,000, meaning that the whole company should collect at least $1mln annually to keep this amount of employees. This is the same in the 100% owned local firm. With a decreasing demand and with the estimated variables, the WOSG and WOSA would also be more profitable over five years. This simulation is however limited to the knowledge of a share value that is based on a turnover rate (1,5x turnover = company value). In practice, the profit or equity of a company is much more reliable and will define the initial investment. This could influence the cost and benefit analysis very much, especially the net present value.

6 Conclusion and discussion

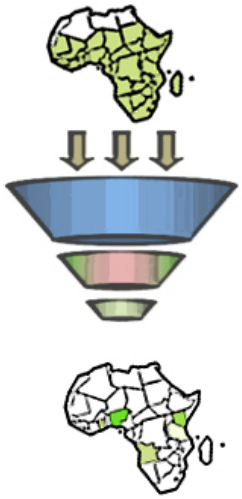


6.1 Decision Making Framework

Choosing the right country and entry type for a specific department in a company is a decision making process that can be done in several ways. In this research a decision framework has been created that is based on a couple of different techniques. According to Bouchet, Clark and Groslambert (2012) many different methods could lead towards a certain judgment depending on which industry your business is in. After studying literature about this topic hypothesis 1 was created, this implied that experience and "softer" methods would be more important in the engineering industry. Based on the case study and the interviews with the experts, the selection process should be supported by both rational and non-rational methods. Intuition and relationship aspects are definitely a good way to start looking in the right directions. But a decision maker cannot solely base its decision on their feelings. They will have to rationalise this to confirm their thoughts and to persuade higher management to acquire the budget for internationalisation. The researcher is trying to find an optimal way to process market selection that can be implemented by business developers. After actively experiencing a market selection method based on several methods, the observation has been made that the alternatives all have their own characteristics, advantages and disadvantages.

A combination of these methods is illustrated in Figure 42 as a process to answer the main research questions: "How does a Decision Making Framework for the Internationalisation of an Engineering Firm look like, computing international market selection and selection of entry strategy?"

In the proposed diagram several steps are presented:



Area Interest | As the literature stated, there has to be a motive for the company or department to internationalise. This step might already indicate which region could be interesting on a global view. In this phase the decision to internationalise will be made and from this point on the choice will be made to invest in further research on where and how this will be done. The resource commitment will start from here.

International Country Selection | During this phase the decision maker will try to find the best location to eventually settle and start a new entity. The countries will have to be benchmarked with other countries to have a relative idea of the markets so that the "best one" can be selected.

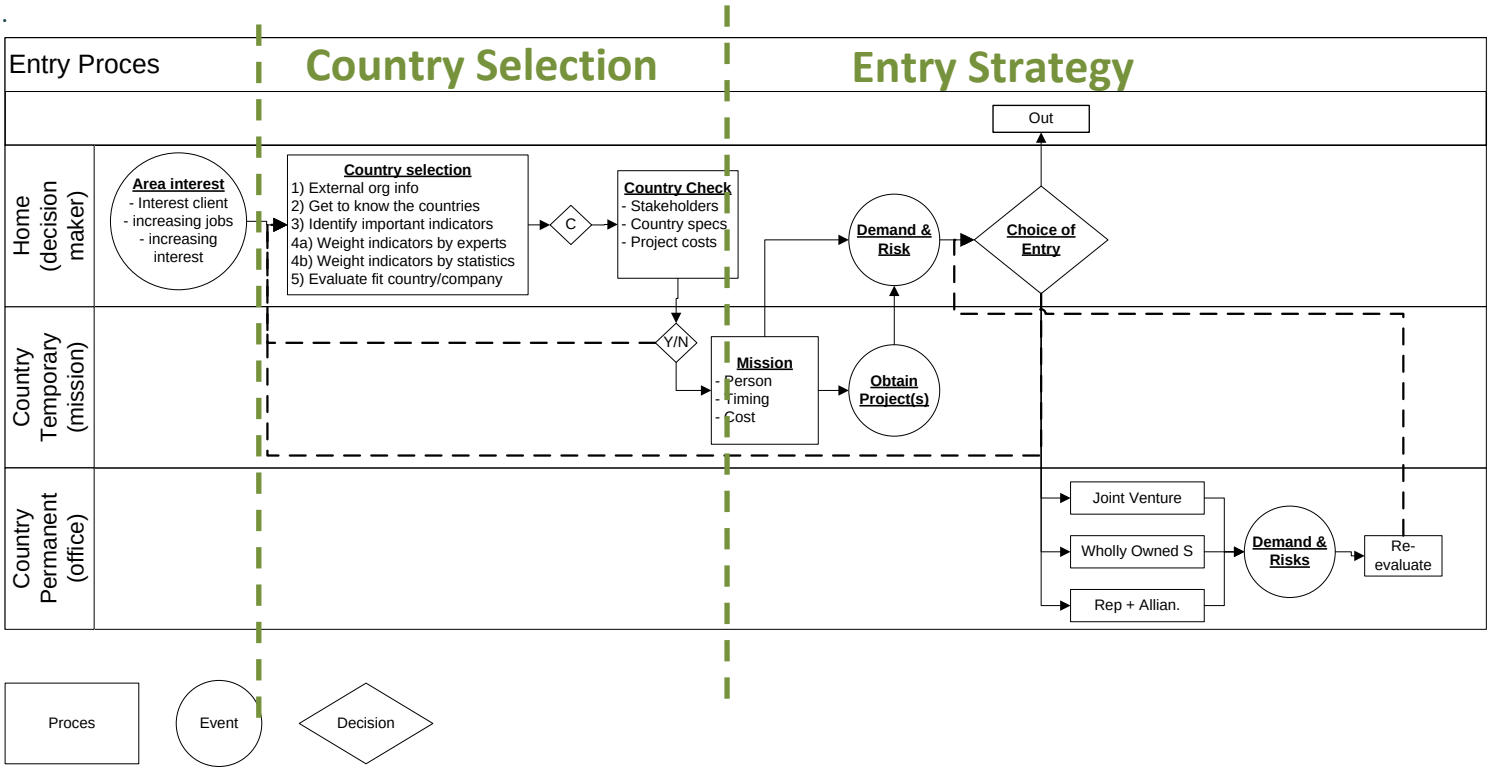


FIGURE 42 THE DECISION MAKING FRAMEWORK

This phase starts with methods that are less time consuming per country, like the method that uses external professional information, and gradually uses methods that require more resources per country. This proves the second hypothesis (Less time consuming methods should be used in the beginning) right. The decision maker will have the ability to analyse each country more specifically as a decreasing amount of countries will remain during this “zoom in” process.

An exception is made in the second step of this process, which is the qualitative step (Get to know the countries). This time consuming method is set in an early stage so that the decision maker will acquire the knowledge, so that the variables used in the next step will be chosen wisely and the statistics can be put into perspective.

The next action is that the decision maker will indentify which variables are the most important on how attractive a country could be for the specific industry. Some variables will be generally used like GDP but others will have to be selected for the explicit sector, like in this case the FDI in food.

From this point the decision maker will have two options to weigh these variables. The first one is to weigh them by experts in this field. The second one is a more complex one and will be used if the decision maker has acquired the statistical knowledge of multiple regression analysis. The advantage of the second method will be that it is more objective, but the disadvantage is that it is time consuming and the expert’s opinion is left out. An advantage of the statistical method is that correlations are found that can be used in many regions and many periods. This makes this method more dynamic than for example the qualitative analysis. The input of the statistical methods can also easily be used for other goals as has been shown in the example of project cost overdue and delay. This

confirms the hypothesis that a more dynamic country selection model can be made by the use of statistical methods

At the end of the international market selection a small amount of attractive countries will be tested on their fit with the company's coverage in this part of the world.

Country Check | The selected country will then be analysed on matters that require more resources. The stakeholders will be analysed as well as some country specifics. This process will be used by the decision maker for two reasons. The first one will be to assemble information as input for the next step, like for example knowing who to make appointments with during the mission. The second reason is mainly to function as verification system to confirm whether the country is really that attractive. If not so, a loop will be made and the last step(s) of the IMS will have to be analysed again for another country.

Mission | If the country proves to be attractive in the country check phase, it will be worth increasing the amount of resources to a much higher level. In this phase a person will physically experience the country. He or she will visit stakeholders and might even acquire a project. The person will be focussing on some risks and demand that might influence the choice of entry. The mission also functions as a verification system to confirm whether the country is attractive or not for the firm.

Choice of Entry | Based on an acquired project, country risk and demand the decision maker will have to choose whether to enter the country in form of a representative office with a temporary alliance, a joint venture or a wholly owned subsidiary. If the mission proved the country to be unattractive the country might not be entered at all. Hypothesis 5, stating that political risk & cultural differences & demand prospects are the most important variables to decide the appropriate entry type, cannot fully be accepted as literature study has proven that cultural differences have no influence on the entry type decision, although they do have effect on the persons who will go on a mission and the persons who will manage the entity. The experts confirmed this during the interviews.

Re-evaluation | The Scenario analysis makes it possible to use the same model after a while to re-evaluate the current settlement and if the political risk or the demand might have changed, the settlement should maybe do so as well. As the risk and demand can be quantified, the scenario analysis would be a good method to base the decision upon.

VERIFICATION & DISCUSSION

The decision framework was analysed and verified within RHDHV by the person responsible with the internationalisation towards Tanzania. This interview can be found in Appendix B.

It seemed that this decision making framework is a good way to base the internationalisation decisions on. But there are many other ways and orders to do so. Most importantly in this industry are the clients of the engineering firm. The model starts with mostly macro indicators of the countries and is not focussed primarily on where the clients are, which might be a better way to start the decision making framework. But this proves to be quite hard as these clients obviously have competitors and their strategic plans to focus on specific countries is far less transparent than the decision maker would want it to be. And the information that a client is momentarily set in a country does not by definition mean that this country is a success and more plants will have to be build. Maybe the client has an overcapacity and is not planning to upgrade its production for years.

The best way to know whether a country will attract new investments is to find the indicators that make those clients want to invest in the country. And this is why statistical correlation comes in handy. In this case obvious indicators proved to correlate best with these investments, namely GDP and house holding consumption. These

correlations could maybe even project the client's interest in a country before they would even know it. And that is what an international engineering firm could be aiming for.

As discussed earlier, there are two ways of entering a country. The first one is the safer option to enter a country only if a project is acquired. The second option is one that larger international firms are currently aiming on and that is to proactively enter a market before even working on a project to serve their clients when they want to enter the market or upgrade their position. The client will prefer to work with an engineering firm that is locally available. The statistical method is quite useful for this reason but it is not without a more qualitative analysis that a full perspective is created. A good example in this case is the level of education per country. According to the experts, well educated human resource is very important in this industry. RHDHV is currently noticing in developing countries that this can be a problem when engineering for their clients. A higher level of educated workforce can be vital for the existence of the entity and this is what makes Kenya so interesting. If we would look at the statistical correlation, we could not conclude that there is a very significant correlation with education or literacy. This is because these variables are tested on correlation with the market demand and not directly with entry success. This statistical conclusion could be misleading without any other information on the country.

Another point of criticism is that the firm's regional coverage is analysed relatively late. If RHDHV's fit would have been analysed in an earlier stage, some countries could have been left out right from the start and more firm related aspects would affect the decision making process in a positive way. It can indeed be concluded that the East-African region should be entered, looking solely at RHDHV's regional coverage. But the current model provides benchmark information on countries where RHDHV is already settled. This is a good system to compare other attractive countries with those already known by the firm.

During the decision making process the decision maker is striving to find certainty in the country selection he or she will make. The decision maker wants to be absolutely sure this is the best country to enter for this industry. But this certainty comes at a price, namely resource commitment. This is why it has been chosen to start with less time consuming methods to immediately focus on a limited amount of countries so that the same amount of time can be spend to analyse fewer countries more specifically. The best examples in this case are the "country check" and the "mission" that require more resources per country and are therefore being processed later in the decision framework. Obviously these methods won't be effective in an early stage.

Although the framework uses several dynamic processes, it still seems to be very systematic for a problem that is often processed more organically. This, however, motivates the decision maker to rationalise his or her thoughts with the benefit to find confirmation by the system in several ways. It also lets the decision maker know which methods he or she did not use and what kind of information they will oversee. Next to that the decision maker will have a more thorough argument to communicate and persuade higher management or simply to reason their decision in starting an entity in a specific country.

LIMITATIONS

The researcher has had the opportunity to analyse each country selection method himself with the case study to gain an optimal perception on how these methods work and in which order they perform best. During the entry strategy some of the steps could unfortunately not been experienced by the researcher himself and some of the information were based on historical information gathered by experts in this field. The trade mission is a good example where assumptions had to be made on the information that can be gathered during such a process as well as experiencing how relationships were build up from the start. It would have been more ideal if the researcher would have physically experienced the countries and or physically experienced a mission to put numbers and qualitative information into perspective. Nevertheless the information of the experts was very useful to simulate how these processes work.

The limited amount of scientific research on the internationalisation of engineering firms has made it difficult to compare this created framework with other decision making frameworks. There are numerous amounts of articles available, which explain internationalisation processes in the manufacturing industry. The service industry is, however, relatively unexplored or the studies are outdated.

During the literature review some methods are selected that are studied during the case study. Other methods like the artificial neural network method are being left out due to the scope of this research. The research would definitely improve if all methods would be analysed to gain a full understanding which methods would be best but the thesis would than extend the rightful amount of time a thesis originally requires.

During the statistical correlation method some independent variables were tested on some dependent variables. These dependent variables would optimally have been the sales made by RHDHV in the countries where they would have started an entity. In this way the correlation of some variables could be found with the amount of sales RHDHV would have had in a country. Unfortunately and especially because of the recent merger between Royal Haskoning and DHV these figures were not fully available. This is why the researcher chose to use market potential indicators like foreign direct investments in food and beer production.

The scenario analysis is rather introductive instead of being a fully elaborated analysis where demand and country threats could have better been quantified. With these quantified dimensions a better perception would have been created on where Kenya lies at this moment and which entry type should have been chosen. Now the system shows that this analysis can provide the decision maker of using this method at anytime while these dimensions obviously change in time, therefore being a dynamic method that can also be used as re-evaluation.

6.2 CASE STUDY AFRICA

6.2.1 COUNTRY SELECTION

The different methods resulted in five countries that were highlighted as more prosper than others in the light manufacturing industry. These countries are Nigeria, Ghana, Kenya, Angola and Tanzania.

The most important country at this moment by a remote distance is Nigeria. The country has an enormous population and attracts a large amount of foreign direct investments annually because of its large oil reserves and the country is actually diversifying and increasing its capacity in other industries, especially the light manufacturing industry. The most important clients of RHDHV in the light manufacturing industry (Heineken, LÓreal, Coca Cola, Pepsico, Procter & Gamble) are all heavily active in this country. As was concluded by the statistical analysis, GDP, household consumption and population are very important indicators. This is mainly why Nigeria is important despite the great political risks and the unsafe environment. Next to that comes Ghana which is very prosper in terms of potential demand and especially safety. The business environment is much better and safer than in the average African country. Angola is another interesting country which is rapidly growing in terms of GDP because of its oil reserves. The country is developing quite fast and it is therefore important that RHDHV will keep monitoring Angola in the near future in how it grows and develops. The unfriendly business environment makes it difficult for businesses to develop themselves in this country at this moment and the risks and inequality make this even worse. Kenya scores great if we would look at the general macroeconomic, political, social and technological factors. In the food and beverage industry this country is far more developed than its neighbours. The distribution network is more developed as well as its human resource. The big players in the food and beverage industry all have their head office in Nairobi and all see this country as a potential goldmine in this sector.

6.2.2 ENTRY STRATEGY

The market analysis led to a conclusion that the market in Kenya is quite active in the light manufacturing industry. Some multinational affiliated clients have recently based their head office in Nairobi and others have made extensive investments in the region, proving the attractiveness of the country. The somehow relatively low amount of competitors in this region gives RHDHV the chance to be an early entrant however Aecom has recently bought a local company and should be considered a real threat. To strengthen the position of RHDHV in Kenya and to make it easier to jump in the market, RHDHV would have a couple of options to partner up with a company. The company should at least be able to deliver services as construction management and project management as the engineering work can be produced in the Netherlands itself. One of the companies has even been doing jobs for clients that RHDHV have worked for in the past. This would be a great opportunity to recover some relationships and extend this even towards other countries. The negotiations would unfortunately be very difficult because of their position and the other party would have less reason to work with somebody who will profit more of the partnership than they will. Technological knowledge is however something that RHDHV could negotiate with, holding into account that the clients are constantly adjusting their quality and technology to the highest level. The country specific relevant elements like rent, wage and tax are also studied. It has been made clear in the country selection chapter that the Kenyan population is the best educated of whole Sub Saharan Africa. The wage is however more than for example Ethiopia. But in the engineering sector it is important to have educated and skilled employees to choose from. The multinational clients will demand some level of quality when it has other plants in other countries as benchmarks. This level of quality will more easily be met in Kenya than in the other countries. The domestic corporate tax is mediocre, compared with other countries, but if the entity is a full subsidiary of a foreign country the tax will increase by 7% making it more expensive than other countries. Although this should not be the main reasons, RHDHV should consider this if it will have to make a decision between a Joint Venture (Corporate tax: 30%) and a wholly owned subsidiary (Corporate tax: 37%). Office rent in Kenya seems to be one of the cheapest of Sub Saharan Africa making it attractive to be located in a central area.

The exploratory mission can be done with a budget of about €40,000. It is suggested that the exploratory mission is done by two people for obvious reason, namely this makes it easier to get in touch with people and to check on each other for safety, functionality. The trip will be experienced by more people, which can positively affect the objectivity of their perspective over country, clients, competitors and potential partners. The persons that will be chosen should at least be capable to relate to other people and should have technical knowhow to explain what the company can mean for them. They may, and even preferably, be different from each other in ethnic, gender and professional way. They should be independent and flexible enough to proactively choose the right path when the person sees one. The persons will have to be managed on cultural differences on how to interact with persons there and prepare them on what they might expect. Kenyans for example don't show affection in public for example and are very related with their family which can mean that for that reason they will be absent of come too late to an appointment. These are aspects that should be understood before going there.

If after the exploratory mission an opportunity will be presented to RHDHV in form of a job or several jobs that would provide more than $700,000 (2 years of minimal investment) in turnover, RHDHV should think about (partly)buying or starting a permanent entity. If the country seems prosper but a job cannot immediately be obtained, especially when clients expect you to be locally present, RHDHV can choose to build up a representative office where two people would for example be employed and where rent would be minimal. This could be budgeted for about $50,000 for the first year and $35,000 annually after that, when no more initial costs have to been made.

If RHDHV did manage to get a project before or after opening the representative office, it can choose to enter the region on a more permanent basis. If the budget is constraint, which it might be because engineering firms might find themselves in a rough period at this moment or if the company wants to have full control and keep absolute technologically quality on a certain level, it will probably be the best option to start an own company. The number of employees will be around 8 people and the initial investment will be $350,000 the first year. If the exploratory mission will conclude that the business environment is absolutely good and that RHDHV could have a lot of potential in the near future, RHDHV should actually buy a company or join one to have full access to the market in a shorter amount of time before anybody else does. An annual turnover will then already have been made and a client portfolio is already within reach. The joined or acquired company will know the local market better. This will make it less risky for RHDHV to do business in this country. The initial investment will however be an estimated amount of $3,8mln for the Joint venture for a company with an annual turnover of $5mln and $7,5mln to acquire 100% shares. These are exclusive first year's expenses.

7 Reference list

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