



A Work Project, presented as part of the requirements of the Award of a Masters Degree in Management from the NOVA – School of Business and Economics

How to monitor and improve Unilever JM Supply Chain processes to become the best of Portugal's sector in 2015?

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How to monitor and improve Unilever JM Supply Chain processes to become the best of Portugal's sector in 2015?

Executive Summary

Unilever Jerónimo Martins is a Portuguese joint-venture leading firm in what concerns the supply chain industry of fast-moving consumer goods in Portugal.

The scope of analysis of this Work Project is focusing on Unilever-JM operations and services in the Portuguese market regarding quality, efficiency and effectiveness over B2B customers.¹

It will be analysed the possibility of development and implementation of a performance measurement system, *Tableau de Bord*,² which will be crucial for the identification of potential opportunities of improvement with impact in the supply chain processes.³ This will be completed through the establishment of KPI's to monitor and manage periodically logistics, planning and customer service processes' performance, which are the ones where the bottlenecks are impacting more in the supply chain.

In this work project the nexus causality for the problems will also be discussed and some recommendations will be prepared to tackle the inefficiencies found through the monitoring of the previous core processes, in order to improve efficacy and quality service of the supply chain.

Keywords

Unilever JM; Supply Chain Management; Tableau de Bord; Key Performance Indicators; Performance Measurement Systems; Logistics; Planning; Customer Service;

¹ UJM main B2B customers are Auchan, Dia Portugal, El Corte Inglés, Intermarché, Makro, Pingo Doce, Recheio and Sonae.

² The *Tableau de Bord* is a strategy performance management tool that allows the strategic and operational control of different areas of supply chain.

³ Potential improvements in the core processes like logistic (reducing costs and potentially driving to more competitive pricing strategies) and customer service (which will impact on customer satisfaction, loyalty and potential sales revenues).

1. Introduction and Background

1.1 Project Purpose and Scope

The aim of this work project is to develop a performance measurement system, *Tableau de Bord*, through the design and implementation of key performance indicators in relation to core processes and resources, which will be essential for the application of strategic decisions.⁴ This system will allow Unilever-JM to monitor, manage and improve logistic, planning and customer service processes in order to increase and sustain quality, efficiency and value perception of those operations to clients. Subsequently, it will be identified opportunities of improvement and it will be discussed the best ways to implement corrective and preventive measures in these areas.

The scope of analysis, as mentioned previously, is focusing on UJM operations and services in the Portuguese market regarding quality, efficiency and effectiveness over B2B customers.

With the intention of fully understanding the origins of inefficiencies or problems in the SCM, it is imperative the examination of performance for different divisions, since they might be related with a specific division. Thus, 5 major category divisions will be analyzed individually (Iglo, Lever, Personal Care, Foods and Knorr).

1.2 Research Question Analysis and Methodology

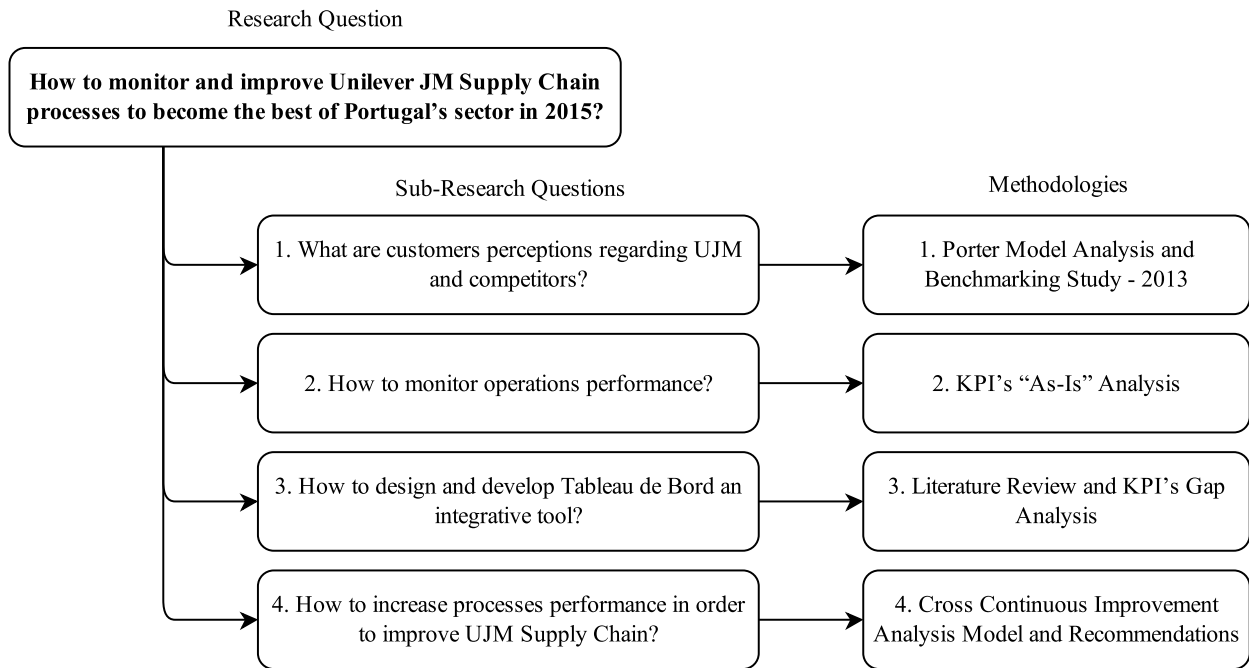
The first step of this project consists in the development of Porter Five Forces Analysis and in the revision of a “Benchmarking Study”⁵ performed by GS1 Portugal⁶ in 2013. Firstly, these will be extremely important to understand the industry’s

⁴ This was supported by Kaplan and Norton, 1996, in their book “The Balanced Scorecard: Translating Strategy Into Action”.

⁵ Study where top national retailers evaluated the services provided by suppliers. This report is explained and analyzed in “Benchmarking Study” section.

⁶ GS1 Portugal was founded in 1985 and it is an advisory and nonprofit organization, which has the aim of making businesses more efficient and sustainable.

structure.⁷ Secondly, it's crucial to know how retailers evaluate their suppliers' operations and services, and to recognize the areas which retailers care the most in order to improve.



Afterwards, the existing key performance metrics will be analysed (data collected from UJM database) for UJM supply chain management and new indicators will be suggested to improve and control core processes' performances. The previous steps will allow the development of a *Tableau de Bord* aligned with UJM vision and strategic objectives.

Lastly, after the implementation of this performance measurement and the interpretation of results, some recommendations will be given to improve Unilever-JM Supply Chain processes' performance.

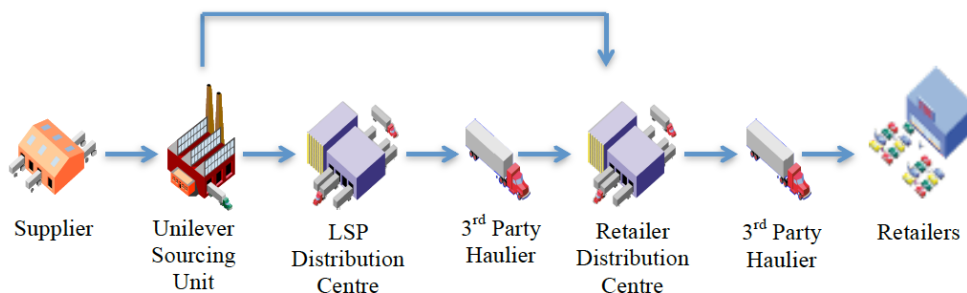
⁷ The Porter Five Forces analysis is essential to conduct a sustain analysis of the Supply chain FMCG industry.

1.3 Introduction

Unilever-JM is a company that emerged from a partnership between Unilever and Jerónimo Martins in 1949, and it is responsible for the distribution of consumer goods. By that time, the partnership agreement resulted in the constitution of a firm named Fima. The Joint Venture with the name of Unilever Jerónimo Martins was only established in 2007, after the company had made several acquisitions both at National and International levels.

Currently, Unilever-JM is a major player regarding the supply chain industry of FMCG. However, due to its vast portfolio of products, it faces strong and powerful competitors⁸ of different categories (i.e. Foods, Home and Personal Care). In Figure 1, presented below, it is represented the supply chain management flow of UJM as a whole. However, this work project will focus on a part of it – covering the products' flow from “Unilever Sourcing Unit” until it reaches “Retail Distribution Centre”. In this segment some potential major improvements are identified in planning, logistics and customer service (i.e. collaborative forecasting of demand, joint deliveries and improvement of communication systems).

Figure 1 – Supply Chain Management Flow



⁸ Nestlé, Sovena, Delta, Danone, Renova and Central Cervejas e Bebidas are some examples of these competitors.

These are the processes where bottlenecks⁹ have a higher impact on the supply chain. Since the capacity of a process is defined by the capacity of the slowest stage, it is essential to know where the bottleneck is to act on it, which will consequently lead to an increase on overall process capacity. Then, this procedure must be repeated in order to find the new bottleneck and tackle it. This cycle represents the steps of Theory of Constraints, which results in a process of continuous improvement (Rand, G.K., 2000).

In order to improve efficiency in the supply chain industry, it is also extremely important to have a strong supply chain management. According to Stock and Boyer (2009) “the goal of SCM is to achieve greater profitability by adding value and creating efficiencies, thereby increasing customer satisfaction”.

Therefore, SCM assumes a huge importance for Unilever-JM logistics, planning and customer services’ areas. This happens due to the high number of operations that occur every day, the geographically distribution of their clients and the fact of handling with a huge number of SKU’s¹⁰ (Stock Keeping Units).

Besides that, there are two other aspects that have acquired some increasing prominence lately. These two issues are the higher level of competition in this industry and the increasing power of retailers. The origins of these problems come from the high level of concentration in the retail market,¹¹ the growth of private labels, the central purchasing (price control and competition problem) and the trade spending (cost of distribution and promotion service).

These issues can lead to different reactions from retailers. As retailers have more power they can demand more from suppliers. The increase in bargain power can be used to demand discounts, retrospective payments, after-sale rebates, higher slotting fees (to

⁹ According to Graham K Rand, bottleneck is the system constraint regarding production planning.

¹⁰ Unilever-JM has more than 1100 SKU’s.

¹¹ Continente and Pingo Doce retain 54,5% market share of retailers in Portugal (2013).

gain access to shelf space) and return of unsold goods. Other examples of how retailers' power can be used are the promotion of their own brands or the threatening of delisting (when suppliers refuse to reduce price or make other payments and concessions).

This type of retailers' reactions have effects on UJM supply chain management, which can bring additional and unexpected costs, loss of volume, loss of profitability, potential forecasting errors and will weaken UJM bargaining power.

Consequently, with the aim of facing these challenges, it is important to establish a measurement system to monitor and control day-to-day operations performance. By identifying, selecting and implementing these key performance indicators to control and manage supply chain operations, it is possible to know how well internal and external expectations (Unilever and customers) are being met. The conceptualization and implementation of this system will be further explained in the Cross Continuous Improvement Analysis Model section.

Currently, UJM has a database with key indicators¹² that measure and monitor transversely core processes of the supply chain. However, Unilever-JM does not have an integrative scorecard or system with KPI's in order to control and manage periodically the supply chain end-to-end processes. Without this performance indicators' tool, the identification of issues, opportunities for improvement and UJM's alignment of vision, goals and strategies is harder and time consumable.

The *Tableau de Bord* is a strategy performance management tool that allows this type of strategic and operational control in an easy and synthetic way, by periodically monitoring different areas of supply chain. It results from the combination of financial

¹² Unilever has several indicators (more than 100 indicators) to measure UJM supply chain processes performance. However, this high number of indicators leads to a new problem: complexity and difficulty to analyze the information in order to identify opportunities of improvement. Hence, in Appendix 1 is presented a list of selected KPI's (most relevant).

and non-financial indicators that measure the efficiency of important operations for the management and decision-making of the company (Paulo Nunes, 2008). It allows to have a global view of Unilever-JM supply chain as a whole and to verify if the established goals are being achieved.

In what regards logistic operations, Unilever-JM has a contract with Luís Simões, which is an important player in this process of consumer goods distribution. Luís Simões is a Portuguese company that works in the transportation industry. It has a distribution centre in Carregado; where Unilever-JM stocks part of their products, being posteriorly distributed from this site to retailers. So, this partner plays a significant role in UJM supply chain core processes, which include the logistics, quality, planning and customer service.

Summarizing, several areas and processes where Unilever-JM and its partners-distributors had a poor performance when compared to other suppliers,¹³ will be analysed. After that, a *Tableau de Bord* will be developed, where indicators are established to monitor and manage logistics, planning and customer service operational performance, periodically. This will allow the detection of problems, identification of nexus causality analysis and actions' taking, in order to improve Unilever-JM Supply Chain to become the best of Portugal's sector.

For this purpose, in the following section – Literature Review – it is analysed the difficulties and advantages in the implementation of performance measurement system.

¹³ This information is given by a benchmarking study performed in 2013 by GS1 Portugal. This report will be explained and analyzed in “Benchmarking Study” section.

2. Literature Review

2.1 Performance Measurement Systems

The implementation of performance measures and its application in corporate operations is a recent concept. According to (Bourne, M., Mills; et al 2000) due to today's highly competitive environment, businesses must implement such practices. Particularly, this leads to improvements in operational results, as well as boosting their reputation within the industry sector (Lisiecka, K.; Czyż-Gwiazda, E., 2013). These practices will be extremely important for the supply chain management of FMCG, especially because of the relative short Life Cycle Industry and the short Product Life, Cycle; which turn this industry to focus on continuous innovation strategies that demand short time to market capacities, quality, efficiency and very well organized supply processes. Besides that, UJM is in a highly competitive industry where it needs to take advantage of resources and capabilities that are valuable, rare, costly to imitate and supported by the organization. These types of resources and capabilities can be the source of sustained competitive advantages.¹⁴

Indeed, recent literature backs up the previous statements, as mentioned by Michaela Striteska and Marketa Spickova (2012), “the first condition to improve, and ultimately to achieve, business excellence, is to develop and implement a system for performance measurement (hereafter PM) (Kanji, 2002).”

Nevertheless, up until the late 1980's firms focused solely on using historical financial data to establish performance measurements, mainly through analysis of accounting measures and ratios such as ROI, ROE, ROCE (Lisiecka, K.; Czyż-

¹⁴ In order to analyze if internal resources and capabilities could be a source of sustained competitive advantage it was used VRIO analysis framework – Appendix 8 – VRIO Analysis Framework – Table 9. Source: Barney, J.B. 1991. “Firm resources and sustained competitive advantage.” *Journal of Management*, 19, pp. 99-12

Gwiazda, 2013). Even though they did consist of important measures, they lacked the increasing complexity much needed to tackle difficulties in the markets in which companies compete (Kennerley, Neely 2002). For this reason, in the late 1970s and 1980s, “authors expressed a general dissatisfaction with traditional backward looking accounting based performance measurement systems, identifying their shortcomings and arguing for change” (Lisiecka, K.; Czyż-Gwiazda, E., 2013).

Tung, Baird and Schoch (2011) acknowledged 4 core shortcomings of financial measures. Firstly, these types of measures (outcome-oriented) do not provide information relative to workers performance level across the core processes operations of an organization. Secondly, these conventional measures only present results of organizations operations, instead of presenting causes of possible issues affecting core processes performance. So, these measures will not help managers to know what needs to be improved to reach business excellence. Thirdly, traditional financial measures might give wrong incentives to managers. Managers may jeopardize long-term effectiveness, so as to maximize short-term results. Finally, these measures are only internal oriented and can diverge from the organization strategy. All these limitations combined with the increasing of market competitiveness and demand, make necessary the raise of qualitative measures (Lisiecka, K.; Czyż-Gwiazda, E., 2013).

The combination of key performance indicators with financial indicators is important for a balanced view of global business performance.

Performance measurement systems can bring many benefits to a business. They allow to manage core business areas through the establishment of indicators and to measure different processes performance at all levels of an organization. This

monitoring helps managers to know if company goals and objectives are being achieved.

Moullin (2007) considers that the best performance measurement definition is Neely et al. (2002) “the process of quantifying the efficiency and effectiveness of past actions”.

“Effectiveness is compliance with customer requirements, and efficiency is how the organisation’s resources are used to achieve customers’ satisfaction levels. To quantify efficiency and effectiveness, performance measures should be chosen, implemented, and monitored” (Lisiecka, K.; Czyż-Gwiazda, E., 2013).

In the development of a performance measurement system, the first step is the planning of how core processes performance can be measured and the creation of performance indicators to measure it. This allows to control if performance objectives are being accomplished. This system is used by managers to improve planning, to regularly monitor and control processes efficiency and effectiveness through the implementation of key performance indicators and targets (Conradie, 2003).

Summarizing, performance measurement systems help aligning key processes with company vision, mission and strategies. It also improves the communication and comprehension of business goals and strategies throughout the different levels of a company. Finally, it is an important tool that helps detecting opportunities for improvement in organization’s key processes and in customer service.

2.1.1 Tableau de Bord

According to Epstein and Manzoni (1997) “The *Tableau de Bord* was first developed by process engineers who were looking for ways to improve their production process by better understanding cause-effect relationships. The same principle was then

applied at the top management level, to give senior managers a set of indicators allowing them to monitor the progress of the business, compare it to the goals that had been set, and take corrective actions”.

In this work project, the *Tableau de Bord* was the tool used to monitor and manage UJM supply chain core processes’ performance. It is a performance measurement system that contains information organized in a synthetic and easy way for a quick overview covering main areas of the organization. In the case of UJM FMCG industry, it will be an essential tool to identify opportunities of improvement and it will be crucial for strategic decision making in the supply chain core processes.

According to Paulo Nunes (2008), the *Tableau de Bord* has the following main purposes:

- Reduction of uncertainty – It offers a better perception of current processes performance and if goals are being achieved or not. This is important to identify measures that should be taken in order to improve and reach the performance desired (important for decision-making).
- Stabilization of information – It filters the essential and crucial information required for managers to sustain measures/actions to take.
- Improves communication by sharing it not only between an area/division, but by sharing it also across different areas/divisions of an organization.
- Offers efficient tools to explore opportunities for improvement in organization main processes.

Therefore, the *Tableau de Bord* is an important performance measurement system that will help Unilever-JM to continuously improve core processes performance

in the supply chain industry of FMCG; which will be analysed in the following section in a literature review of Continuous Improvement Models.

2.2 Continuous Improvement Models

Nowadays, due to competitive environment, there is a need for continuous improvement in products and processes, which is widely recognized (Bessant, Caffyn, & Gallagher, 2001). One of the most widely famous models is the Deming Cycle, which proposes that: “businesses processes should be analyzed and measured to identify sources of variations that cause products to deviate from customer requirements” (Paul Arveson, 1998).

This quality model is organized in four steps: - Plan, Do, Check and Act. In the first step of Deming Cycle, “Plan”, UJM supply chain core processes components will be designed and revised, in order to improve performance. In the second step, “Do”, the plan will be implemented and core processes’ performance are measured. Posteriorly, in the “Check” step, the measurements will be assessed and the results will be reported for strategic decision makers, which will be made through the *Tableau de Bord*. Finally, in “Act”, it will be decided what must be done to improve UJM supply chain core processes performance.¹⁵

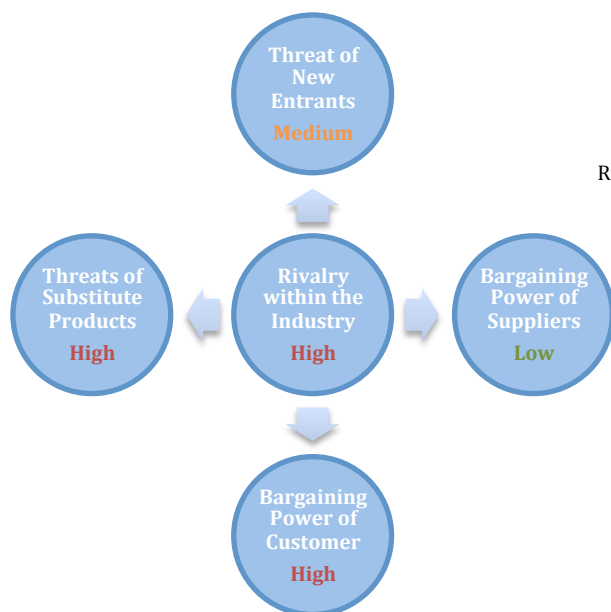
3. Cross Continuous Improvement Analysis Model

3.1 Porter Model Analysis

For a better understanding of the fast-moving consumer goods industry and its competitive outlook it was conducted a Porter five forces analysis. The results of this analysis are presented in Figures 2 and 3.

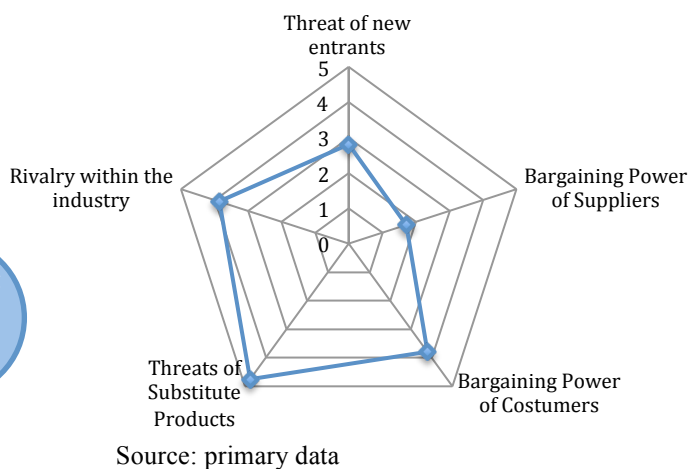
¹⁵ This is corroborated by Paul Arveson in “The Deming Cycle”, Balanced Scorecard Institute, viewed on May 4, 2014 at: <http://balancedscorecard.org/thedemingcycle/tabid/112/default.aspx>.

Figure 2 – Porter’s 5 Forces Analysis



Source: primary data

Figure 3 - Porter's 5 Forces Radar



The threat of new entrants¹⁶ is medium due to the high investments required to enter in the market, the pressure on margins and the probability of retaliation by the existing companies.

Regarding the bargaining power of suppliers,¹⁷ it's low because of the high dimension of Unilever-JM, which acquired a high volume and range of products.

The bargaining power of customers¹⁸ is high due to the fact that power is concentrated in the hands of few retailers (high level of concentration in retail market, where few retailers detain most of the market share).

The threat of substitute products¹⁹ is high due to the growth of private labels, increasing competition (private labels provide cheap products in a price-focused industry).

¹⁶ See more in Appendix 3 - Threat of new entrants – Table 4.

¹⁷ See more in Appendix 4 - Bargaining Power of Suppliers – Table 5.

¹⁸ See more in Appendix 5 - Bargaining Power of Customers – Table 6.

These forces, together, play an important role in the identification of the competitive intensity and attractiveness (profitability) of the industry. Consequently, the rivalry within the industry²⁰ is considered high. There is a high competition from private labels and there are also several manufactures that opt by product differentiation and strongly bet on its brand image. Therefore, it its crucial to focus in the supply chain improvement regarding innovation, R&D, customer service, logistics, marketing and sales.

3.2 “Benchmarking 2013”

“Benchmarking 2013” is a study performed by GS1 Portugal with the aim of evaluating the service level provided by suppliers and their distributors to retailers. The report focuses on activities related with supply chain with the purpose of identifying opportunities for improvement in suppliers’ core processes.

In this evaluation participated 5 retailers, which evaluated the performance of 13 suppliers (Table 1).

The study was performed through the development of questionnaires composed by 50 questions related with the core processes presented in Table 2. For each question, retailers attributed a classification for the importance of the issue and an evaluation for suppliers’ performance (evaluation scale: 0 to10).

¹⁹ See more in Appendix 6 - Threat of Substitute Products – Table 7.

²⁰ See more in Appendix 7 - Rivalry within the industry and Exit Barriers – Table 8.

Table 1 - Retailers and Suppliers

RETAILERS (5)	SUPPLIERS (13)

Source: Benchmarking 2013 report by GS1 Portugal

Table 2 - Benchmarking Study - Groups and Results²¹

Groups/Processes	Scope	Importance	Unilever	
			Score	Position
1. Request	Enforcing quantities, request references and validity	14,21%	6,3	10 th
2. Delivery	Meeting deadlines, schedules and delivery dates agreed	13,78%	6,77	6 th
3. Support	Status of support units	12,18%	5,01	12 th
4. Documentation	Format and content of the documents filed	12,13%	7,01	3 rd
5. Billing	Degree of efficiency of administrative management	11,65%	6,75	7 th
6. Information Systems	AFM, EDI and GS1-128 shipping labels	12,80%	5,7	7 th
7. Capacity Planning	Capacity planning and reaction of discussion partners	11,72%	5,55	12 th
8. Collaboration	Established relationships between manufacturers and distributors	11,53%	6,5	5 th

Source: Benchmarking 2013 report by GS1 Portugal

Unilever was ranked 10th of 13 suppliers in what concerns the global service provided to retailers.²² This result is mainly triggered by the poor performance regarding the groups of “Request”, “Support” and “Capacity of Planning”.

²¹ The service level provided by suppliers to retailers is presented by a rank of 13 positions. The values of evaluation are within the range between 0 and 10, where 0 is the worst grade and 10 is the best.

²² This ranking was based on a total average of all the performance evaluations given by the 5 suppliers at each one of the 8 groups analyzed.

In “Request”, problems regarding the condition of goods when delivered to retailers were identified. Hence, in this process, one opportunity of improvement is the development of infrastructures to better accommodate products during transportation.

Regarding “Support” and “Capacity planning”, there were issues regarding stock availabilities. This represents another opportunity of improvement. With the intention of tackling this issue and better estimate consumer demand, it could be developed collaborative planning with retailers.

Finally, this study also offers key information regarding the most significant issues in the supply chain industry of FMCG for retailers, which are the following:²³

- Good condition of the products when received
- Compliance with the agreed delivery time
- Management of promotions (Stock Availabilities)
- Compliance with delivered products expiration date

This information of Unilever JM classification in each group and the identification of the most important issues are important because it shows the perception that retailers have from Unilever-JM service performance. It also supports the selection and creation of KPI’s for the development of an efficient *Tableau de Bord*, which is developed in the following section.

3.3 *Tableau de Bord*²⁴ – Core Processes Analysis and Nexus Causality

3.3.1 Planning and Customer Service

In this section, an analysis of how efficient is UJM supply chain management regarding the processes of Planning and Customer Service, will be executed. In the first process, it was measured the number of failed cases due to stocks availability.

²³ All of these issues will be monitor in the *Tableau de Bord*.

²⁴ This performance measurement system is presented in Appendix 2 - *Tableau de Bord*.

In figure 4, presented below, it is represented the number of failed cases, associated to each key performance indicator for December 2013. In this chart it is also possible to identify that the major part of failed cases in this month are associated with Losses Before Dispatch (LBD).²⁵

Figure 4 - Failed cases - December13

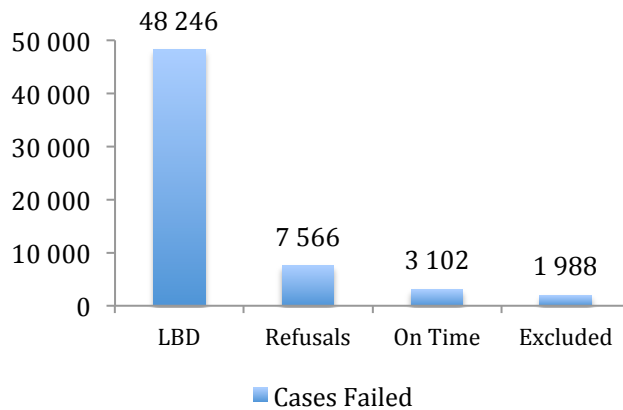
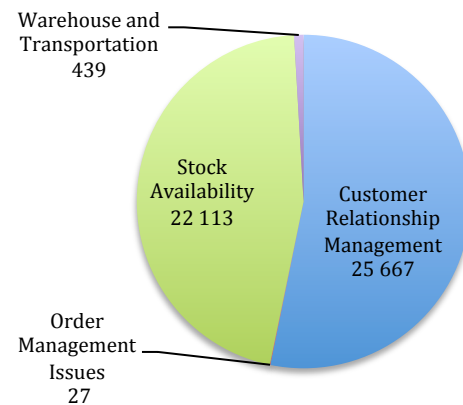


Figure 5 - LBD - December/13



Sources: Unilever Database

Looking at figure 5, the reasons behind the high number of failed cases related with LBD are analyzed. One of the main causes contributing to this issue is the stock availability, which is influenced by the accuracy in the forecasting of customers demand (planning).

As Planning, Customer Service, will also affect the number of failed cases associated with LBD.

In figure 5, presented previously, it is identified a high number of failed cases due to Customer Relationship Management issues (25.667 failed cases of the total 48.246 failed cases in LBD, which represents 53,2%).²⁶ Communication issues between Unilever and its clients might be the cause behind this issue. Therefore, here is presented a possible opportunity of improvement. There are inaccurate forecasts, lack of

²⁵ This indicator is explained in Appendix 1 - Key Performance Indicators.

²⁶ In this month, December 2013, customer expected quantity was 1.975.036 cases. So the 48.246 failed cases in LBD represents 3,08% of the total customer expected quantity.

communication between processes and communication issues with clients (for example, customer service not fast enough in letting customers know about changes in products) that are creating this inefficiency in these core processes.

Subsequently, in order to face these issues, it is important to develop communication systems between processes, to improve communication and to develop collaborative planning with retailers.

3.3.2 Logistics and Quality Management

Concerning Logistics, it was measured the number of failed cases due to late delivering of orders to client (not respecting the schedule agreed, which is represented by the indicator On Time) and the number of failed cases due to picking errors.²⁷

By analyzing Figure 4, it is identified the 3102 failed cases associated with the indicator “On Time”, which means that UJM needs to tackle this process inefficiency. One of the reasons that might be behind this issue is the late placement of the order by the customer, which gives less time for UJM distributor partner to deliver the orders. The geographical distribution of UJM clients across the country also contributes for the difficulty of planning and fulfilment of the agreed schedules.

On the subject of the other indicator, “Picking Error”, it represents a significant part (30%) of the total number of failed cases related with Warehouse and Transportation in Refusals (Figures 6 and 7). Here it is identified other opportunity for improvement. UJM, as mentioned previously, has a high number of SKU’s, which is one of the reasons for the difficulty in the differentiation between packages. This can lead to picking errors. Thus, due to the significant number of failed cases caused by this issue, it is important to implement a new system for a more accurate preparation of

²⁷ Both indicators are explained in Appendix 1 - Key Performance Indicators.

customer orders. The implementation of the new system is especially important for division Lever, which has the higher percentage of picking errors (Figure 8).

Figure 6 - Refusals - December/13

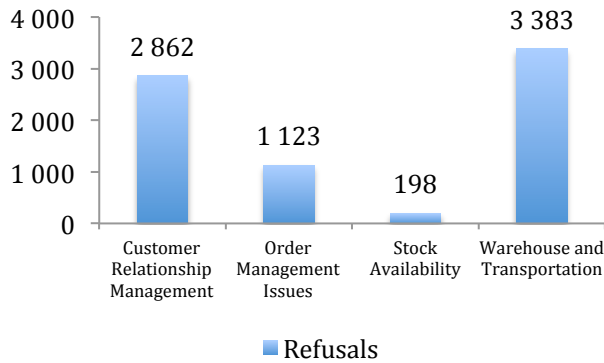


Figure 7 - Refusals - Warehouse & Transportation/13

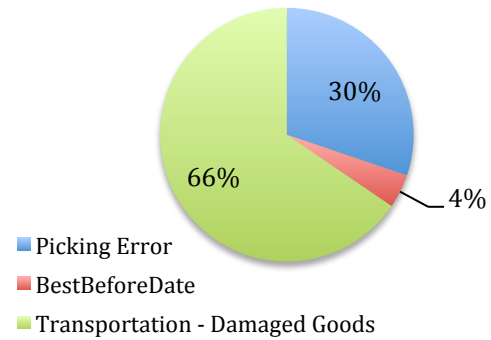


Figure 8 - Picking Error - Decemeber/13

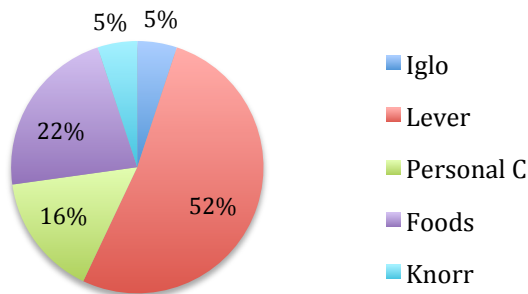
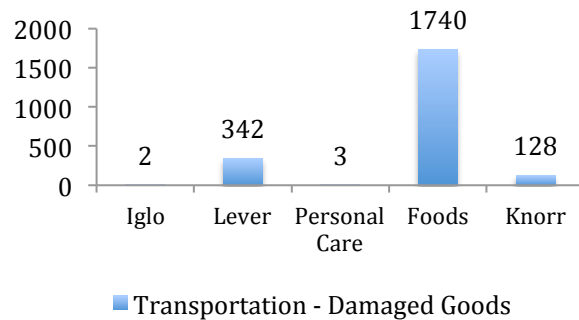


Figure 9 - Transportation - Damaged Goods - December/13



Sources: Unilever Database

In Quality Management it was measured the number of cases refused due to the condition of the consumer goods when delivered to retailers.²⁸

In Figure 7, it is possible to see that 66% of refusals regarding Warehouse and Transportation are due to damaged goods from transportation. Therefore, UJM should develop new infrastructures to better accommodate goods during transportation to retailers. UJM should take special care for products from the division of Foods since it has a higher number of damaged goods (Figure 9 – 1.740 failed cases). Finally, UJM

²⁸ This is represented by the indicator Damaged Goods, which is explained in Appendix 1 - Key Performance Indicators.

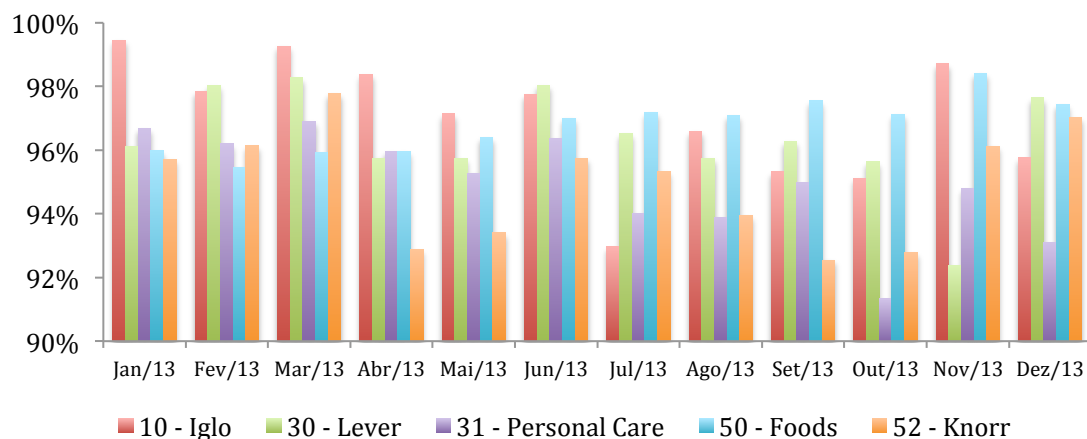
should renegotiate contracts with retailers by offering them incentives for the order of standardized pallets, which could not only reduce the number of damaged goods (pallets of just one product are better accommodated, reducing the probability of damage in transportation) but also reducing the number of picking errors.

3.3.3 Internal Benchmarking between Category Division and Clients

In this last section it was compared the service performance level across UJM supply chain major category divisions and across UJM main clients, which is analyzed in Figures 10 to 15.

In Figure 10 it was used CCFOT indicator, which represents the percentage of cases accepted by the client on time.²⁹ Hence, in this chart it is possible to see the evolution of performance (associated to CCFOT indicator) for each category division over the year of 2013 (monthly). This indicator gives important data since it covers the areas of quality and capacity of UJM supply chain. The category division that has the lowest average performance was Personal Care, with CCFOT equal 94,84% (2013).

Figure 10 - CCFOT - Divisions

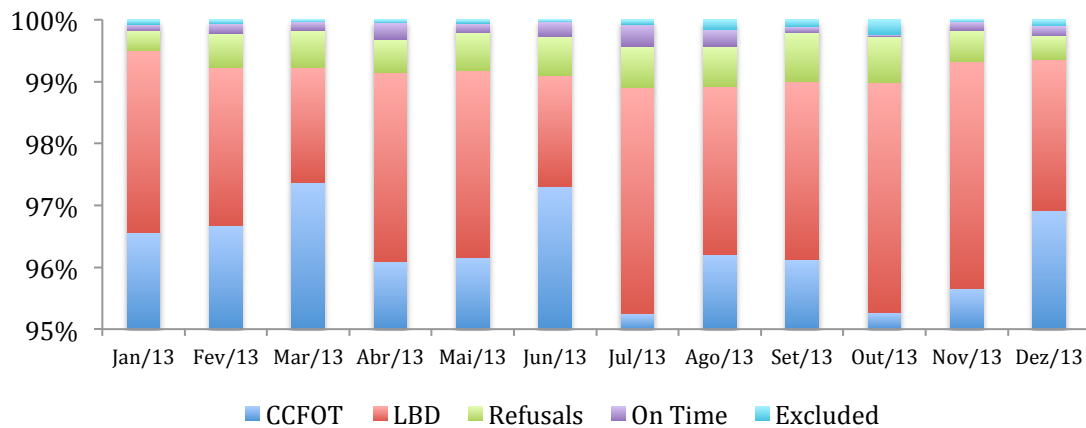


Source: Unilever database

²⁹ This indicator is explained in Appendix 1 - Key Performance Indicators.

In the following chart, Figure 11, several monthly key performance indicators were analyzed.³⁰ The information for each month allows the analysis of global evolution for these performance indicators. In this chart it is possible to identify LBD as the area that is associated with the higher percentage of failed cases (Average of 2,88% failed cases over the year of 2013). These failed cases, as analyzed previously, are related with stock availability and customer relationship management issues.

Figure 11 - CCFOT - 2013

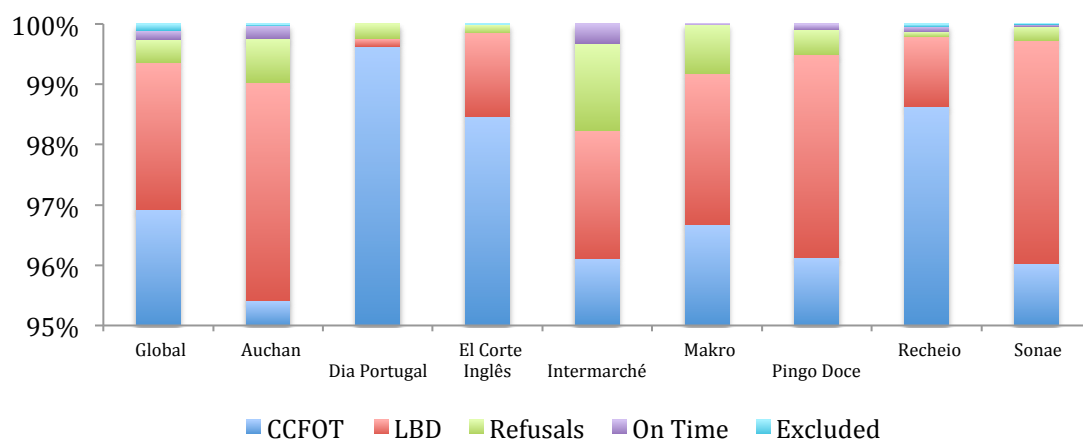


Source: Unilever database

The Figure 12 is composed by the same key performance indicators of the previous chart, but in this case the information is presented for each B2B customer, during the month of December 2013. This is useful to compare operations/service performance across clients in a monthly basis. During December 2013, Auchan has received the lower service level when compared with the service level provided to remaining retailers. One of the main reasons contributing for this issue was the high percentage of LBD (which is planning and customer service processes). Therefore, this is a point that UJM must investigate with the intention of determining the causes.

³⁰ The KPI's analyzed are the CCFOT, LBD, Refusals and On Time, which are explained in Appendix 1 – Key Performance Indicators.

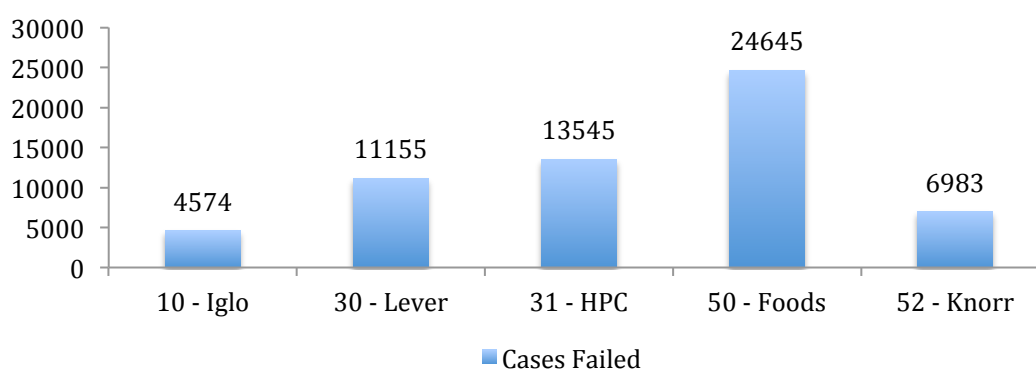
Figure 12 - CCFOT - Clients - December/13



Source: Unilever database

Figure 13 shows the number of failed cases for each division in the last month. This will be important for the identification of the division with the higher number of failed cases, which should be analyzed to take corrective measures. For the month of December 2013 the higher number of failed cases occurred in the division Foods (24,645 failed cases). This will be analyzed and taken in consideration in the recommendations section.

Figure 13 - Failed cases - December/13



Source: Unilever database

In Figures 14 and 15 it's represented the service level provided to the 2 main UJM clients during the year of 2013.³¹ This type of study does not only shows to see the evolution of service level for each client over the year, but it also allows the comparison of the service level provided to other clients; providing a benchmarking analysis.

Figure 14 - CCFOT - Sonae

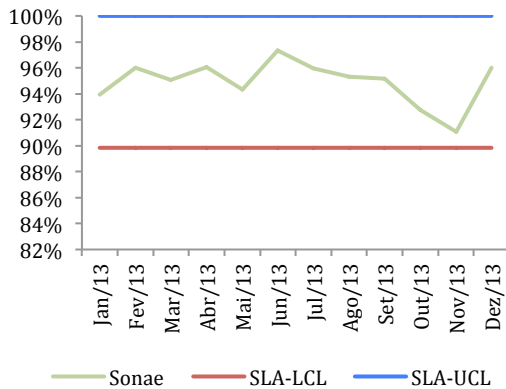
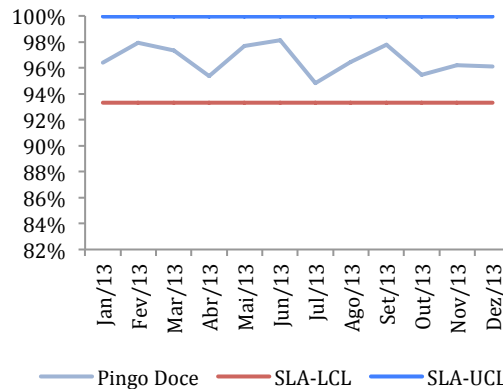


Figure 15 - CCFOT - Pingo Doce



Source: Unilever database

The previous charts reveal the service level provided by UJM to its clients during the year of 2013 and set lower and upper control limits that will provide guidance in the negotiation of Service Level Agreements with each retailer. These limits were set through the development of statistic process control analysis, ensuring the proper continuous improvement and control of core processes. In these charts it is also perceptible a higher standard deviation regarding the service level performance provided to Sonae, comparing with the one provided to Pingo Doce. Consequently, Sonae has a higher range concerning the service level control limits. This difference might be a consequence of a lower level of shared information compared to the one that Unilever-JM has with Pingo Doce. Sonae can be uncomfortable to share certain information, while Pingo Doce on the other hand – because it belongs to Jerónimo

³¹ The remaining charts with the service level provided to UJM clients during the year of 2013 is presented in the end of Appendix 2 – *Tableau de Bord*.

Martins, which is a partner of Unilever joint venture – might feel more comfortable with this share of information.

Sonae and Pingo Doce are the two main Unilever-JM clients, retaining more than 50% market share of retailers in Portugal (2013). These clients received the highest and most consistent (lower variation) service level delivered by UJM, when compared to the other remaining 6 major retailers (presented in Appendix 2 – *Tableau de Bord*). This can be explained through the special attention and focus that Unilever-JM gives to these two key clients, which leads to a higher quality of service level.³² However, in order to deliver this high quality service, Unilever-JM increases costs of quality.³³

The core processes' performance of the supply chain was analyzed through the *Tableau de Bord* measurement tool, as well as the benchmarking study regarding retailers evaluations, perceptions and most important issues. So, in the next section, two tables are presented with the consolidation of all results and continuous improvement measures to take in order to improve and fulfill customers' expectations.

5. Conclusions and Recommendations

In this last section, after having identified issues, causes and opportunities of improvement regarding UJM supply chain core processes, it will be discussed continuous improvement measures to improve UJM performance and service level provided to retailers.

Therefore, the Table 3 is presented in order to consolidate the main issues for each core process of UJM supply chain as well as the causes of them.

³² According to Withers & Ebrahimpour (2000) the eight dimensions of quality are: performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality.

³³ The Costs of Quality are: internal and external failure costs, appraisal costs and prevention costs. Source: Vukčević, M. 2008. Cost of Quality Management. *International Journal for Quality Research*, Vol. 2, No. 4, 297–303.

Table 3 – UJM Supply Chain Core Processes Issues and Causes

Processes	Issues	Causes
Planning	<ul style="list-style-type: none"> High number of failed cases associated with Losses Before Dispatch Inaccurate forecasts Failed cases due to stock availabilities 	<ul style="list-style-type: none"> Low accuracy in the forecasting of customers demand (volatile demand and optimistic predictions) Communication issues between Unilever and its clients Lack of communication between processes Sales team is not aware of planning constraints
Customer Service	<ul style="list-style-type: none"> Failed cases due to customer relationship management issues 	<ul style="list-style-type: none"> Communication delay in letting customers know about changes in products Inefficient communication system
Logistics and Quality Management	<ul style="list-style-type: none"> Refusals Late deliveries Picking errors (specially in Lever division) Damaged goods (specially in Foods division) 	<ul style="list-style-type: none"> Late placement of orders by customers High number of SKU's, which increases the difficulty of differentiation between packages Inefficient structures for the transportation of goods (significant number of damaged goods during transportation to retailers)

The Table 4 characterizes the implementation plan of initiatives for the main processes analyzed in Table 3. KPI's were selected for each one of these core processes (so as to establish targets and to measure the evolution of performance).

Table 4 – Implementation Plan

Processes	KPI's	Targets	Priority Division	Continuous Improvement Measures	Time Frame
Planning	LBD	-15%	HPC	<ul style="list-style-type: none"> Collaborative planning with retailers Improve communication with customer service and sales Create new indicator to measure forecast accuracy³⁴ 	Medium term
	Stock Availabilities	- 40%	Iglo		
Customer Service	Customer Relationship Management	- 30%	Lever and HPC	<ul style="list-style-type: none"> Improve communication systems with retailers 	Medium term
Logistics and Quality Management	Damaged Goods	- 40%	Foods	<ul style="list-style-type: none"> Development of new infrastructures to be placed inside trucks to better accommodate goods during transportation to retailers³⁵ Renegotiation of contracts with retailers in order to offer incentives for the order of standardized pallets (reducing the picking) Create new indicator - Unload Orders³⁶ Possible reduction in the number of SKU's³⁷ Increase products packaging differentiation 	Short and Medium term
	Picking Error	- 30%	Lever		
	On Time	- 15%	-		

³⁴ Forecast Accuracy (KPI) – in a monthly base UJM could measure the forecast accuracy of demand in order to check if it is necessary to develop a more accurate system for this purpose.

³⁵ UJM has being developing these infrastructures (source: Meeting with Pedro Lopes - Director of Logistics Department – March 10th, 2014)

³⁶ Unload Orders (KPI) – in a monthly base UJM should measure the average time it takes to unload customer orders, since in Benchmarking study 2013 it was found that this is an important issue for retailers.

³⁷ The revision of portfolio management (Smart Complexity) was developed by Miguel Saraiva and Madalena Silveira at Unilever-JM in the Survivor project.

Finally, frequent meetings with retailers should be scheduled, with the objective of knowing their perceptions about the service level provided by Unilever-JM and its distributor partners.

Nevertheless, some of these continuous improvement measures will take time to implement and others also need retailers' acceptance. For instance, the collaborative planning with retailers will require a share of information, which they might not feel comfortable with (very sensitive information that can be used in an opportunistic and improper way). Other example is the improvement of communication systems that will certainly take time to change and implement.

The implementation of this performance measurement system, *Tableau de Bord*, aims to help Unilever-JM increasing core processes performance through the identification of opportunities of improvement in order to become the best of Portugal's sector. Examples of these processes improvements are the increase of planning effectiveness, increase in sales forecast accuracy, reduction of damaged goods during transportation and reduction of picking errors. This will be extremely important due to the market environment where there is a high level of competition and an increasing power of retailers.

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Appendixes

Appendix 1 - Key Performance Indicators

The indicators used for the establishment of the performance measurement system are the following:

1. Customer Case Fill, which represents the percentage of cases accepted by the client:

$$1.1. CCF = \frac{\text{Cases Accepted by the Client}}{\text{Customer Expected Quantity}} \times 100$$

2. Customer Case Fill On Time, which represents the percentage of cases accepted by the client on time:

$$2.1. CCFOT = \frac{\text{Cases Accepted by the Client On Time}}{\text{Customer Expected Quantity}} \times 100$$

3. Refusals, which represents the percentage of cases refused by the client:

$$3.1. Refusals = \frac{\text{Cases Refused by the Client}}{\text{Customer Expected Quantity}} \times 100$$

4. Losses Before Dispatch, which represents the percentage of cases lost before dispatch:

$$4.1. LBD = \frac{\text{Cases Lost Before Dispatch}}{\text{Customer Expected Quantity}} \times 100$$

5. On Time, which represent the percentage of cases that arrived to client late (not respecting the schedule agreed):

$$5.1. On Time = \frac{\text{Cases Not Respecting the Schedule Agreed}}{\text{Customer Expected Quantity}} \times 100$$

6. Excluded, which presents the percentage of failed cases that are not included in the previous indicators:

$$6.1. Excluded = \frac{\text{Cases Not Delivered to Client Excluded of Previous Indicators}}{\text{Customer Expected Quantity}} \times 100$$

7. Damaged Goods, which represents the percentage of goods that suffered damages during its transportation to client:

$$7.1. \text{ Damaged Goods} = \frac{\text{Number of Damaged Goods During Transportation}}{\text{Cases Refused by the Client}} \times 100$$

8. Best Before Date, which represents the percentage of goods not complying with the expiration date rule:

$$8.1. \text{ BestBeforeDate} = \frac{\text{Goods Not Respecting rule of Expiration Date}}{\text{Cases Refused by the Client}} \times 100$$

9. Picking Error, which represents the percentage of picking errors:

$$9.1. \text{ Picking Error} = \frac{\text{Numer of Picking Errors}}{\text{Cases Refused by the Client}} \times 100$$

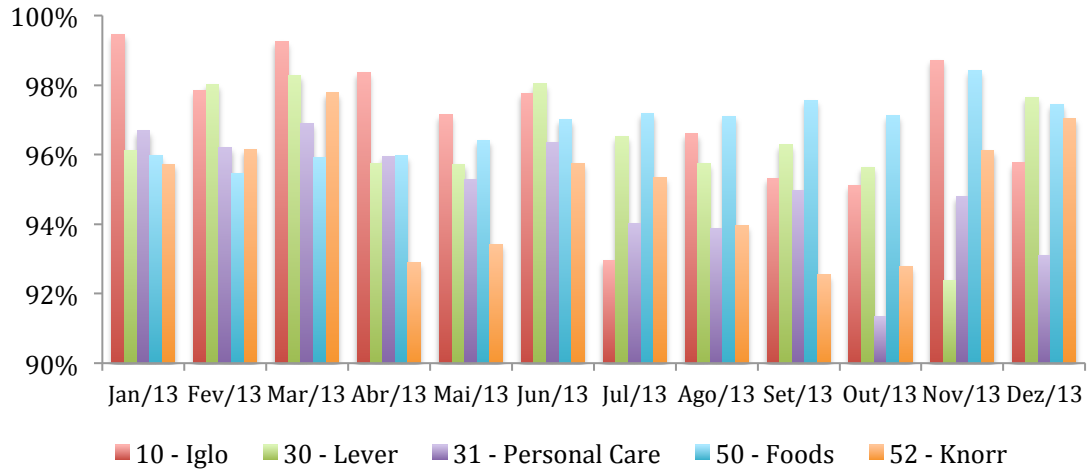
10. Stock Availability, which represent the total number of failed cases due to stock availabilities.

The previous indicators should respect the following:

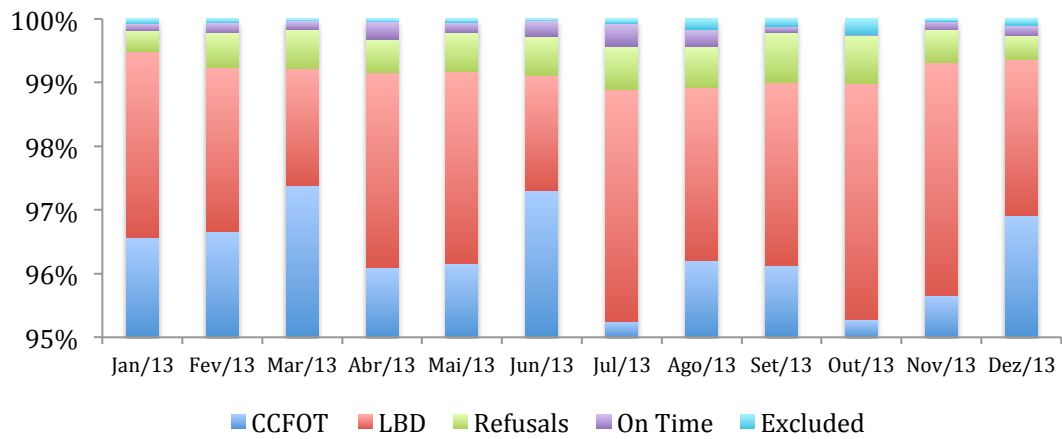
$$CCFOT + LBD + Refusals + On Time + Excluded = 100\%$$

Appendix 2 - Tableau de Bord

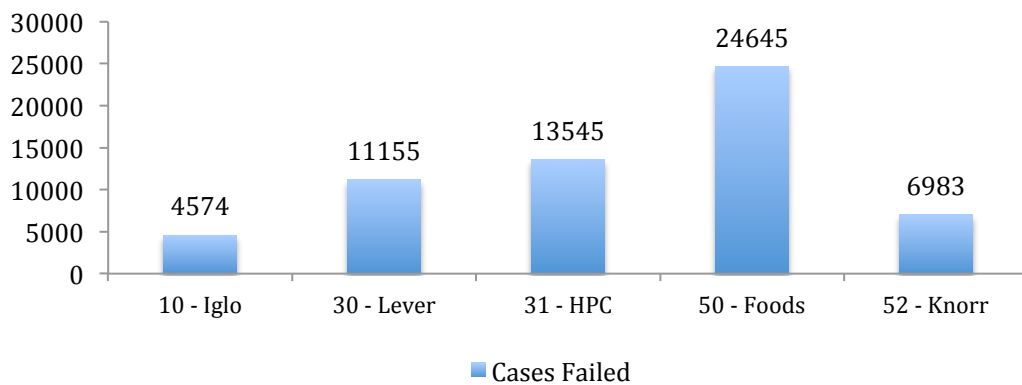
CCFOT - Divisions - 2013



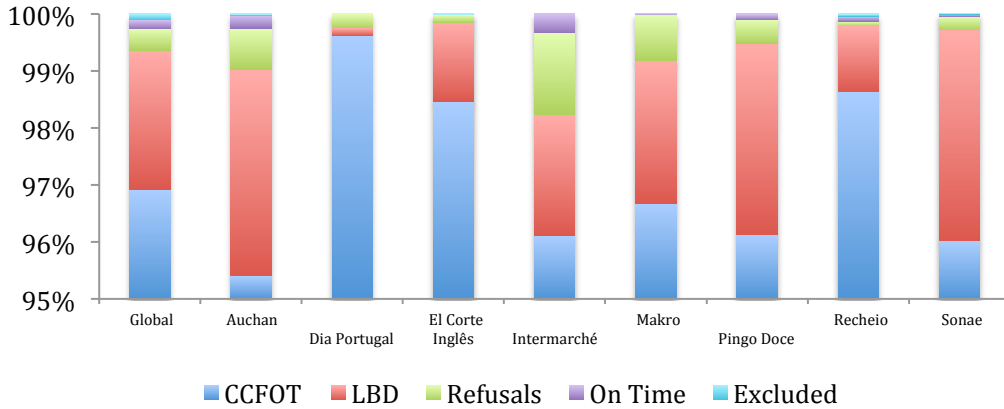
CCFOT - 2013



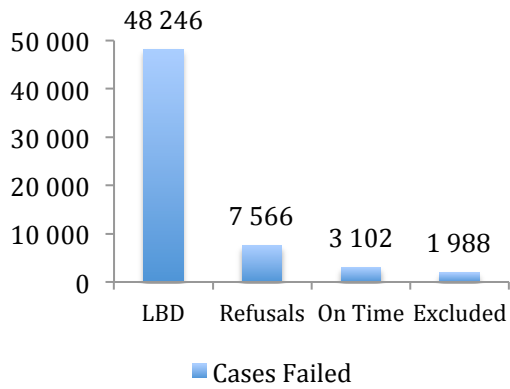
Failed cases - Divisions - December/13



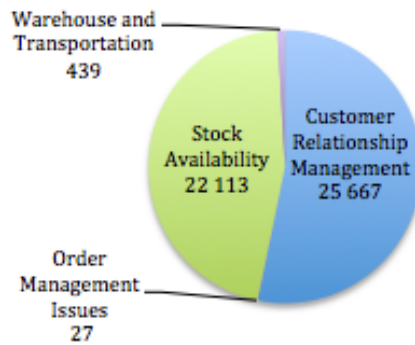
CCFOT - Clients - December/13



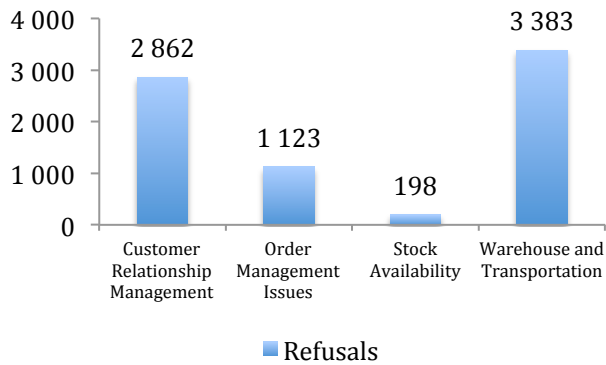
Failed cases - December/13



LBD - December/13



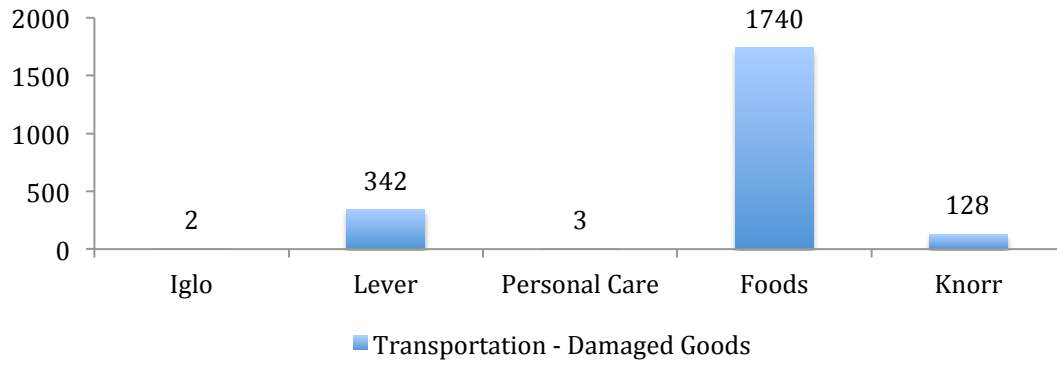
Refusals - December/13



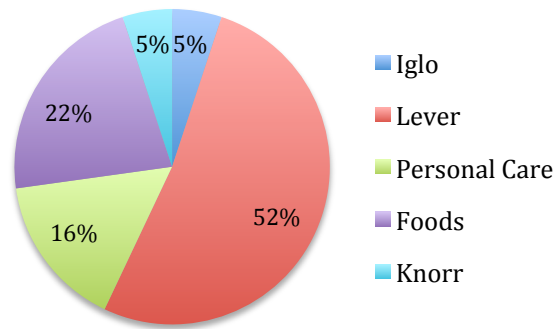
Refusals - Warehouse and Transportation



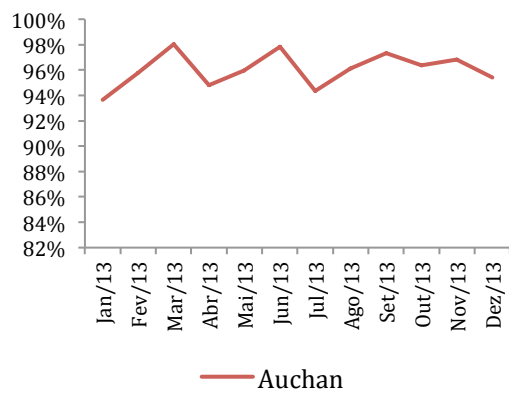
Transportation - Damaged Goods - December/13



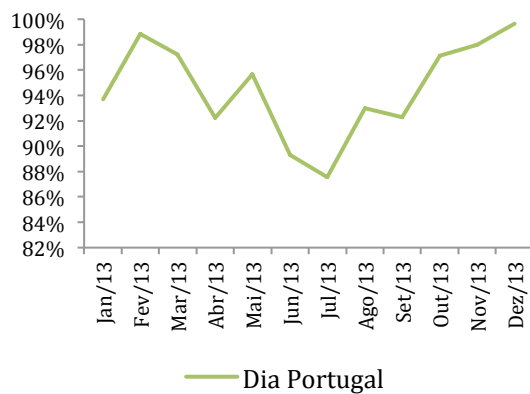
Picking Error - Decemeber/13

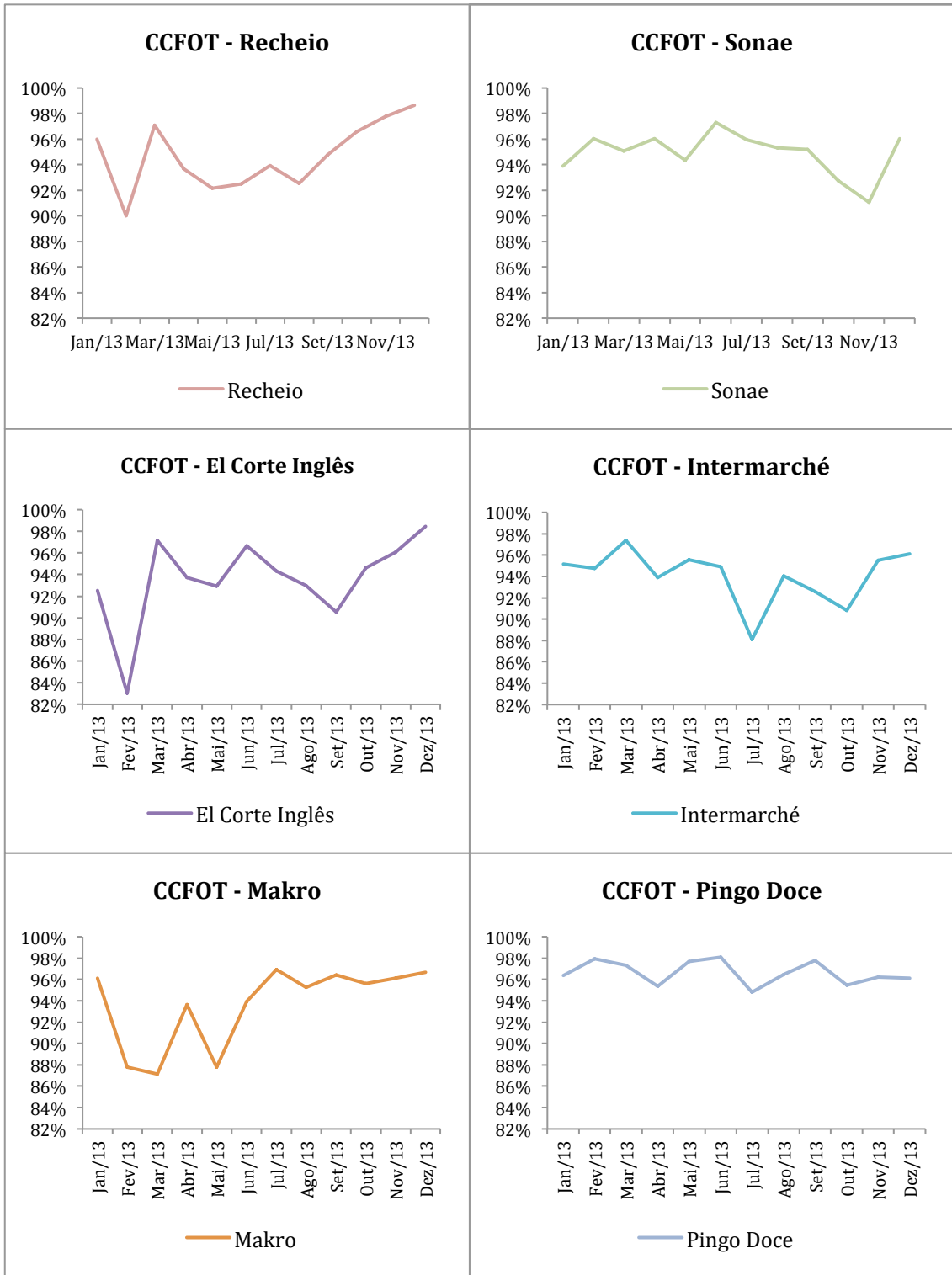


CCFOT - Auchan - 2013



CCFOT - Dia Portugal - 2013





Appendix 3 - Threat of new entrants – Table 4

Industry Analysis Application of the Model of 5 Strengths of Porter		Contribution to the Strength					
		Very Low	Low	Medium	High	Very High	
Threat of new entrants							
Product Differentiation	High			1			Low
Brand Identification	High			1			Low
Others disadvantages of costs	High			1			Low
Capital need	High	1					Low
Cost of change to the customers	High				1		Low
Difficulty to access to distribution channels	High		1				Low
Protectionist Policies	High				1		Low
Difficulty to access to the technology need	High				1		Low
Difficulty to access to materials	High				1		Low
Experience effects	High		1				Low
Probability of retaliation by the existing companies	High	1					Low
		1	2	3	4	5	
Global Value of the Strength		Low		2,82			High

Appendix 4 - Bargaining Power of Suppliers – Table 5

Industry Analysis Application of the Model of 5 Strengths of Porter		Contribution to the Strength					
		Very Low	Low	Medium	High	Very High	
Bargaining Power of Suppliers							
Number of suppliers in the industry	High		1				Low
Importance of the industry as client	High	1					Low
Cost of change of suppliers	Low		1				High
Weight of the cost of the purchased products by the industry on the total costs	Low		1				High
Importance of the quality of the products purchased	Low	1					High
Degree of differentiation of the products purchased by the industry	Low	1					High
Profitability of the suppliers	High			1			Low
		1	2	3	4	5	
Global Value of the Strength		Low	1,71				High

Appendix 5 - Bargaining Power of Customers – Table 6

Industry Analysis Application of the Model of 5 Strengths of Porter		Contribution to the Strength					
		Very Low	Low	Medium	High	Very High	
Bargaining Power of Customers							
Number of clients of the industry	High					1	Low
Concentration of the clients in the industry	Low					1	High
Average volume of the purchases by the customers	Low					1	High
Cost to the customers to change suppliers	High			1			Low
Weight of the cost of the products sold by the industry on the total costs of the customers	Low				1		High
Importance of the quality of the products sold for the customers	Low			1			High
Degree of differentiation of the products provided by the industry	High			1			Low
Disposal of substitute products to the customers	Low		1				High
Threat of vertical integration by the customers	Low			1			High
Disposal of information for the customers about the industry	Low					1	High
		1	2	3	4	5	
Global Value of the Strength		Low			3,80		High

Appendix 6 - Threat of Substitute Products – Table 7

Industry Analysis Application of the Model of 5 Strengths of Porter		Contribution to the Strength					
		Very Low	Low	Medium	High	Very High	
Threat of Substitute Products							
Disposal of substitutes	Low					1	High
Cost for the clients to change to substitute products	High					1	Low
Aggressiveness of the suppliers of substitute products	Low					1	High
“Price-performance” relation of the substitute products compared to the industry	Low				1		High
		1	2	3	4	5	
Global Value of the Strength		Low			4,75		High

Appendix 7 - Rivalry within the industry and Exit Barriers – Table 8

Industry Analysis Application of the Model of 5 Strengths of Porter		Contribution to the Strength					
		Very Low	Low	Medium	High	Very High	
Rivalry within the industry							
Number of competitors	Low				1		High
Degree of concentration of the market	High			1			Low
Market growth	High			1			Low
Fixed costs	Low				1		High
Costs of ownership of the stocks	Low					1	High
Costs of change to the customers	High			1			Low
Degree of variety of competitors	High				1		Low
		1	2	3	4	5	
Global Value of the Strength	Low				3,71		High
Exit Barriers							
Degree of specialization of the assets	Low				1		High
Exit costs concentrated	Low					1	High
Emotional barriers	Low		1				High
Legal and social restrictions	Low					1	High
		1	2	3	4	5	
Global Value of Exit Barriers	Low				4,00		High
GLOBAL VALUE OF THE STRENGHT	Low				3,86		High

Appendix 8 – VRIO Analysis Framework – Table 9³⁸

Sources of Competitive Advantage	Valuable	Rare	Inimitable	Organized	Competitive Implications
Well diversified portfolio	✓	✓	✓	✓	Sustained Advantage
Brand image and recognized brands	✓	✗	✓	✓	Temporary Advantage
Good price-quality ratio	✓	✗	✓	✓	Temporary Advantage
Knowledge based organization	✓	✗	✓	✓	Temporary Advantage
Product Innovations	✓	✗	✓	✓	Temporary Advantage
Products availability in the stores	✓	✗	✗	✓	Temporary Advantage
Direct store distribution	✓	✗	✓	✓	Temporary Advantage

³⁸ Source: Sequeira, Tânia, (2012), “How to optimize the traditional retail market for FMCG sector? A Regional approach for Unilever’s Business Model”.