



Master's degree thesis

LOG950 Logistics

**The implementation of a bi-temperature warehouse in
the northern region of Morocco**

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Preface:

I want to express all my thanks to my advisor which thanks to its valuable advice, to its relevant and constructive remarks, and even to his encouragement, allowed me to have the opportunity to learn a lot from this thesis.

I'm particularly grateful for the preponderant role that has played Madam BEN ABDESSADAK with which gave me the chance to collect the information and use it. I would like to thank her sincerely for her fruitful help and without it; the situation would have been more difficult or even complicated.

I shouldn't forget to mention the support of my family and my friends that where always here to support me and cheer me up during all these months of research, data collection and writing. I thank them all.

1.0 Executive Summary:

Fret International Morocco is a transportation company that wants to expand its service through the development of a bi-temperature logistical platform in the northern region of Morocco. This type of warehouse is almost inexistent in that region which is starting to become an economic pole in Morocco.

The first part of the report is describing the current situation of the company, its history, its operations, the quality of its human resources, the state of its rolling equipment and its distribution network. In the second part, the politico-economic, geopolitical environment and development strategy in Morocco is analyzed. The northern part of the kingdom, especially tangier, where the warehouse is intended to be implemented is given extensive analyses. After that, the financial situation of the company is analyzed through its suppliers and customers. The study is based on data provided by the company for three years (2009, 2010 and 2011). In the third part, the warehouse project was examined by taking into account the project cost, the location, plans and the risk. In the fourth and final part of the thesis, the results were presented along some recommendations that are considered as useful for the company.

To conclude, this expansion which is about the establishment of a bi-temperature warehouse is feasible and important for the company future as it would help Fret International Maroc improve the quality of its services, attract new customers and expand its small size business into a medium sized one. In other words, it would help Fret International Maroc grow into a more competitive and profitable firm which is a key success element.

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2.0 Introduction:

This chapter presents an overview of the thesis. The first section presents the thesis background, which is followed by a discussion of the problems and the purpose of the thesis. A brief introduction to the process of identifying the thesis research questions is also presented.

2.1 Background:

Fret International Maroc is willing to diversify its services and is thinking about the establishment of a logistic distribution platform since the Moroccan market is lacking from such infrastructures. The distribution platforms have emerged in 1980 and were seen as a revolution in the distribution and transportation field. They were about offering the customers a service that combines the receptions of suppliers goods, store it, if necessary, to create an inventory, and then, ship it to the network stores. This type of service with a bi-temperature storage space, is almost non-existent in the northern region of Morocco, constitutes a windfall for the company.

2.2 Discussion of the problem:

The executive and founder of Fret International Maroc (F.I.M) worked and acquired all her experience with OLANO group, and throughout the many visits she conducted to existing platforms abroad especially in Germany and Dubai. This acquired experience, along with the constant growth of the company, reinforced her idea about an existent need for such structures in Morocco. The main objective of the platform implementation is to respond to the partners needs in a much efficient way by offering lower prices and an optimized delivery time, which will help the company achieve better revenues. However, this requires, of course, a good management style and a scrupulous market study that will allow the company, balances the pros and cons about whether or not to create a bi-temperature logistical platform in the north of the country and the economic stakes resulting from it.

2.3 Purpose of the thesis:

The purpose of the thesis is to conduct a feasibility study on Fret International Maroc (F.I.M) that will shows if the current situation of the company will allow them to expand and open a bi-temperature warehouse. If that the case, recommendation will be given to the company on the best ways to start a warehouse project.

2.4 Research question:

- Does the project fit the current company business model?
- Does the company have enough means to afford a big project like opening and operating a warehouse?
- Will the project be profitable and useful for the company and the region?
- Can the company, thanks to this project, move from a small enterprise to a medium enterprise?

2.5 Methodology:

This thesis can be described as a feasibility study of a project. In this case, the project is the establishment of a bi-temperature warehouse in the northern part of Morocco by a company named Fret International Maroc. It is known that expanding a business is very risky and can lead to disastrous results if the company doesn't take the necessary steps before taking the decision. The first step will be to analyze the company strength and weaknesses of the company business process. The business process in this case is management style, assets, suppliers, current company business process, financial means and ways of doing business. After that, the firm environment needs to be analyzed. In this case, it is Morocco, Tangier, the infrastructure and the opportunities. Then, the warehouse project should be looked into. Its cost, feasibility, location, time, advantages and disadvantages should be discussed. Finally, in the last part of the thesis, a conclusion will be made alongside some recommendation seen as essential to succeed in the establishment of a warehouse.

3.0 Fret International Maroc (F. I. M) company description:

Fret International Maroc (F.I.M), a Moroccan company, created in 2004, with its headquarters in Tangier, third biggest city of Morocco situated in the northernmost point of the country, which main activity is the international road transport of frozen goods. It was created after the withdrawal from the Moroccan market of the French carrier Olano considered the biggest transporter of goods in Europe for companies like Kraft, Macdonald and Carrefour Group among others. The company is a subsidiary of the group in Morocco since the owner was working there for twenty years, which explain the strategic agreement between the two for the transportation of good between Morocco and Europe.

The company employs 50% of its resources in the food-processing industry, making the group mainly specialized in the transportation of frozen goods. On the other hand, the firm is among the few that are highly recommended on the Moroccan market and in the Tangier region for international road transport of goods destined to Europe.

F.I.M has partners in Spain (freight forwarders and carriers) and an antenna in the Tangier-Med port as sub-contractor for the data entry that will help them obtain a maximum profit in its logistics operation structure. The natures of the products transported by the firm, in addition to the food-processing industry, are divided into:

- Agricultural goods;
- Diverse goods depending on clients request;
- Goods packaging;
- Sanitary goods.

The firm is essentially dealing with several small customers, and with some exclusive dealers (twelve in total) even though they are small in number, they are present internationally, in Spain, France, Italy and Germany and nationally but mainly in the north of the country. The three main sectors of activities of its collaborators are food-processing industry, the agricultural, and the industrial. The firm, which account on it outstanding team of professionals and foreign partners, increased in 2011 its revenues by 79% compared to 2010. Nevertheless, aware of the context of the sector marked by the globalization, the strong competition, but also the opportunities that offer the association agreements and free-trade agreements concluded recently by Morocco(Moroccan Investment Development Agency 2016), started in 2008 an investment strategy and a leveling program which main objectives lays in the constant satisfaction of its customers. Indeed, the objective achieved in 2011, led

the company to improve continuously to adapt to the constraints of the sector and its external and internal environment. Hence, the idea that comes to the owner was the establishment of the distribution and cold storage platform in the coming years.

3.1 History of Fret International Maroc:

Fret International Maroc has gone through several stages before becoming a transportation company of goods recognized at the national and international scale for its competence and its expertise in the transportation field.

Date	The company changes
2004	Creation of the company INDUSTRY COEQUE SARL AU with a capital of 200,000.00 DH whose main activities are in construction, various jobs, sales of materials.
2005	Obtaining the certificate of registration in the special register of carrier of Goods for the account of others under no.798/T/30
2007	Change of corporate name and the activity of the Company become Fret International Morocco specializes in the International road transportation of frozen goods; partnership with the OLANO group.
2008	Obtaining the certificate of the tax inspector under license n°50484800, stipulating the activities of the following company: Construction work, national and international transport, rental of transport vehicles, accession to the AMTRI.
2009	Increase of social capital to 600,000 Dhs. Obtaining the responsible civil insurance policy of the International road transportation under No. 1202010700088.
2011	The approval code EORI procurement

Table 1: History of the company

3.2 Importance of human capital for Fret International Maroc:

3.2.1 Employee Contribution to the company evolution:

The company performance relay mainly on the employees contribution. The human capital is considered in business one of the essential elements of its structure through which the whole supply chain acquires the value necessary for its proper functioning. The human resources function provides an added value to the organization and to the supply chain since they are the first to be contacted by the client. It also plays a vital role in its contributions to the recruits, inculcating in them the methods of work and the culture of the company.

This success is due to the determination of F.I.M founder and executive Madam Ben Abdessadak Batoul. She has acquired all her experience with the French group Olano, without forgetting her staff acquired to her cause thanks to her good management style and to the imposed climate in her business. A climate of partnership where transparency and open communication are the first rules before signing a contract with a new customer.

The objective of any human resources restructuring obeys to the constraints of the services requested by the customers and the competitiveness. For example, offering a new service like a warehouse offer the company a competitive advantage through bundling products. According to (Panou, Kapros, and Polydoropoulou 2015), service bundling will alter the risk of competition. This shifting in the company strategies from individual to bundle strategies would be reached after the establishment of the warehouse. Bundle strategies will categorize the different companies' product into a bundle making it easy to handle and transport. It will offer better allocation of resources and investment choices according to the authors.

3.2.1.1 Fret International Maroc organizational structure:

The organizational structure of the society description identifies the services, the tasks and the responsibilities of the staff. The staff is distributed as follow (Figure 2)

- Ms. Ben Abdessadak Batoul founder manager of the enterprise;
- Mrs. Oufarssi responsible for the logistics service
- Mrs. Arifi Nabila responsible for exploitation service;
- Ms. El Achhab Samira responsible for accounting;
- Mrs. Chergui Jihad responsible for the accounting service ;
- Anegay Mohamed responsible for export in the Port;

- Mr. Mohamed Merroun responsible for import in the port;
- MR. Ragala Yassine human resources manager;
- MR. El Mansouri Rabie commission agent in Spain for the company ;
- Ten drivers operating at the international ;
- A single driver assigned nationally.

3.2.2 Human Resources management Mode:

In fact, the recruitment process in the company follow a simple principle of hiring only competent people who will be able to adapt easily to the partnership way of working. Training, constitute one of the most common tools to help the new employee integrate easily in the firm dynamic. As for the seniors, they contribute to the completion of the modes of operation of novices in regard to the satisfaction of the client and by the same stroke of the supplier. This know-how is necessary to improve the tasks, and to satisfy the desired objectives.(Danvila Del Valle and Sastre Castillo 2009)

This management strategy has been applied in the hiring process since the establishment of the company. Table 3 show the evolution of human resources during previous years. This demonstrates the determination of the executor to keep a good eye on the human resource department organization so that the results will not be affected. The hiring process is done on regular and constant basis to not interfere with the culture of the company.

First of all, the firm management and the functioning of the business are part of the executive task. Ms. Ben Abdessadak job is to manage the different company documents (for example signing contracts or approving vacation for an employee), keep an eye on the quality of service, and the internal and external controlling tasks. She also sets and applies the procedures of recruitment and training.

The number of managers did not change since the beginning of the company: two managers and one executive (Table 3). The stability of the staff allows the company to maintain the heading of the society in a long run scale. The operating service plays a leading role since it has to develop relations of trust and loyalty with customers on one hand and with the employees, on the other hand, especially with the drivers, supervised closely for a better management of logistical operations knowing that this category represents 48% of the employees. The administrative service role is to optimize the firm's operation. Its daily responsibility is to find and get in touch with the responsible(s), provides the stewardship in all its aspects and to ensure that the guidelines are understood and applied by the company

employee. F.I.M has young and competent workers with an average age of 35 years. We notice an increase of the staff reaching 42% in 2012 compared to 2010 related to its expansion policy leading in a long-term scale to the establishment of the logistical platform.

3.3 The company mode of management:

The culture of the company F.I.M a SMES, is based on a horizontal management, create good working atmosphere between the seventeen employees and their superiors. This management model is inspired by the modern management style where the employees learn to love their work and do everything possible to increase the profits without having their manager constantly on their back. Unlike the traditional management that reprimand without discomfort its employees throughout the day to get better results. This does not make the employee enthusiastic to come to work every day. However, if the staff increases, a new problem will arise. The platform establishment will modify this mode of operation, which will certainly change due to this change in the structure and new status of the company. Such a strategic shift must be accompanied by good measures:

- Establishing a logistical thought in all operational layers of the company ;
- Adoption of more practical means, necessary for a good management style ;
- A precept of logistics specification unique to each department and task regulating and adjusting, purchase, schedule of storage or delivery, and operational organization.

3.4 Rolling equipment status:

The entire rolling equipment is in a correct state and it has been adapting to the F.I.M activities and all the fleet trailers meet the specifications of the Euro 3 standard; moreover, the company plans to move its tractors to the standards Euro 4 and Euro 5. The rolling equipment fleet for the transport of goods meets the standards and criteria of the national and international transport norms. F.I.M has 7 trailers for transporting frozen goods, 7 normal trailers and a trailer tank (Table 4). To cope with the competition and to the satisfaction of the growing needs of the market, the firm is adopting a strategy that consists of a continuous improvement of the structure, of the quality and quantity of the rolling equipment. According to the demand, between 2009 and 2012 each type of equipment (tank, refrigerated, normal) increased from 0 to 1, 0 to 7 and 0 to 7 times.

The infrastructural investments, done by Morocco, the port, rail, road , (Port Med, new railway line linking it to the national and international network) invigorates the import-

export and give a boost to the economy in general. In this environment, convenient to the development, the company is trying to reposition itself according to this orientation by retooling their rolling equipment and readjusting their human resources recruitment process, training, etc. We significantly notice this impact on the company benefits during the past three years (Table 5). We note, for example, that the processing of file, in import, increased from 44 cases in 2009 to almost 426, and in export from 41 to 213. This huge increase of the activity can be explained, in part, by the new authorities' policies in the kingdom for the North region with the establishment of a whole set of facilities promoting the economic activities in the region. However, if these numbers are analyzed more carefully, it shows the premises of a company willing to expand its services.

This expansion policy and gaining customer loyalty is having an impact on the tonnage transported for the import and export. Between 2009 and 2011 the goods transported in tons have been multiplied by ten. However, the imports are experiencing a net growth toward the export, which reveals the impact of the European crisis on the world market in general, and Moroccan market specifically. This explains the stagnation of freight toward Europe between 2010 and 2011, without omitting the increase in tonnage of nearly 50% based on its strategy that consists of building a mutual trust and respect between the company and its customers. This lead to a loyalty policy offered to its the partners that consist of offering good payment plans.

3.5 Fret International Maroc distribution network:

F.I.M performs its services to supply and respond to the demands of its various customers. The organization of its activities is carried out at two levels, through the national territory and on the international level. Two tables summarize these destinations, one toward the Moroccan cities and the second toward the European countries:

3.5.1 The company's activities at the level of cities:

The city of Larache, where FGG is implanted, has the most important customer of F.I.M who has just signed a strategic partnership with the firm in 2010. He alone absorbs 53% of the activities of the company. A quick glance at the data (Table 6) reveals, also, the increase in the turnover going from five hundred fifty-five thousand two hundred and sixty-eight to seven million six hundred six thousand one hundred fifty-nine dirham between 2011 and 2010.

Agadir takes the second position in the goods transit, with 12% of market share given its proximity to agricultural land. Knowing that at the beginning, this site belonged to the group's subsidiary Olano which, naturally, has inherited the management responsibility up to our days to F.I.M. In addition, two firms, AGA and BCIF, share the firm services in this region. Nevertheless we note a 43% decline in the turnover between 2011 and 2010 going from three million one hundred and twelve thousand seventeen to a million seven hundred sixty-six thousand three hundred forty-eight dirhams. This is due to the partnership with FGG and to the financial crisis that has affected Spain main Moroccan fruit and vegetable exporter.

Tetouan, with the CER and SAN business, constitutes 7% of market share. A 246% increase in the turnover between 2010 and 2011 going from three hundred one thousand eight hundred to one million forty-five thousand dirhams. Two main reasons can explain this new strategy, diversifying the product transported and the financial crisis that European economy is going through.

Casablanca, the economical capital of Morocco, with the clustering companies, is also contributing with 7% of the total activities with a significant increase in the flow of goods between 2010 and 2011 of 233 %; from three hundred sixteen thousand two hundred four to a million fifty-two thousand six hundred and ninety-five dirhams, a considerable increase for the company.

The other cities of the kingdom cover only 1% of the flow of goods and couldn't be considered as strategic points of the company since their request for freight services is random and unreliable.

3.5.2 The company's activities at the level of European countries:

Spain constitutes the key market for the company. With 75% of the overall freight, F.I.M has seen its turnover increasing by 291 %, going from a million one hundred ninety-nine thousand eight hundred and ninety-six, to four million six hundred and eighty-nine thousand six hundred and twenty one dirham.

We notice also that France is another important destination of the firm as it was a subsidiary of Olano in Morocco before becoming independent, yet, it has kept its status as a strategic partner. Olano allows F.I.M to use its platforms as well as its rolling fleet, if they are available, to dispatch the goods toward Spain or the Kingdom. The market share reach 18 % and the turnover have decreased by 38 %. It went from one million eight hundred and fifty-nine thousand two hundred and fifteen, to one million one hundred fifty thousand six hundred

and eighty-seven dirhams because the number of trucks is becoming inadequate and below the demand of the international freight market. It is mainly due to their Larache partner who is requesting more and more trucks thanks to the developments of its main activity, the salty anchovies.

Italy and Germany represent only 7% of the overall transactions. Besides, most of the time, the company charter its services for some Moroccan companies so their goal is to transport the packages to their destinations. This can explain the low level of transaction in these parts of Europe.

4.0 The current situation of Fret International Maroc:

Generally, the situation analysis of a country is based on two basic components, among others, the politico-economic and geopolitical situation. The condition of these two parameters leads to test these vital factors. These two elements have a significant impact on any investment intention in any economic field. To better reflect on the decisions that Fret International Maroc need to take concerning the opening or not of the platform; this issue would be tackled without going into details considering that this is not the aim of our study.

4.1 Politico-economic strengths:

With its stable political system, its economic choices, Morocco benefit from a good reputation in the eyes of foreign investors in all sectors of activities. Particularly, in the service sector where the international freight is experiencing a booming after the inauguration of the Tangier Med port, the opening of the new highway that disserve the south toward Agadir (main agricultural city of Morocco) and the major geographical advantages of country. In addition, the rate of urbanization in Morocco, estimated at approximately 59% and reaching 60% in 2015 (Haut Commissariat au Plan data), explains the rapid growth of the urban population causing the consumption to steadily increase since the middle of the twentieth century.

It is also known that the huge investments undertaken by the Moroccan state, during this last decade, especially by the construction of 'Tangier Med' port and the highways linking the major cities, have led to a substantial increase in the flow volume of goods between Morocco and its different economic partners. These reasons had a direct impact on the sector evolution that is experiencing a remarkable growth on both the national and the international level.

Thus, the current policy of the government resides in the accompaniment of any freight company by offering the best working conditions in a secure and competitive environment. On the same line, Morocco is working on the adoption of a law that will be more flexible on regards of the free transfer of capital and signed agreements with 35 countries and the Arab Maghreb Union in order to avoid double taxation.

4.2 Geopolitical Environment:

To begin with, the location of the Kingdom at the mouth of the Mediterranean toward the American continent, between two major hubs, Europe and Africa, played in his favor, and grants it, for the moment, an important role actor in two large markets with strong potential: the African market and the European market. This strategic value facilitates the transportation of goods and people only if the delivery time limits in its operational areas could be maintained consistently.

On the other hand, the flow of international road transported goods between Morocco and Europe served by the Moroccan companies represents only 5% of the global flows, a big portion of flow goes to the European companies. Indeed, in 2002 the national park reaches 1246 vehicles belonging to 403 firms and almost one quarter are installed in Casablanca. In addition, the Spanish companies detain 80% of the turnover in the transportation of goods sector. In other words, this strategy of creating a new pole in the north of Morocco is confirming more and more the changing needs of the international market that seek lower transportation prices.

4.3 Development policy:

The growth of a company is built upon the elaboration of mechanisms for the structuring and maximization of its activities. Its objective about improving the outcomes lies on exploring and knowing its economic environment so that it can conquer other markets. Its ability in managing its own success and making it profitable goes through strategic plans that discuss future investments that will help the company be always attractive and aware of new trends in the markets. If not, its inaction will become a threat that may lead to bankruptcy without forgetting that there are other risks factors. To sum up, the environment of the company and its strategy, and even its development policy consolidate and concede to the firm new serene horizons.

The environment in which F.I.M is moving is characterized by a fluctuation of the companies' activity whose goods flows depend on its commercial activities. Therefore, it has developed and mastered, over the past few years, the way they are serving their suppliers and partners, by a continuous investment in the rolling equipment, which offer them an advantage as it, help them establish loyalty among their customers, and conquer new markets niche. Such strategy make the firm achieves a two-digit rate of growth thanks to the improved roiling material and without forgetting that job is to make the costumers happy and willing to

come back. This new positioning endows to the firm a determining competitive advantage to meet the expectations of its partners.

Obviously, the company did not have to suffer from delay times, nor from the delivery time (usually during the day), nor in the fulfillment of the demand (usually less than 24H) due to an agreement with its partner OLANO group that give the company the ability to use their logistical platforms present in Spain and France. It helps them respect the announced or confirmed deadlines with their different customers, knowing that the satisfaction of customers is by definition a factor of competitiveness in the transportation sector: each customer has different expectations and the firm will try to satisfy it by developing quality measures and adapting to the market expectations.

Nevertheless, the service price is increasing sharply during this last years as we can say that there is a direct or indirect relationship with the outbreak in the raw materials prices (fuel, engine oils and tires). As a small note, Morocco just liberated the prices of oil that were subsidized so there is a notable increase of gas at the pump station. The positive correlation that exists between the pricing of goods transported internationally and the increase in oil price continuous fluctuation can be seen as a treat in the coming years for the company.

The strong fluctuation of the oil prices in recent years is directly influencing the final price of the service, without neglecting the law of supply and demand of the market. At last, the firm seeks to gain a competitive advantage by its operation strategies:

- Time for service delivery: weekly planning in advance;
- Delivery times: in the day;
- Processing Time of customer complaint: as they receive it;
- Types of claim: delay of delivery ;
- Delay of supplier payment: 90 days.

The proximity policy and giving importance to the various requests of the customers constitute the key success of F.I.M. For instance, even with the increase in demand for its services during the last few years, the company has been able to react quickly when transport flows increased by raising its rolling fleet and expanding its services with the new logistic platform project. This commitment, no doubt played necessarily in its favor. It is admitted that the customers of the company, operating in a very competitive market, forcing them to always have a very balanced offer between the needs and purchasing price. In this situation, of course, to maintain a very good quality services (responsiveness, availability, proximity,

and assistance), delays (effectiveness and respecting the commitments), and price is keeping the company among the most efficient International Moroccan road carriers of goods locally and internationally.

Furthermore, the satisfaction of customers, being by definition a factor of competitiveness in the transport sector, the company is trying to fulfill each customer expectations. These measures are related to the respect of the announced or confirmed deadlines of the firm customers. Even if the demand for its services has increased during the last few years, the firm will have the qualification to respond quickly to this increase in the transportation flows by the continuous increase in the rolling fleet and the establishment of a logistics platform in a near future.

Finally, the company has also the expertise, knowledge and experience in the logistics field. That explains its ability to deliver value added services to its customers. In this optic, any request is treated carefully and professionally, and by the same occasion constitutes for F.I.M a source of constant improvement.

4.4 Fret International Maroc customers:

The flow development and the multiplication of activities in the transportation and storage of goods is associated with the continuous efforts to ensure that the customers will be able to access this offer on the national and international level, without neglecting the importance of the company to manage the prices effectively so that it can optimize its costs and benefits. In other words, the two aspects should be balanced one in reference to the other.

4.4.1 Sectors of Activity:

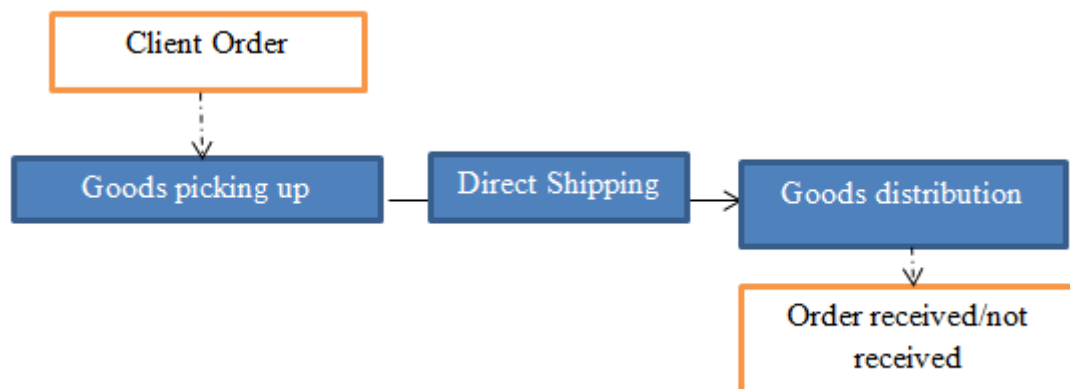
F.I.M has a strategic collaboration partnership with the large french group 'Olano' specialized in refrigerated transport for more than 37 years and who has a fleet of 650 vehicles, 50000 m² of refrigerated docks (+2 to +5°C), 650,000 m³ of refrigerated warehouse (-20C) and 165,000 m³ of ambient temperature warehouse (+14°C). In addition, Olano gather several entities located in France and Spain that the company can use according to its needs.

The company is also a member of the URIS (International Road Transport Union) and collaborates regularly with forwarders and Spanish carriers. The organization takes advantage of these different partnerships by offering personalized assistance and performance to its various customers, without neglecting the importance of keeping and developing professional relations with the clients. This allows the company to acquire a certain degree of credibility in

the market and to shape it over time. This is why the business is a valued partner by its customers, suppliers and competitors. Referenced in its field with its multiple activities and services:

- International road transport of batched goods delivery from end-to-end customers
- International road transport of bulked goods delivery for the same client
- Transshipment of goods in Algeciras with AFL DEL SUR company ;
- Rental of rolling equipment (chartering) if the demand from the customers exceed the company supply.

The different types of delivery are processed as shown in the distribution Supply chain diagram of the company:



To measure the degree of satisfaction of its customers by this system of distribution, the company develops regular questionnaires and organized customer satisfaction surveys with insisting on the essential points in this type of services:

- The respect of deadlines
- Service price
- The customers' requests
- The objectives achievement

The entreprise has many clients that are in different sectors of activity at the national and international level (Spain, France, Italy, and Germany). Indeed, the distribution of products transported is divided by sector of activity:

- food-processing goods: 50% of the demand
- Agricultural product: 17% of the demand
- Diverse Merchandise: 16% of the demand

- Goods Packaging: 9% of the demand
- Sanitary Goods: 8% of the demand

From these numbers, two sectors stand out, the food-processing and agriculture with 67% of provided services, followed by the industrial sector with 17 %. This shows that half of the provided services are intended to the food-processing sectors since most of their products are perishable, which explains the specialization of the firm into transporting refrigerated goods. Actually, Nowadays, Francisco GCV occupies a distinguished place among the customers of F.I.M , in the transport of salty anchovy intended to export.

Yet, the firm provides its services for the transport of good packaging, canned food and the barrels of salty anchovy. In addition, its operational strategies opted for diversification their servicing by acquiring a trailer tank, which will be used to import the vinegar and olive oil needed for the production of FGG.

4.4.2 The Company profits:

The interaction between the development of activities, their multiplication and their organization depending on the customers' profiles may correspond to a transportation market conquer and, specifically, an increase at the same time of the firm profits. Accordingly, the company turnover distribution, by family of products transported and clients served, is presented in the following table, during the years ended 31 December 2009, 2010 and 2011 (DH):

Table 8 shows that the figures referring to the road transportation activity didn't weaken in Morocco, but in the contrary, it knew an important growth due to the factors mentioned earlier (Tangier Med Port, road infrastructure to serve all the cities of the kingdom etc.).

Fret International Maroc signed a strategic long-term partnership with FGG Company which made food-processing goods the most profitable ones since they generate around 50% of the turnover reaching more than three million eight hundred million dirhams in 2010 and more than six million four hundred thousand dirhams in 2011.

The canned anchovy are also considered as a main activity as its covers one of the highest rate with 37% of the global turnover. Moreover, the delivery of raw materials, composed of barrels of salty anchovy or empty one and packages, get a total of 54% of the total turnover. In another word, more than half of the freight is devoted to this activity. During the last three years, this type of products brought to the firm around ten million dirhams, with an average of three million four hundred thousand dirhams per year. It can be explain by the facts that in 2011 the flow of this type of products has almost tripled.

Agriculture is another important activity because of its role in the company benefice scheme. BCI farm is the company with which Fret International Maroc deals (with all its different subsidiaries). BCI brought in almost nine hundred thousand dirhams in 2010 and more than two million one hundred thousand dirhams in 2011, which is a substantial increase of almost 134 %. This type of goods represents 15% of the total turnover of the company.

The third activity within the long-term are the Sanitary goods because of their widely presence in the north of the country since it is cheaper to produce in Morocco, like Jacob de Lafond in Tangier. F.I.M is dealing with three companies, SAN, SERA and CER of Tetouan. These three companies were charged more than two hundred and fifty thousand dirhams in 2010 and more than one million one hundred fifty thousand dirhams in 2011, a significant increase of 354%. This type of goods represents 8% of the overall turnover of the company.

4.5 Fret International Maroc suppliers:

For a company, deciding on the choice of its supply mode, either in single sourcing, or in multi-sourcing, arouse many questions. Selecting one or several suppliers has always been an issue for companies and it requires an analysis to see the benefits from each solution. Moreover, to meet the requirements of a competitive market, it is important to seek for alternatives, which are necessary from the point of view of the business location constraints and the technical and organizational offer abilities.

4.5.1 Choice criteria:

In the framework of creating and maintaining a network of suppliers, the company proceeded to sort out the best. A difficult decision that the company must take; but, a priori, it is useful to carry out a preliminary study to match the type of service or products required from its partners to its own needs .

Generally, the choice of suppliers is based on various criteria and the most important one are(Benyoucef, Ding, and Xie 2003):

- Location ;
- Delivery Times ;
- Reactivity ;
- Operation functions and their efficiencies ;
- Compliance with Requirements/specifications;

- Price-quality of services/products ;
- Flexibility.

According to its delivery commitment policy, F.I.M selects its suppliers, according to its constraints and from its own internal procedures and delivered infrastructures requirements to derive the maximum benefit. This policy is applied, for example, in the company purchases, based on mutual trust with the suppliers, which enables it to maintain competitive prices with good quality service.

As a safety Measure, every time and for any type of products, it takes care in particular, of the chartering, towing, gas, the signing of commercial contracts and other services. As a result, the delivery deadlines are respected, and price, delivery or quality issues have rarely been reported.

To cope with the competition and maintain its market share, the firm is involved in a perpetual seek of a better service quality. Through its close collaboration with its suppliers in terms of the respect of commands clauses, the cost deduction and the operations fluctuation that constitute the cornerstone of the company concerns.

The distribution from Table 9 denotes the suppliers' diversification choice from Fret International Maroc. Thus, shipping companies, with 37% of the overall purchases in 2011, has known a huge increase of 1041% compared to 2010. On the other hand, the gas section increased by 22% in 2011 while the overall purchases are experiencing a net increase of 248% in comparison with 2010.

Given that F.I.M, a transportation company owner of its ten trucks, gas, with 21% of the total purchase cost made by the company, constitutes the most significant cost with one million two hundred thousand dirhams in 2010 and nearly one million six hundred thousand dirhams in 2011. This instability in oil prices during the past few years and the constant increase of its prices in the European countries, where this commodity is not subsidized by the state, are the reason, among other things, why we notice an increase of 32.25% between 2010 and 2011.

In addition to that, thanks to the rapid expansion of the firm, an important player in the international transport of goods in Morocco, the number of trips increased considerably which is causing, in periods of strong demand, an incapacity to find available truck to satisfy the customers demand so the firm is obliged to use chartering and freight forwarders. These companies invoiced their transport services for three hundred thousand dirhams in 2010 and

more than a million seven hundred thousand dirhams in 2011 meaning a deficit of 475% compared to the two years.

The shipping companies, the third significant expenditure of the company refers to the two Moroccan shipping companies, Comarite, before its compulsory liquidation, Comarship and Euromaroc Detroit. They charged the company more than two hundred twenty-five thousand dirhams in 2010 and two million one hundred sixty thousand dirhams in 2011 constituting 35% of the total costs of the company. This dramatic increase of nearly 91.23% between 2010 and 2011 resulted from the changes undertaken by the executive in her management as she used to charge the shipping cost service separately from the overall service. However, nowadays this cost is included in the total price of the transport service.

In addition, the firm wasn't used to keep all the bills of its different provided service but for the sake of transparency an itemized bill, with all the fringe expenses (costs of shipping transport and customs for instance), is sent after each freight.

Finally, to facilitate the management of foreign customers, especially Spanish (75% of the company's customers are Spanish), the company, since 2010, use the services of a forwarding agent which cost them six hundred and fifty thousand dirhams, nearly 9% of the overall budget.

The other suppliers of the company, 7% of the purchases of the company, are mainly in charge of the trucks maintenance. Additionally, The Company has signed a partnership with Renault and DAF to ensure this operation. This agreement cost them approximately thirteen thousand dirhams in 2010 and nearly five hundred thousand dirhams in 2012. A more precise glimpse of the above analysis is given in Table 10

4.5.1.1 The average costs per year per kilogram and per kilometer:

Table 11 gives us an idea on the evolution of the price compared to two variables: the weight and the average distance during the last three years. On average the import costs decreased significantly but they confirm an increase in export, a decrease in the average transported goods and a stability in the travelled distance.

The increase in costs is mainly due to the expansion policy of the company mentioned above. On the other hand, the average weight of the transported goods has decreased. Nevertheless, the new commercial strategy, which consists of loading a truck, according to the needs of the customer, instead of not allowing his departure unless the truck is loaded at its maximum level, invoiced at a higher price of course. These two variables related with the distance and weight, pay off the costs per kilogram on average over the three years.

The distance, in contrast, has experienced a remarkable stability during the past three years, along with a decrease in the cost per kilometer in import and an increase in the costs per kilometer in export. The increase of costs in export can be explained by the explosion in oil price in Europe, especially the diesel fuel, compared with the Moroccan prices.

4.6 Company Constraints:

Today, playing the major role in competitiveness, responsiveness exists at the level of the company that, with sufficient resources, didn't stop investing in order to improve its productivity and develop its operating competencies to satisfy, at the same time, its customers.

The company's investment was mainly into rolling equipment, which explains an increase in the needs for the transportation service internationally. In addition, the constant prices increase, during the recent years, in the oil sector and in the same time, the company raw materials price: fuel, engine oils and tire explains the constant increase of F.I.M expenses. Therefore, the firm is obliged to fix the purchase price with its various suppliers in order to reduce this risk of prices inflation that may have a bad impact on the service final price.

The prices agreements and the easy terms of payments are negotiated between the operation service, in consultation with the executive, and the suppliers then concluded via a contract. This kind of approach is helping the company grow and improve its relations with the partners and its various suppliers. However, when the market price is lower than the price of the contract the company is obliged to pay the highest price.

The enterprise depends entirely on its customers; consequently, they are trying to not neglect its supplying constraint that consists of selecting the suppliers according to the current internal procedures. These procedures take into account the requirements of the different demanders groups without neglecting the loyal customers.

To adapt to the laws of market, the responsiveness of the service is the competitive advantage that fret International Maroc is using against the competitors. Hence, the company is continuously increasing its operating capacity and improving its efficiency by diversifying its services and negotiating the prices.

To sum up, to develop partnerships with the suppliers, signing the contracts while diversifying its raw materials supply sources is helping the firm hedge against the competition constraints and risks and continues confirming itself as a leader in the international transport of goods in Morocco in general, and in the region of Tangier specifically.

5.0 Fret International Maroc logistic platform project:

5.1 The importance of logistics:

A distribution and bi-temperature storage platform (warehouse), a concept insufficiently exploited in Morocco, is difficult to find in the northern region of the country. In fact, the company, as a new service provider in this region, advocates to meet the growing need of demanders for this kind of service by ensuring to know, first, how to sell this new service to its customers, otherwise its lack of skills in this area of logistics will cost the firm a lot. This is why, in the beginning, it should follow the rules of the current market situation. For instance, if the average, and acceptable, delivery time in the region is 48hours, why will we rush to deliver in 24hours and neglect our service quality?

In this situation, it is good to divide our customers into different segments with different service price. In other words, determine the average time delivery and ask the ones who are in a hurry, meaning a lower delivery time, to pay more.

The same procedure will applies to our storage facility as we can also divide our customers in three segments:

- First segment:

The loyal customers will have the priority to benefit from a greater and less expensive surface area, because of their long-term contracts with F.I.M meaning a constant and a certain demand for the offered services.

- Second segment:

The seasonal customers will be second in the priority list and will benefit from a smaller surface area, but a little more expensive, since of their medium term contract.

- Third segment:

The occasional customers won't have the priority and will have to pay the market price linked to the supply and demand (spot Price).

At last, the company has to take a position in relation with its competitors by choosing the strategy to adopt: a lower price but a bad services quality or an irreproachable quality with a higher price. Namely, knowing how to balance between the demand price and the offered quality is set without compromising the essence of the company.

5.2 Location:

The company found a 2500m² land in the Meloussa region where the cost of one m² is negotiated at 600DH. The land will cost one million one hundred twenty-five thousand dirhams. This high price is explained by its Location which is close to the highway leading to the Tangier Med port and within the new industrial area, thus the warehouse will benefit from significant advantages. Besides, Renault is already implanted in this region and represents an economic booster in the area. The management style of F.I.M seems able to promote the economy of this region and take advantage of its strategic place.

5.3 Realization:

The surfaces of each land plot have been planned in a coherent manner between the architect and the executive of F.I.M. Their agreement follows the need of the market, while trying to optimize the facility operation and cost. It is adapted to the activities and operation that are subject to the current management practice of a warehouse. The organization of the warehouse is illustrated in Table 12.

The reception and office parcel would be done on two levels. The ground floor will be dedicated to the customer reception, to the storage and destocking of goods responsible, a small room would be reserved to drivers so that they can relax, eat or change their clothes before heading back the road. The manager of the warehouse, founder of the company, would occupy an office on the first floor to have a strategic view over the whole storage and destocking of trucks area. The refrigerated hall would be used to store the goods that are in the process of being load or unload from the truck justifying the 150m² reserved surfaces.

The storage part is in fact bi-temperature to allow the changes from a negative temperature to a positive one depending on the customers' needs. This space of 500m² could expand up to 1000m² when the needs of the Moroccan market in storage and transport of goods matures.

The mechanical workshop built on 300m² surfaces would have the capacity to accommodate two trucks at the same time and to decrease, as well, the company costs, since a stopped truck cost more than a moving one. Moreover, a washing station and a diesel pump would be constructed as a mechanical workshop annex to save valuable time because the trucks will no longer have to move to get their gas before heading the road. The plans (Figure 3&Figure 4) visualize and describe the warehouse surfaces distribution.

5.4 Construction deadlines:

The establishment of the warehouse, which will be launched as soon as possible, should be operational within the time limits established with the different project stakeholders (architect, Feasibility Studies, contractors).

The platform construction requirements will take into account the specific choices of the company and will define two main areas:

- Internal Areas
- External Areas

In practice, the schedule of carrying out the work will require a two phase's implementation procedure. The first phase will be devoted to the facilities construction and will last 9 months. While the second phase will be devoted to the laying out of the external area into parking, washing station and gas pump annexed to the mechanical workshop; furthermore, the refrigerating installation will be conducted in the storage area. These two tasks would be processed simultaneously for approximately two months. The total duration of the project will be eleven months excluding any unexpected events Table 13.

5.5 Facilities overall estimation:

The establishment of the warehouse is within Fret International Maroc restructuring process. On the one hand, the financial opportunities linked with the new cost strategies that will be applied to the existing services and the reorganization of the logistical services are part of this renewal strategy. On the other hand, it is seen as a new competitive advantage; which can help the company prosper. Due to these objectives and the scheduling constraints agreed upon by mutual consent, the overall cost to establish the platform (warehouse) is estimated to be around nine million dirhams. The cost are presented in the following Tables (Table 14, Table 15, Table 16) which describe the different phases of constructions, the equipment costs and the warehouse overall cost.

The largest part of the budget is for the Feasibility market studies before the platform implementation. It is estimated at six hundred seven thousand eight hundred twenty-eight dirhams. This is the reason why the company chose to get involve a student in their feasibility study. The project total cost is estimated at eight millions seven hundred eighty-five thousand seven hundred sixty-four dirhams. We shouldn't omit the contingency cost which is very important because it can help us intervene whenever a work is delayed by using more resources to finish a given tasks. All that is important if we want our platform to be delivered

in time since any delay may turn away our customers to our competitors who can offer them the same services instantaneously.

5.6 The reasons of the platform establishments:

Today, logistics is becoming an important strategic partner in the services operations and occupy the principle role in the organization management and synchronization of the flow of activities. This view had an impact on Fret International Maroc decisions, even on the usefulness of the logistics platform (warehouse) establishments' idea. This choice is taken into account for multiple reasons. We cite among other (Chopra and Meindl 2013):

- Better positioning within the competitors
- The customers are becoming more exigent, requiring a constant improvement of the services quality and diminishment of the delivery time.
- The customers are less loyal because of the competition becoming more and more harsh and the weak world economy. That why the company should be flexible and could easily adapt with the market situation
- The customers are more demanding and the exclusivity desire is arising among them. Thus, the flow management is changing forcing the suppliers to have a high turnover rate so that they can fulfill the customer needs who always seek to be fashionable and original in their consumption mode.
- Globalization and the geographic dispersion of customers with different needs but all seeking the best quality price product with a short delivery time
- Change in the operation style of the company, going from a vertical and centralized structure, to a partner's mode of operation forming a network, able to provide the needed reactivity to optimize the distribution chain.

These various reasons demonstrate the growing role of logistics and its role in any firm success. Moreover, the service logistics concept (transportation, warehousing, and inventory management) is now taking part in the concerns and strategies of the various distribution chain actors. They take into account the geographical position of their customers, the required deadlines of the customers and the competitors without forgetting the sensitivity and the uncertainty of the demand to fully respect their commitments with their various customers.

5.6.1 Advantages:

There are many advantages for this project which will help the company save enough given that the services are centralized and the flow of goods optimized. Thus, the reorganization of the enterprise will offer various opportunities listed as follows:

- The transportation cost will decrease significantly: the clients will send more goods to the platform, and thanks to the economy of scale, they will benefit from a more compact and concentrated market allowing them to save on the volume.
- The inventory will help the partners better manage the demand for their product, planning according to the supply and demand, and it will finally avoid an inventory overstocked or an inventory shortage in the operational areas.
- The partners average volume of orders will be maximized which will lead to an administrative cost reduction.
- The information management system will allow the company to offer its customers, in real time, a clear transparency at the level of monitoring their orders. Moreover, the company will be able to access and manage directly the distribution and storage of the goods.

5.6.2 Disadvantages:

The disadvantages of a platform are mainly financial and operational:

- The location of the platform plays an important role since it allows a gain of valuable time and money when the platform is situated near the highways, the airport and the port.
- The time frames are very important for customers and if there is an administrative dysfunction, staff strike, employee stop work because of illness for example, or an operational breakdown caused by a power cut or an IT problem, the whole distribution chain will be paralyzed implying disastrous consequences for the company .
- The management information system establishment cost turn out to have a high initial investment.
- The collaboration of the various partners in the supply chain constitutes an obstacle when there are no logistical specifications which are often neglected by the supply chain members. This leads to bad optimization of the chain because we know that the benefits of the whole chain are linked with the weaker member of the whole Supply chain.

6.0 Result:

6.1 The Feasibility study of FIM warehouse:

It is known that there is no growth or competitiveness for a company without an expansion strategy. The objectives, of any firm, are not only about reducing the costs, improving the quality of services, but about the capacity to anticipate the challenges and the changes in its environment. F.I.M shouldn't rely only on renewing its organizational model. But it must be able to react quickly to the changes and take strategic investments decisions necessary to the survival of the company by taking into account its customers, suppliers, partners, its geo-economics environments and policy.

This feasibility study analysis done in the previous part proved that the company in its actual situation can afford such investment even though it possess a small number of human resources, equipment and resources. There are four main reasons that support this claim. Firstly, there was a constant improvement of the equipment, number of drivers and the profit that is increasing exponentially during these last years since the customers are becoming more loyal especially. Secondly, considering the existing opportunities in the north of the Kingdom by its geographical position, proximity to Europe, at the crossroads of the biggest sea network, building the bi temperature warehouse appears to be feasible and necessary in a near future. Thirdly, this economic-strategic choice is strengthened when we know that FG has already booked 40% of the platform storage capacity from F.I.M and there is already an offer from BCI Farm to book between 10%- 20% of the platform storage capacity. Finally, if F.I.M took the choice of establishing a logistic platform, it will add value to its current customer and would attract new ones that would help the company become more important in the region.

The establishment of F.I.M warehouse is important and has more advantages than disadvantages for the company. The only thing that may delay this choice would be financial part since the company is waiting for a bank loan but there is great sign from the bank since it has already passed two first phases from three which were to convince the bank manager, and the regional manager of the feasibility of the project and its great impact in the region. Moreover, during last four years, the Moroccan government starts helping SMEs from the northern part of the country finance their project since Tanger Med was ranked as the fastest growing African port in 2013 (Intelligence 2014). The analysis that is being done in this thesis will help the company convince the bank headquarter in Casablanca, which is the economical capital of Morocco, to accept their project and help them finance it. However, there is many

uncertainty about the project since the personal lack logistic knowledge. Therefore, the next part is about the recommendation given to the company to make their project successful.

6.2 Management Information System:

In the business world, information is everywhere and we should plan, consolidate and organize wisely and correctly the routing of all the kind of information flows. The treatment and usage of this information flux become a challenge; therefore, management information systems arise as major tool to help companies control this information overflow. It monitors the delivery of the goods from the beginning to the end of the supply chain if looking upstream while monitoring the money and information flow downstream. The management of information flow has completely changed during the last decade thanks to the technological evolution of the information and the teletransmission. These advances are contributing in large part to the development of the logistical activities around the globe. It was able to grow and move forward by promoting the geographical tracking of the goods from entering to leaving the distribution chain. This technological improvement would help any firm organize the flow of information in the whole supply chain from retailer to suppliers and then customize its service according to the customers' needs. (Sarngadharan and Minimol 2009)

One example of the management information system is the warehouse management system (WMS). It is known that managing an inventory is very hard without an information system due to the continuous change in the inventory level during the course of a day. WMS ensure transition of information in real time of inventory level and the communication become easy between all the layers of the chain. In addition, the company will have an overview over the storage capacities and the geographical network despite its disparity and distribution. The firm can choose to have only the Warehouse management system or integrate it to an existing enterprise resource planning (ERP) that would allow it to benefit from the latest technological advances like RFID, voice recognition and automation. There are many definitions of ERP system in the literature but the one that was given in a class encompass all of them. "An ERP system is an IT-system that supports and automates business processes by integrating operations and sharing data across the organization in real time". The usage of an ERP system, not to mention others, is used by businesses to facilitate this exchange of information. This integrated ERP system gives all the information about the logistics structures of partners, the sales forecasts, the orders of the different parties of the

chain and can even help the companies do their daily accounting. In other word, it facilitate the work of companies and in the same time optimize the whole supply chain since the information exchange between all the layers of the chain is a key measure in the logistics performance. (Nwankpa 2015)

This thesis is a tool for F.I.M to build a request for proposal to acquire an ERP system. There are many vendors like SAP, Microsoft dynamics or Oracle. The first part of analysis come handy as it helped understand the company strategy and it specific needs. The selection process should derive in a solution that best matches the business objectives and ensure that it specific needs are met. Thus, choosing the right ERP is crucial for the company development and the success of its warehouse.

According to Gwynne Richard, among its six step of choosing the right WMS, the most important in this step is to list the key function required from the new system then research and approach a selected number of vendors which have experience in providing solution in the region (Richards 2014). To create the list of key functions for the new ERP, the company should keep in mind the following point stated in two different papers (Cable 2009) and (Ahmad and Pinedo Cuenca 2013):

- A system that is built with a long term view on how the business would be ten years from now.
- A system that has already proven it efficiency
- A "Vanilla" systems that would be easy to maintain and upgrade
- A system that was mainly build for SME to avoid any software limitation
- A system with unique key factors that are shaped for the SME needs

The most accurate method that will help the company choose the right ERP system vendor is the Multi-Weighted scoring model. It uses several weighted selection criteria to evaluate a project and identify decision factors. Each selection criteria is assigned a weight while a score is assigned to each criterion depending on its importance to the ERP system. The weight and scores are then multiplied to get the total weighted score for each evaluated vendor. With the total weighted score, the vendors can then be compared and the one with the highest score is considered as the one offering the best overall ERP system. (Larson and Gray 2011)

There are ten different criteria that would be taken into account when choosing the ERP system from one of the vendors. These criteria come from the analysis of the company

human resources, business management, number of customers, suppliers and the warehouse project cost done in the previous part:

- Vendor history
- Product Offering
- Consulting Support
- Availability of training
- Sales presentation
- Ability to Integrate Accounting with other ERP Modules
- Cost of ERP Modules, training and consultant
- Web-based Reporting Capability
- Fit with Current Business Processes
- User friendliness

Table 17 has been designed to be used during the selection process when the vendors would come to the company to present their ERP system. F.I.M would give a score on each criterion depending on how good the vendor tackles the criteria list send to them prior to the meeting. The most important criteria for the company, weighted above 10% in the table, are the cost of the system, the availability of training, consulting support and user friendliness but only the firm will know about that.

The cost is really important for the company as there have already a huge investment with the warehouse establishment (Table 16). Moreover, the firm will have a limited budgeted depending on how much loan they would get from the bank. It is crucial for them to start with a standard ERP model and then with time, start upgrading it and introducing new modules. That why one of the criteria is to have a basic model that encompass the accounting, human resources and WMS. It has the same weight as the user friendliness since the company doesn't have big and highly educated human resources. Thus, offering training and consulting support is critical for the company expansion and success. Without these two criteria, F.I.M warehouse project would be a failure based on this study since there is no worker that is advance enough to work with an ERP without training and can face problems without having a consulting support that will help and advice.

6.3 Spacing and handling:

After managing the information, the company needs to manage the space in the new warehouse then find ways of handling the different customers' products in that space. In this

final part of the thesis, an extensive research is done on that along finding which equipment are needed, how many extra employees should be hired and which racking is best for each available good in the warehouse.

Gwynne Richard (Richards 2014) define the six different activities along the needed factor to be considered when designing a new warehouse. Each activity is described alongside the factors that need to be taken into account for F.I.M warehouse (Table 2)

	Description	Considerable factors
↓	Receipt Ensuring that the right product has been delivered in the right quantity, time and condition	<ul style="list-style-type: none"> • Delivery frequency and time slots • Receiving area size
↓	Put-away The received goods are put into storage	<ul style="list-style-type: none"> • Handling equipment • Fixed vs. random
↓	Storage	<ul style="list-style-type: none"> • Storage method • Storage area size • Item Value • Fragility • Aisle width • Family product groups • Sales combinations • Weight capacity of racking • Results of an ABC analysis •
↓	Picking Taking ordered goods out of storage and carry them to the dispatch area	<ul style="list-style-type: none"> • Handling equipment • Picking operation (Pick by label, paper pick, voice picking, etc.) • Picking method (Pick by order, Batch picking, Zone picking, etc.) • Picker (Picker to goods, goods to picker, etc.)
↓	Packing	<ul style="list-style-type: none"> • Packing area size
↓	Dispatch Labeling and check on condition, quantity and product specification	<ul style="list-style-type: none"> • Dispatch area size

Table 2: Activity profiling

After the activity profiling, the products need to be divided into groups. The best known method to do that is the ABC Analysis which is a well established categorization technique based on the Pareto Principle for determining how items need to be prioritized in the inventory management of a company (Ravinder and Misra 2014). Since F.I.M is a service company, some changes have been done in the product profiling (Table 19). The weekly orders have been changed into the benefits that each product brings to the firm. Then, the product have been ranked from the most beneficial one to the least one. From this benefits, the percentage of total usage is calculated for each items and finally, the cumulative total percentage is presented. Using the pareto rules, that differ from one book to the other, 20% of items are classified as A items while the next 40% as the B items and last 40% as the C items seem the one that is the most used in litterature (Table 19).

F.I.M has three fast moving products which belong to two different customers and don't share the same storage temperature. Therefore, clustering the warehouse space among customers or depending on product storage temperature is impossible in this case. Moreover, the last item is refered as "other products" meaning that any customer product can be stock in that space. This strenghten up the warehouse project presented above where the first discussed point was about the ability to offer an interchangable temperature in the warehouse depending on the product, and also the spot market rental space that was presented as a good idea for a service company that is entering a warehouse rental space service. However, to be able to create an optimal functioning warehouse the storage strategy cannot be set up only by the orders per week per item and the best distance to the dispatch and sorting area; the necessary handling equipment for an item, different item sizes, storage temperature, volume and their racking must be considered as well the necessary operations in a warehouse.

6.3.1 Warehouse Layout:

The ABC Analysis presented above defines the fast and slow moving items which are essential in designing a warehouse layout. It must be determined in order to decide on future operations like the picking-strategies, handling equipment, number of employees and the different kind of goods racking. Furthermore, the different kinds of products needs to be defined, and in F.I.M case, they mainly differ in the storage temperature and volume which eventually require different handling and storage.

- Small product in refrigerated environment: > 1.5kg (vegetables, preserved anchovies)
- Medium product: <1.5kg -19.9kg (Sanitary, Fertilizers, Olives Plants)

- Bulky barrels: <25, 60, 205 liters (Barrels of Anchovy)
- Fertilizer: <600 kg
- Tubes and Irrigation pipes

Those goods are divided based on their sizes but on the other hand, could also be separated into fast, medium and slow moving goods which will affect their storage later when determining their shelves' position. Also, this distinction between fast and slow moving items will be used later in determining storage strategies.

After profiling the goods, a basic warehouse layout Figure 1 was designed to determine the different inbound strategies and necessary equipment for the warehouse. This layout could be seen as a basis plan.

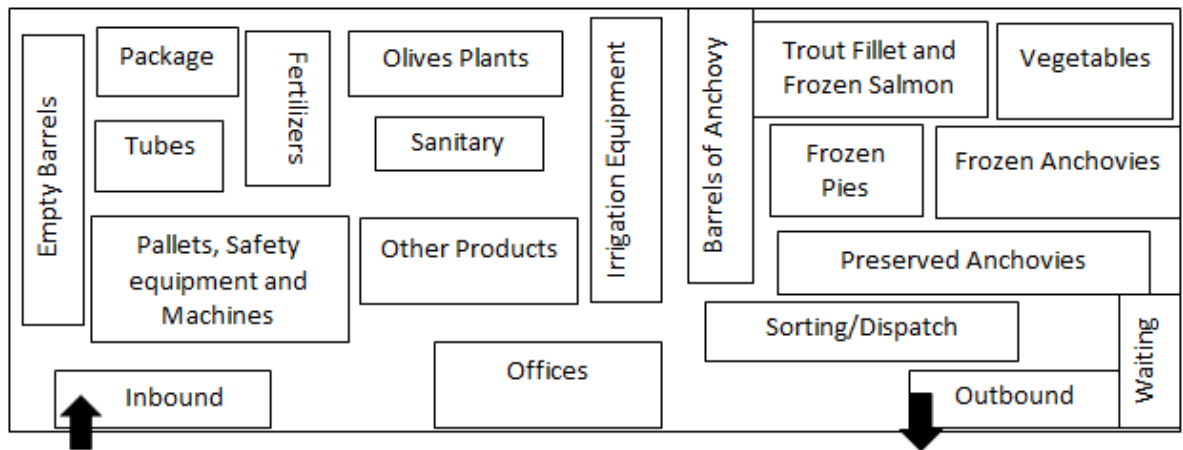


Figure 1: basic warehouse layout

A warehouse needs inbound and outbound operations. These are at the opposite sites of the warehouse to prevent mixing up incoming and outgoing orders. The office and employee facilities (toilet, break room, etc.) are in between those two areas as a visual and physical wall. The most logical and time-saving step is to put the waiting area for out-going orders directly next to the outbound area since the trucks arrive there and it guarantees fast and easy processing. The sorting /dispatch area then must be next to the waiting area to maintain short walking distance and little handling effort.

Logically all the fast moving products with the highest number of orders per week and day (presented in the ABC analysis Table 19) must be close to the sorting/dispatch area and the ones with the lowest and slowest demand can be further away. With that approach a fast and effective handling of orders is granted to all high value items.

The items with the highest benefit for F.I.M are the preserved anchovies and irrigation pipes. Thus these goods should be close to the dispatch area. However these goods require different handling, equipment and racking. Therefore storing them next to each other using the same kind of shelving would be inefficient and infeasible. The irrigation pipes are heavy and are best moved with a forklift or pallet jacks and are stored on pallets in large quantities. The preserved anchovies do not need that much space and later the picking can be done by hand from smaller containers. In this case using different zones would be the optimal solution. The layout draft shows that both product groups are easy to reach from the sorting/dispatch area (Figure 1). Moreover, the space dedicated to other product, is next to the irrigation pipes so that it has easy access to the sorting/dispatch area

The refrigerated area is located behind the preserved anchovy area. They need special shelving and temperature. Thus the frozen products are kept separated from other items. Another reason why these items are placed close to the preserved anchovy is that there is a lot of movement by foot involved in this area. Thus, to prevent any accidents between workers and heavy machinery, the areas with no such equipment are close to each other's.

The next area consists of all the medium goods (Sanitary, Fertilizers, Olives Plants) those can be slotted and sorted according to fast and slow moving items in the shelves for fast handling. The medium goods do not rank that high in the ABC analysis therefore they are further away from the dispatch areas however the first shelves still grant easy access to products.

The fertilizers, the empty barrels and packages are compared to other goods slower moving items. They are located in the very back of the warehouse and also grouped together since they also require special racking. Especially, the big fertilizers bags of 600kg that can't be simply stored on pallets and need heavy machinery to move them around. The same applies to the oil barrels (up to 205liter). Those goods can only be moved by special heavy machinery. Thus the goods requiring that kind of handling are placed close to each other. Still the demand for oil is higher than for tires. Hence they are stored more conveniently closer to main transport aisle. Next to all those areas is the storage for pallets, safety equipment and machines.

6.3.2 Future research:

Since Fret International Maroc is a service provider, it is pretty hard to forecast the orders based only on the profit of the company. Moreover, the literature on bi-temperature

warehouses is pretty limited. That why, future research could come after the implementation of the warehouse through the analysis of the demand that will help establish a better layout for the warehouse and better space management. The product transported by the company doesn't seem homogeneous and made the writer very puzzled on how can they fit in a bi-temperature warehouse. It is very hard to understand how irrigation material or pipes can share the same space as trout salmons or anchovies. This is the main reason why only a basic warehouse and space management models were presented while a more advance model is let for future research when the warehouse would be operational.

7.0 Conclusion:

There is no growth or competitiveness for a company without an expansion strategy. The objectives, of any firm, are not only about reducing the costs, improving the quality of services, but it should also have the capacity to anticipate the challenges and the changes in its environment. Fret International Maroc shouldn't rely only on renewing its organizational model. But it must be able to react quickly to the changes and take strategic investments decisions necessary for the survival of the company by taking into account its customers, suppliers, partners, its geo-economics environments and policy.

Fret International Maroc should make the choice of establishing a logistic platform to add value to its customer and partners. It is a strategic choice to improve all its offered activities. This approach, even if more challenging should be based on the respect of deadlines, the costs, and the flow of information by adopting a more efficient technology and by applying a rigorous operations planning. By doing so, the SME firm will grow slowly but surely will achieve the desired, requested and required success and outcome.

8.0 Appendix:

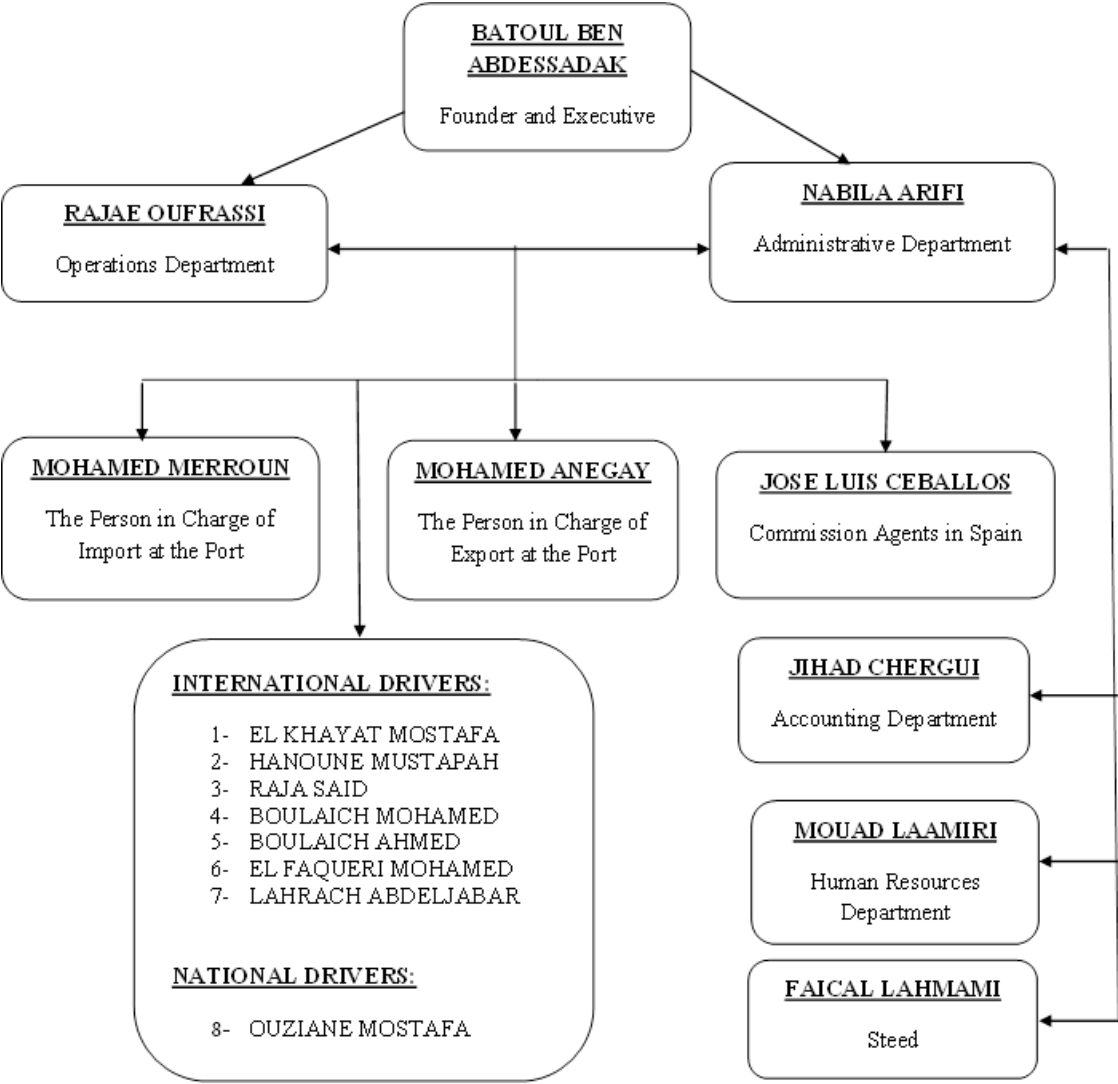


Figure 2: Organizational structure

Staff /Year	2008	2009	2010	2011	2012
Managers (Executive)	3	3	3	3	3
Employees	2	3	3	4	6
Drivers	6	6	6	7	8
Total	11	12	12	14	17

Table 3: Descriptive table of the recruitment evolution

Rolling Stock /Year	2008	2009	2010	2011	2012
Trailer	1	3	5	5	7
Refrigerated Trailer		4	5	7	7
Trailer Tank					1
Total	1	7	10	12	15

Table 4: The rolling equipment evolution

Transport Activity	2009		2010		2011	
	Number of operation	Tonnage (kg)	Number of operation	Tonnage (kg)	Number of operation	Tonnage (kg)
Import	44	602,166.00	134	2,063,365.60	42 6	7,110,776.12
Export	41	882,446.21	214	2,187,929.11	21 3	3,809,699.62
Total	85	1,484,612.21	348	4,251,294.71	639	10,920,475.74

Table 5: The Freight evolution

Moroccan Cities	Turnover Figures (DH)			%	Var 11/10
	2009	2010	2011		
Larache	366,316.18	555,268.18	7,606,159	53%	1270%
Agadir	1,264,979.51	3,112,017.93	1,766,348	12%	43%
Rabat	190,000	787,000	1,677,175	12%	113%
Casablanca	132,697.2	316,204.59	1,052,695	7%	233%
Tetouan	50,000	301,800	1,045,000	7%	246%
Mehdia	815,220.87	1,816,040.12	328,145.8	2%	82%
Sidi Slimane	-	72,000	192,000	1%	167%
Marrakech	-	12,528	185,257.4	1%	1379%
Tangier	61,364.2	151,304.12	110,503.2	1%	27%
Fes	-	-	110,000	1%	-
Azrou	-	166,098.94	84,000	1%	-49%
El Jadida	-	118,229.32	75,318.2	1%	-36%
Ben Slimane	-	304,183.17	39,201.64	0%	-87%
Total	2,880,577.96	7,712,674.37	14,271,804	100%	85%

Table 6: the company's activities at the level of cities

European City	Turnover Figures (DH)			%	VAR 11/10
	2009	2010	2011		
Spain	486,326.91	1,199,896.72	4,689,621	75%	291%
France	606,796.16	1,859,215.55	1,150,687	18%	-38%
Italy	-	340 23.68	252,980.8	4%	644%
Germany	-	120,167.44	185,310.3	3%	54%
Total	1,093,123.07	3,213,303.39	6,278,599	100%	95%

Table 7: the company's activities at the level of European countries

Customers	PRODUCT FAMILY	Turnover Figures (DH)			%	VAR 11/10
		2009	2010	2011		
FGV	The Anchovies Preserved	257,374.27	3,890,351.4	5,220,826.98	37%	34%
BCI	Irrigation Equipment	209,000.00	897,000.00	2,102,500.00	15%	134%
FGG	Barrels of anchovy	32,031,22	46,254,42	1,205,989.94	8%	2507%
SSCT	Sanitary	50,000.00	254,328.00	1,153,500.00	8%	354%
BFGV	Packages	465,611.63	513,996.79	841,624.36	6%	64%
DISVH	Bulking	93,438.29	692,864.38	817,982.22	6%	18%
BFG	Empty Barrels	54,000.00	82,002.50	402,638.10	3%	391%
AGA	Vegetables	-	215,404.51	335,133.55	2%	56%
LF	Fertilizers	21,000.00	5,116.06	243,631.30	2%	4662%
VFG	Frozen Anchovies	52,677.73	49,343.64	142,881.14	1%	190%
PAT	Frozen Pies	-	39,063.50	123,605.40	1%	216%
SAN	Tubes	54,000.00	47,966.00	117,000.00	1%	144%
ARA	Trout Fillets and Frozen salmon	-	128,098.94	84,000.00	1%	-34%
AMAR	Olives Plants	-	389,310.39	18,693.00	0%	-95%
Total Main Products		1,289,133.14	7,251,100.53	12,810,005.99	90%	90%
Other Products		2,306,018.32	710,528.88	1,480,476.90	10%	10%
Total General		3,595,151.46	7,961,629.41	14,290,482.89	100%	100%

Table 8: company turnover by type of product

Main Suppliers	Type of Services	Costs (DH)			%	Var 11/10
		2009	2010	2011		
Total Station	Gas Station	35,793.22	1,226,512.07	1,575,930.46	21%	28%
Comarship	Shipping Companies		125,574.38	1,327,413.86	18%	957%
Comarit	Shipping Companies		101,243.51	842,567.68	11%	732%
Trans Fadila	Carrier - Charterer - Rental Truck		159,920	809,480	11%	406%
Helg Teruel	Forwarding Agent			652,248.82	9%	
Group G. R.	Charter - Truck Rental		55,900	420,100	6%	652%
Euromaroc Detroit	Shipping Companies			417,780	6%	
As 24 Passango	assistance – Breakdown service – Gas station		219,992.97	337,154.81	4%	53%
Mertramar	Algeciras Freight Forwarder		70,419.54	308,084.38	4%	337%
Trans Bolipesk	Carrier - charterer - Rental Truck			134,991.73	2%	

CFAO Motors	Daf (Purchase Tractor + oil change)	13,931.37	39,701.32	100,686.55	1%	154%
Correa On	Algeciras Freight Forwarder		19,876.09	99,621.17	1%	401%
Other	Renault/Daf Partnership		13,818.07	499,450.14	7%	3514%
Total		49,724.59	2,032,957.95	7,525,509.60	100%	270%

Table 9: Company costs of the major suppliers

Service/Product	2009	2010	2011	%	VAR 11/10
Shipping Companies		226,817.89	2587761,54	34%	475%
Gas	35,793.22	1,226,512.07	1,575,930.46	21%	28%
Road Transport		215820	1,364,571.73	18%	532%
Support/Maintenance	13,931.37	273,512.36	937,291.50	12%	243%
Forwarding Agent			652,248.82	9%	
Transit		90,295.63	407,705.55	5%	352%
TOTAL	49,724.59	2,032,957.95	7,525,509.60	100%	270%

Table 10: Summary of the major suppliers by type of service

Average/Year	2009		2010		2011	
	Import	Export	Import	Export	Import	Export
Cost (Dh)	38,392.65	13,685.50	24,160.17	30,523.21	19,309.53	30,777.44
Weight (Kg)	24,843.70	22,061.15	15,513.95	19,611.39	16,850.18	19,048.49
Distance (km)	1189.43	1369.78	1192.67	1254.35	1129.83	1156.14
Cost per kg	1.54	0.62	1.55	1.55	1.14	1.61
Cost per km	32.28	9.99	20.26	24.33	17.09	26.62

Table 11: company average costs per year per kilogram and per kilometer

Parcel	Floor Area (m ²)
Offices and Reception	180
Local drivers	40
Pallet Storage	48
Refrigerated Hall	150
Room Temperature Storage	500
Mechanical Workshop and Washing Station	300
Parking lot	500
Expansion*	500
Total	1718

Table 12: warehouse surfaces distributions

NB:*the expansion is not included in the total calculations

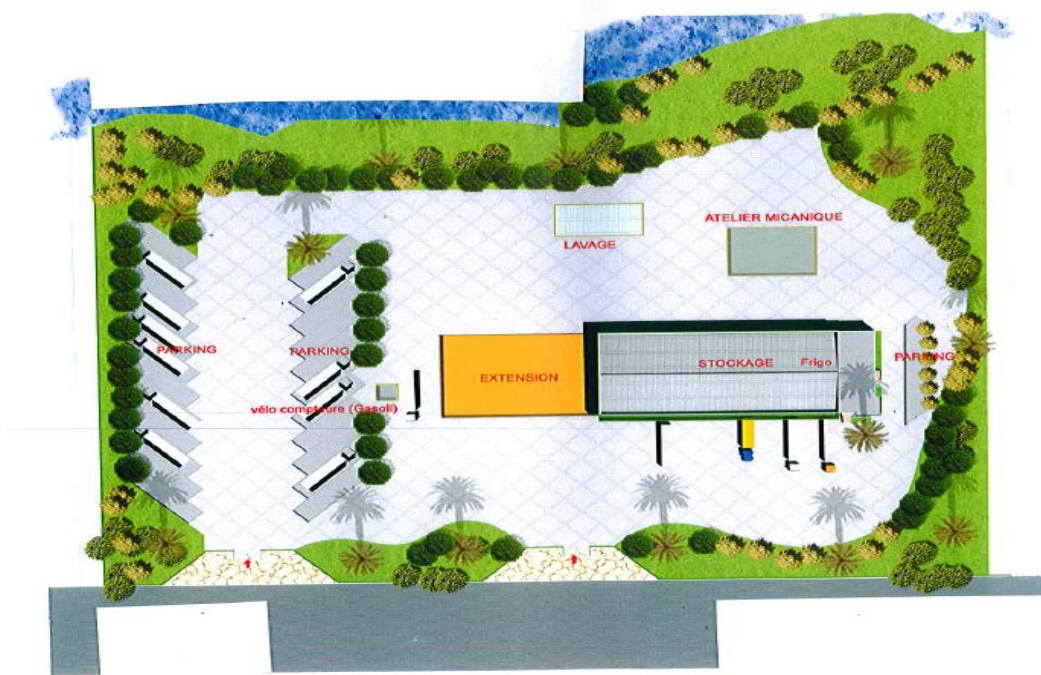


Figure 3: The platform architectural plans 1/2

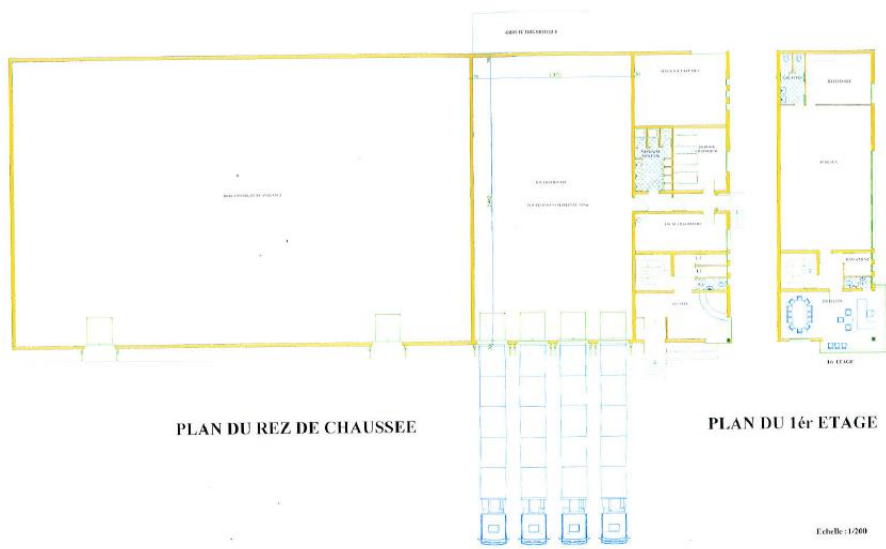


Figure 4: The platform architectural plans 2/2

Phase	Delay (months)
Facilities Construction	9
External area laying out	2
Refrigerate Installation	2

Table 13: Warehouse construction deadlines

Different work parties	Estimation (DH)
Shell	2,095,784
Metal frame structure and roofing	762,963.2
Waterproofness	123,154.8
Coatings	156,405.2
Joinery	250,572.8
Electricity	255,209.33
Sanitary Plumbing	111,846.67
Painting	108,269.91
External area laying out	1,467,621.8
Total work without V.A.T	5,331,827.6
Total V.A.T (14 %)	746,455.87
Total Work A.B.R	6,078,283.5

Table 14: Costs of different warehouse works

Type of Equipment	Estimation (DH)
Cost of various networks (water, electricity and telephone)	466,666.7
Cost of refrigeration equipment	534,280
Cost of office equipment and handling	133,333.3
Cost of pump and gas tank	166,666.7
Total equipment costs	1,300,947

Table 15: warehouse equipment cost

Different cost type	Estimation (DH)
Construction	6,078,284
Feasibility market study	607,828.4
Equipment	1,300,947
Contingencies (10 %)	798,705.9
The project Overall estimation	8,785,764

Table 16: Project overall cost

Criteria	Weight 0-100%	Score 1 - 6	Weighted Score	Comments
Vendor history	6%			
Product Offering	6%			
Consulting Support	15%			
Availability of training	15%			
Sales presentation	3%			
Accounting, human resources and WMS modules in the basic model	10%			
Cost of ERP Modules, training and consultant	22%			
Web-based Reporting Capability	8%			
Fit with Current Business Processes	5%			
User friendliness	10%			
	100 %		Total:	

Table 17: Multi-weighted scoring model

Items	Products	Cumulative % of items	Total Benefits	Usage as % of total usage	Cumulative % of total
1	The Preserved Anchovies	6,67 %	5220826,98	36,53 %	36,53 %
2	Irrigation pipes	13,33 %	2102500,00	14,71 %	51,25 %
3	Other Products	20,00 %	1480476,90	10,36 %	61,61 %
4	Barrels of Anchovy	26,67 %	1205989,94	8,44 %	70,05 %
5	Sanitary	33,33 %	1153500,00	8,07 %	78,12 %
6	Packages	40,00 %	841624,36	5,89 %	84,01 %
7	Bulking	46,67 %	817982,22	5,72 %	89,73 %
8	Empty Barrels	53,33 %	402638,10	2,82 %	92,55 %
9	Vegetables	60,00 %	335133,55	2,35 %	94,89 %
10	Fertilizers	66,67 %	243631,30	1,70 %	96,60 %
11	Frozen Anchovies	73,33 %	142881,14	1,00 %	97,60 %
12	Frozen Pies	80,00 %	123605,40	0,86 %	98,46 %
13	Tubes	86,67 %	117000,00	0,82 %	99,28 %
14	Trout Fillet and Frozen Salmon	93,33 %	84000,00	0,59 %	99,87 %
15	Olives Plants	100,00 %	18693,00	0,13 %	100,00 %
	Total Usage		14290482,89	100,00 %	

Table 18: Product Profiling

Category	Items	Percentage of Items	Percentage usage (%)	Action
Class A	1,2,3	20 %	61,61 %	Close Control (fast moving goods)
Class B	4,5,6,7,8,9	40 %	33,29 %	Regular Review, (Normal moving goods)
Class C	10,11,12,13,14,15	40 %	5,11 %	Infrequent Review (slow moving goods)

Table 19: ABC Analysis using paretor rule

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