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CONSULTING PROJECT FOR THE LUBRICANTS EXPORT DEPARTMENT OF GALP ENERGIA: GLOBAL MARKET ASSESSMENT AND REDEFINITION OF THE INTERNATIONALIZATION STRATEGY

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ABSTRACT

The subsequent report is aimed at describing the group project conducted under the Management Consulting Field Labs initiative. It consisted of, as the name indicates, a consulting project completed by four NOVA SBE's students for the Oil and Gas Company Galp Energia (Galp) on its Lubricants Export Department (Export Department).

The project's main objective was to develop a global market assessment and redefine Galp's Lubricants Export Department internalization strategy.

In order to respond to the Company's needs, having in consideration the dimension of the scope, a high level approach was adopted. Furthermore, the close relationship with the client was critical in order to develop a project that matches the Export Department's specific needs and therefore creating value for the client.

Keywords: Consulting, Galp Energia, Base Oils, Lubricants, Internationalization

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EXECUTIVE SUMMARY

This document is intended to be a Master Thesis, which is the equivalent to a Work Project report of a team of four students, under the initiative of the Management Consulting Field Labs. The team had, in this sense, the opportunity to assist a Portuguese Oil and Gas Company, Galp Energia, in issues typically tackled by consulting firms.

During three months, the group had the chance to develop a project, working directly with the client on a daily basis. The assignment's final objective was to prepare a global market assessment and redefine the internalization strategy. The first phase consisted in a thorough analysis of the global market of the two products commercialized in the Lubricants Export Department (base oils and lubricants), which supported the recommendation of the potential attractive markets.

The present Master Thesis will be divided into three main parts according to the consulting methodology: Situation, Complication and Solution. In the first one, the authors provide a brief introduction to the Theoretical Context of the project, followed by the Company Overview.

In the second part, the client's challenge is addressed. In the last of the three crucial parts of the thesis, the team explains in detail the final deliverables that have been developed throughout the project, namely the Global Market Assessment, the Geographical Potential Tool and, finally, the Internationalization Framework Tool.

Additionally, there are three sections that were not included in the previously mentioned framework. Firstly, the information regarding the quantitative value added of the project is provided in order to materialize its impact on the client's business. Secondly, a summary of the solutions developed and the outcome of the project are presented. Lastly, one individual report is developed by team member that contains their individual contribution to the project as well as some personal reflections regarding the learnings of this experience.

1. SITUATION

1.1 Theoretical Context

Prior to describing in detail how the Consulting Work Project unfolded, the team believes it is important to contextualize both the nature of the project conducted (i.e. the Management Consulting Field Lab) as well as the particular topics of the project (i.e. the definition of base oils and lubricants).

Management Consulting is "an advisory service contracted for and provided to organizations by specifically trained and qualified persons who assist, in an objective and independent manner, the client organization to identify management problems, analyze such problems, recommend solutions to these problems, and help when requested in the implementation of solutions[1]".

Likewise, regarding the Management Consulting Field Labs, its purpose for students is described as getting to "know, from first-hand experience, what management consulting is all about"[2] whilst having the chance to "put theoretical knowledge into practice and learn new methodologies and approaches"[2]. The initiative has also undeniable advantages for the Client, that can "benefit from high-quality and cost-effective management advice", while having "privileged access to a talented recruitment pool"[2].

From the very beginning, the team engaged in all phases of the consulting process by developing the initial proposal to the client (Exhibit 1) and the kick-off meeting presentation (Exhibit 2). Having the world as a starting point, the team managed to narrow the initial scope and dynamically redefine the internationalization strategy through solid problem solving. During the project, the team had the possibility to apply consulting tools in data collection and analysis, develop its own methodology and recommendations as well as designing presentations, all while inserted in a corporate environment. Additionally, the team had the opportunity to understand the

[1] **Greiner, L. and R. Metzge**r. 1983. *Consulting to management*. Englewoods Cliffs, NJ: Prentice Hall

[2] **Casquinho, Constança.** 2013. *Consulting Labs – Conducting real life consulting projects for real life clients*. Power Point Presentation. Lisbon: Nova School of Business and Economics

team dynamics in a real life situation as well as to diplomatically manage the relationship with the client.

As mentioned above, the authors believe it is fundamental to provide vital information on the two core topics studied in the project (i.e. base oils and lubricants), in order to develop the Theoretical Context of the project's scope of work.

Base oils is the name given to lubrication oils produced from refining crude oil (mineral base oil) or through chemical synthesis (synthetic base oil). These oils, when blended with other materials (additives) produce special purpose products such as engine oils (lubricants).

As explained above, base oils can be either mineral or synthetic. As mineral base oils represent currently 88% of the global base oil market, the team decided to focus the study on this product segment. Mineral base oils are subsequently divided into group I, II and III base oils. Group I base oil alone represents 58% of the market and is the base oil produced by Galp. The difference between base oil groups depends in the chemical processes used to refine the crude oil, and each type of group demands different technologies and investments.

Lubricants are the final product resulting from the blend between base oils (70-90%) and additives (30-10%). They can be classified into mineral, semi-synthetic or synthetic depending on the type of base oil used and its final purpose is to "reduce attrition, heat and erosion of two surfaces with relative movement between them[3]". Moreover, lubricants are produced with different specifications depending on their final application, being consequently divided into different categories: Automotive, Industrial, Marine, Process oils and Hydraulic Fluids. Since the Automotive and Industrial lubricants represent 65% of the global lubricant demand, the team chose to focus its study on these two main product segments.

[3] **Aires, Francisco L**. 2013. *Óleos Base Parafínicos e Lubrificantes*. Power Point Presentation. Lisbon: Galp Energia – Direcção de Exportação

1.2 Company Overview

Galp is a vertically integrated energy operator focused on exploration and production of oil and gas. Its business is divided into three segments - Exploration & Production, Refining & Marketing and Gas & Power. Its strategy involves taking advantage of the current and future dynamics of the Oil & Gas industry, namely the expected increase in oil and natural gas demand worldwide, and shift the strategic focus away from markets with higher economic slowdown, as is the case in Europe, particularly in the Iberian Peninsula[4].

The Lubricant Division is inserted in the Refining & Marketing business segment and Galp, through this segment, has an integrated refining system, consisting of two refineries in Portugal, with a marketing network of oil products primarily in Iberian Peninsula but also in Africa, on a smaller scale, namely and among others Portuguese speaking countries.

In one of the two refineries mentioned above, in the Oporto Refinery complex, Galp produces group I base oils as well as a wide range of mineral and synthetic lubricants. This wide portfolio of lubricants produced, ranging from Automotive to Industrial, Marine and Specialties segments, allows the Company to meet customers' needs from less developed markets to the most developed ones, with the highest requirements.

The Lubricants Export Department is responsible of seeking and acquiring new clients as well as to maintain the existing sales and promoting new ones. Currently the Lubricants Export Department is present in various countries in three continents[5] being the Angolan market the most important in terms of sales and commercial presence.

4 Galp Energia - Annual Report and Accounts 2012

[5] Africa, Asia and Latin America

2. COMPLICATION

This challenge arose since, currently, the Export Department members are not able to dedicate themselves to the study of the present lubricant and base oils situation as well as future worldwide trends. This is due to the fact that the nature of the job is very time consuming as it involves intensive research and allocation of human resources. On the other hand the available reports on the market that provide the information mentioned above are not a viable alternative to the solution due to high costs.

In addition, no specific methodology is being followed in order to identify countries that can be of interest for Galp to export to, something that the Export Department also wanted to implement due to their will to expand. Furthermore, the scope of this project is tremendous and a problem solving approach is needed in order to narrow down the world into a set of high potential countries and develop a framework that can be applied in the future. The client was unable to do so due time restrictions, as mentioned above, as well as a lack of expertise concerning management tools appropriate for structuring and developing an internationalization strategy framework.

Additionally, the Lubricants Export Department is a recent division of the company that used to, until approximately one year ago, be a part of Galp's International Department and some valuable team members are currently performing other functions.

3. SOLUTION

The third chapter of the current document is divided into Methodology (3.1) and Final Deliverables (3.2).

The Methodology constitutes the foundation that enabled the team to build the final deliverables. Those Final Deliverables are the documents containing the conclusions and recommendations consequent to the problem solving activity, are studies and tools that will contribute to further growth in the Exports Department at Galp. Hence, these documents add value to the Client, both in quantitative and qualitative terms.

3.1 Methodology

Bearing in mind the Complication that this project intends to solve, a structured script was built on three blocks that, together, allow the fulfillment of the purpose of the project, "Develop a global market assessment and redefine Galp's Lubricants Export Department internalization strategy".

Firstly, a deeper acquaintance of the core subject of the project (i.e. base oils and lubricants) was needed. For that, the team led an exhaustive online research, studied documents and attended sessions provided by Galp, being one of the sessions particularly pertinent since it was conducted in Oporto's Blending Plant[6], which allowed the team to acquire a perfect understanding of all production processes and flows.

After having a broader knowledge of the heart of the matter and in order to attend client's requests and needs, the team first conducted an in-depth study to provide, not only an updated overview of the global market of base oils and lubricants, but also to serve as a pillar for the following blocks of the project, namely the Geographical Potential Tool and Internationalization Framework Tool.

This study comprises three main topics. The first one consists in a macro analysis of the base oils and lubricants markets (i.e. demand, supply and installed capacity) as well as their future trends and behaviors. The subsequent topic, following a top-down approach, involves an assessment of the lubricants market by continents as well as a base oils continental market assessment and its distribution in terms of groups. Finally, and prompting that base oils' demand is hugely influenced by the

[6] The Blending Plant is one of the plants located in Oporto's Refinery Complex and where lubricants are produced. Base oils arrive at this plant and are here mixed with different additives in order to meet specific types of finished lubricants.

lubricants market, the team led an investigation on the industries that influence lubricants' demand and its geography. For a more pragmatic approach, and following the academic advices from Professors Luis Almeida e Costa and Luis Lopes, the team followed an 80/20 rule[7], focusing its attention on the two most important segments, the automotive and the industrial, that together represent more than 65% of the total market. The result contributed for a deeper understanding of the lubricants' demand evolution, future trends and geographical migration.

The second block consists in the development of a tailored-made tool to assist Galp to spot countries with great potential for its lubricants business. Having the world as starting point, the team followed a top-down approach, discovering at first place the most promising continents based on nine macro metrics related with the demand and supply of base oils and lubricants. Subsequently, the team started to restrict the number of countries, which constitute the continents with the greatest potential, to a shortlist of five countries per continent based on two metrics macro. This first treatment was suggested by Professors Luis Almeida e Costa and Luis Lopes due to the vast number of countries involved. Note that this approach did not damage the overall goal of the project once the team purpose was to spot markets with great potential and not the market with the most potential, which would be the optimal solution. For that it would be necessary to evaluate each country *per se*, which was not possible due to lack of information and time constraints.

Thereafter a second filter was made, to cut the shortlist to three countries per continent, through a deeper analysis, taking into account both the demand and the competition side, using sector specific information regarding the lubricant business.

Finally, with the objective to further analyze and score the list of the six countries defined by the previous filters, each of them was deeply scrutinized taking into consideration three main subjects: Country Overview, Total Market Potential and Competitive Pressure.

Each subject integrates several specific metrics and for each metric a score from 1 to 5 was given (1: lowest potential; 5: highest potential). Furthermore, each subjects' score was reached by calculating the average of each individual metrics' score. The final score for each country was finally calculated through a weighted average, in which different weights were given to each subject. Not only did this step enable the team to understand in detail the potential of the six markets, it also helped to narrow the scope for the coming step due the dimension of the project.

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[7]. **Rasiel, Ethan M.** 1999. *The McKinsey Way. Using the Techniques of the World's Top Strategic Consultants to Help You and Your Business*. United States of America: McGraw-Hill

The ultimate block comprises in the elaboration of a tailored made internationalization framework for Galp's Export Department. This tool was born by crossing two strategy frameworks discovered during team's research on this topic, Strategy Pyramid and the Pyramid of Purpose, with the internationalization methodology developed by Professor Luis Filipe Lopes, particularly adopted bearing in mind Galp's specificities and core competencies. Within the developed framework there were two types of factors that needed to be analyzed, the internal that are transversal to Galp's lubricants business and the external that are specific to every country analyzed. In order to obtain information regarding the internal factors online research was made, however, the main source of information were documents provided by Galp as well as informal interviews[8] to Refining & Marketing Department collaborators. The external factors were studied for the two countries with a higher scoring in the previous block, as will be explained in further detail in section 3.2.3. For the first country the only source for information was the Internet, and so it wasn't possible for the team to gather all the needed data without visiting it and understanding the reality of the market or having a contact present in the country. For the second, the presented methodology could not be followed since the company is already present in that market and so, the team decided to study the market's current situation as well as analyze Galp's position, through interviews and available company data. Then, a strategic objective was defined and tactics were designed by the team, following the marketing mix approach of the 4 P's[9]: Product, Price, Place and Promotion.

3.2 Final Deliverables

The team presented three documents as their final deliverables. The first, a study on the current situation of base oil and lubricant markets in a global perspective, as well as its expected evolution, allowed the client to have an overview of the global market of these two products, as well as to understand where it is moving towards, thus better recognizing opportunities and threats. The team also provided several conclusions and recommendations tailored to the client's features.

[8]. **Rasiel, Ethan M.** 1999. *The McKinsey Way. Using the Techniques of the World's Top Strategic Consultants to Help You and Your Business*. United States of America: McGraw-Hill

[9]. **Kotler, Philip, and Gary Armstrong.**2008. *Principles of Marketing*. 13th Edition. United States of America: Pearson

Secondly, a Geographical Potential Tool composed by different sector specific metrics allowed to screen the world and spot the markets with high potential. This document served as a powerful tool in assessing and spotting markets that appear more attractive for the Export Department.
The third deliverable developed was an Internationalization Framework Tool, tailored to the client's profile that helps guide the assessment of new markets, thus supporting the decision-making and saving time to market.
All deliverables were compiled for the use of the whole team of the Export Department within Galp's Refining & Marketing Business Unit, from the top management to the supervisors of the Commercial and Business Development areas.
Each deliverable will be further explained in detail and structured by *objective, value-added* and *description.*

3.2.1 Global Market Assessment

Objective

The objective of the Global Market Assessment is not only to provide a current overview of the global market of base oils and lubricants and the key trends for the future but to serve as a base for the strategic recommendations, Geographical Potential Tool and Internationalization Framework Tool.

Value added

All the information compiled in this research, along with the team's conclusions and recommendations provides the Export Department with a document that summarizes the current global situation in the referred market as well as future trends. This will contribute to a more informed decision making process regarding the future of the business unit as well as others department that related with this subject.

Description

This deliverable includes an analysis of the base oil market (main component of lubricants) and of the finished lubricant market.

Given the dimension of this scope the team used several methodologies to breakdown the analysis. A **Top-down approach** was used in the entire analysis, which means that the team started by analyzing a topic at a high-level and then developed it in more detail. Also the **80-20 rule** was used in order to select which topics were most relevant to the analysis, given that this is a vast subject with several components and implications.

For an easier and faster comprehension all analyses of values of volumes were presented graphically.

Starting with the base oil market, the team began with a **worldwide analysis** in which the global volumes of capacity, supply and demand were related (Exhibit 3), allowing the understanding if there has been over or under capacity since 2008. Moreover, a projection was made until the year 2020, which allowed to conclude that there is a global overcapacity of base oils which is forecasted to increase.

Given that, of the five base oils groups, group I, II and III represented 88% of the market in 2012 (Exhibit 4), as mentioned in Theoretical Context, the team studied these three groups in more detail, their historic values of demand and their evolution. It was found that group I is significantly decreasing in percentage of global demand but it is still very representative of the market (from 88% in 2008 to 45% in 2030).

An analysis (demand and capacity) **by geographic areas** (Europe, North America, South America, Africa and Asia Pacific) (Exhibit 5) and **by group** (I, II and III) (Exhibit 6 & 7) was developed in order to understand the differences among geographies and the base oil groups. The team created a graph showing the current situation and the forecasts for 2017 (Exhibit 8). With this analysis the team concluded that there is still **opportunity to invest in group I in Africa and Latin America**, since there is still demand not being met by capacity. Moreover the levels of capacity are not expected to increase. In addition, it is **too late to invest in the production of group II and III** given that the overcapacity in Europe, Asia and North America will persist.

A deep down analysis in the base oil **situation of Iberia** was also conducted aiming to achieve a more detailed overview of Galp's main market.

In order to understand the lubricant market a similar top-down approach was followed. Firstly at a global level (Exhibit 9) and then comparing geographic areas (demand and supply) (Exhibit 10). The team found that there are **opportunities in Africa and South America**, due to the fact that there is demand not being met by production. Moreover, **Asia** appears to be an attractive

continent given that, although demand and production are at similar levels, the lubricant demand in this continent is expected to growth modestly and will represent 60% of the global demand in 2020.

In order to understand the trends of the lubricant market a breakdown by lubricant use in terms of markets was done (Exhibit 11). **The automotive and industry represented 65% of the global lubricant demand in 2012** and so these two segments were selected as the most representative in terms of influence in the lubricant market.

Regarding the Automotive segment an overview of the market as well as forecasts were made. Also, an analysis that related the main drivers of change in the automotive industry with the lubricants characteristics and the consequent base oils composition was completed. With this research the team found that the governments and OEM's[10] (e.g.: Fiat, Volkswagen) are the entities that influence the evolution of lubricants in terms of their chemical characteristics and properties. Given the environmental and efficiency concern of these entities, the lubricants must possess three main chemical characteristics[11] to reach the desired performance. These lubricants cannot be produce with group I base oils, only with group II, III and synthetic. This global trend confirms the team's initial findings of the increasing importance of group II and III and the consequently decrease of group I.

It was also found that, although the trend previously mentioned is global, there are geographic areas that are less developed (e.g.: low GDP, low available income) with also less advance automotive fleet (e.g.: high average vehicle age) where the trend in question is not yet present. In these areas the type of lubricants demanded are the ones with lower performance that are produced using group I base oils. The geographic areas in question are, for example, most countries in Africa and Latin America. This conclusion is aligned with what was previously mentioned (the opportunity for Group I base oils in those countries).

Finally, to understand the trends in the Industry, the three main representative sectors in terms of lubricants consumption were selected (cement, mining and steel). A correlation between the changes per year of production in volume of these three industries, the lubricant demand in volume and the GDP was studied in order to access the relationship between these sectors and

[10]. Original equipment manufacturers

[11]. Low SAPS (Sulfated Ash Phosphors and Sulphur), high viscosity index and low viscosity

the lubricant market (Exhibit 12). After verifying this relation an analysis of the current situation and the forecasts in terms of geographic evolution of these industries was made.

Concerning the cement industry the team concluded that the BRIC, the Middle East and the Southeast Asia countries are the ones that contribute the most for the prosperity of this industry.

Regarding the mining industry, there are huge investment taking place in Latin America, Africa and parts of Asia.

Finally, in the steel industry, the key evidence is the importance of China, given that this country has increased its production by 300%. Also India is considered a very promising country in this sector due to public investments. On the other hand, there has been a reduction of production by 50% in Europe and North America due to economic stagnation.

In conclusion, the main trend in the industry market is the **global expected growth with shift to the emerging markets** (Asia and Latin America).

Furthermore, in both markets (Automotive and Industry) it was found that due to the **greater efficiency and durability required** by the OEMs and the industry in general, the potential growth volume of the lubricant market will be diminished.

3.2.2 Geographical Potential Tool

Objective

The objective of this deliverable is to endow Galp with a tailored-made tool that allows to spot countries with great potential for the Export Department, allowing both a qualitative and quantitative evaluation.

Value added

The Geographical Potential Tool created value in three different ways. First, it allowed to understand the continents with greater potential for the company as well as the countries within those same continents. Moreover, critical information that the company would need to gather to analyze those continents and countries was summarized and organized. Finally, the Export Department has now also an structured way to evaluate and compare other countries that seem relevant, being able to adapt the framework by and adding new metrics or altering the weight of each.

Description

The Geographic Potential Tool was a logical step after the study conducted, concerning the base oil and lubricants market, and taking into account the main objective of the project, "redefinition of the Internationalization Strategy for Galp".

Not having any geographic restriction as a premise and, therefore, the world as a starting point, the team first analyzed the attractiveness and the potential of each continent considering and weighing nine metrics (Table 1a). Each metric was valued with a score from 0 to 5, being the 5 the best, and a weight ranging from 5 to 15% (Table 1b). After the math, Latin America and Africa appeared as the most suitable continents to enter, with a score of 4 and 3.8, respectively, followed by Asia with a score of 3.3. North America and Europe, being scored with 2.1 and 1.6, respectively, are the continents with less attractiveness and potential.

Putting aside North America and Europe, due to its poor potential outlook, and Latin America, continent within the scope of Sub-Project A, the team focused its attentions on Africa and Asia and in their one hundred and twenty one countries. Due to the wide range of countries under scope, the pool of countries underwent by two filters based on two macro metrics[12] (Table 2 & Table 3) in order to reduce the number of countries and increase the feasibility of the analysis.

Once the countries' pool was reduced to ten, five per continent (Table 3), a deeper analysis was performed based on five sector specific metrics related with the lubricants business (Table 4a). After each metric for each country was scored, a weighted average was performed and the top 3 countries per continent were determined (Table 4b & Table 4c).

Subsequently, each one of the six countries still under scrutiny was further evaluated by thirteen metrics, and scored from 1 to 5[13]. The objective of further analyzing and scoring the top six countries was to narrow them to the two markets with the highest potential, in which the Internationalization Framework Tool will be applied. Not only did this step enable to understand better in detail the potential of the six markets and thus identify pitfalls that wouldn't be noticed otherwise, it also helped narrow the scope for the coming step.

Each of the top six countries was here deeply analyzed taking into consideration three main blocks, namely: Country Overview, Total Market Potential and Competitive Pressure. Each block integrated

[12] First filter – Top 10 countries per continent based on GDP; second filter – Top 5 countries per continent based on GDP growth. This cut-off was suggested by the team together with Professor Luis Almeida Costa and Professor Luis Filipe Lopes due to time constraints and approved by Galp Energia.

[13] 1: lowest potential; 5: highest potential

several metrics and the scoring system was maintained. Within its block, each metric had the same weight. The final score for each country was calculated through a weighted average, as each block had different weights. Finally, after completing this step (Table 5) the countries with greater potential were ascertained. **Angola and Thailand emerged as being the most attractive countries for Galp's characteristics**, with a score of 3.6 and 3.5 respectively. Morocco closed the podium with a score of 3.2 and followed by India, with 3.1. Indonesia and Nigeria were the countries under scrutiny with a lower score, 3.0. It is important to note that the countries were not rated in isolation but rather compared between each other.

The weights and metrics of each of the blocks will be following explained in detail.

Country Overview

Country Overview is the block with the most metrics, highest volume of information and highest level of accuracy in the information obtained and has thus a weight of 50%. This block contains eight metrics in total, which are: *Political Environment, Economic Situation, Relationship with Portugal, Distribution, GDP, Export Costs, Automotive* and *Industry* (the explanation of each metric can be viewed in Appendices - Description 1).

Total Market Potential

The second block of metrics rates the attractiveness of each market in terms of demand. It has a total weight of 35% since the team believed in its importance in assessing the level of potential of a market and also due to the amount of information that was possible to gather. It comprises three metrics: *Total Market Demand, Potential Demand* and *Demand Evolution* (the explanation of each metric can be viewed in Appendices - Description 2).

Competitive Pressure

The third and final block characterizes the six markets regarding the level of competitiveness and market fragmentation. Although it is still a very important and sometimes even decisive metric, due to lack of detailed information to draw more decisive conclusions, it was attributed a weight of 15%, as the team believes giving a higher weight could bias the final score. Some data about competition in each country was already gathered, nevertheless it remains fundamental to visit the countries in person or have a connection in the market that can provide more accurate

information. The metrics are *Top Players and Long Tail* and *Price Sensitivity* (the explanation of each metric can be viewed in Appendices - Description 3).

3.2.3 Internationalization Framework Tool

Objective

The objective of this deliverable is to endow the Export Department of a clear methodology for a deeper analysis of a country's potential in the lubricant market, as well as to choose and implement the most appropriate entry strategy in that country.

Value Added

The Internationalization Framework adds value to Galp given that the Export Department does not have a structured approach to evaluate new countries potential. Therefore, with this methodology, it will be less time consuming to assess the attractiveness of a market. Moreover, it will be easier to compare countries, in case it is necessary, with specific metrics of study established. Regarding Thailand, important information was gathered, decreasing the time to market in this country. Finally, in Angola valuable insights were made in order to increase the company's presence in this country and the information regarding the current situation was summarized and organized, something that hadn't been done so far.

Description

This framework is a combination of the **Strategic Triangle**, which was based on the Strategy Pyramid[14] and the Pyramid of Purpose[15] (Exhibit 13 and 14), and the **internationalization methodology** developed by the professor Luis F. Lopes, with some modifications. A a graphic representation on this deliverable can be seen in (Exhibit 15).

Regarding the Strategic Triangle the first part of the methodology, there are five items to analyze and define:

- The company's mission
- The business unit goals

[14]**Berry, Tim.** 2006. *Hurdle: the Book on Business Planning.* 6th Edition. United States of America: Palo Alto Software, Inc.
[15]**Mind Tools**. 2013. Mind Tools Ltd. http://www.mindtools.com. (Accessed 18th November)

- The objectives of the strategy
- The internationalization strategy
- The tactics to adopt

The first two are transversal to every country studied. However, it is critical to include them in this framework since any decision to be taken by the division has to be aligned, first with the **company's mission** and then with the **business unit goals.** (Exhibit 16)

After assuring this alignment the **strategic objectives** (the desired outcome of the internationalization) have to be defined. Moreover, it is critical to ensure that those objectives are SMART[16]: specific, measurable, attainable, relevant and time-bound.

The next decision is to choose the **strategy to enter** and operate in the chosen country. Regarding the entry Strategy, there are six suggested strategies (Exhibit 17a and 17b).

- Exporting through local agents
- Direct Exporting
- KAM[17] to large retailers
- KAM approach and local team of area managers
- Local production
- Partial or total acquisition of a competitor

Finally, the business unit has to define which **short-terms measures** will be taken in order to put in practice the defined strategy, the tactics. They should be organized according to the 4 P's methodology of marketing mix[18] into Product, Price, Place and Promotion.

However, it is impossible to define the final steps that were mentioned: strategic objectives, the strategy and the tactics without a profound knowledge of the market selected, as well to decide if, in fact, the company should expand to that market. Therefore, a **complementary instrument** to the strategic triangle was build, which can be divided into two parts: **internal and external factors.**

It is critical to note that the internal analysis is transversal to the various countries, unless there is a change in the business unit's strategy.

Starting with the internal factors, a division was made in five critical pillars:

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[16]**Kotler,. Philip, Gary Armstrong, Veronica Wong and John Saunders.** 2008. *Principles of Marketing*. 5th European Edition: Prentice Hall

[17] Key Account Management

[18]**Kotler, Philip, and Gary Armstrong.**2008. *Principles of Marketing*. 13th Edition. United States of America: Pearson

- Growth Opportunities
- Core Competencies
- Risk Profile
- Finance
- Business Model

In each pillar, more specific factors were detailed, as it will be further explained.

In order to assess if there are **growth opportunities** it is crucial to understand what is the company's current production capacity, the range of products that are available as the constraints of a geographical expansion, if existent.

Regarding the **core competencies**, it is imperative to infer if the company has the needed know-how for an expansion in terms of production as well as the ability to understand and adapt to the needs of customers that differ within markets.

To understand the company's **risk profile** the geographic flexibility has to be known as well as the ability and willingness to both produce in the selected country as well as to ensure commercial presence.

In terms of the **financial situation** the current position of the company has to be understood in order to evaluate its stability as well as define the openness towards investments as well the amount of these.

Finally, the current **business model** has to be studied so that the strategy and tactics are developed with a basis on the company's value chain.

After ending the internal analysis of the current competences, the external factors that are specific to each country have to be analyzed. A division was also made within them into five critical pillars:

- Market Structure
- Market Potential
- Barriers to Entry
- Customers
- Partnerships

First it is important to understand the **structure of the market**, which encompasses any particularities of how the market functions, how many players are present as well the market share of each. Then, a detailed analysis should be done to the main players, in order to

understand their positioning, prices, segments targeted, distribution channels as well as further important information.

Then, an evaluation of the **potential of the market** has to be done, in order to assess its attractiveness to the company. This includes the country's total demand as well as the gap between this demand and what is locally produced. Within this pillar another measures are studied such as the values per capita, that are important if the company is deciding between several countries.

The company also needs to understand if there are any **barriers to trade** that might difficult the entry and operation in that market. Those barriers can be tariffs to imports, limits regarding the amount of import as well as natural barriers.

Moreover, it is critical to study the **customers** to understand how the current sales are allocated to which segment as well as each of these segments preferences in terms of product specification, the price range of the products bought, the most common purchase locations and their response to promotion.

To finish this analysis the possibility of **partnerships** should be studied. Therefore, there is the need to assess the cultural fit between the two countries as well as understand if there are companies have complementary skills in important aspects such as distribution channels and market knowledge.

Applying the part of the Internationalization Framework Tool to Galp that is transversal to every country and starting with the internal factors the **main conclusions** are the following:

- The company has the ability to **produce more** than the current levels and there are no restrictions regarding this increase in any product. Moreover Galp has geographical flexibility;
- The company has a vast **know-how** in terms of production and experience in exporting and commercializing products in diverse continents namely in Africa and Asia;
- Galp is willing to set up a **commercial team** in the countries that desires to enter, however it is not willing to set up a new **production location** in any of these countries;
- It's financial position is favorable and stable, however the company is not opened to **large investments**;
- It has a solid business model that can be viewed in Exhibit 18.

Regarding the external factors, these were analyzed so that the company can, in the future define its strategic goals for each country, select and implement its strategy and tactics. Therefore these are following presented, separately.

Thailand

The study of the five critical pillars was limited in this country since there was **little information publicly available**, especially in the barriers to entry and partnerships topic. Therefore, there is the need to deepen the research as well as a visit to the country in order to understand the reality of the market.

Regarding the three other pillars, in the market structure we were able to have an idea of its concentration. In market potential we were able to observe the total demand and its gap with local production. Finally, Customers is the most complete pillar due to a study of customers' preferences in the Lubricant Thai market[19].

The main conclusions of the team's research were that the Thai market is on the top 13 countries that, altogether represent 75% of the global lubricant demand, it a **highly competitive and fragmented market and the imported lubricants usually aim at the high-end segment**. Moreover, customers value immensely promotion efforts, after sales service as well was price-quality relation.

Given the lack of information necessary in order to complete the strategic triangle, we opted to advise an entry strategy that was adequate to the market characteristics as well as to the company restrictions (unwillingness to make large investments and to produce locally). Therefore, the strategy chosen was **entry through local Agents**, also due to the Export Division's lack of market knowledge.

Finally, the team defined the key critical factors to a successful entry in Thailand. Those factors consist in the suitability of the **local partner**, the **marketing efforts** (that are crucial for a market where customers value brand reputation and sales force quality), to choose an appropriate **target segment** and finally, a coherent **price strategy**.

All the information, conclusions and recommendations on this topic can be viewed in (Exhibit 19a to 23)

[19] **Choo-Iead, Manee, and Wattana Keawpoolpakorn**.2013. "A Study of Factors Influencing Lubricant Purchases by Logistics, Mining and Construction Business Entrepreneurs in the Three Lower-North Thai Provinces of Uttaradit, Pitsanulok and Sukhothai" *SIU Journal of Management*, 3:101-112

Angola

In Angola we were unable to use the same methodology since Galp is already established in the country and, therefore, there was need for adaptation. Therefore the team started by understanding the market's situation in terms of segments, distribution channels and trends. Then the team evaluated Galp's current situation in the market, analyzing the products sold as well as the company's positioning in these, its customer base, and promotion efforts. Finally some important facts regarding the competitors were gathered.

In order to obtain this information online research was made however, as happened in Thailand, publicly available information was scarce and so, the main source for the information mentioned above were interviews to Galp collaborators that are currently in Angola and have a deep knowledge of the market.

The main conclusion of this analysis is that **Galp's customers are mainly in the industry segments** (70%) which does not mirror the market reality (80% Automotive, 20% Industry). Furthermore **the company is only present in the high quality automotive market** which represents half of the total market. In addition it was found that the company made few commercial efforts in so far.

After the analysis previously mentioned, our team assessed if there was a potential of growth in this country and, as we believed so, the strategic objectives for the expansion were established: a **growth in market share from 5% to 15%-20% in 5 years was suggested together with the client.** Subsequently, suggestions regarding changes in Galp's current marketing mix were made in order to achieve those objectives. The team's most important recommendation is to **create a low cost label to enter the low quality market**, which is not being explored. The reason for a low cost label is due to the risk of damaging the brand image since this is a market where the produced can be easily adulterated [20]. The information gathered, team conclusions and recommendations can be viewed in more detail from Exhibit 24 to 31c.

[20] In the low quality automotive market segment the product is sold in "cantinas" which are containers located in the suburbs. The products are sold without quality control and are often adulterated. This happened with Castrol, which is the second biggest player in the market when entering this market it damaged the high end segment. With the low cost label approach this risk is mitigated.

4. PROJECT VALUE ADDED

Although the qualitative value added of the project has already been described throughout this Masters Thesis, it is also important to monetize it.

This can be done by attributing to the work the team developed the average market value of such a Consulting Project: from 300 000 to 500 000 Euros21.

Alternatively, this value can be calculated by adding the value of each of the three final deliverables:

Regarding the Global Market Assessment (3.2.1), a report containing the same information and level of detail from Kline & Company22 has a cost of, approximately, 58 800 Euros.

However, when it comes to the Geographical Potential Tool (3.2.2), the Internationalization Strategy Framework (3.2.3) it becomes more difficult to quantify them, due to the fact that there is no benchmark. Moreover, their benefit is saving time to market in any country in which Galp intends to enter in the future which is hard to qualify.

To conclude, it is important to mention that, besides what was previously explained, a great result of this project was the share of knowledge regarding management practices as well as strategy models that the Export Department can use to develop, in the future, other methodologies to address different issues that may arise.

[21]This information was provided by the Lubricant Export Department

[22] Kline & Company is a provider of Consulting services, custom research and Market research reports and is particularly well-known for its Market research reports about lubricants and base oils

5. CONCLUSION

In conclusion, this project can be seen as a structured redefinition of Galp's Export Department internationalization strategy. The team was able to take the challenging and vast scope that is the global market of base oils and lubricants and through a solid problem solving reach business oriented recommendations and created dynamic frameworks. This development of intellectual capital created immediate value for the client and supports their wish of growth outside their current markets.

To reach this objective the team created three different deliverables. An analysis of the present and future global market of base oils and lubricants which concludes Galp to be more informed and prepared for the evolution of the market and the changes that are foreseen. It was also developed a Geographic Potential Tool that provided Galp a simple dynamic solution to spot potential markets for internationalization and which can be updated with the evolution of the market. Finally it was created, from scratch, a dynamic and tailored-made Internationalization Framework Tool to analyze in detail any market that the company found to be attractive.

These analysis and frameworks, created together with Galp's team, organize and structure complex information, focusing on the key factors and needs of the company. With the team’s contribution the department will know exactly what information to gather, how they should proceed to evaluate the potential of an identified country and how to define the export strategy.

Ultimately, this focus and guidance will increase efficiency, productivity, motivation and success for the Export Department, which will allow Galp to continue the growth in complexity and proficiency of its department.

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2. **Aires, Francisco L.** 2013. *Óleos Base Parafínicos e Lubrificantes*. Power Point Presentation. Lisbon: Galp Energia – Direcção de Exportação

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APPENDICES

Exhibit 1 - Initial proposal designed by the team

Management
Consulting Labs

real life projects for real life clients

Evolução do mercado de óleos base e lubrificantes – Alternativas estratégicas

Proposta de serviços de consultoria – Subprojecto B

Lisboa, 30 de Setembro de 2013

1. Entendimento da situação de partida

Dada a existência de projectos já elaborados através da parceria Nova e Galp Energia, acreditamos que está estabelecida uma colaboração *win-win*, de valor acrescentado para Galp e de aprendizagem para os alunos-consultores, no contexto de um desafio de negócio real.

Recordamos que os projectos passados enfocaram na redefinição da abordagem *à customer loyalty* em retalho, bem como no aperfeiçoamento dos seus processos e serviços junto do cliente (promovendo a retenção e fidelização dos clientes de Oil e Gás Natural, e a redução de custos internos). Os resultados obtidos pelos projectos anteriormente realizados foram considerados muito positivos.

Actualmente, o negócio de óleos base está a sofrer alterações significativas, sendo premente uma reavaliação da estratégia da Galp neste mercado bem como no mercado de lubrificantes. Estas alterações devem-se a diversos factores como a inovação tecnológica ou o *shift* geográfico quer da procura quer da produção.

Neste sentido, a Galp pretende enfocar o presente Consulting Lab **na Análise da evolução do mercado de óleos base e na definição da estratégia neste mercado e no de lubrificantes.**

2. Âmbito da colaboração

Este projecto tem como objectivo responder a duas questões essenciais:

- Como irá evoluir o mercado dos óleos base?
- Qual deverá ser a estratégia da Galp no mercado dos óleos base e lubrificantes?

3. Objectivos da colaboração

A proposta de colaboração aqui apresentada entre a Nova SBE, através do Consulting Lab, e a Galp Energia tem neste projecto específico o objectivo de definir a estratégia da empresa através de:

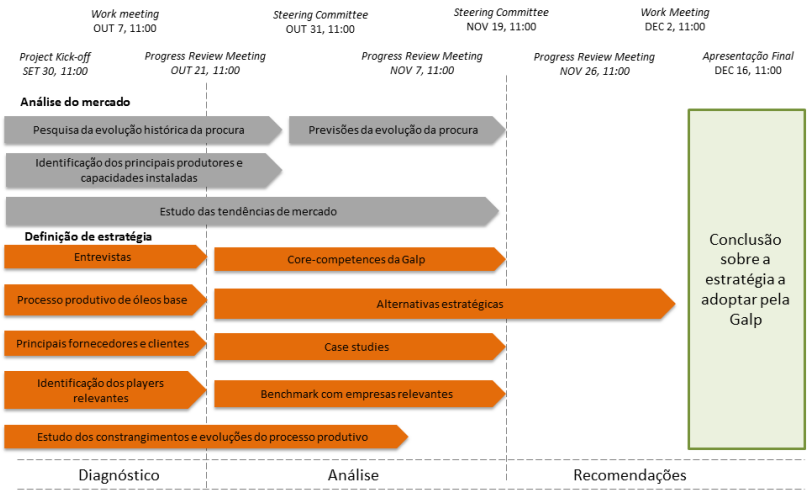
1. Análise do mercado de óleos base
    - Evolução histórica da procura e previsões
        - Geográfico
        - Segmentos e Industrias
        - Principais *players*
        - Temporais
            - Sazonalidade
            - Ciclicidade
            - Tendência

- Produção
  - Principais produtores
  - Capacidades instaladas
  - *State of the art*
- Tendências de mercado
  - Inovação
    - Tecnológica (processo produtivo)
    - Características do produto final
  - Legislação
    - Laboral
    - Ambiental

2. Recomendação da estratégia da Galp nos mercados de óleos base e lubrificantes
   - Análise de *case studies* de *players* proeminentes no mercado
   - *Benchmark* com empresas relevantes para a posição actual da Galp
   - Definição das *core competences* da Galp

4. Abordagem metodológica do projecto

De acordo com os objectivos identificados atrás e tomando como base o briefing realizado pela Galp Energia, a abordagem proposta (a aprofundar e redefinir, se necessário, após a reunião de kick-off do projecto) é a seguinte, em termos esquemáticos:



Actividades a conduzir pela Equipa

- Actividades de diagnóstico
    - Análise de mercado
        - Pesquisa da evolução histórica da procura
            - Geográfico
            - Segmentos e Industrias
            - Principais *players*
            - Temporais
        - Identificação dos principais produtores e capacidades instaladas
        - Estudo das tendências de mercado
    - Definição da estratégia
        - Entrevistas aos *key-stakeholders* da Galp (a identificar).
        - Entendimento do processo produtivo de óleos base. (visita à refinaria)
        - Estudo dos constrangimentos e evoluções do processo produtivo
        - Principais fornecedores de óleos base
        - Principais clientes de óleos base e lubrificantes
        - Identificação dos *players* relevantes

- Actividades de análise
    - Análise de mercado
        - Previsões da evolução da procura
        - Estudo das tendências de mercado
    - Definição de estratégia
        - Análise de case studies de players proeminentes no mercado
        - Benchmark com empresas relevantes para a posição actual da Galp
        - Definição das *core competences* da Galp
        - Alternativas estratégicas: elaboração de um modelo económico-financeiro

- Recomendações
        - Conclusão sobre a estratégia a adoptar:
            - Em que moldes será possível alcançar uma maior rentabilidade (com que produtos, para que mercados e em que segmentos)
            - Averiguação de alternativas com maior valor acrescentado

Principais entregáveis

- Estudo e previsão da evolução do mercado de óleos base

- Identificação das *core-competences* da Galp, no sector dos óleos base e lubrificantes.
- Alternativas estratégicas: Apresentação e recomendação
    - Quais os produtos, mercados e segmentos a focar

5. Calendário

Para a concretização dos objectivos definidos, foi estimada uma duração aproximada de 12 semanas de trabalho efectivo da equipa de projecto.

A metodologia proposta pressupõe a realização de 1 kick-off meeting, 2 Steering Committees (que têm como objectivo a apresentação e discussão dos principais resultados e a discussão das etapas seguintes dos trabalhos) e uma reunião de Apresentação Final.

Adicionalmente, e por forma a realizar um acompanhamento operacional dos trabalhos, deverão ser realizadas reuniões semanais de acompanhamento de projecto e que deverão envolver o principal interlocutor responsável ao nível da Galp.

6. Equipa para realização do projecto

De acordo com a metodologia de seguimento que foi seguida anteriormente, a Equipa Operacional para a realização do projecto será composta por alunos finalistas dos Mestrado em Gestão e em Finanças da Nova School of Business and Economics, assessorados por um Coach, Professor da NOVA SBE com uma larga experiência na condução de projectos de consultoria estratégica.

Exhibit 2 - Example from Kick-off Meeting Presentation

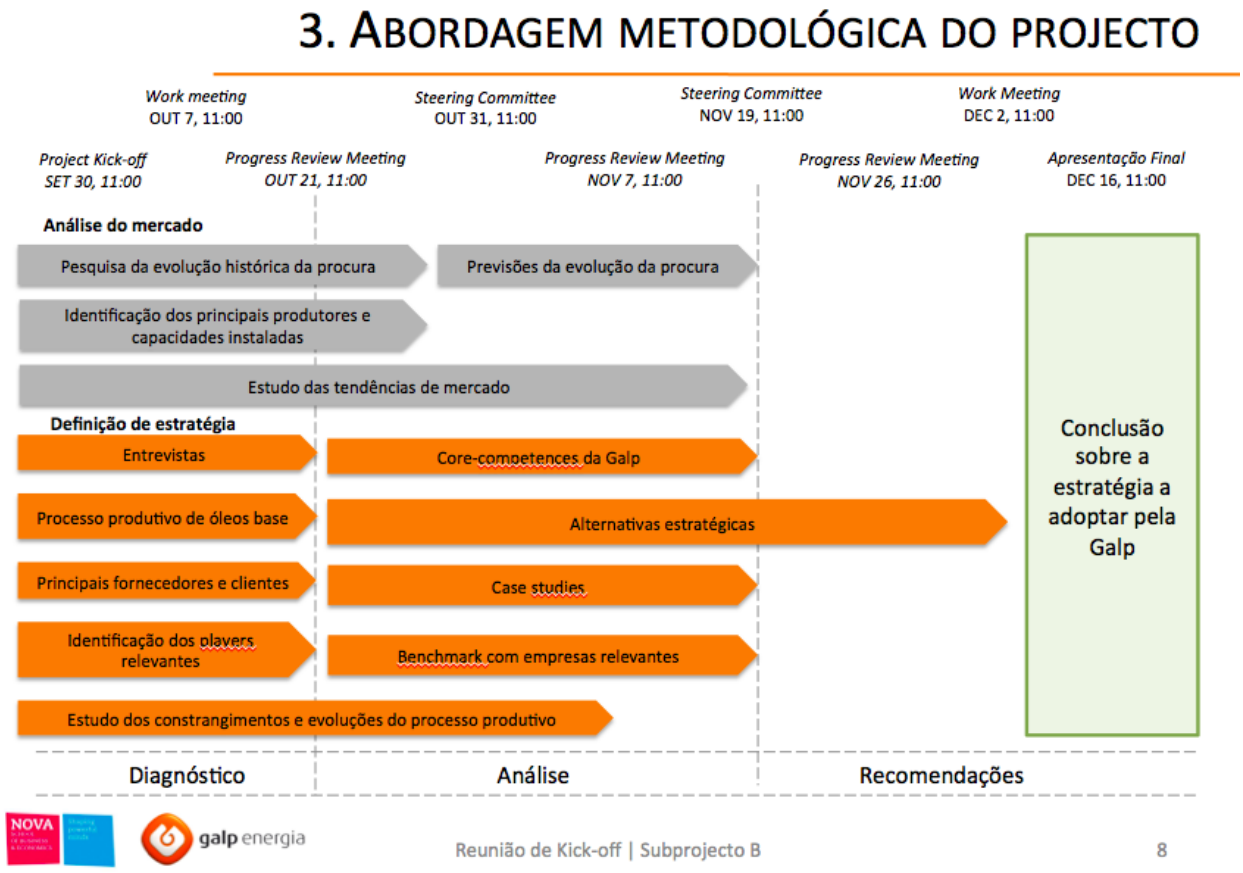


Exhibit 3 - Global Demand & Supply of Base Oils | Thousand tons per year

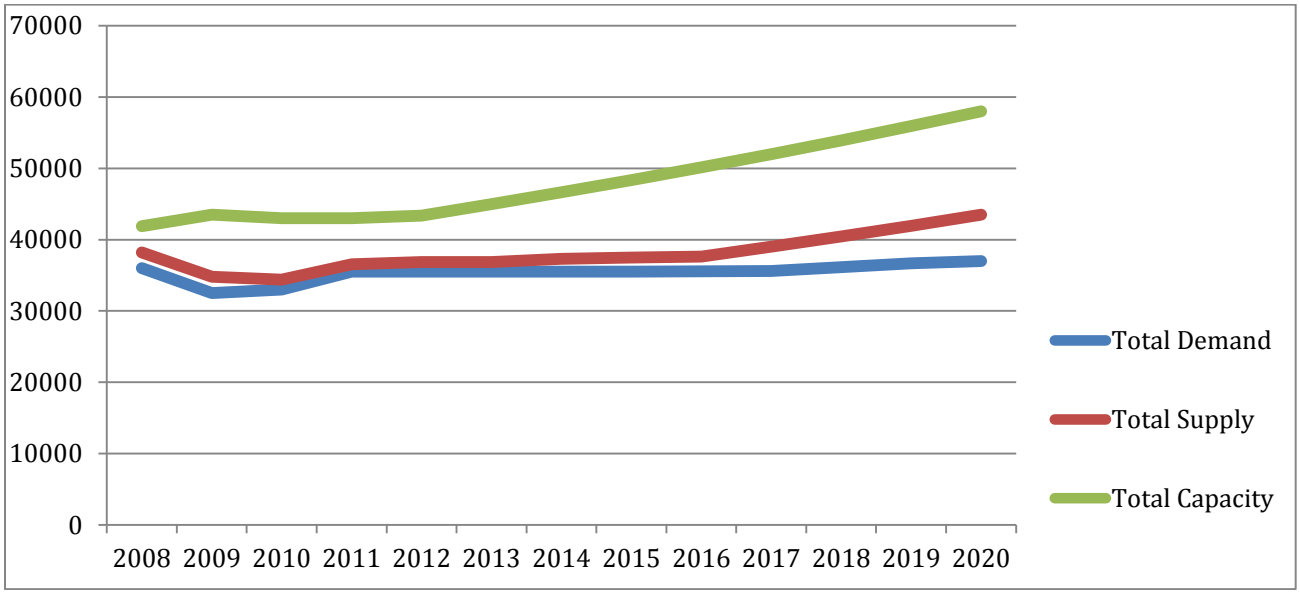


Exhibit 4 - Base Oils Demand by Group in 2012

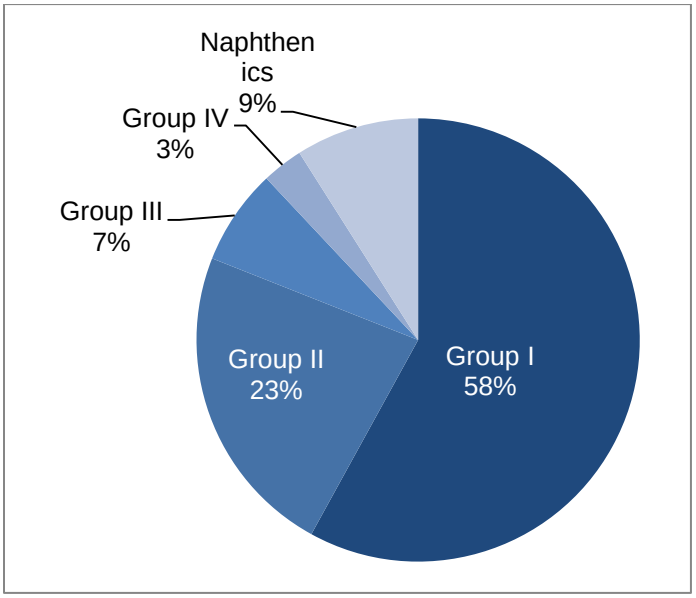


Exhibit 5 - Base Oil Market 2012 – Breakdown by Continent | Thousand tons per year

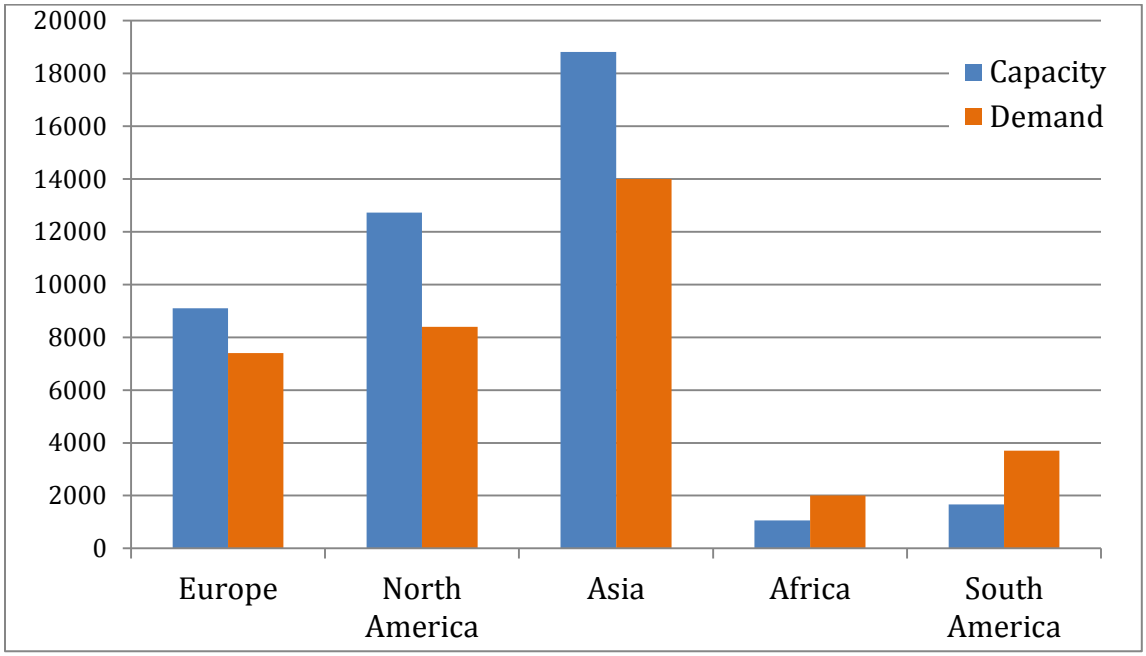


Exhibit 6 - Base Oil Market 2012 – Breakdown of Group I by Continent | Thousand tons/year

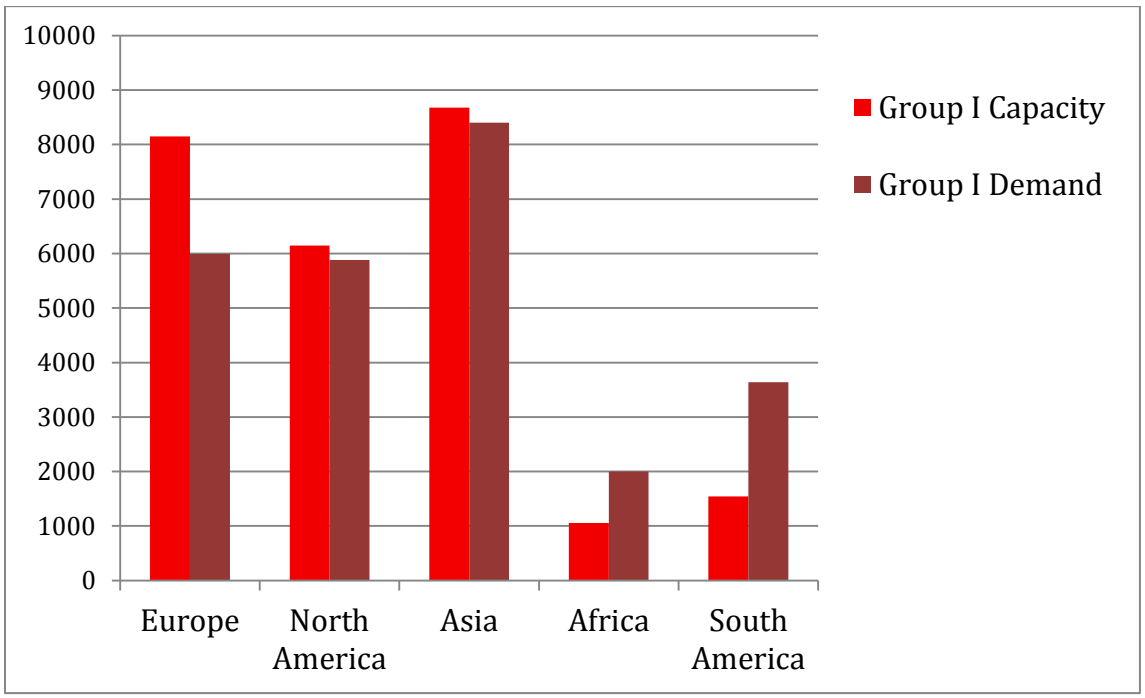


Exhibit 7 - Base Oil Market 2012 – Breakdown of Group II and III by Continent | Thousand tons/ year

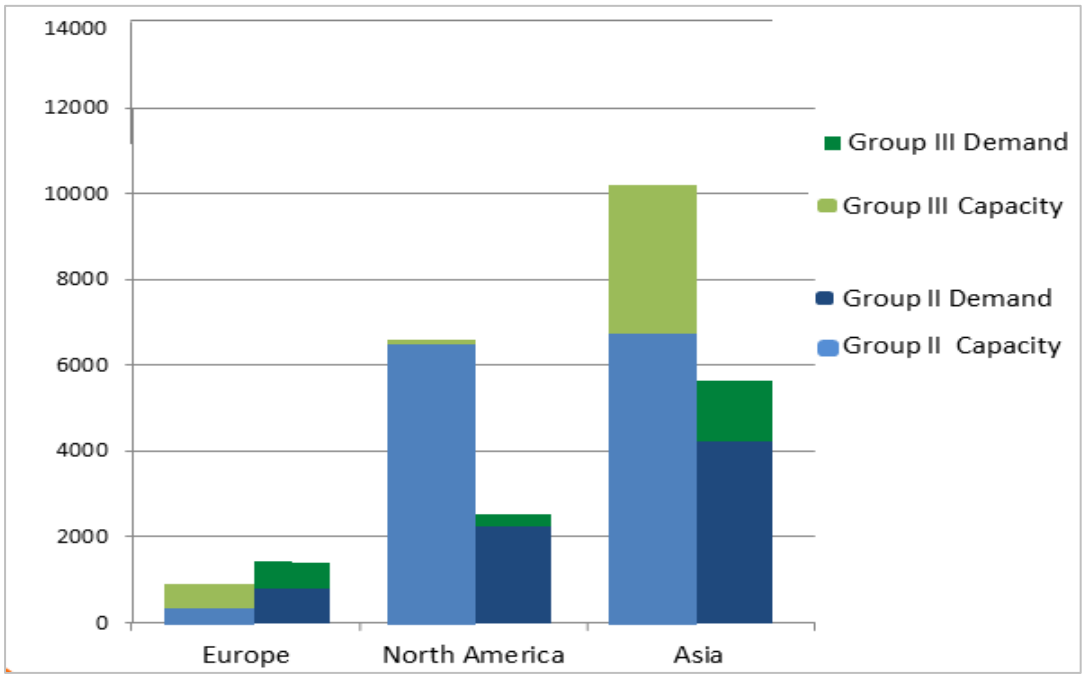


Exhibit 8 - Base Oil Market 2017 – Breakdown of Group II and III by Continent| Thousand tons/ year

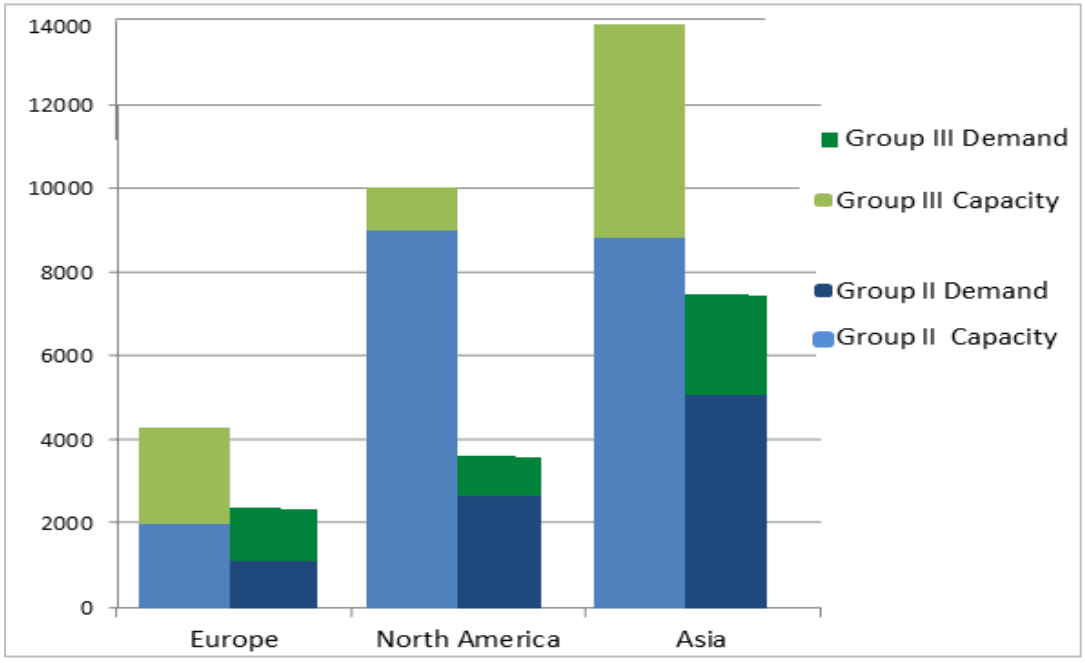


Exhibit 9 - Global demand and supply of lubricants | Thousand tons/ year

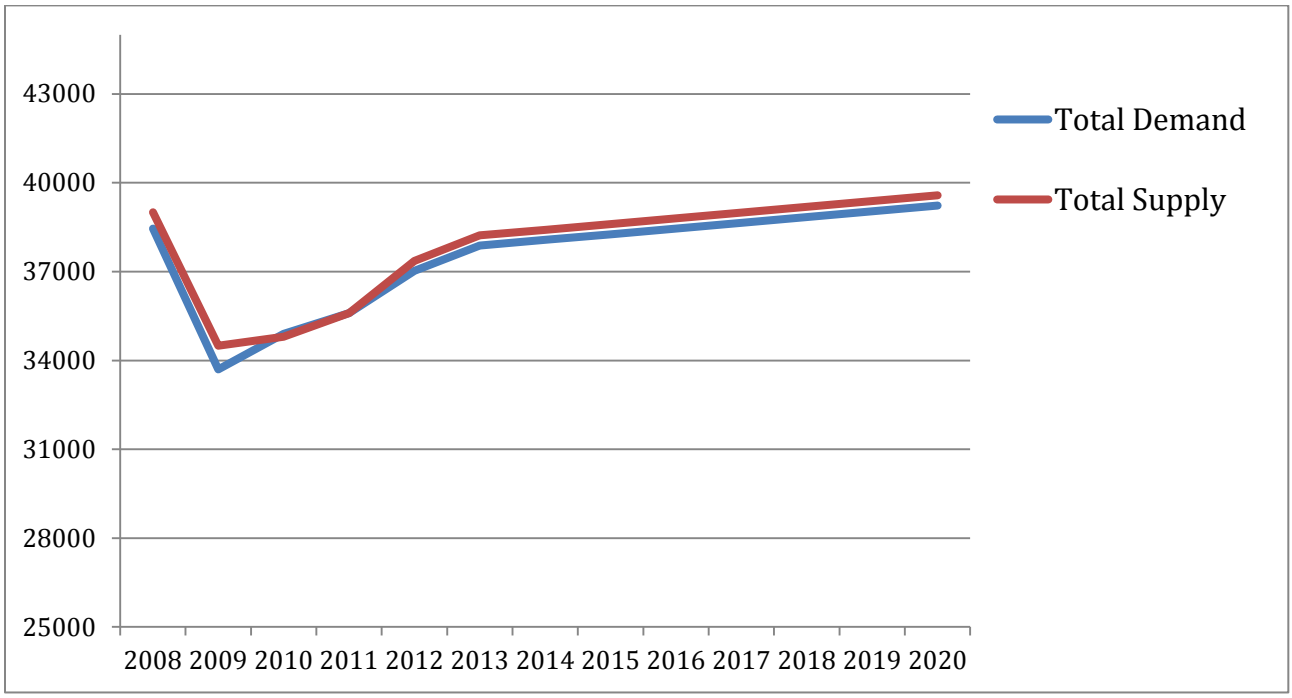


Exhibit 10 - Lubricant Market 2012 – Breakdown by Continent | Thousand tons/ year

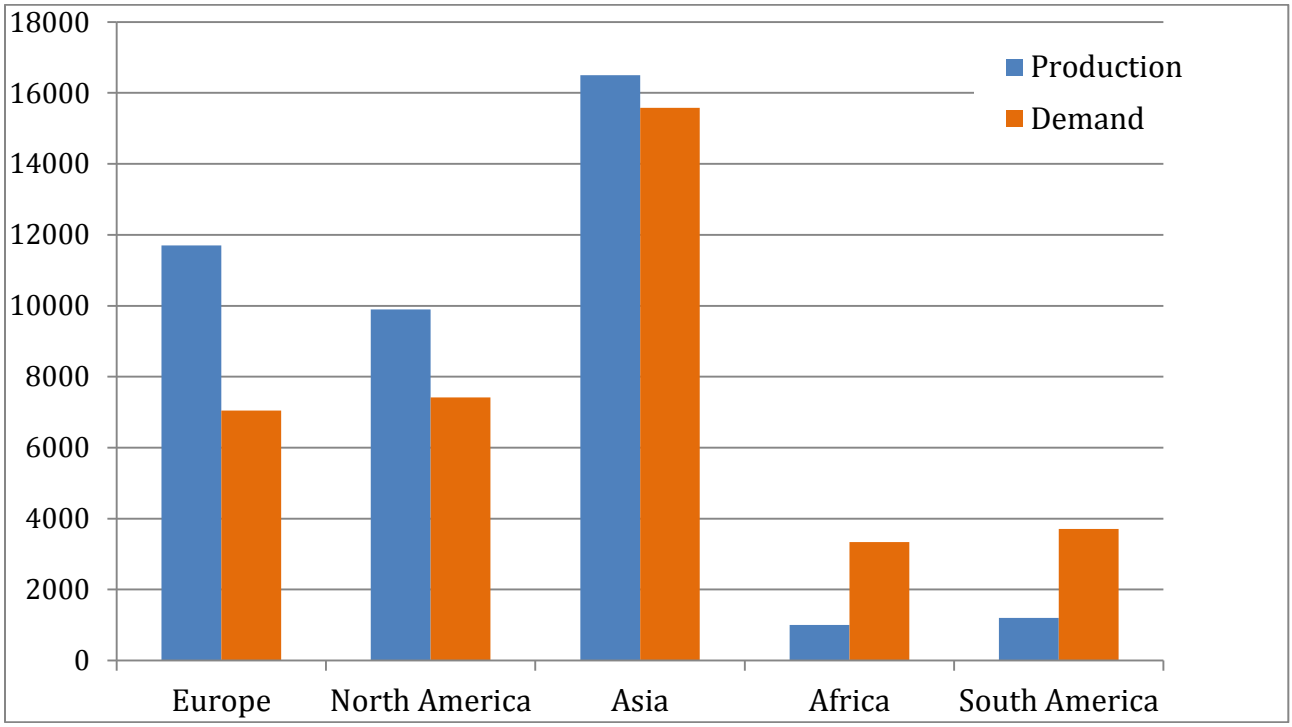


Exhibit 11 - Lubricants 2012 | Demand by Product

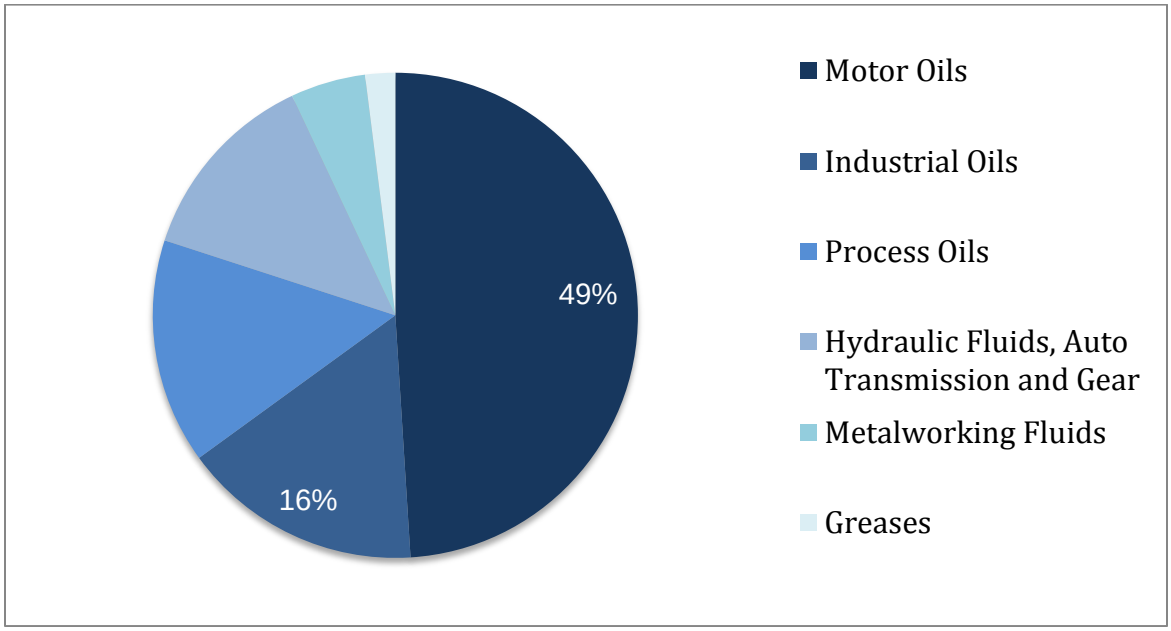


Exhibit 12 - Industry Key Sectors

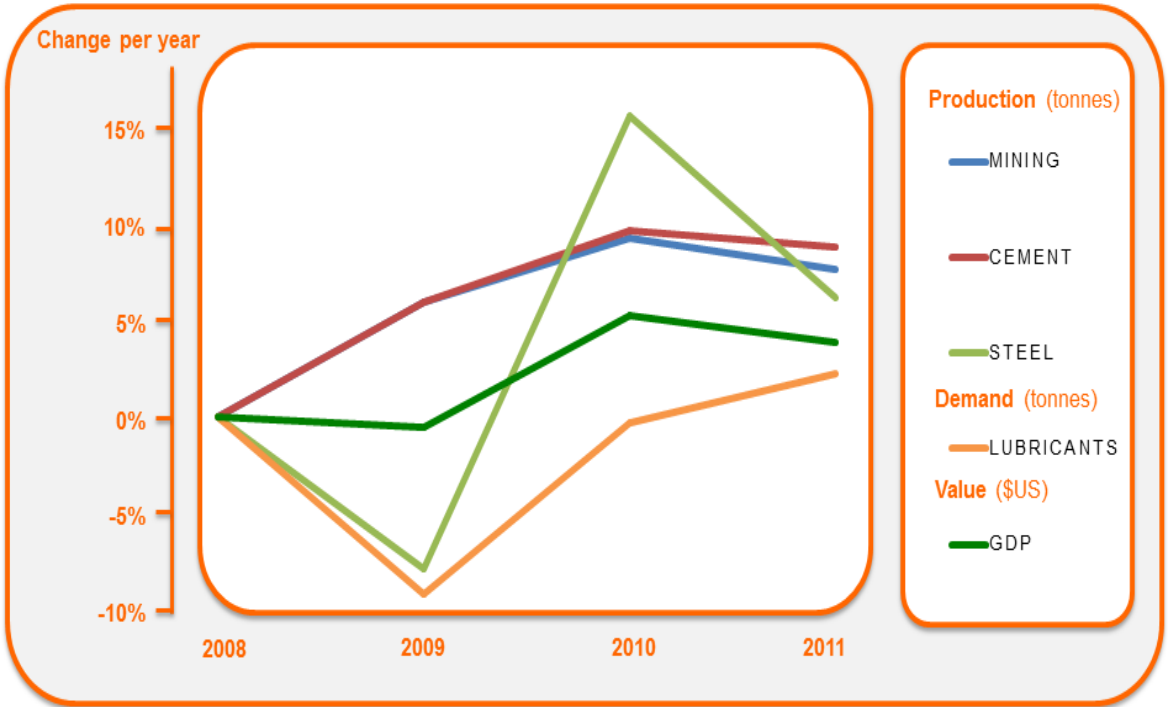


Table 1a – Continental Metrics description and weights

Metric	Weight	Description
1. GDP growth	**15%**	A measure of the rate of change that Continents' Gross Domestic Product (GDP) experience from one year to another.
2. Base Oil installed capacity	**15%**	Production capacity of all Base Oil plants installed in the Continent.
3. Lubricants demand expected growth	**15%**	A measure of the rate of change that Continent's lubricants demand will predictably experience from one year to another.
4. Base Oil demand expected growth	**15%**	A measure of the rate of change that Continent's base oil demand will predictably experience from one year to another.
5. Car parc age	**10%**	The average age of the total number of cars and other vehicles in each Continent. It is useful to understand the type of auto lubricants demanded in each Continent.
6. Share in Global industrial energy consumption	**10%**	Percentage of the global energy consumed in the industrial sector per Continent. It is useful to understand the attractiveness of each Continent for industrial lubricants.
7. Lubricants plants	**10%**	Number of lubricant plants per Continent.
8. GDP per capita	**5%**	A measure of the total output of a Continent that takes the gross domestic product (GDP) and divides it by the number of people in the Continent.
9. Car parc share expected growth	**5%**	A measure of the rate of change that Continent's car parc will predictably experience between 2012 and 2017.

Sources: 1. IMF; 2. Lubs n' Greases; 3. Team analysis; 4. Team analysis; 5. OICA; 6. IEA; 7. Barclays Lubricants Big Book; 8. IMF; 9. OICA.

Table 1b – Results

Metric	Weight	Africa	Asia	Europe	N. America	L. America
1.	**15%**	4	5	1	2	4
2.	**15%**	5	1	3	3	5
3.	**15%**	3	4	1	1	4
4.	**15%**	4	3	1	1	4
5.	**10%**	5	3	1	2	5
6.	**10%**	1	5	4	4	2
7.	**10%**	4	1	1	3	4
8.	**5%**	5	4	1	1	3
9.	**5%**	4	5	1	2	2

Table 2 – Top 10 countries per continent based on GDP (IMF)

Africa		Asia	
Rank	**Country**	**Rank**	**Country**
1.	**South Africa**	**1.**	**China**
2.	**Egypt**	**2.**	**Japan**
3.	**Nigeria**	**3.**	**India**
4.	**Algeria**	**4.**	**Russia**
5.	**Angola**	**5.**	**South Korea**
6.	**Morocco**	**6.**	**Indonesia**
7.	**Sudan**	**7.**	**Saudi Arabia**
8.	**Tunisia**	**8.**	**Taiwan**
9.	**Ghana**	**9.**	**Iran**
10.	**Libya**	**10.**	**Thailand**

Table 3 – Top 5 countries per continent based on GDP Growth (IMF)

Africa		Asia	
Rank	**Country**	**Rank**	**Country**
1.	**Angola**	**1.**	**China**
2.	**Ghana**	**2.**	**Saudi Arabia**
3.	**Nigeria**	**3.**	**India**
4.	**Tunisia**	**4.**	**Thailand**
5.	**Morocco**	**5.**	**Indonesia**

Table 4a – Top 3 countries per continent - Metrics

Metric	Weight	Description
1. Market fragmentation	**30%**	A measure that mirrors the competition level within the market.
2. Lubricants demand per Continent demand	**25%**	Percentage of the total continental demand consumed in the Country.
3. Base Oil installed capacity	**25%**	Production capacity of all Base Oil plants installed in the Country.
4. Ease of doing business	**15%**	This index averages the country's percentile rankings on 10 topics, made up of a variety of indicators, giving equal weight to each topic. A high ranking on the ease of doing business index means the regulatory environment is more conducive to the starting and operation of a local firm.
5. GDP growth	**5%**	A measure of the rate of change that Countries' Gross Domestic Product (GDP) experience from one year to another.

Table 4b – Top 3 countries per continent – African results

Metric	Weight	Angola	Ghana	Morocco	Nigeria	Tunisia
1.	**30%**	3	1	3	4	2
2.	**25%**	3	1	3	2	2
3.	**25%**	5	3	4	4	5
4.	**15%**	1	3	4	1	4
5.	**5%**	5	5	2	5	3

Table 4c – Top 3 countries per continent – Asian results

Metric	Weight	China	India	Indonesia	S. Arabia	Thailand
1.	**30%**	1	4	4	3	2
2.	**25%**	5	5	3	2	3
3.	**25%**	1	2	3	3	3
4.	**15%**	5	1	1	4	5
5.	**5%**	5	4	3	4	3

Table 5 – Top 6 countries

Block	Weight	Angola	Morocco	Nigeria	India	Indonesia	Thailand
Country Overview	**50%**	3.8	3.9	2.5	2.9	3.4	4
Potential Market Demand	**35%**	3.5	2.0	4.5	3.5	2.5	3.5
Competitive Pressure	**15%**	3.0	4.0	1.0	3.0	3.0	2.0
Final Score	**100%**	**3.6**	**3.2**	**3**	**3.1**	**3.0**	**3.5**

Description 1 – Country Overview metrics

Political Environment: level of centralization of power, political stability and type of government were some of the characteristics assessed.

Economic Situation: level of unemployment, middle class and level of poverty, performance during crisis and economic growth were taken into consideration.

Relationship with Portugal: This metric assessed the position of each market in the ranking of Portugal's customers and the weight of Portugal in each country's both imports and exports.

Distribution: Population, density (i.e. number of inhabitants per square kilometer), number of big cities (i.e number of cities with more than 1Million inhabitants), percentage of population in big cities and percentage of urban population were the factors relevant to assess the ease of distributing a product in each market.

GDP: This metric decomposed into GDP per capita, GDP growth from 2011 to 2012 and GDP expected growth from 2012 to 2018.

Export Costs: With the calculation of the transport time in days by boat from Portugal to each market, the transport cost per container and the tariffs (i.e import duties) each country was classified regarding its attractiveness in this matter.

Automotive: The classification of this metric in each country was based on the parc age (i.e. average age of the vehicles in use), type of market (i.e. level of technological advance of the vehicles in use), fleet division (i.e. percentage of passenger cars versus commercial cars), number of unit sales in 2012 (total and per capita), production in 2012 and percentage of automotive lubricants consumed versus industrial lubricants.

Industry: The industry was characterized by three factors, being the first one the weight of the industry sector in its country's GDP, the second the value in USD of this percentage per capita and finally the share of each country in the total consumption of energy in the industry sector in its respective continent.

Description 2 – Potential Market Demand metrics

Total Market Demand: The total demand in tons of lubricants in the most recent year with information available (2010)

Potential Demand: The gap between the tons of lubricants locally produced and the total market demand. Here the production and the demand per capita of each market was also calculate, since it enables to compare the countries in a fair manner, not being biased by the geographic dimension.

Demand Evolution: The team researched the expected demand evolution of lubricants until 2018. On the countries where it was not possible to find the information, a proxy was made with the GDP expected growth and historical evolution of lubricant demand in the given country.

Description 3 – Competitive Pressure

Top Players and Long Tail: The markets were here analyzed in terms of having or not players that controlled a substantial share of the market and also in the level of fragmentation of the market.

Price Sensitivity: Each market was rated in being "Low", "Medium" or "High" price sensitive.

Exhibit 13 – Strategy Pyramid

Exhibit 14 – The Pyramid of Purpose

Exhibit 15 – Strategic Triangle

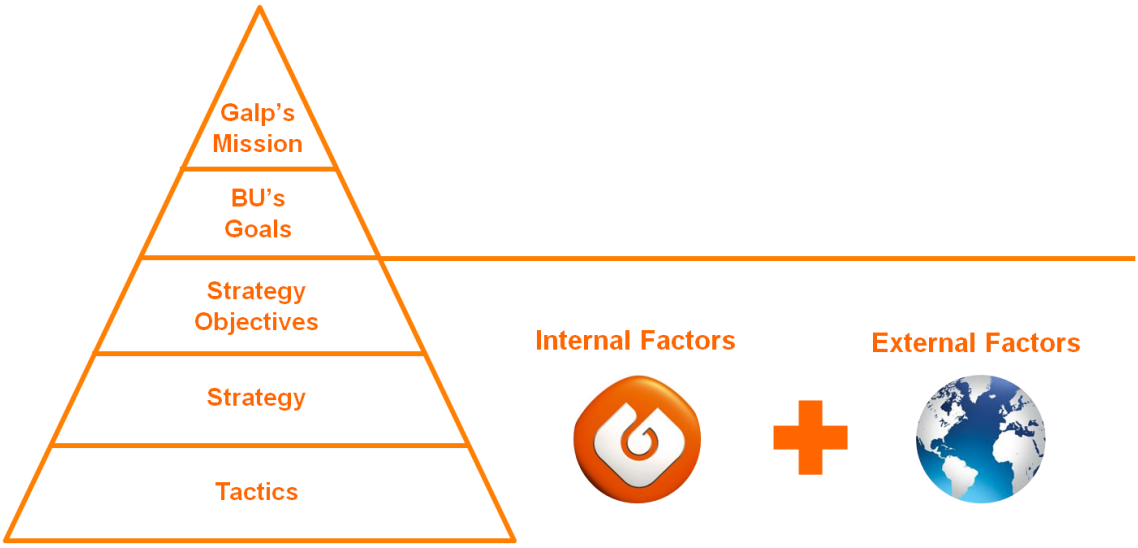


Exhibit 18 – Strategic Triangle

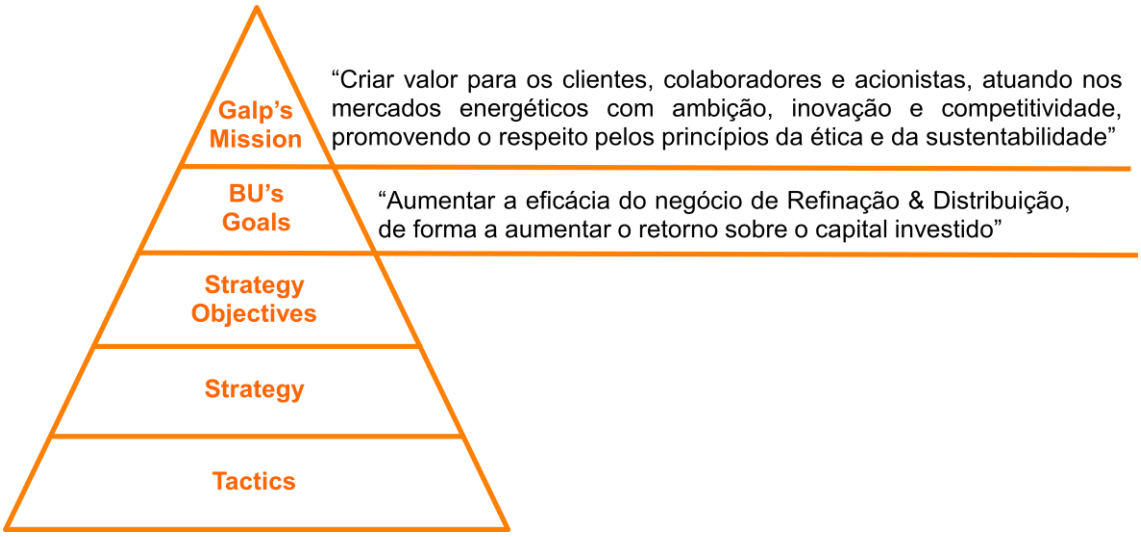


Exhibit 17a – Entry strategies

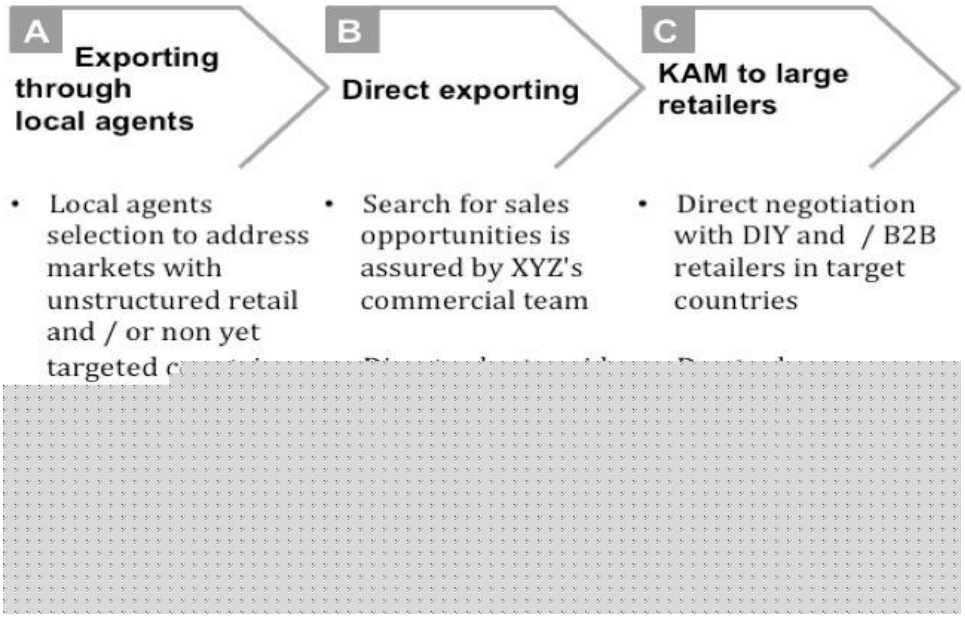


Exhibit 17b – Entry strategies

Exhibit 19b – Thailand – Market Structure

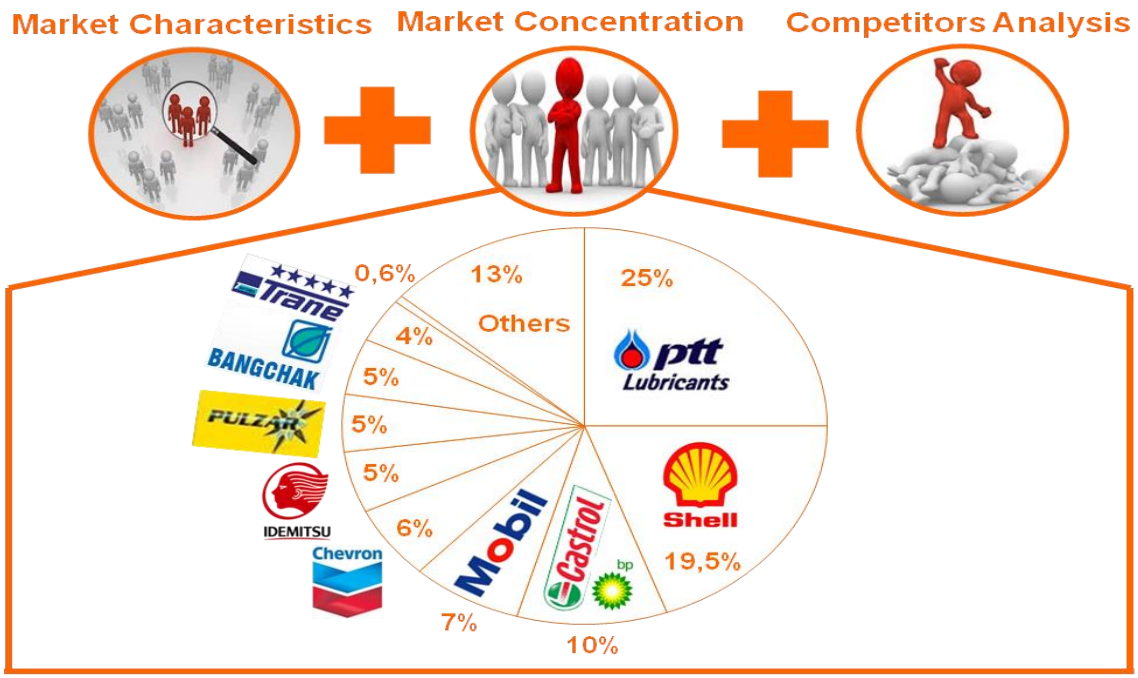


Exhibit 19c – Thailand – Market Structure

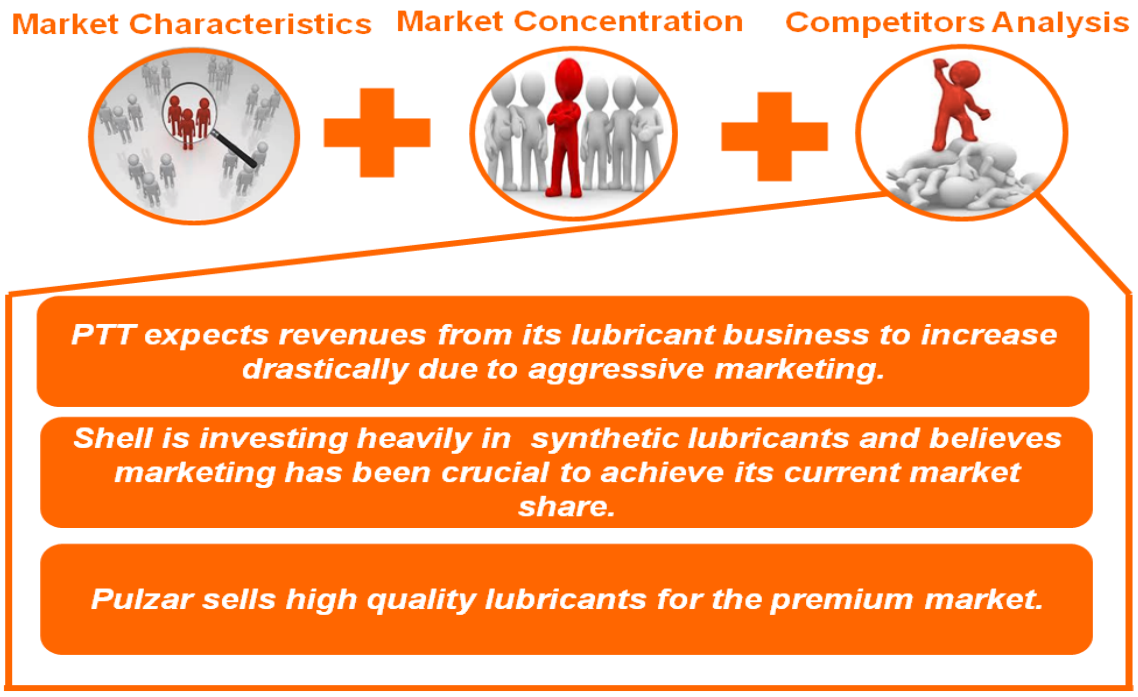


Exhibit 20a – Thailand – Market Potential

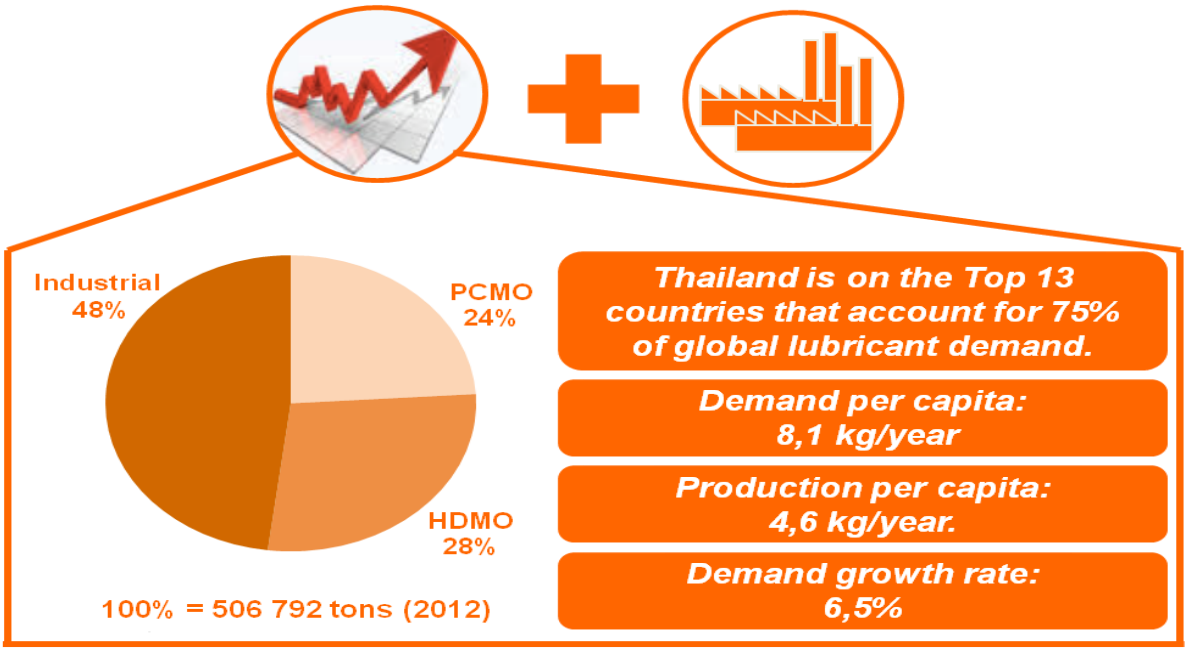


Exhibit 20b – Thailand – Market Potential

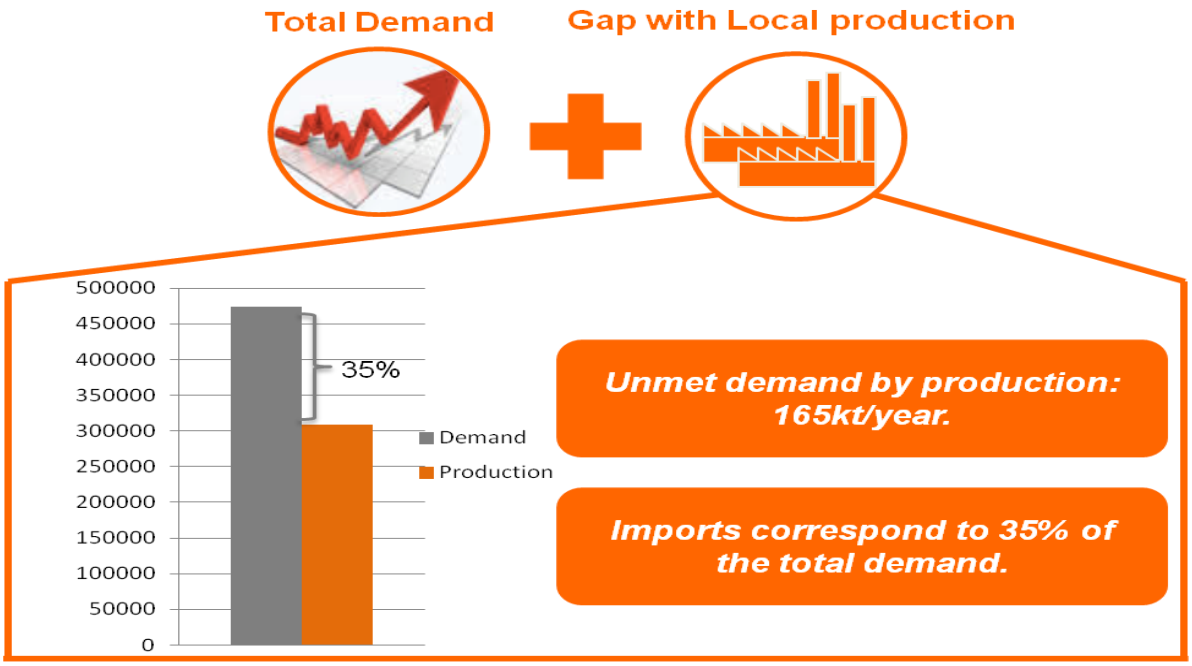


Exhibit 21a – Thailand – Customers

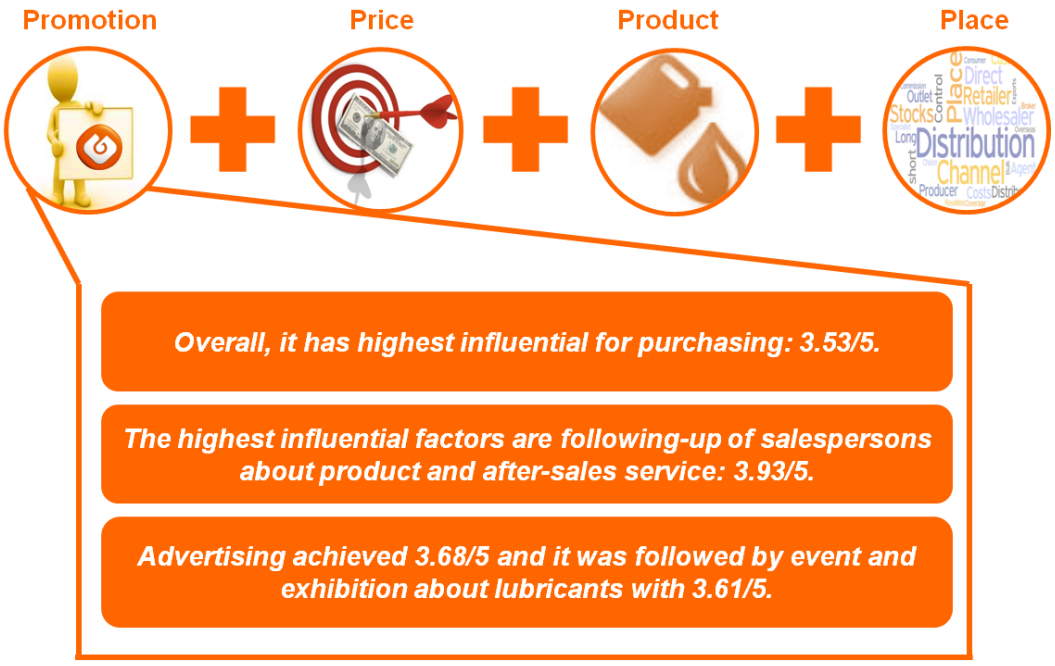


Exhibit 21b – Thailand – Customers

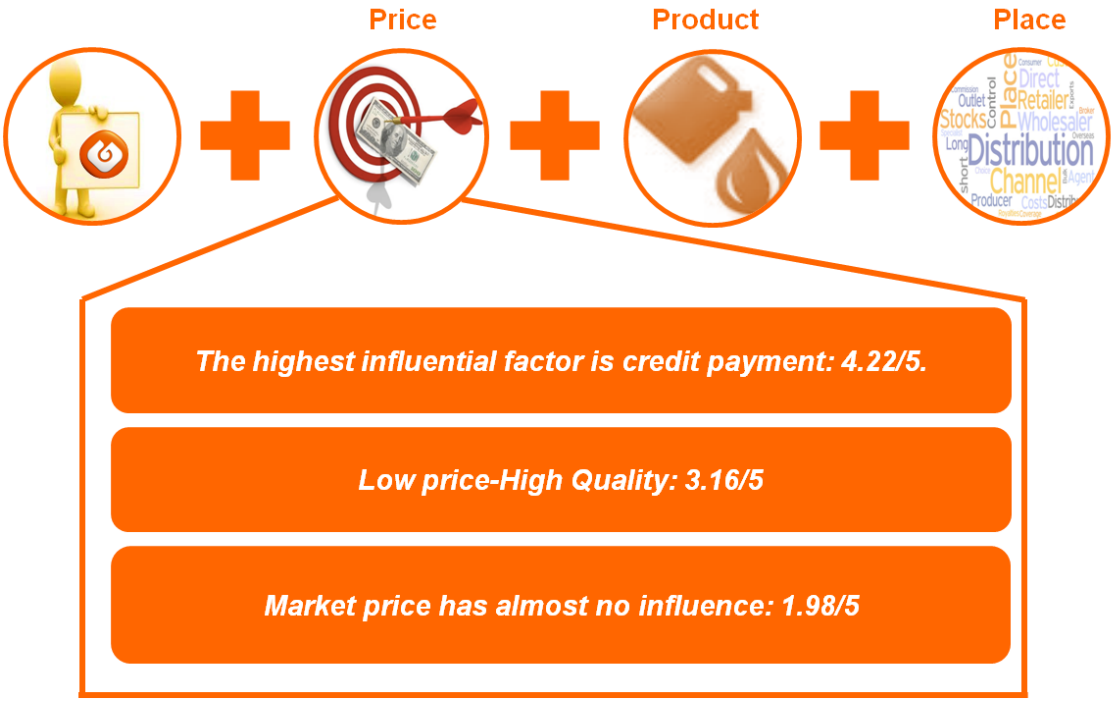


Exhibit 21c – Thailand – Customers

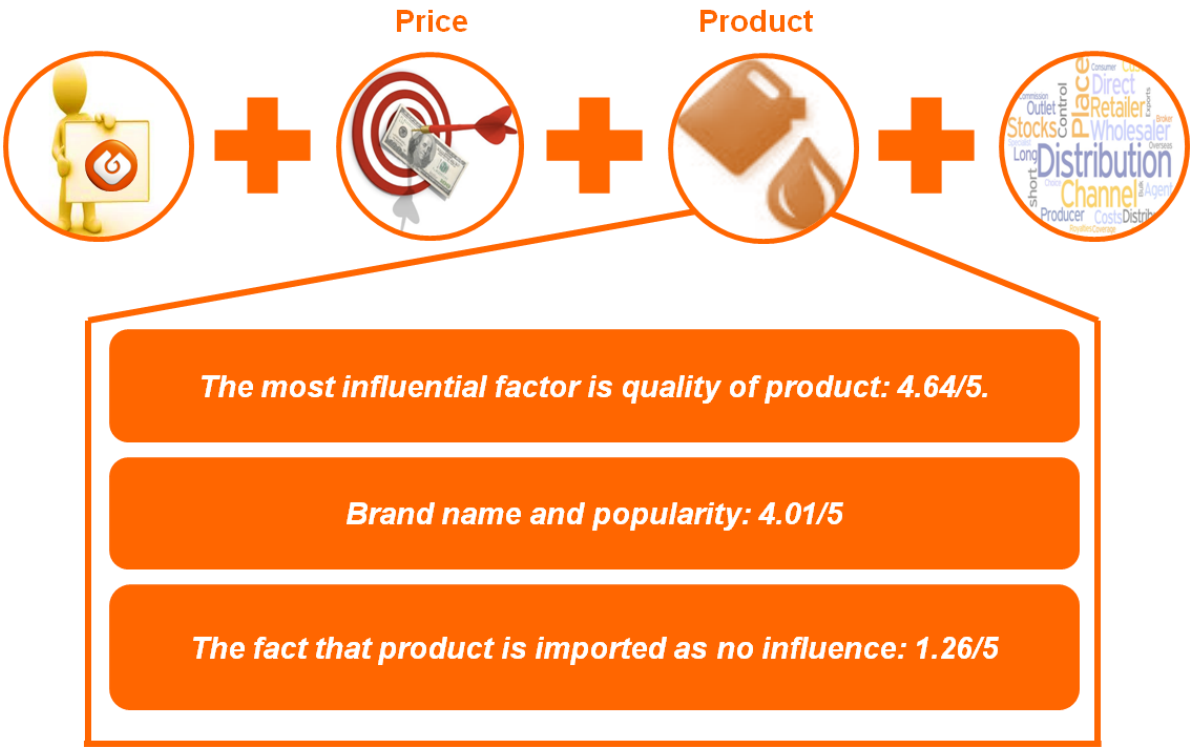


Exhibit 21d – Thailand – Customers

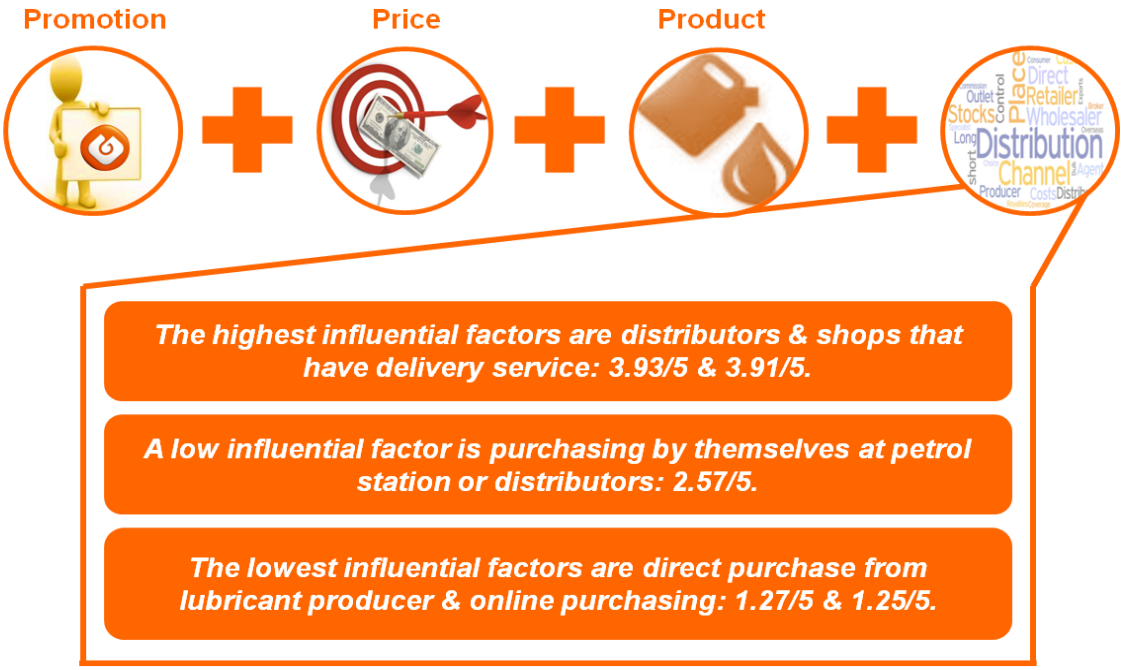


Exhibit 22 –Thailand – Entry strategy

ADVANTAGES

- Low costs and risks
- Increased economies of scale due to larger production volume
- Market knowledge is obtained through sales network, reducing the risk of a possible future investment

DISADVANTAGES

- Transport cost and time
- Tariff barriers
- Dependence on local sales agents (if sales and marketing are delegated) may reduce Galp's ability to gain significant market share
- Part (can be significant) of the business value goes to the sales agent

Exhibit 23 –Thailand – Key Success Factors

Local agent	• Suitable, experienced in imported NOC / RM* lubricants, knowledge of the market and specifically target segments.
Marketing	• Invest in raising brand awareness linked with a reputation of quality. • Imperative to invest in a dedicated sales force.
Target Segments	• Target the medium segment.
Price Strategy	• Neutral strategy: Sell products with high quality at a medium price (in comparison with competitors).

Exhibit 24 –Angola – Lubricants Market

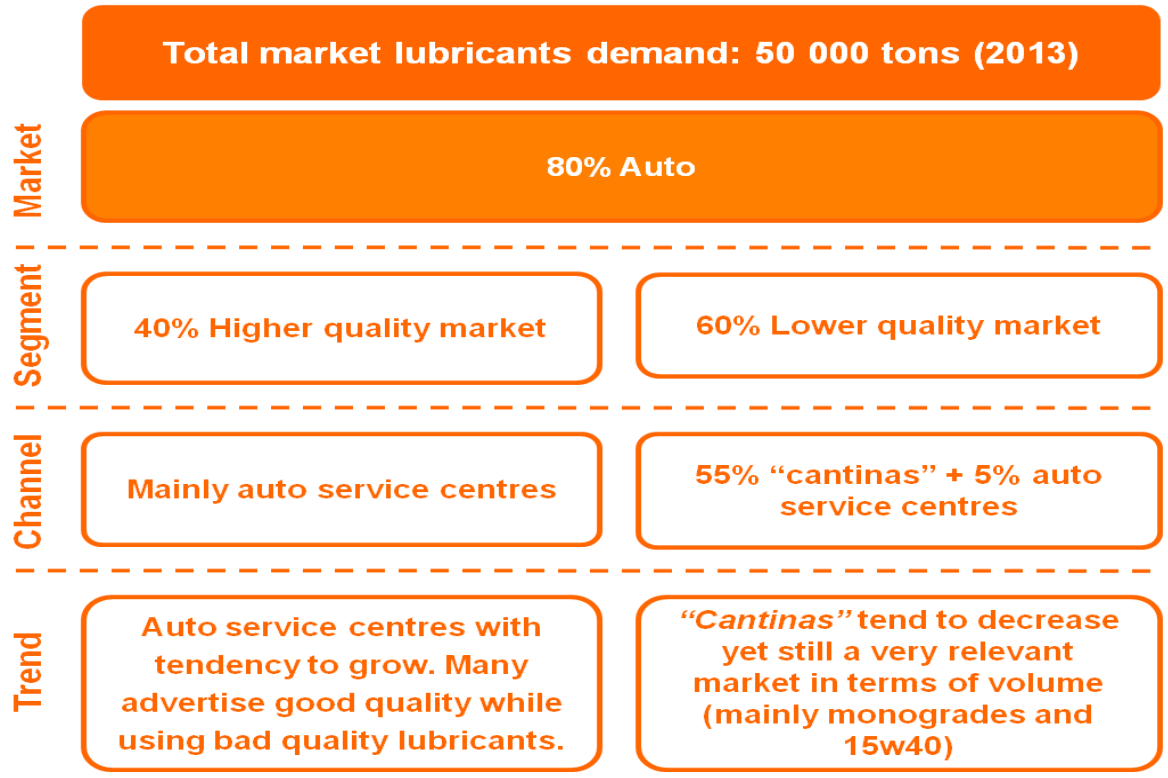


Exhibit 25 –Angola – Positioning & Products

Galp is positioned as a premium product, leveraging on fact that it is an European brand.

Products: whole portfolio is available to Angolan consumers.

Mineral 92%; Synthetic 6% (and growing); Semi synthetic 2%

70% of sales are for Construction and Industry.
15 Products (Industrial and HDMO) represent 80% of sales.

Sales increased 60% from 2009 to 2010 due to the implementation of a dedicated sales force.
Growth in sales 2012-2013 is expected to be 1%.

Exhibit 26 –Angola – Customers

Industrial lubricants: sold to distributors and direct clients.

Auto lubricants: sold mainly to large retailers and in petrol service stations.

Client base: 65% distributors, 20% direct sales, 11% auto service centres, 3% retail and 2% hypermarkets.

Partnership with auto service centre Midas.

Exhibit 27 –Angola – Promotion

In general few marketing efforts and also no substantial marketing campaigns by competition.

Galp's product catalogue done by Sonangalp.

In 2013 some incentives to distributors (flyers, posters, catalogues, stickers) worth 45 000 USD.

Exhibit 28 –Angola – Competition

PUMA ENERGY	Present since 2004 through the national brand Pumangol.
	Markets "high quality lubricants with a broad choice and affordable price." More than 50 service stations – expects to have 200 by 2015.
Castrol	Puma Energy has exclusive distribution rights to Castrol's lubricant brands in Angola since 2010. Has partnership with BMW, Porsche, AUDI. Strong presence in cantinas.
Shell	In September 2013 Shell entered through a distributor.
Sonangol	Biggest player in the market, yet the quality offered is not at the same level as other players.

Exhibit 29 –Angola – Main conclusions

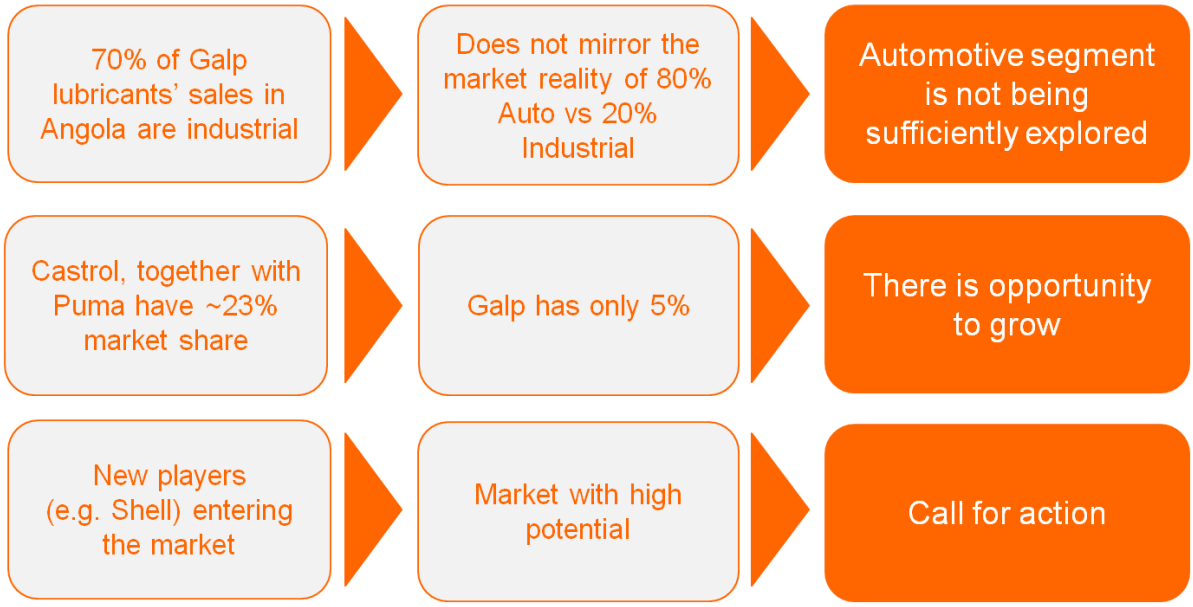


Exhibit 30 –Angola – Recommendations

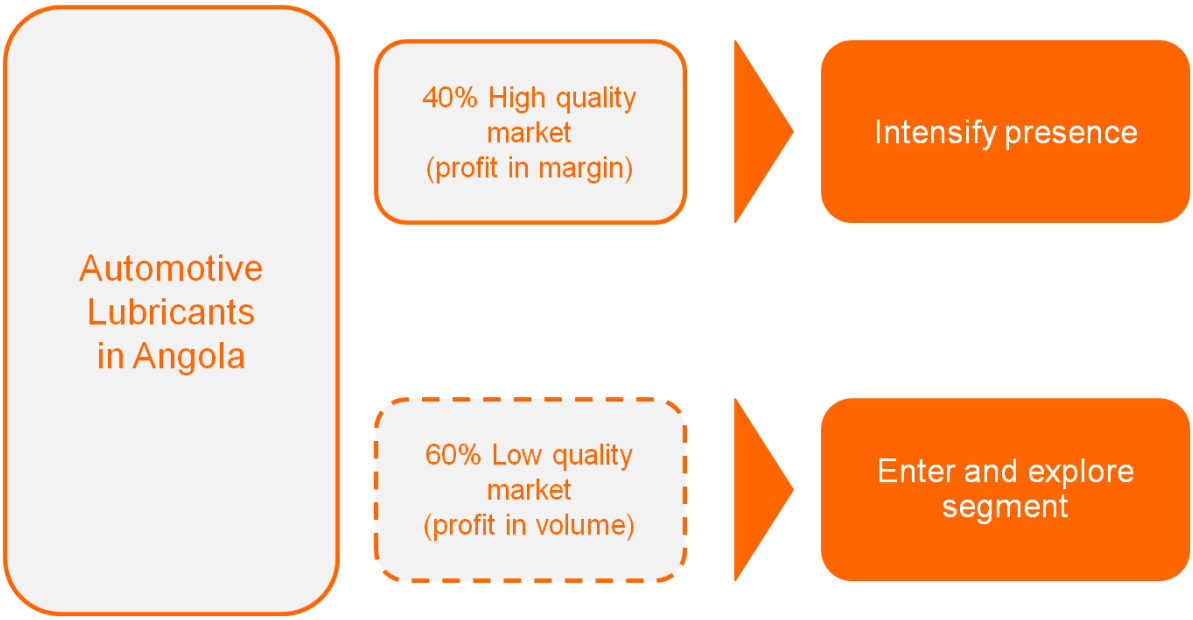
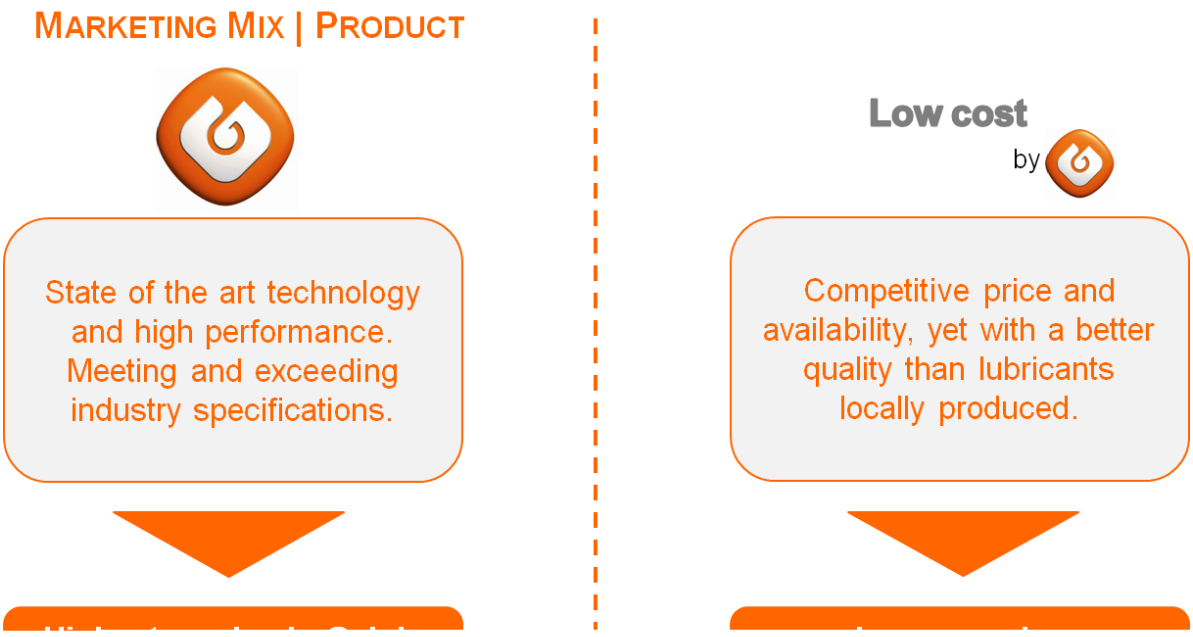


Exhibit 31a –Angola – Marketing Mix



6. INDIVIDUAL REPORTS

6.1 Beatriz Melo Couto

6.1.1 Theoretical and Methodological Context

Having the world as a starting point, the team managed to narrow the initial scope and dynamically redefine the internationalization strategy, through solid problem solving. It is fundamental to clarify the two core topics studied in the project in order to understand the scope and methodology of the project.

Lubricants are a product used to "reduce attrition, heat and erosion of two surfaces with relative movement between them". They are produced with different specifications depending on their final application by mixing base oils and additives. Lubricants are given the classification of mineral, semi-synthetic or synthetic according to the base oil used. Base oils are produced from refining crude oil (mineral base oil) or through chemical synthesis (synthetic base oil), and can be divided into five groups. Given that mineral base oils represent currently 88% of the global market, the team will only study these three.

Regarding the methodology used to address this challenge, it is important to organize it according to the three deliverables. In order to develop the Global Market Assessment a deeper acquaintance of the core subject of the project was needed. For that, the team led an exhaustive online research, studied documents and attended sessions provided by Galp. For a more pragmatic approach, and following the advices from Professors Luis Almeida e Costa and Luis Lopes, the team followed an 80/20 rule, focusing its attention on the two most important segments, the automotive and the industrial, that represent more than 65% of the total market. When it comes to the Geographical Potential Tool, the team followed a top-down approach, having the world as starting point, and discovering, at first place the most promising continents, based on nine macro metrics. Subsequently, the team restricted the number of countries until the two with most potential were asserted. Finally, in the Internationalization Framework Tool was born by crossing two strategy frameworks, Strategy Pyramid and the Pyramid of Purpose, with the internationalization methodology developed by Professor Luis Filipe Lopes, bearing in mind Galp's specificities. Within the framework there were two types of factors that needed to be analyzed, the internal that are transversal to all countries and the external that are specific to the country. In order to obtain information regarding the internal factors online research was made, however, the main source of information were documents provided by Galp as well as informal interviews to Refining & Marketing Department collaborators.

6.1.2 Particular content theme of the project - Internationalization Framework Tool

This deliverable was constructed because the Export Department did not have a clear methodology for a deep analysis of the potential of a certain country in the lubricant market as well as to choose the best strategy to implement in that country.

Therefore the team developed a Framework that is a combination of the Strategic Triangle, which was based on the Strategy Pyramid and the Pyramid of Purpose, and the internationalization methodology developed by the professor Luis Lopes, with some modifications.

Regarding the Strategic Triangle the first part of the methodology, there are five Items to analyze and define: The company's mission; the business unit goals; the objectives of the strategy; the internationalization Strategy and the Tactics to adopt.

The first two are already existent, however, it is critical to include them in this framework since any decision to be taken by the division has to be aligned, fist with the company's mission and them with the business unit goals.

After assuring this alignment the strategic objectives (the desired outcome of the internationalization) have to be defined. The next decision is to choose the strategy to enter and operate in the chosen country from six of which the team suggested: exporting through local agents, direct exporting, KAM[23] to large retailers, KAM approach and local team of area managers, local production and partial or total acquisition of a competitor.

Finally, the business unit has to define which short-terms measures will be taken in order to put in practice the defined strategy, the tactics.

However, it is impossible to define the final steps that were mentioned: strategic objectives, the strategy and the tactics without a profound knowledge of the market selected, as well to decide if, in fact, the company should expand to that market. Therefore, a complementary instrument to the strategic triangle was build, which can be divided into two parts: internal the external.

It is critical to note that the internal analysis is transversal to the various countries.

Starting with the internal factors, a division was made in five critical pillars:

- Growth Opportunities
- Core Competencies
- Risk Profile
- Finance

[23] Key Account Management

- Business Model

The main conclusions that can be taken from this analysis are that the company is not willing to make large investments neither to produce in a new country of interests for exports. After ending this analysis, the external factors that are specific to each country have to be analyzed. A division was also made within them into five critical pillars:

- Market Structure
- Market Potential
- Barriers to Entry
- Customers
- Partnerships

The team then, applied the external factors methodology to the two countries that presented a higher potential, Thailand and Angola.

Thailand

The study of the five critical pillars was limited in this country since there was little information publicly available, especially in the barriers to entry and partnerships topic. Therefore, there is the need to deepen the research as well as a visit to the country in order to understand the reality of the market.

Regarding the three other pillars, in the market structure the team was able to have an idea of its concentration. In market potential was able to observe the total demand and its gap with local production. Finally, Customers is the most complete pillar due to a study of customers' preferences in the Lubricant Thai market.

The main conclusions of the team's research were that the Thai market is on the top 13 countries that, altogether, represent 75% of the global lubricant demand, it is highly competitive and fragmented and the imported lubricants usually aim at the high-end segment. Moreover, customers value immensely promotion efforts, after sales service as well was price-quality relation.

Given the lack of information necessary in order to complete the strategic triangle, we opted to advise an entry strategy that was adequate to the market characteristics as well as to the company restrictions (unwillingness to make large investments and to produce locally). Therefore, the

strategy chosen was Entry through local Agents, also due to the Export Division's lack of market knowledge.

Finally, the team defined the key critical factors to a successful entry in Thailand. Those factors consist in the suitability of the local partner, the marketing efforts (that are crucial for a market where customers value brand reputation and sales force quality), to choose an appropriate target segment and finally, a coherent price strategy.

Angola

In Angola we were unable to use the same methodology since Galp is already established in the country and, therefore, there was need for adaptation. Therefore the team started by understanding the market's situation in terms of segments, distribution channels and trends. Then the team evaluated Galp's current situation in the market, analyzing the products sold as well as the company's positioning in these, its customer base, and promotion efforts. Finally some important facts regarding the competitors were gathered.

In order to obtain this information online research was made however, as happened in Thailand, publicly available information was scarce and so, the main source for the information mentioned above were interviews to Galp collaborators that are currently in Angola and have a deep knowledge of the market.

The main conclusion of this analysis is that Galp's customers are mainly in the industry segments (70%) which does not mirror the market reality (80% Automotive, 20% Industry). Furthermore the company is only present in the high quality automotive market which represents half of the total market. In addition it was found that the company made few commercial efforts in so far.

After the analysis previously mentioned, our team assessed if there was a potential of growth in this country and, as we believed so, the strategic objectives for the expansion were established: a growth in market share from 5% to 15%-20% in 5 years was suggested together with the client. Subsequently, suggestions regarding changes in Galp's current marketing mix were made in order to achieve those objectives. The team's most important recommendation is to create a low cost label to enter the low quality market, which is not being explored. The reason for a low cost label is due to the risk of damaging the brand image since this is a market where the produced can be easily adulterated.

6.1.3 Personal Reflection

The Management Consulting Lab was an excellent learning experience since I had the opportunity to develop a project with other NOVA Master's students while working with professionals from a major Portuguese company in the energy sector and having support from a mentor and professors with vast experience and knowledge.

Firstly, I was able to experience the life of a consultant, with all its challenges, something that was essential for me, given the fact that I intended to initiate my professional life in this area, and so, was able to understand that there is a fit between myself and consulting.

During this project I had the opportunity to discover and apply commonly used approaches to problem solving in consulting that I believe will be useful for my professional future. For instance the 80/20 rule was critical, given that the scope of the project was enormous, my team had to select the most important factors within the base oil and lubricants market to study in more depth. Moreover, in the beginning of the project, it was difficult for me to understand what I should start researching and what level of detail was necessary and so, by using a top-down approach, this task became less complicated. In addition, I started to prepare the dummy pack slides before the content of the presentation was even known, something that was, as the top-down approach, important to understand which information was crucial for the project success as well as to have a mental picture of the final deliverable. Therefore, I believe I improved my organization skills since, besides the tools previously mentioned myself and my team developed, in the beginning of the project, a Work Plan, that was imperative for me to set personal deadlines for the completion of certain parts of the project.

In addition, I believe I increased my ability to handle stressful situations since, it was common during this project to modify the work that was being developed due to sudden changes in the client's needs, something that is common in consulting.

Continuing this line of thought I also learned that communication with the client is one of the most import aspects for the success of a project and that it is crucial to involve him in the various steps so that the final result is tailored to their specific needs. Moreover, this continuous communication allows managing their expectations, which guarantees that the team's final deliverables match the client's desires.

Another area where I believe I improved my skills was during formal presentations, given the fact that I presented my work multiple times to several Galp collaborators, even to the Director of

the Export Division, Dra. Isabel Calado, to the Commercial Director, Eng. Rui Reis and even to the Administrator, Dr. Luis Palha. Moreover, I received constant feedback and advices from my mentor, Constança Casquinho.

Furthermore, in this specific project I was able to gain knowledge of an area of which I had none, base oils and lubricants. This was only possible due to extensive research as well as to the collaboration of the Export Department members that, besides providing critical information, arranged for a trip to the Matosinhos Blending Plant, that allowed me to better understand the production process of these products.

In addition, I believe that I contributed to the project mainly through my analytical skills, perseverant personality, as well as positive attitude even at the most complicated moments.

Finally, I believe that the success of this project was due to the commitment of every member of my team as well as to the good work environment and mutual help mindset that we created.

To conclude, this Management Consulting Field Lab was a gratifying experience, since I was able to develop several skills that were mentioned throughout this report and the work me and my team delivered to the Export Department is valuable for its members and will contribute to its success and further growth. Moreover, it was a great opportunity to network as well an important aspect for the job search that I am currently in, since, I believe, is something that has been valued in the interviews that I have attended.

I would like to finish this report by thanking my mentor, Constança Casquinho for her constant support, motivation and share of knowledge.

6.2 Catarina Liquito

6.2.1 Theoretical and Methodological Context

Having the world as a starting point, the team managed to narrow the initial scope and dynamically redefine the internationalization strategy, through solid problem solving. It is fundamental to clarify the two core topics studied in the project in order to understand the scope and methodology of the project.

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6.2.2 Particular content theme of the project - Global Market Assessment

The objective of this deliverable is not only to provide a summarized current overview of the global market of base oils (main component of lubricants) and lubricants as well the key trends for the future but to serve as a base for the strategic recommendations, geographical potential tool and internationalization framework.

The information compiled in this research, as well as the team's conclusions and recommendations, contributed to a more informed decision making process regarding the future of the business unit as well as other departments related with this subject.

Given the challenging dimension of this scope the team used several methodologies to breakdown the analysis in order to better diagnose the problems and develop recommendations. A Top-down approach was used in the entire analysis, which means that the team started by analyzing a topic at a high-level and then developed it in more detail. Also the 80-20 rule was used in order to select which topics were most relevant to the analysis, given that this is a vast subject with several components and implications. For an easier and faster comprehension all analyses of values of volumes were presented graphically.

Starting with the base oil market, the team began with a global analysis in which the global volumes of capacity, supply and demand were related. This analysis allowed the understanding the levels of overcapacity or unmet demand. The analysis was composed since 2008 and projected until the year 2020. The team was able to conclude that there is a global overcapacity of base oils that is forecasted to increase substantially.

Given that, of the five base oils groups, group I, II and III represented 88% of the market in 2012, as mentioned in Theoretical Context, the team studied these three groups in more detail, their historic values of demand and their evolution. It was found that group I is significantly decreasing in percentage of global use but it is still very representative of the market (from 88% in 2008 to 45% in 2030).

An analysis (demand and capacity) by geographic areas (Europe, North America, South America, Africa and Asia Pacific) and by group (I, II, and III) was followed to understand the differences between these geographic areas and the base oil groups.

The team created a graph showing the current situation and the forecast for 2017 (see appendix). The main conclusions of this analysis were that there is still opportunity to invest in group I in

Africa and Latin America, since there is still demand not met by capacity and this is not expected to increase, and that it is too late to invest in the production of group II and III given the actual and expected overcapacity in Europe, Asia and North America.

A deep down in the base oil situation of Iberia was also analyzed in order to have a more detailed overview of Galp's main market. The global conclusions also apply to this market.

To understand the lubricant market a similar top-down approach was followed. First globally, then comparing geographic areas (demand and supply). The main conclusions were that there are opportunities in Africa and South America, due to the fact that there is demand not met by production, and also in Asia given that although demand and production are at similar levels, the lubricant demand in Asia is expected to growth modestly to represent 60% of the global demand.

To understand the trends of the lubricant market a breakdown by lubricant use in terms of markets was done. The automotive and industry represented 65% of the global lubricant demand in 2012 and so these two markets were selected as the most representative in terms of influence in the lubricant market.

Regarding the Automotive market an overview of the market as well as some forecasts were done. Also, an analysis that related the main drivers of change in the automotive industry with lubricants characteristics and the consequent base oils composition was completed. With this research the team found that the governments and OEM's (i.e.: original equipment manufacturers, e.g.: Fiat, Volkswagen) are the entities that influence the evolution of lubricants in terms of their chemical characteristics and properties. These entities have environmental and efficiency concerns which translate into three main chemical characteristics the lubricants must possess to reach the desired performance. The grades of lubricants that have these characteristics cannot be produce with group I base oils, only with group II, III and synthetic. This global trend confirms the team's initial findings of the increasing importance of Group II and III and the consequently decrease of group I.

It was also found that, although the trend previously mentioned is global, there are geographic areas that are less developed (e.g.: low GDP, low available income) with also less advanced automotive fleet (e.g.: high average vehicle age) where the trend in question is not yet present. In these areas the type of lubricants demanded are the ones with lower performance that are produced using group I base oils. These geographic areas are, for example, most countries in

Africa and Latin America, which is aligned with the previously mentioned conclusion that there is opportunity for group I base oils in those countries.

Finally to understand the trends in the Industry, the three main representative industries in terms of lubricants consumption were selected (cement, mining and steel). A correlation between the changes per year of production in volume of these three industries, the lubricant demand in volume and the GDP was created to access the relationship between these industries and the lubricant market. After verifying this relation it was done an analysis regarding the current situation and the forecasts in terms of geographic evolution of these industries.
Concerning the cement industry the main conclusion are that the BRIC, the Middle East and the Southeast Asia countries are the ones that contribute the most for the prosperity of this industry.
About the mining industry, there are huge investment taking place in Latin America, Africa and parts of Asia. Finally in the steel industry the most important evidences are the importance of China, given that has increased its production in 300%, of India, which is the most promising country in this industry and the reduction of production in 50% in Europe and North America.
In conclusion, the main trends in the industry market are the global expected growth with shift to the emerging markets (Asia and Latin America).
Furthermore, in both markets it was found that due to the greater efficiency and durability required by the OEMs and the industry in general, the potential growth volume of the lubricant market will be diminished. This happens because with higher efficiency lubricants it is necessary a smaller quantity of lubricant and/or a less frequent change/replacement. This fact goes along with the forecast of a global small growth of lubricant in volume. Another common fact was the growth in synthetic lubricant also already found in the global analysis.

This analysis and its conclusions were used as a base for the rest of the project since it created a common grown between the team and Galp and it lead to important recommendations that impact the whole department.
I chose this topic because I think my contribution was essential to its completion.

6.2.3 Personal Reflection

I want to express my reflection on this experience and the impact it had on me starting by the end, by the conclusion, I will explain it "*à la consultant*". This was one of the many things I learned during this project.

For me, this experience was exactly what I wanted and what I needed to make the bridge between the academic and the professional world, which is one of the purposes of a Master Thesis. I learned about myself, I developed soft skills important for my professional future, I reinforce some of the hard skills I learned during my academic years and I gain experience working in a team in a corporate environment. I was also able to learn about how companies work, how difficult is to know what they want and what they need and how it is, even more difficult, to provide them that. This was indeed the preparation I needed to step in with confidence in the labor market and I do feel prepared.

During this project I started to learn about myself. I found the Belbin's model to be an interesting way to profile your role in a team. I learned that I needed to work on being a *team worker* which role is to "promote unity and harmony within a group" (Belbin Consulting). This was one of my goals during the project and I feel I have improved a lot in this area. I think I had an important role in managing stressful situations, keeping a positive attitude, which helped to keep focus and to create a productive environment in the team leading to an increase in motivation.

Another event that contributed a lot for this learning experience was, right in the begging of the project, when I had the opportunity of being Project Manager, and as expect by my Belbin's leading philological role of *president*, I loved it. I found that it is important to always have guidance and coordination and that having someone responsible for that specific role is the best way to do it. I believe I have done a good job coordinating the team during the difficult, trouble adjustment period the first weeks were. Finally I had the opportunity to improve my communications skills. This was much due to the many presentations done to a highly respected audience, in a highly respected room (which makes all the difference). Presenting with the pressure of knowing that our audience has decision making power, and that our conclusions can actually impact a decision made by the company really pushes you to be absolutely certain of our conclusions, and more than that, to sound absolutely certain of them and to transmit your message clearly and straight to the point.

Additionally, a huge part of my learnings were due to the work in teams. I believe I was very lucky regarding the team I was put in (or maybe it wasn't luck, it was expertise in forming teams). During the whole project our team always worked together, we completed each other's weaker points, we helped improving those exact points and we had similar commitment levels and ways of working. I learned that working in teams can be very rewarding and that a great team, that works well together, makes all the difference in the success of a project. I also realized that motivation is a key success factor in the team performance. I noticed this in many situations after a stressful presentation or a meeting that critically changed the scope of the project.

Another important topic of my learnings is the one related with the client. The big lesson learned was "communication is key". I now believe that in today's world the work done in or for companies is much deeper than just having the right analysis, the right calculations or the right conclusions. To be able to have a successful and win-win experience the way you communicate is critical. Most problems or difficulties arouse from miscommunication or lack of it. It is essential to understand the expectations of the client, to involve him during the entire project and to balance all the different personalities and ways of working and apprehending information. This was something very important in our project that was possible due to the constant dedication of our mentor, Constança Casquinho, who always alerted us for its necessity.

The final matter I want to address is the one related with consulting. Quoting one of the professors that helped us during the project, the big lesson is "under promise and over deliver". This is a sentence that encompasses the whole project and a big lesson I will carry throughout my professional life. Another methodology I found to be essential in our project and a very useful lesson was the high level approach that allowed us to take the huge scope that is the world and the vast and complex subject that are base oils and lubricants and reach value added recommendations by always keeping in mind the big picture and the final objective.

To conclude, I am really grateful for this experience, I believe it made me a better person and a better professional.

6.3 Francisco Duarte Guerreiro

6.3.1 Theoretical and Methodological Context

Having the world as a starting point, the team managed to narrow the initial scope and dynamically redefine the internationalization strategy, through solid problem solving. It is fundamental to clarify the two core topics studied in the project in order to understand the scope and methodology of the project.

Lubricants are a product used to "reduce attrition, heat and erosion of two surfaces with relative movement between them". They are produced with different specifications depending on their final application by mixing base oils and additives. Lubricants are given the classification of mineral, semi-synthetic or synthetic according to the base oil used. Base oils are produced from refining crude oil (mineral base oil) or through chemical synthesis (synthetic base oil), and can be divided into five groups. Given that mineral base oils represent currently 88% of the global market, the team will only study these three.

Regarding the methodology used to address this challenge, it is important to organize it according to the three deliverables. In order to develop the Global Market Assessment a deeper acquaintance of the core subject of the project was needed. For that, the team led an exhaustive online research, studied documents and attended sessions provided by Galp. For a more pragmatic approach, and following the advices from Professors Luis Almeida e Costa and Luis Lopes, the team followed an 80/20 rule, focusing its attention on the two most important segments, the automotive and the industrial, that represent more than 65% of the total market. When it comes to the Geographical Potential Tool, the team followed a top-down approach, having the world as starting point, and discovering, at first place the most promising continents, based on nine macro metrics. Subsequently, the team restricted the number of countries until the two with most potential were asserted. Finally, in the Internationalization Framework Tool was born by crossing two strategy frameworks, Strategy Pyramid and the Pyramid of Purpose, with the internationalization methodology developed by Professor Luis Filipe Lopes, bearing in mind Galp's specificities. Within the framework there were two types of factors that needed to be analyzed, the internal that are transversal to all countries and the external that are specific to the country. In order to obtain information regarding the internal factors online research was made, however, the main source of information were documents provided by Galp as well as informal interviews to Refining & Marketing Department collaborators.

6.3.2 Particular content theme of the project – Geographical Potential Tool

The objective of this deliverable is to endow Galp with a tailored-made tool that allows to spot countries with great potential for the Export Department, allowing both a qualitative and quantitative evaluation.

The Geographical Potential Tool created value in three different ways. First, it allowed to understand the continents with greater potential for the company as well as the countries within those same continents. Moreover, critical information that the company would need to gather to analyze those continents and countries was summarized and organized. Finally, the Export Department has now also a structured way to evaluate and compare other countries that seem relevant, being able to adapt the framework by and adding new metrics or altering the weight of each.

The Geographic Potential Tool was a logical step after the study conducted, concerning the base oil and lubricants market, and taking into account the main objective of the project, "redefinition of the Internationalization Strategy for Galp".

Not having any geographic restriction as a premise and, therefore, the world as a starting point, the team first analyzed the attractiveness and the potential of each continent considering and weighing nine metrics. Each metric was valued with a score from 0 to 5, being the 5 the best, and a weight ranging from 5 to 15%. After the math, Latin America and Africa appeared as the most suitable continents to enter, with a score of 4 and 3.8, respectively, followed by Asia with a score of 3.3. North America and Europe, being scored with 2.1 and 1.6, respectively, are the continents with less attractiveness and potential.

Putting aside North America and Europe, due to its poor potential outlook, and Latin America, continent within the scope of Sub-Project A, the team focused its attentions on Africa and Asia and in their one hundred and twenty one countries. Due to the wide range of countries under scope, the pool of countries underwent by two filters based on two macro metrics[24] in order to reduce the number of countries and increase the feasibility of the analysis.

Once the countries' pool was reduced to ten, five per continent, a deeper analysis was performed based on five sector specific metrics related with the lubricants business. After each metric for

[24] First filter – Top 10 countries per continent based on GDP; second filter – Top 5 countries per continent based on GDP growth. This cut-off was suggested by the team together with Professor Luis Almeida Costa and Professor Luis Filipe Lopes due to time constraints and approved by Galp Energia.

each country was scored, a weighted average was performed and the top 3 countries per continent were determined.

Subsequently, each one of the six countries still under scrutiny was further evaluated by thirteen metrics, and scored from 1 to 5[25]. The objective of further analyzing and scoring the top six countries was to narrow them to the two markets with the highest potential, in which the Internationalization Framework Tool will be applied. Not only did this step enable to understand better in detail the potential of the six markets and thus identify pitfalls that wouldn't be noticed otherwise, it also helped narrow the scope for the coming step.

Each of the top six countries was here deeply analyzed taking into consideration three main blocks, namely: Country Overview, Total Market Potential and Competitive Pressure. Each block integrated several metrics and the scoring system was maintained. Within its block, each metric had the same weight. The final score for each country was calculated through a weighted average, as each block had different weights. Finally, after completing this step, the countries with greater potential were ascertained. Angola and Thailand emerged as being the most attractive countries for Galp's characteristics, with a score of 3.6 and 3.5 respectively. Morocco closed the podium with a score of 3.2 and followed by India, with 3.1. Indonesia and Nigeria were the countries under scrutiny with a lower score, 3.0. It is important to note that the countries were not rated in isolation but rather compared between each other.

[25] 1: lowest potential; 5: highest potential

6.3.3 Personal Reflection

Throughout the project I was able to acquire new soft and hard skills, which will most likely prove valuable for my forthcoming career.

Firstly, one of the gains of working with a firm as Galp Energia was the ability to be connected to the company throughout the whole semester. By interacting with Galp on a regular basis, I was able to absorb how the company operates, as well as to live, in person, its daily dynamics.

Additionally and from a pure consultant perspective, the most valuable lesson learned from the project was in terms of project- management expertise. Starting from the work plan in which were identified the objectives, the activities to reach those objectives and the milestones, which also worked as quick-wins and were key to not only guide us during the project but also to build a solid and sustainable relationship with the client. If the set up of the work plan was important, adapt it and review it during the project, upon new or unpredictable circumstances, was an ongoing challenge and a priceless lesson learned. Moreover, align the concerns and expectations of all stakeholders was emotionally though-provoking and proved to be a very important aspect, having to setting up agendas, accomplishing the team and the client's prospects, while having to respect the industry's best practices.

Also, working in a team with three women, with different personalities and working styles was a very interesting and challenging experience. The difference of backgrounds, which guaranteed that diversity translated into a collective pool of skills that would not have been found and complemented so easily in a more homogenous group. It implied the creation of a positive working atmosphere and a bond of trust and companionship. Moreover, the role the project manager was very important to mediate discussion and to interact with the client on a daily basis. From my point of view, its role within the group should be reinforced in the next projects, by giving to her/him greater executive responsibilities since I believe that would improve the productivity and efficiency of the group. Aside from the long discussions, which were key to offer a valid and well-reasoned opinions and outcomes, all project rolled out with an upstanding environment and constructive criticism.

Furthermore, the project also made me become more conscious of some of my own strengths and weaknesses. I became aware of my capacity to think critically, structure problems and to solve them on a pragmatic way, benefiting both the team and the client. On the other hand, some of my weaknesses were also exposed. I tend to concentrate on my own opinions and be reluctant to

accept others' or do not listen them at all. Also, I need to try to adapt more the way that I communicate with the client, sometimes the content was right but the client did not understand it and responded in a defensive way.

Concluding, the Field Project has given me a "down-to-earth" understanding of the corporate reality that is different from anything I had faced before in my student life, it has given me the practical insights to put in place in my future job and it has helped me to develop an extensive range of skills, mainly on the interpersonal sphere, which I would not have gotten in any other thesis typology and I realized that is the most important factor to be professionally successful. I have no doubt that in my future career I will judge better and fail less due to the references, understandings and experiences lived during the project.

6.4 Maria Corvacho

6.4.1 Theoretical and Methodological Context

Having the world as a starting point, the team managed to narrow the initial scope and dynamically redefine the internationalization strategy, through solid problem solving. It is fundamental to clarify the two core topics studied in the project in order to understand the scope and methodology of the project.

Lubricants are a product used to "reduce attrition, heat and erosion of two surfaces with relative movement between them". They are produced with different specifications depending on their final application by mixing base oils and additives. Lubricants are given the classification of mineral, semi-synthetic or synthetic according to the base oil used. Base oils are produced from refining crude oil (mineral base oil) or through chemical synthesis (synthetic base oil), and can be divided into five groups. Given that mineral base oils represent currently 88% of the global market, the team will only study these three.

Regarding the methodology used to address this challenge, it is important to organize it according to the three deliverables. In order to develop the Global Market Assessment a deeper acquaintance of the core subject of the project was needed. For that, the team led an exhaustive online research, studied documents and attended sessions provided by Galp. For a more pragmatic approach, and following the advices from Professors Luis Almeida e Costa and Luis Lopes, the team followed an 80/20 rule, focusing its attention on the two most important segments, the automotive and the industrial, that represent more than 65% of the total market. When it comes to the Geographical Potential Tool, the team followed a top-down approach, having the world as starting point, and discovering, at first place the most promising continents, based on nine macro metrics .Subsequently, the team restricted the number of countries until the two with most potential were asserted. Finally, in the Internationalization Framework Tool was born by crossing two strategy frameworks, Strategy Pyramid and the Pyramid of Purpose, with the internationalization methodology developed by Professor Luis Filipe Lopes, bearing in mind Galp's specificities. Within the framework there were two types of factors that needed to be analyzed, the internal that are transversal to all countries and the external that are specific to the country. In order to obtain information regarding the internal factors online research was made, however, the main source of information were documents provided by Galp as well as informal interviews to Refining & Marketing Department collaborators.

6.4.2 Particular content theme of the project – Country Analysis and Scoring

The objective of further analyzing and scoring the final top six countries is to narrow them to the two markets with the highest potential, in order to dynamically redefine the internationalization framework for the Lubricants Export Department. Not only did this step enable to understand better in detail the potential of the six markets and thus identify pitfalls that wouldn't be noticed otherwise, it also helped narrow the scope for the coming step. Each of the top six countries was here deeply analyzed taking into consideration three main blocks: Country Overview, Total Market Potential and Competitive Pressure. Each block integrates several specific metrics and for each metric a score from 1 to 5 was given (1: lowest potential; 5: highest potential). Furthermore, each blocks' score was reached by calculating the average of each individual metrics' score. The final score for each country was finally calculated through a weighted average. Angola and Thailand emerged as being the most attractive countries concerning Galp Energia's features, with a score of 3.6 and 3.5 respectively. Morocco closed the podium with a score of 3.2, followed by India, with 3.1. Indonesia and Nigeria were the countries under scrutiny with a lower score, 3.0. It is important to note that the countries were not rated in isolation but rather compared between each other.

The weights and metrics of each of the blocks are explained in detail.

Country Overview

Country Overview is the block with the most metrics, highest volume of information and highest level of accuracy in the information obtained and has thus a weight of 50%. The block comprises eight metrics in total, the last two sector specific metrics, which are:

Political Environment: level of centralization of power, political stability and type of government were some of the characteristics assessed.

Economic Situation: level of unemployment, middle class and level of poverty, performance during the economic crisis and economic growth were taken into consideration.

Relationship with Portugal: This metric assessed the position of each market in the ranking of Portugal's customers and the weight of Portugal in each country's both imports and exports.

Distribution: Population, density (i.e. number of inhabitants per square kilometer), number of big cities (i.e number of cities with more than 1Million inhabitants), and percentage of population in

big cities and of urban population were the factors relevant to assess the ease of distributing a product in each market.

GDP: This metric decomposed into GDP per capita, GDP growth from 2011 to 2012 and GDP expected growth from 2012 to 2018.

Export Costs: With the calculation of the transport time in days by boat from Portugal to each market, the transport cost per container and the tariffs (i.e import duties) each country was classified regarding its attractiveness in this matter.

Automotive: The classification of this metric in each country was based on the parc age (i.e. average age of the vehicles in use), type of market (i.e. level of technological advance of the vehicles in use), fleet division (i.e. percentage of passenger cars versus commercial cars), number of unit sales in 2012 (total and per capita), production in 2012 and percentage of automotive lubricants consumed versus industrial lubricants.

Industry: The industry was characterized by three factors, being the first one the weight of the industry sector in its country's GDP, the second the value in USD of this percentage per capita and finally the share of each country in the total consumption of energy in the industry sector in its respective continent.

Total Market Potential

The second block of metrics rates the attractiveness of each market in terms of demand. It has a total weight of 35% since the team believed in its importance in assesing the level of potential and also due to the amount of information that was possible to gather. It comprises three metrics:

Total Market Demand: The total demand in tons of lubricants in the most recent year with information available (2010)

Potential Demand: The gap between the tons of lubricants locally produced and the total market demand. Here the production and the demand per capita of each market was also calculate, since it enables to compare the countries in a fair manner, not being biased by the geographic dimension.

Demand Evolution: The team researched the expected demand evolution of lubricants until 2018. On the countries where it was not possible to find the information, a proxy was made with the gdp expected growth and historical evolution of lubricant demand in the given country.

Competitive Pressure

The third and final block characterizes the six markets regarding the level of competitiveness and market fragmentation. Although the team believes it is a very important and sometimes even decisive metric, due to lack of detailed information to draw more decisive conclusions, it was attributed a weight of 15%. Some data about competition in each country was already gathered, nevertheless it remains fundamental to visit the countries in person or have a connection in the market that can provide more information. Metrics assessed were:

Top Players and Long Tail: The markets were here analyzed in terms of level of fragmentation, existence of dominant players and the existence and strength of local brands.

Price Sensitivity: Each market was rated in being "Low", "Medium" or "High" price sensitive.

6.4.3 Personal Reflection

The Consulting Field Lab was an enriching learning experience in discovering what it is like to work as a consultant and in the same team for such a long period. Working in teams is a way of creating value by leveraging on the knowledge and ideas of all members. It is thus, an intense experience, since it demands not only successfully sharing ideas but also overcoming divergences and discussions.

First, I would like to focus on the Belbin's Model analysis[26] carried out by our supervisor Constança Casquinho before the project beginning. The objective of this questionnaire was to define my role as a team member, recognize the main roles in our team and determine which ones we should try to develop. Additionally, it also served as a self-awakening exercise. Important to note that this test was done based on questions about our perceived behavior in a team, thus it is not a rigid conclusion and we can always adapt to the projects and to the teams.

My main roles in a team turned out to be President and Operational, while I obtained the lowest scores in the Monitor and Intellectual roles[27]. For the purpose of this report, I will briefly comment on these results.

Starting with my predominant role, the "President's role in a team is to clarify objectives and define the business agenda by establishing priorities. It is mostly a coordination job."[26]

Indeed, I agree with the strengths listed as typical of the President role, I am a stable and extroverted person and I have a natural tendency to coordinate people and tasks within a group. I also believe I am self-disciplined and a good communicator. The President is someone that looks at the project in a more macro approach and knows about all the different topics in a broader way, rather than specializing in a specific topic. It's someone who focuses a lot on the final objective and tries to keep the group focused on that as well, which is something I saw myself doing.

The second role in which I scored highest, was the Operational, which I completely agree with. The Operational is someone who "puts into practice the team's projects."[26] Indeed I am more interested in practical things than abstract ideas. Likewise, I also believe in the weaknesses of this role as being my own too, since I "need objectives and tasks to be clear, concise and precise and I can sometimes show a lack of flexibility and difficulty in adjusting to new situations."[26]

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[26] Casquinho, Constança. 2013. *Team dynamics – Belbin*. Consulting Lab. Lisbon: Nova School of Business and Economics

[27] Roles in Belbin's Model comprise of President, Strategist, Intellectual, Monitor, Operational, Team Worker, Prospector and Finisher.

Nevertheless, this is one of my major learnings from this project, since I strongly believe I improved considerably in my capability of dealing with frustration. It used to affect me in a greater way if unpredictable situations in the course of projects arose or if scopes changed, and during the project I started feeling more confident in dealing with those situations by focusing on the final objective and practical problem solving within the team. I believe adversities are usual and expectable in any project of this kind and I feel much more prepared to deal with those without feeling frustrated and in a reasonable way.

As mentioned above, I scored lowest in Monitor and Intellectual. Monitor is someone who "submits people to a certain standard of performance, does not let feelings and emotions interfere with his/her critical and analytical judgment, is good at collecting and dealing with a large amount of information and easily gives feedback to the group."[26] Although I worry about always delivering a high quality work, I am not particularly detail-oriented or am concerned in giving feedback to the group on its performance. Moreover, I let feelings and emotions interfere, since I am a very passionate person.

Finally, I scored the lowest in the Intellectual role, who is someone that "sows the ideas that will feed the group and allows an idea to gain roots. The Intellectual redefines the problems and proposes new procedures and objectives."[26] It is someone that thinks creatively and that is good in feeding many ideas to the group, even though they might at times lack a practical applicability or be inconsistent with the final objective. Undoubtedly, it is a valuable role in a team, especially for problem solving, and I agree it is a skill I should improve, to be able to freely express ideas, even if they sound not feasible at first and to be more open to think differently.

In general terms, being a team with no previous consulting experience and with no knowledge about the industry, I am confident we smartly managed to gain reliability in the company by delivering powerful contents. We learned the importance of aligning the expectations of the Client with our own (as our supervisor insightfully told us, "under-promise and over-deliver."), as well as the need of having a collaborative relationship between all involved parts.

Ultimately, besides learning a lot about myself, my own skills, about working better in teams and winning the Client's approval, I also learned vital consulting tools, all in all contributing to a successful consulting engagement. This project definitely added value to my professional career and for my growth and improvement as an individual.