



**CATÓLICA PORTO**  
BUSINESS SCHOOL

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## **SONAE MC**

### When Lean Comes to Service

Case Study

Reference nº 611-016-1

This case was written by Professors Rui Soucasaux Sousa and Sofia Salgado Pinto, Católica Porto Business School. It is intended to be used as the basis for class discussion rather than to illustrate either effective or ineffective handling of a management situation. The case was made possible by the co-operation of Jaime Maia at Sonae MC.

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In January 2011, Jaime Maia, Sonae's Human Resource Director, stared out his office window overlooking the Continente hypermarket store in Matosinhos, Portugal. This was where Sonae MC, Sonae's Food Retail business, had been born in 1985. Although the country's economic mood was gloomy, it seemed that they had another busy shopping day at the store. In the last 4 years, Jaime Maia had spearheaded the steering group responsible for the implementation of Lean in Sonae MC's stores across the country. He felt satisfied with the course the program had taken to date. Several difficulties had been overcome and the program had produced major benefits.

Jaime Maia pondered on the course that the program should take in 2011 and beyond. In a few days, he would make a recommendation on future directions at the forthcoming steering group annual review meeting. One challenge would be to sustain the motivation for the program across the organization, after four years of continuous successes. He also felt the program was reaching a new turning point and needed to be reinvented. Until now, lean principles had been applied mainly to materials flows and workplace organization. Could lean principles be extended to customer flows?

### **Sonae Corporation**

Sonae was founded in 1959 in the district of Porto, Portugal, as an engineered wood business, producing high-pressure decorative laminates. Belmiro de Azevedo joined the company in its early beginnings and is recognized as the main architect of the group and its development as we know it today. He was recently ranked by Forbes magazine as the third richest man in Portugal, with an estimated net worth of US\$ 1.5 billion.

During its first 20 years of existence, Sonae was a small-to medium-sized business, focused on the wood derivatives market. In the 1980s, under the leadership of Belmiro de Azevedo, Sonae began a period of rapid expansion and diversification, which coincided with Portugal's strong GDP growth as the country joined the European Union. During this period Sonae acquired and set up new businesses.

In 1983, Sonae decided to enter the retail business. Because of the absence of previous expertise in this sector, Sonae set up a joint venture with Promodès (a French retailer which merged with Carrefour in 1999) to operate hypermarkets in Portugal. It opened the first hypermarket store under the Continente brand in 1985.

In the 80s and 90s, Sonae expanded into the real estate and telecommunication businesses. Several specialized retail brands were launched, namely: SportZone, Worten, Zippy, Modalfa, Vobis, Maxmat and Max Office. In the 2000s, Sonae continued to grow internationally. Exhibit 1 presents a brief history of Sonae's growth and expansion.

In 2007, Sonae re-structured its business portfolio. Today, Sonae comprises six business units – Sonae MC – (Modelo Continente – Food Retail), Sonae SR (Specialized Retail), Sonae RP (Retail Properties, with Sonae MC and Sonae SR as tenants), Sonae Sierra (Shopping Centres), Sonaecom (Telecom) and an Investment Management arm (see Exhibit 2). Exhibit 3 shows the contribution of each business segment to the group's EBITDA.

### **Sonae MC (Food Retail)**

Sonae's activities in food retail began in 1985, with the opening of its first hypermarket in Portugal, in the city of Porto (Matosinhos) under the Continente brand. In 1997, Sonae acquired a Portuguese supermarket chain 'Invictus' and converted the stores to the Modelo brand. Until February 2011, Sonae hypermarkets operated under the Continente brand and the supermarkets under the Modelo Brand. In March 2011, the two brands were unified and the 130 Modelo stores became Continente. Now, Sonae MC operates all of its stores under the Continente brand. Exhibit 4 shows Sonae MC's organization chart.

Despite being highly dependent on the evolution of consumer spending, Sonae MC has been able to succeed in fairly difficult macro-economic conditions. In 2010, Sonae MC continued to lead the food retail market with 3,275 million euros turnover and with 32% of the market share (followed by Jeronimo Martins, another national food retail corporation, and Intermarché, the renowned French multinational - see Exhibit 5). At the end of 2010, there were 170 stores nationwide, with a total sales area of 516,000 m<sup>2</sup>. Exhibit 6 presents the number of stores and sales area in 2009 and 2010. There are many hypermarket stores in Portugal, with most cities, even smaller ones, covered by at least one store (frequently, several), many of them built next to shopping centers and virtually all offering free parking. As a consequence, customers in these areas will typically have one or several hypermarket stores within reasonably easy driving range from their homes.

Continente stores have become a benchmark in the food retail sector in Portugal, offering competitive prices, high product variety, superior customer service and regular promotional offers. Various customer surveys in recent years have shown that these aspects are greatly

valued by Portuguese consumers. Among other awards, Continente has been voted 'The Most Trusted Brand' in the food retail industry in Portugal for nine years in a row.

## **Operations**

Sonae MC operates 170 stores and two large state-of-the-art distribution centers in Portugal (one in Porto and one in Lisbon). These two distribution centers supply a large percentage of the food volume of Sonae MC stores: over 90% in hypermarkets and over 99% in supermarkets. The remaining volume corresponds to direct delivery, used for very fast-moving goods such as milk, bread and beer. Non-food supply is fully centralized for both hypermarkets and supermarkets.

Sonae MC stores offer a high number of stock keeping units (SKUs) and SKUs per m<sup>2</sup>. On average, there are 70,000 SKUs (aprox.) per store in the hypermarkets, with an average sales area of 7,200 m<sup>2</sup>; and 40,000 SKUs (aprox.) in the supermarkets, with an average sales area of 1,750 m<sup>2</sup>.

The stores are divided into a number of areas. The back-office includes: unloading docks; food and non-food warehouses; cold rooms; technical and maintenance areas; administrative offices. The front office includes the following sales areas: books and stationary; apparel/clothes wear; leisure; health and beauty; dairy; fruits and vegetables; frozen food, bakery, delicatessen, meats and seafood; and the supporting checkout and customer service areas. Exhibit 7 presents a physical store layout with its corridors and aisles. Exhibit 8 displays a simplified store layout with its main selling areas and the key flows of customers and goods.

The store operations include several processes: unloading of the trucks that come from Sonae's distribution centers or directly from the suppliers; organizing the goods that need to go to the sales area or to the warehouses; cleaning the store and the shelves; replenishing the shelves; decorating the store for specific seasons or promotions; delivering customized services in specific areas (e.g. delicatessen, meats, seafood); and customer check-out. Key operational goals include store space optimization, sales productivity and customer satisfaction.

By the end of 2010, 22,500 employees were working at the Sonae MC food retail stores. The stores organization chart is presented in Exhibit 9.

## **Lean Implementation at Sonae MC**

### *The beginning*

In July 2006, Jaime Maia pondered on how to react to the recent change in the labor law in Portugal, which required companies to administer a minimum of 35 hours of training per year, per worker. He was particularly interested in the concept of on-the-job training: rather than the traditional classroom training, this approach avoided removing workers from their work posts for long periods of time and seemed to provide more immediate benefits. Jaime went back to the brochures on his desk from the consulting firm Kaizen Institute (KI) listing training programs in Lean. These programs seemed to have a good fit with what he was looking for. He called KI for a meeting and asked them to observe the daily operations at several retail stores. KI's lean perspective on operations uncovered a significant amount of "muda". It soon became clear that there was potential for more than a training program; an action-training program in Lean, combining training with process improvement, seemed to hold great potential. The next step was getting the buy-in from senior management. Jaime Maia and KI presented their ideas to the Chief Operations Officer (COO). It was not an easy meeting. The photos showing several "muda" generated discomfort in the most successful retailer in Portugal. Despite some skepticism, the COO decided to invite KI to explain the program in a seminar attended by himself, the 10 Regional Operations Managers and senior management from Human Resources. At the time, most known lean initiatives had been implemented in manufacturing. Several managers argued that lean principles would not work in retail because, contrary to a manufacturing plant, the retail environment was very turbulent and dynamic (e.g., due to promotions and seasonality). After a post-seminar mulling and courting period, the COO decided to take the plunge: "let's give it a chance".

### *Phase I (2007) – Pilot Program*

The first stage of the program had a well defined focus: i) three store processes (goods reception, replenishment and multi-replenishment<sup>1</sup>); ii) three areas of the store operations (food, non-food and textiles); iii) applying three simple lean tools (5S, Visual Management and Standard Work). This stage began with a number of seminars from March to May 2007 attended by Regional Operations Managers (each supervises a number of stores), and for each

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<sup>1</sup> The term *replenishment* refers to shelf replenishment activities carried out with the store closed, while the term *multi-replenishment* refers to shelf replenishment activities carried out during the day with the store open.

of the stores, the Store Manager, Area Managers and Key Operators. The goal of the seminars was to explain the lean tools and immediately test and apply them in the “Gemba” (workplace).

After a seminar, each Store Manager had to go back and work with his/her team to: i) develop and provide training sessions to the workforce, based on a “lean manual”; ii) define an action plan and schedule for applying the learned lean tools; iii) identify the most obvious problem areas in the stores and select the lean tools to be applied. Jaime Maia explained: “Improvements were suggested by Store Managers, top down. But those ideas were immediately enriched and put into action by the teams in the stores, bringing about further improvements in a continuous fashion”.

The existing store work teams were kept together throughout the action-training program, so that right after training they could go back and apply the concepts as a team in their workplace. The program was continuously supported by the Regional Operations Managers, Store Managers, the HR Department and KI.

After just one year, and an “explosion of creativity”, significant benefits arose:

- Increased productivity (due to visual management applied to worker daily scheduling and the development of standard procedures for replenishment activities).
- Reduced inventory levels (mainly due to the improved organization of the warehouse layout and space).
- Reduced stockouts (due to improved labeling of merchandise, which made it easier to find product items in the warehouse).
- Reduced breakages (due to the development of improved transport equipment and reduction of improper stacking).

All of this led to increased customer satisfaction. As Jaime Maia put it: “Kaizen stimulates a good attitude and a constant sense of critique”. A new culture was emerging...

### *Phase II (2008) – Consolidation and Expansion*

After the success of the 2007 program, Sonae MC decided to expand it in several ways:

- 1) To all areas in the stores (including perishables, check-outs, maintenance and administrative areas).

- 2) Including additional lean practices, such as total preventive maintenance.
- 3) Involving every employee in the program.

A formal steering group for the project was created, including Human Resources (Jaime Maia), Regional Operations Managers and KI. Halfway each year the steering group developed an action plan for the following year. Program steering and monitoring was achieved by holding monthly general meetings and a videoconference meeting every two weeks to assess milestones.

Similar to 2007, Sonae achieved substantial improvements in performance. But the main breakthrough was obtaining the widespread involvement of employees, which led to a greater feeling of success. As Nuno Fonseca, Store Manager in a pilot store, observed, “the store photos from 2006 now seem to belong to a different company; we cannot imagine doing things in any other way”.

2008 was not only a year for consolidation, but also for celebration and increased visibility. In June the Lean project was presented in Sonae Corporation’s annual management meeting. In October it was awarded the FINOV award, an award attributed each year by Sonae Corporation to the most innovative project across all business units of the Corporation.

### *Phase III (2009-2010) – Formalization and Consistency*

With the growth of the program (156 stores across the country and a large number of teams with over 20,000 employees involved), it became difficult to have visibility over the implementation process as well as to manage the dispersion of initiatives. In July 2008, the steering group, spearheaded by Jaime Maia, asked KI to conduct an audit to a sample of 18 stores to assess the level of lean implementation. The overall store average was 50%. However, the results showed a large variation between stores, ranging from an 87% score for the best store to 37% for the store with most improvement potential. So, rather than introducing new lean tools into the program, the steering group decided that the priority for 2009 would be to drive consistency in implementation across stores as well as to allow for benchmarking and learning. This raised the need to develop an internal auditing system.

Hence, the SIM<sup>k</sup> auditing system (System for the Implementation of Kaizen Improvements) was born (Exhibit 10). It comprises two levels of lean implementation (Level 1 and Level 2), each with a set of associated tools and objectives. Each area of a store (food, non-food, textile, perishables, check-out, maintenance, human resources, security and decoration) is required to

implement a set of tools identified as relevant for the area's operations, with each tool receiving a certain % weight. The objective is for each area of a store to achieve 100% evaluation in the use of the tools which are relevant for that area.

Sonae MC decided to use this model to drive implementation of Level 1 tools across all stores during 2009. Each store was required to achieve certification in Level 1 tools, consisting in getting an assessment of over 70% in the implementation of these tools. An initial (diagnostic) audit took place in January, followed by a certification audit in June/July. The audit teams were made up of Store Managers. All the 156 stores existing at that time were audited. 154 (99%) stores achieved Certification, of which 121 (78%) reached Distinction (assessment over 85%).

The audit system enabled Sonae MC to identify best practice stores (or areas within stores), which were then the object of benchmarking visits from other stores. As an example, the Manager of one of the stores which received a low score in the first audit undertook a number of visits to the best stores in the areas in which most improvement was needed. He then set internal goals to area managers equal to best practice scores. In the next audit, this store came close to first place.

In the beginning of 2010, Sonae MC developed a Store Balanced Score Card which cascaded store level KPIs to the different areas in the stores. It also created a knowledge management system shared across stores, in which all best practices, improvements and innovations were codified and registered.

#### *Phase IV (2009-2011) – Internal Logistics – Pilot Stage*

The aim in this stage was to maintain Level 1 implementation and start making inroads into Level 2. In particular, three internal logistics projects were developed (layout redefinition, improving flow, logistic trains), with a focus on the application of value stream mapping. These were tested via pilot projects in selected stores in 2009 and 2010, in three specific store areas: bakery, food and non-food. Each team collected performance data and mapped the existing value stream, identifying the main areas for improvement. A new (ideal) chain was then proposed.

The pilot projects were validated, and in 2011 Sonae MC began rolling-out the internal logistics projects to all current 170 stores, initiating another cycle of replication/expansion and benchmarking.



## **Examples of Lean Practices**

### *Layout in the delicatessen area*

The delicatessen area offers a variety of cheese, ham, smoked ham, sausages and salami products. These products are offered in different packages and presentations (chopped, sliced or in pieces) and, in many Continente stores, they can be sliced according to the customer's needs. The customer can choose the quantity of the product, as well as the thickness of the slice for each product.

The delicatessen area comprises a customer serving counter and work/support areas. Prior to the introduction of the Lean practices, the slicer machine was usually placed in the back part of the sales area or even in the back office. Thus, it was far away from or inaccessible to customers. As a result of a kaizen project, the slicer machine was moved to the serving counter. In stores with limited space on the serving counter, a table was purposely designed so that the slicer machine would fit on the counter. Moving the slicer machine to a more visible and accessible area brought a number of benefits. Instead of walking back and forth to check with a customer: the thickness of a slice; the quantity requested or to ask if any more items were wanted, the staff member now remains in front of the customer, facing him/her and maintaining eye contact during the entire service. This re-organization of the workplace reduced staff movement, increased their productivity, and ensured that staff worked directly in front of the customer whilst carrying out the service, fostering increased customer confidence and satisfaction with the outcome of the service.

### *Shelf replenishing policy*

Initially, Sonae believed that the best method to replenish sales shelves in order to minimize stockouts was to continuously replenish shelves as sales took place (just-in-time). This meant that sales shelves were replenished frequently in small quantities during the day. However, replenishing the store during opening hours (i.e., with the customers in the store) has a number of disadvantages. In particular, product movements are constrained by customer flows and by the need to keep the store clean and tidy at all times.

A kaizen project was organized and a new replenishment policy tested. "The store is fully loaded before the morning opening. From then on, we just need to perform minimal stock maintenance during the day. This maintenance is more about cleaning and decoration, rather than replenishment per se. There is a time of the day at which a shelf may appear to be quite empty. However, typically, there is no need to replenish the shelf, but simply bring the products from the back to the front of the shelf, or from the upper shelves to the eye level shelves",

explained Nuno Almeida, Regional Operations Manager. Fast moving goods continue to be replenished during the day with the store open, but they represent only a small proportion of the total number of goods displayed at a store (for each 10,000 goods only 20 or 30 are fast movers). This replenishment is made using specific logistic equipment, in order to cause the minimum inconvenience to the customer.

The change in the replenishment policy resulted in a reduction in the number of times shelves were replenished each day and during the day, with an increase in the number of times the goods on a shelf were rearranged. The movement of products in the sales area was reduced, freeing the area for the flow of customers. Moreover, the stock is now kept where it is more productive, that is, at the store.

### **The Future**

In his office, Jaime Maia pondered about the course that the Lean program should take in 2011 and beyond. The lean program had been very successful and had contributed to the significant operational performance improvements that took place over the years (Exhibit 11). How could Sonae MC sustain motivation and reinvent the lean program? One option that was being discussed in the steering group was to strive for more radical types of improvements and larger gains, in the line of the Level 2 projects that had been piloted in 2010. But a number of challenges were anticipated. First, these more complex projects would require a stronger top-down approach, more specialized competencies and smaller groups. How would Sonae MC be able to keep all people involved? As the experience from 2010 showed, when the rate of change was high and changes were significant (e.g., new layouts), some employees felt discouraged from continuing with their daily improvement activities. For example, some felt that it was not worth applying 5S and keep the workplace tidy when they knew layouts could change soon. In addition, it was felt that larger gains might only be achieved by looking at the whole supply chain. So far, the lean program had been confined to the store Operations. This would mean involving other functions, like Marketing, Sales and Logistics (their decisions have a high impact on inventory management), as well as suppliers. A good example of this was the recent project on “self-ready packaging”, which required suppliers to deliver products in packages ready to be placed in the supermarket shelves, thus reducing movement muda and increasing replenishment efficiency.

At the same time, other questions were being raised at the level of store operations. Until now lean principles had been applied mainly to materials flows and workplace organization. Could lean principles be extended to customer flows? Perhaps lean principles could be used to

improve customer productivity, by reducing unnecessary movements and the length of stay at the store.

Assignment questions:

1. How can Sonae MC sustain motivation and reinvent the lean program? Discuss possible ways forward.
2. Should lean principles be extended to customer flows? If so, how?

**Exhibit 1 A brief history of Sonae Corporation**

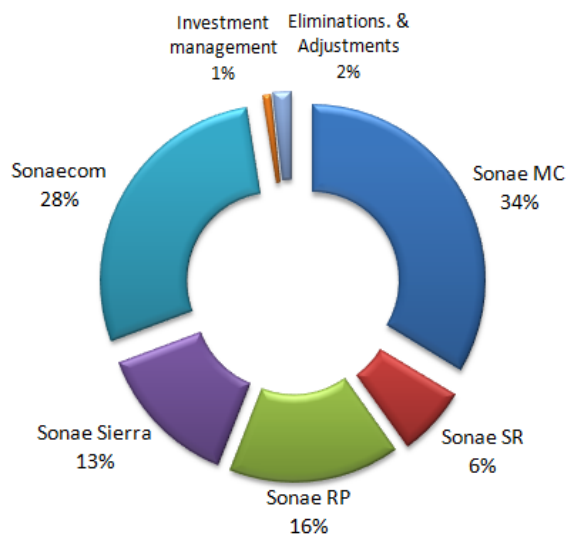
<b>Date</b>	<b>Event</b>
1959	Sonae - Sociedade Nacional de Estratificados is founded
1962	Start up of production of decorative laminates (laminated)
1965	Sonae hires Belmiro Azevedo
1975	Sonae begins operating in the chemical industry
1983	Sonae and the French company Promodès set up a joint venture (Modelo Continente) to enter the distribution and retail business
1985	Opening of the first hypermarket in Portugal: Continente (Matosinhos)
1988	Sonae Information Technologies is created, investing in new technologies and the media sectors
1989	Start-up of the Sonae Imobiliária business (Estate business), later renamed Sonae Sierra
	Opening of the first shopping centres managed by Sonae (Algarve - Portugal)
1991	Launch of the first batch of Continente own-brand products
1995	Launch of Modalfa (apparel chain)
	Beginning of the specialised retail project, with stand-alone brand names (Sportzone, Maxmat, Max Office, etc.)
1996	Launch of Worten, a white goods and consumer electronics chain
1997	Opening of the Colombo shopping centre, the largest in Iberia
	Launch of SportZone, specialized retail in sports goods
	Launch of Vobis, a large store concept selling technology and computer consumables
1998	Launch of Optimus (Telecom)
2000	Sonaecom is listed on the Lisbon Stock Exchange
	Sonae Sierra enters Italy and Germany
2004	Launch of Zippy, a retail chain selling clothing, accessories, childcare furniture and toys for children aged 0 to 14
2007	Sonae's Business Portfolio is re-structured into 6 main business units: Sonae MC, Sonae SR, Sonae RP, Sonae Sierra, Sonaecom and an investment arm
	Changes in the management structure (Belmiro de Azevedo becomes Chairman of Sonae and Paulo Azevedo becomes the Executive Chairman)
	Acquisition of Carrefour Portugal
2011	Modelo and Continente brands are unified under the single brand "Continente"

### Exhibit 2 Sonae corporation's business units

<b>SONAE MC Food Retail</b>	<b>SONAE SR Specialized Retail</b>	<b>SONAE RP Retail Properties</b>	<b>SONAE SIERRA Shopping Centres</b>	<b>SONAE COM</b>	<b>Investment Management</b>
Hypermarkets and Supermarkets	Non-food Retail formats: sports, fashion and electronics	Retail real estate assets	Shopping Centre developer, owner and manager	Integrated telecom provider	Business with M&A activity: Insurance, Travel and DIY
<b>CORE BUSINESSES</b>		<b>RELATED BUSINESS</b>	<b>CORE PARTNERSHIPS</b>		<b>ACTIVE INVESTMENT</b>
<b>RETAIL Businesses</b>			<b>OTHER Businesses</b>		

Sonae Corporation owns 100% of the retail businesses, 50% of Sonae Sierra and 53% of Sonaecom.

### Exhibit 3 Sonae's EBITDA breakdown in 2010



Source: Sonae Management Report 2010

Exhibit 4 Sonae MC organization chart

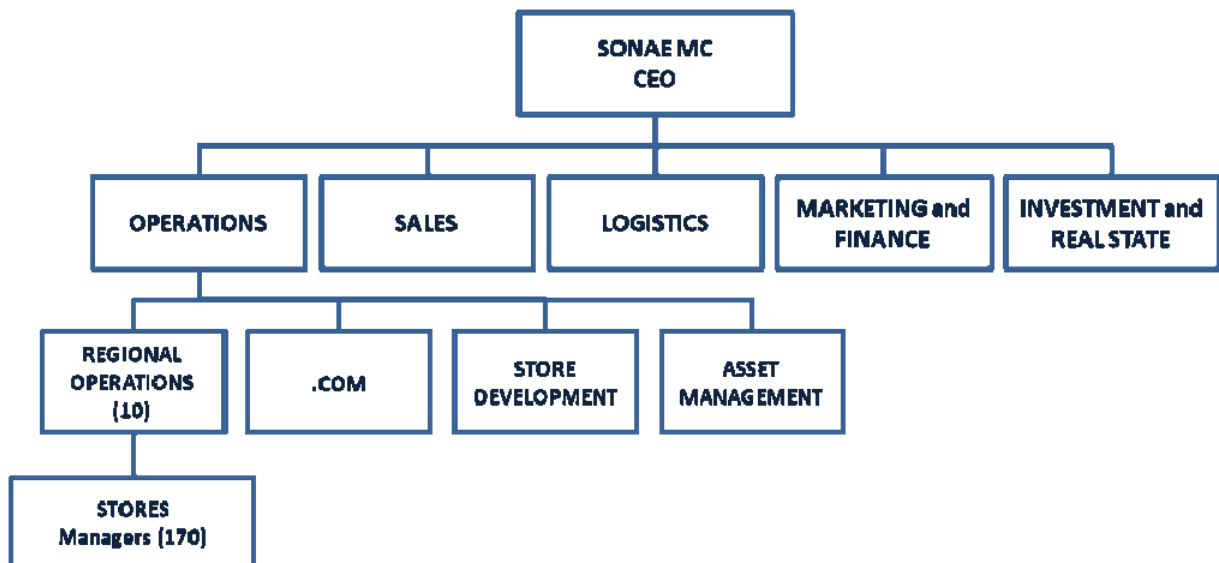
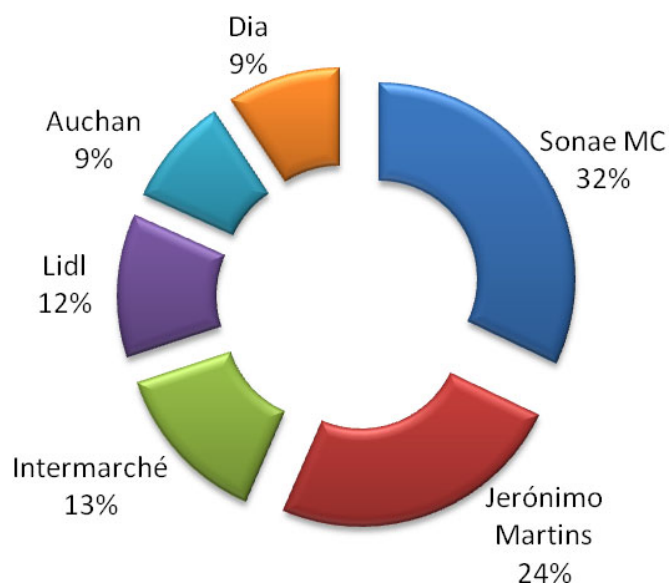


Exhibit 5 Food retail market share in Portugal in 2010



Source: Company data, Nielsen report

**Exhibit 6 Number of stores and sales area for Sonae MC (2009-2010)**

	Number of stores		Sales area('000 m <sup>2</sup> )	
	Dec 2009	Dec 2010	Dec 2009	Dec 2010
<b>Sonae MC</b>	<b>164</b>	<b>170</b>	<b>503</b>	<b>516</b>
Hypermarkets	39	40	284	288
Supermarkets	125	130	218	228

Source: Sonae Management Report 2010

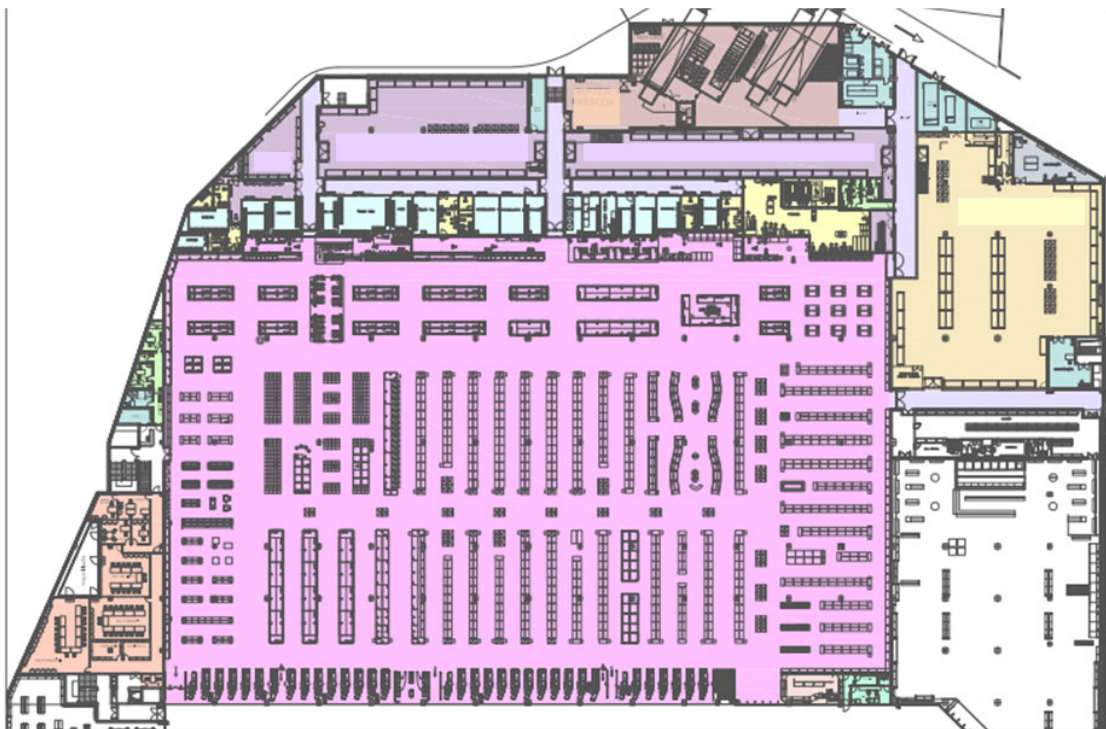
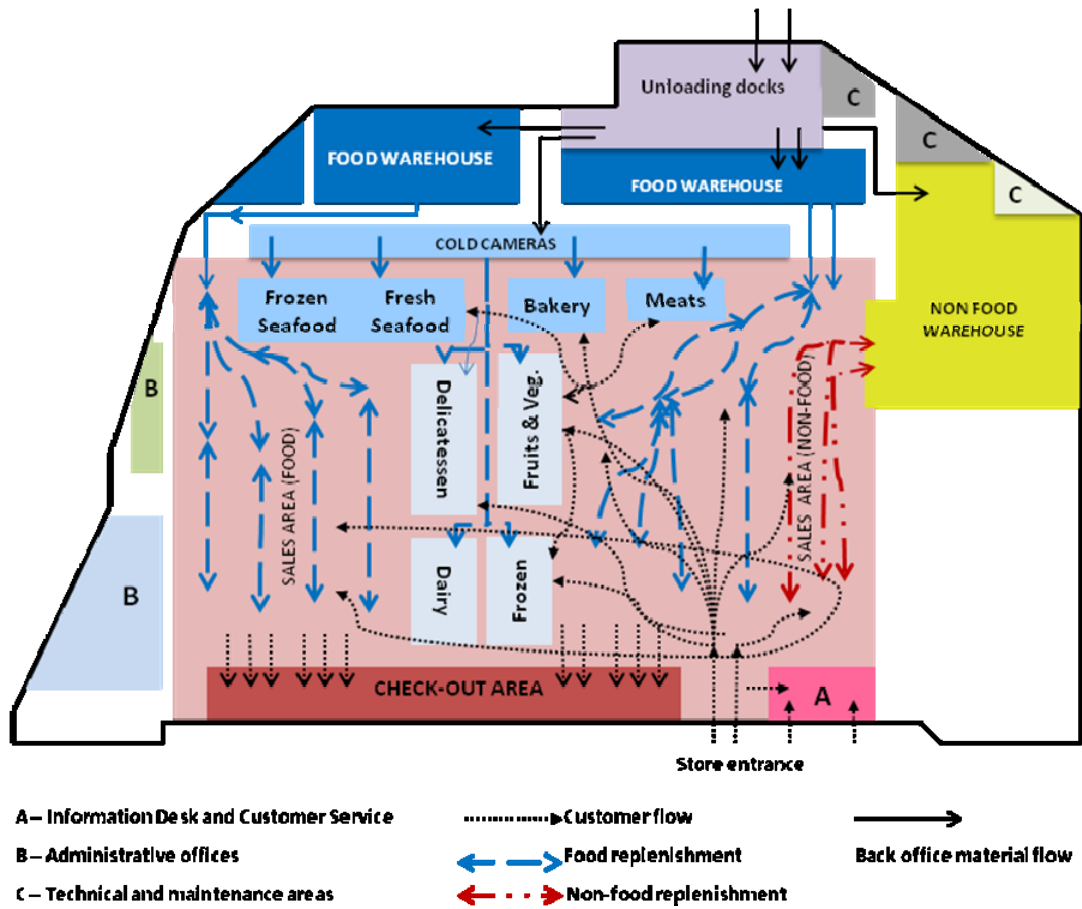
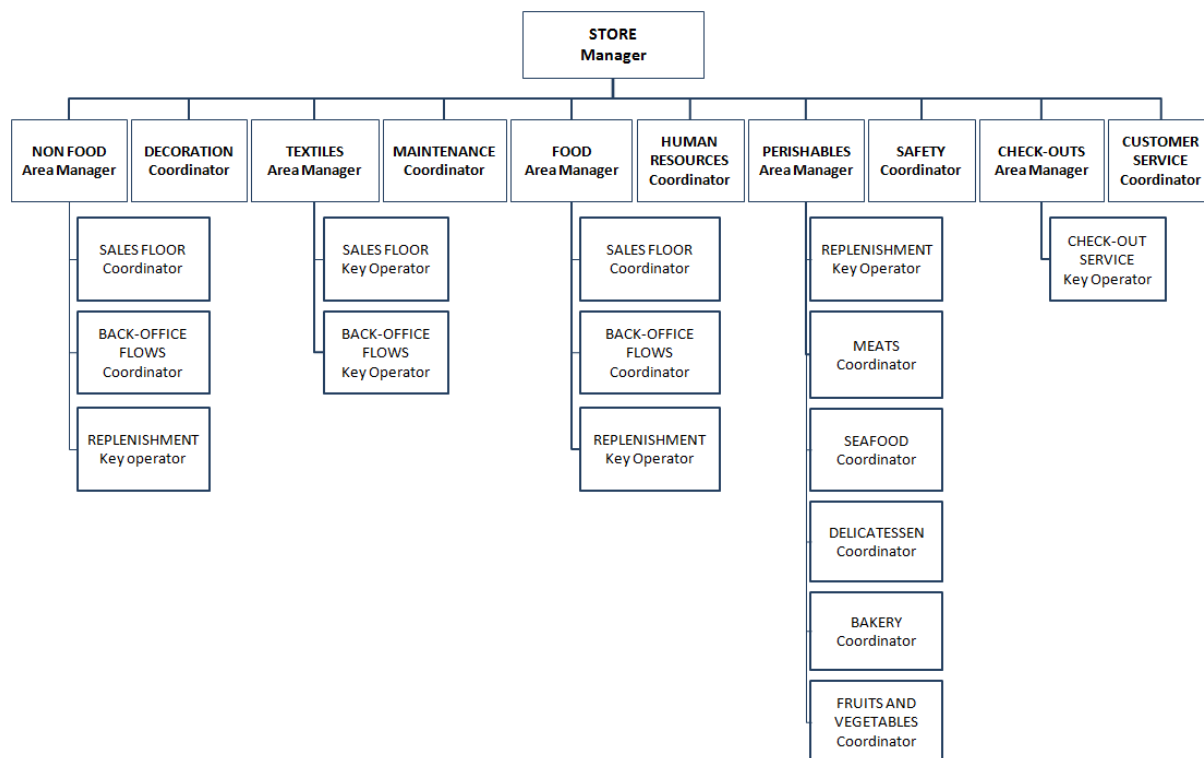
**Exhibit 7 Physical store layout**

Exhibit 8 Store layout with main areas and flows





### Exhibit 9 Organization chart of a store



### Exhibit 10 The SIM<sup>k</sup> Lean auditing instrument

Implementation Level	Lean Tools	Objectives
1	5S Visual Management Standard Work Work Instructions Cause and Effect Analysis Planned Maintenance Process Mapping	<ul style="list-style-type: none"> <li>• Organization of workplace</li> <li>• Improvement and standardization of tasks</li> <li>• Reduction of quality problems</li> <li>• Reduction of waste</li> </ul>
2	SMED Pull Levelling Internal Logistics (Logistic trains, Supermarkets)	<ul style="list-style-type: none"> <li>• Improvement of flow</li> <li>• Quality at the source</li> <li>• Increase in equipment uptime</li> <li>• Reduction of waste</li> </ul>

**Exhibit 11 Operational performance of Sonae MC stores**

	2008	2009	2010
Average store warehouse inventory (yearly % change)	-4%	-1%	-2%
Store labor productivity (net sales/no. of full time equivalent employees) (yearly % change)	+3%	+5%	+2%
Net sales (million Euros)	2,333	2,330 (-0.13%)	2,353 (+0.99%)