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SCHOOL OF ECONOMICS AND BUSINESS ADMINISTRATION

A thesis submitted for the degree of
Master of Science (MSc) in Management

OCTOBER 2012
THESSALONIKI – GREECE

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Abstract

In the current challenging economic environment, companies are fighting to keep what they have built through the last years after consumer confidence has halted in a highly volatile and insecure business landscape. Most organisations struggle to cut down costs in their supply network and refrain from investing in new capital, as the estimations for return to global economic growth are not optimistic at all.

Meanwhile, more and more companies emphasize on the ever-growing importance of customers as servicing a customer is increasingly becoming a competitive advantage for most of them, as more demanding customers, global competition and slow-growth economies and industries push them to search new ways to achieve and retain such an advantage over their competitors.

The business sector most challenged by the current recession is the Consumer Packaged Goods industry, as consumers that are becoming more and more price sensitive are attracted by low-cost private label items, in an effort to reduce their everyday spending. CPG companies have already achieved significant optimisations in their upstream supply chain, but the always volatile downstream supply chain might exhibit a high cost to serve, so high as to erase any improvement made in previous stages of the supply chain.

This study promotes customer segmentation as a solution in establishing an overall profitable downstream supply chain, while at the same time maintaining high levels of service and customer satisfaction. Using action research, combined with a ten-year working experience in a popular food & beverage organisation in Greece, with active involvement in segmentation projects, we will present a comprehensive framework to deploy the customer segmentation approach in all nodes of a CPG supply chain.

I would especially like to thank my supervisor Professor Eleftherios Iakovou for providing valuable guidance and encouragement in completing this dissertation.

Efstathios Simeonidis
30/10/2012
Contents

ABSTRACT .......................................................................................................................... V
CONTENTS ................................................................. V

1 INTRODUCTION .............................................................................................................. 1

2 MOTIVATION, AIMS AND OBJECTIVES FOR THE STUDY ........................................... 3

3 LITERATURE REVIEW .................................................................................................... 7

4 METHODOLOGY .............................................................................................................. 13

5 THE SEGMENTATION APPROACH .................................................................................. 15

6 THE CPG SUPPLY CHAIN STRUCTURE ......................................................................... 21

   6.1 SUPERMARKETS ........................................................................................................ 22
   6.2 DISTRIBUTORS ........................................................................................................... 24
   6.3 SMALL DROP OUTLETS ......................................................................................... 25

7 IMPLEMENTING A CUSTOMER SEGMENTATION ............................................................. 27

   7.1 THE PREPARATION STAGE ...................................................................................... 27
   7.2 THE DATA COLLECTION STAGE ............................................................................. 30
   7.3 THE MODELLING STAGE ......................................................................................... 32
   7.4 THE EMBEDDING STAGE ......................................................................................... 43
   7.5 POST-EMBEDDING / ROLLOUT STAGE .................................................................. 46

8 CUSTOMER SEGMENTATION FRAMEWORK FOR CPG CUSTOMERS ......................... 49

   8.1 CUSTOMER SEGMENTATION FOR SUPERMARKETS .......................................... 49
   8.2 CUSTOMER SEGMENTATION FOR DISTRIBUTORS .............................................. 51
   8.3 CUSTOMER SEGMENTATION FRAMEWORK FOR SMALL DROP OUTLETS ........... 54

9 CONCLUSIONS ................................................................................................................. 57

BIBLIOGRAPHY .................................................................................................................. 58
1 Introduction

In the challenging times we live in, especially in the southern end of Europe, companies are fighting to keep what they have built through the last years after consumer confidence has halted and many people refrain from spending in a highly volatile and insecure economic environment (Greece CCI: -4 points Q1 2012 vs. Q1 2011) (Nielsen, 2012). After relentless cost cutting and layoffs (Q1 2012 unemployment rate 22.6% versus 15.6% Q1 2011) as quick measures (Hellenic Statistics Authority, 2012), it became evident that the situation would not get better any time soon and recovery would be late to come (Xie and Cao, 2012).

Companies now need to further optimise their investment in sales force and distribution network in order to serve their customers cost-effectively and take advantage of every market opportunity (Zoltners, 2006). A number of enterprises, like Dell, are benefiting from a process by which a company can create a profitable one-to-one relationship between their supply chain and their customer. This can be done by segmenting the organization’s customers in similar categories (clusters) and serving each cluster differently using well-defined policies and procedures (Thomas, 2012).

The business sector we are going to focus on is the FMCG sector, acronym for Fast-Moving Consumer Goods, alternatively called CPG from Consumer Packaged Goods. This multi-million dollar sector consists of corporations that market well-known brands that everyone purchases and uses in their everyday lives. These products are named fast-moving because they have the biggest inventory turnover and they are characterised by high volume and low cost. (Reckitt Benkiser, 2009)

A big subsidiary of the FMCG industry is the Food & Beverage sector, while the rest of the industry consists of companies marketing cleaning products, personal care items and over-the-counter medicines. A small part of the industry also includes pharmaceuticals, paper products, tobacco and stationery. The best FMCG corporations stand out by their ability to market products that are in highest demand by the consumers while at the same time develop brand loyalty and top quality perceptions. In some cases, the whole
product category is unofficially named after a company’s top brand. The list of world’s leading FMCG companies include names like Procter & Gamble, Colgate-Palmolive, Johnson & Johnson, Unilever, Nestle, Kraft, Kimberly-Clark, Coca-Cola and SC Johnson.
2 Motivation, aims and objectives for the study

Consumer Packaged Goods corporations are currently facing very strong pressures due to the recession, especially in southern Europe. Although the products they sell are functional, consumers are becoming more and more price sensitive, brand loyalty is relaxing and high quality is losing priority. This has given space for growth for the private label product lines that are getting an even larger market share. The food and beverage sector is the one most affected by this trend, as local producers are entering into deals with large retailers to ship their products directly to them, giving the end consumer an even lower price by avoiding marketing costs. Other FMCG sectors like chemicals and home consumables are facing pressure from limited assortment retailers that import few Stock Keeping Units (SKUs) in large volume, from extremely low-cost producers, achieving a significantly lower price and attracting consumers through cost leadership.

CPG corporations have been in the market for many years and have already achieved significant optimisations in their upstream supply chain – effective collaboration with suppliers, location of distribution centres and production facilities, in order to reach sustainable profitability in a low-margin business sector. In the downstream supply chain however, the situation is becoming more and more volatile and the cost to serve the customers-outlets where the consumer is purchasing the goods can become as high as to erase any improvement made in other stages of the supply chain.

This can be attributed to the supply network nature of CPGs – a big portion of the sales revenue comes from big retailers like supermarkets and hypermarkets. At the same time, a significant portion that differs from sector to sector comes from a large number of points of sale called the fragmented market (or small-drop outlets). This includes outlets like convenience stores, mini-markets and haberdasheries, the so-called future consumption market (FCM), while especially for the food and beverage sector, it also includes restaurants, traditional or quick-service, kiosks and cafes, the so-called immediate consumption market (ICM), where the customer consumes the product on-premise.
Most companies opt to serve the big retail customers like supermarket chains or hypermarkets directly for both sales and distribution – this means that the company has sales representatives that visit these outlets regularly, while company trucks deliver the orders from the distribution centre or warehouse directly to the customer’s location.

This straightforward scheme however is not sustainable in the fragmented market, with its sheer number (can be tens of thousands) of small-drop-size outlets. Companies, though, cannot afford not to serve this market segment because it can constitute a significant percentage of the revenue. Therefore, they need to find a way to serve their customers profitably, and this starts by segmenting their customers effectively using the right assumptions and the right criteria, and then expanding the model to right-size the sales and distribution network of the company that constitutes a significant investment.

Having an optimal sales and distribution network based on a customer mapping will ensure that any hard-gained efficiency in the supply chain will not be negated by a higher cost of sales that will occur by over-serving or under-serving customers. But only establishing such a mapping is not enough – this is a common mistake that companies make; this mapping needs to be constantly updated and revisited, reporting and monitoring mechanisms need to be in place and sales business processes need to be re-written and re-communicated, as dictated by the highly volatile business environment.

Unilever, for example, that had traditionally targeted middle-income western households in the UK with its product line, has recently started selling low-price detergent packs and healthcare products in discount stores. Nielsen research has found that almost 75 per cent of UK shoppers are in a recession mind set, moving from hyper markets to local stores with a stricter budget. Nestle has also started selling the smaller packages that it originally produced for Eastern Europe, in the southern Eurozone countries.

Conditions are clearly changing and as consumer habits change, so does the market. A supply chain that adapts to the market by providing a differentiated service can be the vehicle to ride the on-going financial storm in anticipation of the recovery; and there is no better way to keep up with the market changes than maintaining relevant and current customer segmentation.

This study aims to become the guideline for creating, updating and exploiting a customer mapping for CPG companies during these unfavourable times. This is necessary be-
cause it has become apparent that the one-size fits all approach almost guarantees lower profitability, lost sales and higher cost-to-serve for companies with already low profit margins and high pressures from competition.
3 Literature Review

Although the market segmentation concept has been around for many years (Smith, 1956), the link between business performance and segmentation has attracted little attention in literature (Bonoma & Shapiro, 1984). Furthermore, the market segmentation concept is mostly applied to consumer behaviour, in order to position a product in the market, differentiate or focus on a consumer group while establishing a company’s marketing strategy (Kottler et al, 2009).

Bonoma & Shapiro’s work “How to Segment Industrial Markets” describes how the complicated task of segmenting industrial markets can be simplified by introducing five general segmentation criteria and using a nested approach. These segmentation criteria are (a) demographics, (b) operating variables, (c) purchasing approach, (d) situational factors and (e) personal characteristics. These criteria are arranged in a nested hierarchy, moving from the easily observable characteristics of the customer to more specific and subtle ones.

Bonoma & Shapiro’s study that was published as early as 1984, though it aims to assist industrial marketers on segmenting their market, constitutes significant scientific foundation for our customer segmentation approach. However, marketers’ work was highly theoretical at the time; in order for the segmentation process to produce real, solid and measurable results (profits and cost savings), the entire process must be data-driven (Thomas, 2012).

Martin Christopher in the latest version of his book “Logistics and Supply Chain Management” defines the ultimate goal of supply chain management and logistics as “to provide customers with the level and quality of service they require at less cost to the total supply chain”. When referring to the perfect order, he makes a direct reference to customer segmentation. Different customers have different perception of the perfect order and have different service requirements. However, “it is usually possible to group customers into segments and then identify the key service needs of those segments” (Christopher, 2011).
Recent studies (Thomas, 2012), have pointed out that the biggest benefit in tailoring a company’s supply chain strategy using segmentation is greater profit, with the minimum investment in new fixed assets. Supply chain managers are now beginning to understand that, using segmentation to serve every customer profitably by understanding their profit profiles enables them to adjust their supply chain strategy in order to increase overall profitability.

The latest “eyeForTransport” FMCG Supply Chain survey (2011 report), with 68% of the respondents based in Europe, revealed that 76% of them expect slow growth and 18% no growth at all. Moreover, according to the survey, the top supply chain priorities of the FMCG executives for the next years are lowering costs, aligning supply chain with business strategy and distribution network optimisation.

More importantly, initiatives like warehousing optimization, outsourcing manufacturing, logistics and distribution, even efficient planning, get lower priorities while supply chain executives’ biggest concerns are weakening demand and increased fuel and transportation costs. The most important result we can take away from this important study is that the supply chain executives are now concerned about stimulating demand (sales) and optimising their distribution network, by focusing on the downstream supply chain.

Customer segmentation is not just an exercise; it is a strategic management tool that shapes the company’s strategy towards its customers. Therefore, the customer groups that will be created need to be useful and this usefulness is assessed using criteria that are common regardless of the discipline it is applied to. Kotler et al, in their book “Marketing Management”, define that the segments that will be created, in order to be useful they need to be:

- Measurable: the characteristics of each segment can be measured,
- Substantial: the segments are large enough homogeneous groups,
- Accessible: the segments can be effectively reached and served,
- Differentiable: the segments are distinguishable, and
- Actionable: effective strategies can be applied for serving the segments (Kotler et al, 2009).
These assessment criteria can be translated into quantifiable measures and used during the modelling stage, in order to judge the quality of the customer segments created (for example, in order to be substantial, every segment must contain at least the 25% of the population and no segment must contain more than 45% of the population).

In order to create measurable and distinguishable customer segments, Prashant Yadav of MIT has listed the most important criteria that can be taken into account in Supply Chain segmentation:

- Lead time requirements
- Service level requirements
- Purchase history (sales figures)
- Order size, volume and frequency
- Geographical characteristics (location and traffic)
- Demographical characteristics
- Sales channel characteristics (e.g. the type of retailer)
- Sales trends of the customer (Yadav, 2005)

As we will see in later chapters, these criteria can be translated into more specific factors with specific weights, in order to qualitatively assess the characteristics of every customer that will ultimately lead to the creation of the customer segments.

In recent years, Customer Relationship Management (CRM) has become a prominent business principle, as customer retention is at the centre of many organizations’ strategy. Most segmentation approaches are introduced together with CRM as an overall customer-centric approach strategy. Among the most interesting segmentation approaches is the Customer Lifetime Value approach, or LTV, introduced by Hwang, Jung, and Suh (Hwang et. al 2004).

Hoekstra and Huizingh define LTV as “the total value of direct and indirect contributions to overhead and profit of an individual customer during the entire customer life cycle that is from the start of the relationship until its projected ending.” LTV is considered as a single segmentation factor with many components, like current value (current revenues), potential value (performance gap) and customer loyalty (Hoekstra et al, 1999):
\[ LTV = f(LTV_i, LTV_j, LTV_k) \]

This approach can be generalised, in order to group customers according to their (a) current performance and (b) their growth potential or performance gap. However, since the customers of a CPG company, as separate business entities, do not have a predictable lifetime (like in the telecommunications industry for example), there is a need for the segmentation model to be reviewed and updated at least annually, to incorporate not only market changes but also any organisational structure transformations.

Kelly Thomas, in Supply Chain Quarterly of Q2 2012 claims that segmentation gains more and more ground, because in the tight current financial environment, companies must use existing assets in order to differentiate service to customers by using segmentation as a decision making management framework (Thomas, 2012). Additionally, according to Martin Christopher, organisations must also seek to reduce supply chain complexity. Complexity drives uncertainty levels higher and reduces forecast accuracy, thus increasing total costs (e.g. inventory holding costs, obsolete products). The sources of supply chain complexity are:

1. **Network** complexity (the number of nodes within the organization’s supply network),
2. **Process** complexity (lengthy internal processes that extend lead times),
3. **Range** complexity (variation of products and/or services offered to the customer),
4. **Product** complexity (in terms of product design),
5. **Customer** complexity (too many non-standard service options or customised solutions),
6. **Supplier** complexity (the size of the supplier base),
7. **Organisational** complexity (the overall size and efficiency of the design of the organisation)
8. **Information** complexity (the large volume of data that flow across the supply network) (Christopher, 2011).

Segmentation helps reduce customer and range complexity by introducing standard service policies that apply to customer groups (as opposed to personal judgement for every customer). This, coupled with a successful implementation in the field, leads to a reduc-
tion of the overall complexity and subsequently to an increase in forecasting accuracy. However, it is only in the last few years that the information and communications technology has enabled companies to collect the required data and process them without spending a huge load of money (Byron Banks, Forbes, 2012).

We believe that now is the time to introduce an inter-disciplinary approach that will combine the vast experience from market segmentation and supply chain management principles, in order to ensure profitability across the supply chain. Very well respected academics in the supply chain management field, like David Simchi-Levi, are pointing out the need for segmentation in the supply chain (Simchi-Levi, 2010). And there is no better field to exercise this approach than Consumer Packaged Goods organizations that have been around for many years, already having established solid collaboration with their suppliers and applying manufacturing optimisation techniques (Benavides, 2012).
4 Methodology

In order to achieve the objectives of this study, we will use action research, in the form of experience gained from 10 years in the CPG industry, in a popular Food & Beverage organisation in Greece, as well as the latest developments in corporate supply chain strategy and supply network design. The study is mostly based on personal organisational experience gained from actively participating in evolving customer segmentation projects for many years. Important feedback received from participants in these projects combined with current supply chain management trends and relevant literature will be incorporated in order to structure a framework for customer segmentation focused on profitable supply chain execution.

In this study we introduce the segmentation approach in marketing and then adapt it to supply chain management. Then, focusing on the special characteristics of Consumer Packaged Goods organizations, we analyse the downstream supply chain nodes of the CPG industry in order to highlight the benefits of the segmentation approach for each. Finally, we adapt customer segmentation to supply chain practices by describing in detail each of the stages converging extant literature with work experience.

An organisation can utilize a segmentation approach in many ways. In this study we will introduce a general framework for segmenting customers in a model while dividing it into components. These components serve a different purpose and work in collaboration with one another in order to enable the implementation of the pursued strategy down at the bottom line of the organisation. Also, we extend the segmentation model into a what-if scenario tool that the top management can use in order to estimate the impact of its strategy decisions in the market and the organisational structure.

Finally, this general framework is specialised to the unique characteristics of the consumer packaged goods customer groups. This is essential to this study because these different nodes of the CPG supply chain have different needs and have much different business behaviour. Therefore, not only the segmentation criteria and the model are different, but the business policies that need to be implemented are also different.
Special attention is being paid to establishing the procedure of a successful implementation of a segmentation project, so that important aspects are not overlooked. The importance of the preparation and embedding stages is at the centre of this study, as most projects can be excellent in the theoretical stages but fail in the implementation and the inclusion of the segmented execution in their corporate DNA.

This is because establishing a new approach for serving customers can bring a lot of resistance at the bottom line of the organisation. The implementation of such a project will change perceptions and informal procedures previously considered efficient and effective, being established for lots of years, involving not only the workforce of the organisation but also its partners. For this reason, among the different styles of managing strategic change, we promote an approach combining education, communication and participation approach that although time consuming, will ensure that the organization has the capabilities required for the strategic change and has full ownership and confidence in the segmentation process.
5 The Segmentation Approach

For years, segmentation has been used as a marketing tool to differentiate consumer behaviour and pinpoint buyer needs that need to be satisfied. After applying a market segmentation model, the company tailors its value proposition accordingly to each market segment in order to build successful relationships with consumers and ensure profitability.

However, the idea of segmentation can be extended from consumers to customers and partners of an organisation in order to define how it will differentiate its service level to different segments of customers in order to ensure profitability across its supply chain by achieving profitability in all customer segments.

Customer segmentation in particular, is the idea of creating a grouping of the customers of the company in order to first understand their different profiles, identify similarities and then create a set of different offerings, rules and business processes aligned to this mapping. These business processes must then be incorporated in the company’s Customer Service Policy, showing the clear differentiation of service between the segments.

The common result of a customer segmentation process is a customer mapping, where every customer occupies a point in the customer segmentation matrix as pictured below. Segments within the matrix are defined by the so-called cut-off points or boundary lines that are drawn by specific business criteria. When this customer grouping is formed, the organisation goes on to build clear strategies for each of these groups, in order to ensure profitability when serving these customers.

Such a customer mapping based on actual values can be found in the image below; in this example customers are evaluated on their estimated revenue generated and their score on a qualitative function, performance gap:
But there is much more to segmentation than establishing profitability in the supply chain; segmentation can also help organisations solve a portfolio of problems that traditional mechanisms fail to deal with. One of them is the demand variability at the customer level – the company might be able to predict demand variability at the product level and address seasonality, but the result might be disappointing when it comes to which customers will buy in order to plan deliveries at regional level.

The foundation of segmentation is a data-driven analysis of customer profiles and the total cost to serve them. The segmentation process can be an initiative that will trigger discussions for many issues that encountered on the route of a product to the market. One of these issues is that companies might leave out significant costs of serving a customer – a case of an incomplete total landed cost structure (3CE, 2011). As we will see later, a good segmentation is based on the ability to calculate the company’s profit from a customer by using a total landed cost model.

Segmentation also requires abilities that might be relatively new to a company, like the ability to gather and analyse vast amounts of data. Especially for the CPG companies, this ability, that might require a significant Information Technology (IT) and talent investment, is crucial if companies want to win the battle for retail shelf space and customer sales (Banks, 2012). Creating a segmentation base requires the IT power to analyse and run the models required, but also the infrastructure to collect data about the

*Figure 1: An actual customer segmentation matrix*
customers from remote locations every time the segmentation model needs to be run. But apart from IT, organisational capabilities are also important.

Embedding a customer segmentation scheme is only effective when it is successfully implemented and endorsed across the board of a company. This is attributed to the fact that a customer can interact in many ways with the organization – therefore the differentiated service should apply to different departments like Sales, Logistics and Distribution, Customer Service, Marketing and Finance.

<table>
<thead>
<tr>
<th>Department</th>
<th>Service Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Visit Frequency</td>
</tr>
<tr>
<td></td>
<td>Visit Duration</td>
</tr>
<tr>
<td></td>
<td>Assortment List</td>
</tr>
<tr>
<td></td>
<td>Equipment Allocation</td>
</tr>
<tr>
<td>Logistics and Distribution</td>
<td>Service Level e.g. On Time In Full (OTIF)</td>
</tr>
<tr>
<td></td>
<td>Delivery time</td>
</tr>
<tr>
<td></td>
<td>Inventory Management</td>
</tr>
<tr>
<td></td>
<td>Package Availability</td>
</tr>
<tr>
<td></td>
<td>Returns Policy</td>
</tr>
<tr>
<td></td>
<td>Demand Planning</td>
</tr>
<tr>
<td>Customer Service</td>
<td>Call Waiting Time</td>
</tr>
<tr>
<td></td>
<td>Order Management</td>
</tr>
<tr>
<td></td>
<td>Additional Services</td>
</tr>
<tr>
<td></td>
<td>Account Manager</td>
</tr>
<tr>
<td>Finance</td>
<td>Discounts</td>
</tr>
<tr>
<td></td>
<td>Performance Schemes</td>
</tr>
<tr>
<td>Marketing</td>
<td>Promotion Allocation</td>
</tr>
<tr>
<td></td>
<td>Product Bundles</td>
</tr>
<tr>
<td></td>
<td>Pricing</td>
</tr>
<tr>
<td></td>
<td>Payment Terms</td>
</tr>
<tr>
<td></td>
<td>Promotion Material</td>
</tr>
</tbody>
</table>

Table 1: Examples of differentiated service per department

The business functions touched by the segmentation process are very crucial – a very carefully planned and orchestrated change management procedure is needed in order for the segmentation to produce measurable results. This change management process is comparable to the installation of a cross-departmental ERP system – C-level executive involvement is needed, a project team should be in place and a pilot test site should be chosen before a full roll-out is decided.
While proposing a framework for segmenting a company’s customers, it became evident that during this process, a company needs to implement a cost-to-serve analysis that in turn leads to a detailed modelling of how it conducts business with its customers.

The final product of the process will be a customer base where every customer will be assigned in a segment and subsequently (a) a detailed action plan, (b) a set of policies that will govern the relationship of the company with the customer. The real opportunity that emerges is that other departments of a company can directly benefit from the result of the segmentation process, whether related to the supply chain function or not:

- The Marketing department can plan customer-related activities in detail by focusing on growth customers.
- Procurement can plan the purchase of equipment or material related to customers by following the detailed action plan.
- The Finance department can incorporate the segmentation in an effort to estimate the directly customer-related expenses such as discounts, equipment purchasing, promotional activities or new product launches.
- The Finance department can also budget the operating expenses incurred by the sales & distribution personnel such as salaries and fuel costs using the final customer segmentation.
- Human Resources can tailor the sales & distribution personnel size by consulting the segmentation model and measuring the activities needed to conduct business with the customers, using a time-and-motion study.

The segmentation can impact and benefit the company as a whole, from one end to another. Recent studies show (Bain & Company, 2010) that there is an increasing trust in the customer segmentation process as a management tool, as CPG company executives are still looking to cut costs across the supply chain and expect other departments to jump on the bandwagon and assist, as fuel and raw material costs reach all-time high (eyefortransport, 2011).

Establishing a framework for customer segmentation seems to be more important than ever – Dell’s example of success in segmentation is mentioned many times in literature.
Dell, faced with declining profitability made the decision to target the most profitable segments, like the corporate channel and temporarily pull focus off its retail channel. CPG companies facing higher competition and measuring the effects of the on-going recession can use the segmentation tool in order to sustain their profits and protect their market share. (Bain & Company, 2010)
6 The CPG supply chain structure

Before we can propose a customer segmentation framework, we must examine the structure of the CPG organisations’ downstream supply chain. The final products of CPG companies can reach the consumer through the following different channels:

- Through direct sales delivery (DSD) to a large retail outlet such as a supermarket, or
- Through indirect sales (ISD) to a wholesaler or distributor (WS), to a small-drop-outlet (SDO) either future consumption (FC) or immediate consumption (IC).

With this structure in mind, we can identify the three important nodes in the downstream supply chain that essentially are the different types of customers for a CPG company:

- **Supermarkets**: These large retail outlets, supermarkets, in their vast majority belong to a specific chain, under a specific brand. Besides the discrete branding, supermarkets have different formats – a format is essentially how the end consumers classify these stores in their minds. The most common classification of supermarkets is based on variety (how extensive the product availability is) and the perceived pricing strategy (premium or economic pricing).

- **Wholesalers**: Third-party smaller distributors that purchase in volume in order to sell the company’s goods to smaller retailers. Wholesalers play an integral part in the company’s downstream supply chain as they traditionally are closer to the market and can provide insights to the company while playing the role of the outsourced distribution network, and

- **Small Drop Outlets**: Relatively low volume per store (compared to supermarkets) small retail outlets like mom and pop, kiosks and traditional or quick-service restaurants that purchase the company’s goods from wholesalers. Despite their
small volume per store, their total revenue share can be very large especially in the food and beverage industry.

![Conceptual map of a CPG downstream supply chain](image)

Figure 2: Conceptual map of a CPG downstream supply chain

### 6.1 Supermarkets

Supermarkets were pioneered in the start of the previous century, as a way to cut labour costs by letting shoppers do some of the work like picking up the groceries on their own. Through the course of the years, consumer habits and economic development have shaped the format of these large grocery stores to what we know now.

Supermarkets occupy a large amount of floor space that resembles a big warehouse, with different products sections that contain the merchandise in shelves. These shelves or racks are maintained and replenished with products by the supermarket staff in order to facilitate the sale. These stores are open until well into the evening and are located usually next to but not inside residential areas in order to be convenient for the consumer.

The main idea behind the contemporary supermarkets is the one-stop shop, where under a single roof the consumer can find everything he needs at a competitively low price. In many cases, supermarkets are housed together with department stores or a shopping mall to cover an even wider range of consumer needs.
Supermarkets are categorised in formats, which essentially is a perceptual map of how consumers classify these types of stores in their minds. The dimensions of this perceptual map are the product selection availability and price; however, other categorisation methods include the number of available cash registers or the square meters of the store space.

These stores typically belong to a national or international supermarket chain - the branding of the stores (e.g. Carrefour, TESCO, Sainsbury’s, Wal-Mart) usually is defined by which chain owns each store. The central offices of the supermarket serve as the administration for all the stores of the chain. One of their main tasks is to negotiate agreements with various suppliers, in consultation with the store managers, on prices and any other commercial issues. They are also responsible for the central policy that will govern the way the shelves will be organized within the store (shelf set-up).

CPG competitors battle for the available shelf space in the supermarket floor that ultimately leads to higher consumer sales – therefore, they would ideally like to influence this set-up in their favour in order to gain more shelf space or a much more privileged
positioning. Some store managers are willing to deviate from the central agreement and be more favourable to some suppliers that they think can increase the store revenue - this is considered a differentiating factor in the store level and an opportunity for growth.

Segmenting the supermarkets at the store level can highlight these growth opportunities as companies can increase the investment in these particular stores while maintaining the investment in stores with little to no window of opportunity. However, taking advantage of these growth opportunities requires supply chain excellence with no stockouts, with high service levels, availability and reliability, in order to build the confidence of the store managers.

6.2 Distributors

Distributors are comparably few in number but are of great importance. Currently, few businesses can afford to assume that after forwarding their products to the distribution channel, their role is over. CPG companies in particular, due to the intense rivalry in the market, can only benefit if they establish strong ties with their distributors. Their importance is even more augmented if indirect sales channel share is larger than direct sales channel. (McKenna, 2008)

Because of their proximity to the end market, distributors can offer a greater level of flexibility and have the ability to economically serve small order deliveries. This is hugely important in the fragmented indirect market as small retail outlets have little to no stock space at all (small-drop) and order small quantities more often. Distributors help deal with this inefficiency by maintaining inventory strategically near the customers while the manufacturer focuses on operational efficiencies and/or its key customers.

All distributors purchase goods on wholesale base price and usually get (a) an on-invoice discount that is part of the deal of doing business with the company (fixed percentage discount), (b) an off-invoice discount that is linked with meeting sales targets in a specific period ('pay-for-performance' scheme) and (c) other customised or seasonal financial benefits like access to promotion schemes or new product/package launches. These benefits are part of a commercial package that is usually called ‘trade terms’ – the
parameters of this package define the nature of the relationship between the organization and the distributor.

In most cases and especially in southern European countries like Greece and Italy, there is significant variance in the distributor size, capability level and competitiveness. From my experience in these countries and in other in the South-eastern end, the distributor network is usually addressed with no specific methodology or policy, but mainly through individual decisions of the distributor manager in place at the time.

CPG company executives would like to have the best of relationships with their distributors mostly because they provide for continuity and trust of supply. Any initiative targeting the indirect market will be channelled through distributors and the trade terms package parameters determine the level of collaboration with them. Establishing solid relationships with distributors requires a solid business policy and consistency from the company’s part. However, since the variance in distributor characteristics is significant, assessing every single partner, building a distributor segmentation and then implementing a carefully designed distribution business policy, creates a foundation upon which both the company and its distributors can build their collaboration and improve their capabilities and performance in general.

### 6.3 Small Drop Outlets

Supermarkets may be called a CPG company’s key customers or key accounts, its distributors might be considered business partners, but small drop outlets are the final point of sale (POS) for a large percentage of consumers. In some sectors, these stores have the lion’s share of the total revenue due to the large availability and convenience in the future consumption market and the occasion of sale in the immediate consumption market.

These outlets are our next door convenience stores, kiosks or mini markets, where consumers usually purchase in small volumes, even one-item per purchase. Their significantly large number makes them an important part of the supply chain; however, in most cases it is not sustainable to serve these outlets directly just like the supermarkets. This is where the distributor network comes into play, keeping inventory near these stores to ensure availability and satisfy local demand.
But the competition law in the European Union dictates that (especially if the supplier is the market leader) the manufacturer cannot have exclusive third-party distributors, or force them in any way to distribute his products (European Commission, May 2012). Especially in the food & beverage sector, distributors market products from many suppliers that might even be competitors, and channel them to their customers as they deem more profitable. The CPG manufacturer needs a more active role in the indirect sale in order for the customer and/or the distributor to order his product and not the competitor’s.

This active role the manufacturer will pursue has to abide by the law – the common practice is that a CPG company employs a sales force that regularly visits the customer, making arrangements that will benefit both of them (profit story). This sales force, combined with the possible placement of related equipment and promotional material provided at the point of sale, is considered a significant investment in the downstream supply chain and a source of significant competitive advantage for the manufacturer.

Most CPG manufacturers consider that sales per customer/outlet are highly responsive to the frequency and the nature of the visit and the suitable placement of promotional material or equipment. However, not all companies have a methodical approach to right-sizing this investment; the decision is usually intuitive, judgment-based and little to no guidance is given on the duration of the visit, the activities involved in it and the equipment and material proposed to be present in the point of sale.

Grouping and classifying this large number of customers in segments helps CPG companies capture growth opportunities in high-growth outlets and cost-effectively serve those with lower potential. This process can also drive the utilization of the same human resources and physical equipment higher, and thus help increase the overall return on investment (ROA), a performance indicator that in these times is more important than ever.
7 Implementing a Customer Segmentation

Deploying a customer segmentation solution requires a number of different stages, similar to those of the implementation of new enterprise software. These stages are common regardless of the industry type, or the customer group that the segmentation will be applied to.

![Customer Segmentation Process Diagram](Image)

**Figure 4: The customer segmentation process (Adapted from S.-Y. Kim et al., 2006)**

7.1 The Preparation Stage

The preparation stage is the overall planning of the process. It usually involves the project team and some C-level executives or directors, one of which should be the project sponsor. A project kick-off meeting takes place in order to define responsibilities, milestones and the expected outcome, in order for everyone involved to be on the same
These activities are typical to any project implementation – however the following are specific to the segmentation roll-out:

- Reach an agreement on the segmentation criteria (in other words, define the axes on the segmentation matrix). Usually the vertical axis is sales- or finance-related, e.g. sales volume, net sales revenue or net profit. The horizontal axis should be a factor or a set of factors that differentiate the customers and could result in higher profits and/or sales figures. Some examples could be:
  - overall growth potential
  - performance gaps (current status vs. ideal status)
  - behaviour and relationship with the company
  - ability to influence the customer
  - risk of losing the customer (switching to another supplier)
  - assessed financial status of the customer
  - any combination of the above.

- Agree on what the segments will be. The decision is not necessary final, but in general the segments should be well defined up front. The naming should be both simple in order for everybody to understand their meaning (down to the lower level of hierarchy) and descriptive, in order for everybody to understand the difference between them. A good example is Gold, Silver, Bronze, Iron – a bad example is 1,2,3,4.

Note that the segments are considered within the same customer category – meaning that if a company separates its customers into resellers, retailers and corporate customers then there should be gold, silver and bronze resellers, then gold, silver and bronze retailers and so on.

- Establish a procedure for assessing the input data validity, if such a process is not already in place. Customer data must be:
  - Complete, meaning that customer universe must contain every possible customer or point of sale for the company and
- Accurate, meaning that all the critical customer fields must contain valid data.

This is of paramount importance because the segmentation cannot be based on an invalid customer base – the end result will be invalid itself.

- Establish a process for data collection and validation. The segmentation is a data-driven process by itself, and the source of data must be defined in advance. For example, the ERP system will provide the sales data and the CRM system the customer master data.

- In most cases there is a need to collect additional data that are specific to the segmentation process and not included in any of the company’s systems. Even if they were, in order for the result to be accurate and in accordance with the market condition, these data would need to be refreshed. The key input tool for the segmentation process is a questionnaire – a pragmatic, judgment-based assessment, answered preferably by the company’s sales force as they have the most frequent contact with the customer.

At this stage, the questionnaire must be designed carefully; the questions must be aligned with the strategic directions of the company and with the resulting segmentation in mind. Questions must be clear, straightforward and able to be answered quickly whether they need querying of the customer or not.

Sales force personnel must be properly trained on how to fill the questionnaire correctly; guidance on what evidence to take into account, how to deduce the answer or give an estimate, especially when data is insufficient or the customer is unwilling to answer should be given.

- A process for monitoring the questionnaire completion progress should also be established. When conducting research for a lot of customers (their number can be close to tens of thousands), the data gathering process could take a lot of time and derail the entire segmentation project.

- A pilot test site should be selected if the process is implemented for the first time. The selected site should be a particular sales area or territory, large enough to constitute a good sample without disrupting the entire organization.
The project team must design the training process before the roll-out starts; the nature and the design of the training are different, depending on the audience: sales personnel are interested in different topics from distribution people and distribution managers are interested for more in-depth issues than the sales developers.

Planning the training process carefully is an important part of the preparation stage mainly because of the fact that a large number of people will be required to change their way of doing business and incorporate the new customer segmentation.

Even when the organisation is accustomed to the segmentation, reviewing and updating the training material is important because:

- The usually high turnover rate of sales personnel means that the new employees must get on board quickly.
- Since the segmentation itself is regularly reviewed, changes must be incorporated in the training material.

### 7.2 The Data Collection Stage

The *data collection stage* is the process during which the actual collection of internal data and external insight from the market takes place. This external insight is in fact the judgment-based questionnaires filled in by the sales force for each customer, while the internal data are already in the company’s systems.

*Internal* data must be prepared in order to fit the segmentation model that will be developed in the later stage. From my experience, the internal data needed for a customer segmentation model are, for each customer:

- customer master data (name, address, etc)
- customer hierarchy (who visits and who delivers to the customer)
- customer category (if applicable)
- sales records depending on which dimension will be used in the model (volume, revenue, gross or net profit)
These data might have issues that need to be remedied in order not to experience problems during the modelling stage. If some data fields are not available they need to be filled; if sales figures for some customers are not available then a process for estimating these figures needs to be in place. The segmentation project could provide a good incentive to review and update the customer data that usually contain obsolete information (customers that cease to exist, change ownership, etc.).

External data are collected manually or electronically through questionnaires. It is the qualitative assessment of the customer, made by the sales force at the contact point. This assessment is based on:

- careful observation of the customer
- knowledge of the customer
- discussion with the store owner / store manager / distributor

In order for the answers to be as accurate as possible, every question needs to be explained in detail to the surveyors (sales personnel). However, errors and misjudgements will always occur, as the questions will usually be answered by a large number of people with different personalities, backgrounds and subsequently different understanding of how to answer the question. This amplifies the need for quality assessment of the questionnaire data which is easily done using standard quality control techniques:

- **Sampling of the questionnaire**: In the sampling method the manager of the surveyor or somebody from the project team randomly selects a number of customers in a territory and fills in the questionnaires himself. These results are compared to the official ones and if they differ a lot then the surveyor should revisit the answers.

- **Statistical control**: Statistical analysis methods can be employed in order to check if the surveyors answer the questions randomly. In particular, the quality control can include:
  - distribution check of the answers
  - correlation between two answers should not be significant
  - all answers must be completed
- outliers (customers with extremely high or extremely low values) should be reviewed and confirmed.

External data, like internal data, need to be 100 per cent complete. For a segmentation model to work correctly, data must not have any blanks or missing fields. If a question is not applicable, then it should have a default answer (e.g. the population average). If no sales/volume data is available, then there should be an appropriate volume estimation method (e.g. an external question for the surveyor to fill in).

### 7.3 The Modelling Stage

The *modelling stage* is the process during which the internal and external data are integrated and fed into the *segmentation model* in order to reach the final segmentation result. The segmentation model is a piece of software that is designed either by the project team or by an external developer during this stage. It is a very challenging endeavour as it combines business awareness together with technical skills. The overall role of the model in the entire process is crucial, as illustrated by the following schematic:

![Figure 5: The role of the segmentation model in the process](image)

A typical outcome of the customer segmentation process is (a) the classification of each
customer into a segment and (b) the definition of what this classification means, through the assignment of a service policy for each customer. A typical result of the segmentation process is the following:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Type</th>
<th>Segment</th>
<th>Visit Frequency</th>
<th>Visit Duration</th>
<th>Call Frequency</th>
<th>Call Priority</th>
<th>Standard Delivery Time</th>
<th>Minimum Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Convenience Store</td>
<td>Gold</td>
<td>4 per month</td>
<td>35min</td>
<td>4 per month</td>
<td>High</td>
<td>48h</td>
<td>48h</td>
</tr>
<tr>
<td>B</td>
<td>Hypermarket</td>
<td>Silver</td>
<td>2 per month</td>
<td>40min</td>
<td>2 per month</td>
<td>Medium</td>
<td>95%</td>
<td>92%</td>
</tr>
<tr>
<td>C</td>
<td>Supermarket</td>
<td>Bronze</td>
<td>2 per month</td>
<td>25min</td>
<td>1 per month</td>
<td>Low</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 2: Examples of differentiated service per department

In order to produce this result, the customer segmentation model needs to integrate the internal and external data, incorporate business logic and given parameters that will define the customer’s segment and then use given assumptions to assign the service policy per department for each customer. However, there is no one-fits-all solution for all the company’s customers; different customer groups need different segmentation models because of their different way of doing business with the company. In the following chapter, we will propose a distinct framework for modelling every different node of the CPG downstream supply chain (supermarkets, distributors and small-drop outlets). However, in all cases, the segmentation model will be implemented in the form of a segmentation software tool that will incorporate some common components:

(a) The raw data component, where the internal and external data will be loaded.

In this section, the tool builder incorporates the immediate result of the data collection stage. Internal and external data have already been merged and verified that they are complete and as accurate as possible. This combined data set will be used as a source for all the calculations that will take place in the model.
In the raw data section, the external survey data are converted into scores (or ratings) for each question. Quantitative data for each customer should be normalized in order to be comparable (for example, sales revenue should be annualized in all customers, currency should be the same, etc.). It is important that the raw data are fed into the model after they have been assessed for their quality and checked for completeness.

One of the most difficult tasks during the modelling stage is collecting the sales data that will be used in the model. This might be relatively easy in the case of distributors that buy directly from distribution centres, but in the case of the hugely fragmented indirect market, having the complete sales data available is next to impossible. This must be identified as early as possible, even during the preparation stage; however, there are several ways to overcome this particular barrier:

- Receive sales data for indirect customers through distributors’ information systems (data sharing with partners).
- Estimate sales data using input from sales force (using survey questions).
- Estimate sales data using internal inputs (e.g. order taking).

Having inaccurate raw data as input can jeopardize the entire process, as customers may be assigned to the wrong segment during the final review, and in the end undermine the credibility of the segmentation project.

(b) The model definition component, where the segments are defined.

In this component, the model defines how the data will be handled in order for the tool to assign the correct segment for each customer. The definition of the segments, an important parameter of the segmentation model, is in fact the minimum score every customer must achieve in order to be included in each segment. These minimum scores are also referred to as “cut-off points” in order to describe where the line is drawn in order to establish the limits of the segment.
Figure 6: Cut-off points in a segmentation matrix

For example, in the Figure above, the cut-off points are:

- When the revenue of the customer is considered Low, Medium, or High
  
  High: Revenue is higher than 6,000 €
  Medium: Revenue is between 2,000 € and 6,000 €
  Low: Revenue is less than 2,000 €
  
  As a result, the cut-off points in terms of revenue for this segment scheme are 2,000 € and 6,000 €.

- When the growth potential score of the customer is considered Low, Medium or High
  
  High: Score is higher than 50
  Medium: Score is between 20 and 50
  Low: Score is less than 20.

The cut-off point definition is a critical decision point for the modelling stage. Statistical methods can help the project team decide the initial cut-off points, but later at this stage these lines may need to be redrawn in a trial-and-error fashion. For example, when using percentiles, the cut-off points can be defined at the point where the segments contain an equal population of customers. Alternatively, using distribution analysis, the cut-
off points can be defined at the steepest point, in order to ensure that all customers within a segment exhibit as similar behaviour as possible.

**Sales/Revenue (quantitative) cut-off points**

A very important factor for the success of the segmentation is the definition of the cut-off points in the sales-related dimension of the segmentation matrix; the reason for this being the fact that one of the main targets of the process is to ensure profitability across the supply chain. Therefore, although a model gives the ability to adjust these cut-off points as desired, a lower limit for the sales/revenue cut-off needs to be in place to ensure that every segment is as profitable as possible.

This is the point where the segmentation model needs to incorporate the total landed cost model in an effort to calculate the total cost to serve every customer. When assessing the profitability of the customers served directly from the distribution centres of the company, the exercise of calculating the net profit per customer can be relatively easy – in some cases it might be included in the financial system. The only pitfall in this particular process is leaving out hidden or indirect costs out of the total landed cost calculations. In other words, the model needs to have a holistic view of cost by including all customer-related costs, like:

- Unit Selling Price
- Transportation costs, fuel surcharges
- Expediting costs
- Handling costs
- Inventory carrying costs
- Inventory obsolescence costs (e.g. returns of expired products)
- Duties and taxes
- Product damage and replacement/return costs
- Customer service penalties (free units, discounts)
- Costs of visiting the customer (sales employee salary, fuel, car rental costs)
- Promotional activities (rebates, volume discounts)
- Administration costs (Adapted from Thomas, 2012)
Since most financial systems installed do not calculate the net profit per customer accurately, costs like the ones listed above need to be expressed in percentages, at the lowest level available, and then applied to each customer within the model. For example, when segmenting supermarkets, if net profit is not available at the store level, customers of the same chain at the same region can be assigned the same cost percentage. Then, the profit can be calculated based on the net sales revenue of each store.

e.g. Customer A and B belong to the same chain C and are located in region 1.

Chain C data show that total landed cost accumulates to 90% of net revenue.

POS data show the following:
Customer A: sales revenue 100,000€, cost estimated to 90% estimated profit 10,000€
Customer B: sales revenue 50,000€, cost estimated to 90% estimated profit 5,000€

In contrast, when assessing the profitability of the indirectly served customers (Small Drop Outlets) where data are not readily available, the calculations need to include some assumptions in order to estimate the profit per customer as accurately as possible. An estimation effort like this can follow the steps below within the model:

*STEP 1*: Assign every indirect customer to a primary distributor (using input from sales).

*STEP 2*: Calculate the average unit buying price for every channel (Mini Market, Kiosk, Convenience Store, etc).

*STEP 3*: Calculate the average unit buying price of every distributor.

*STEP 4*: Estimate the average unit sales per month for each customer if accurate figures are not available, in order to estimate the revenue of the distributor from the indirect customer.

*STEP 5*: Combine data collected from previous steps in order to calculate the revenue of the company from the indirect customer.
STEP 6: Apply the total cost structure that is derived from the analysis of direct customers to the revenue figure of step 5 in order to estimate the net profit per customer as accurately as possible.

In order to set the correct cut-off point for the new segmentation scheme, the segmentation model needs to accurately forecast the total landed cost that will occur after the implementation of the new business rules. A rule of thumb is to use a break-even analysis for calculating the lower limit of the cut-off point per segment. For example:

\[
\text{Cut-off for Segment} = \left( \frac{\text{Current Revenue} \times \text{Trend}}{\text{Sales}} \right) - \text{Direct Costs} - \frac{\text{Customer Service Costs}}{\text{Costs}}
\]

* the customer service costs vary depending on the type of the organisation and have to be derived from within the model, using the business logic component of the model introduced in the next section.

Using this break-even analysis, the new segmentation and the new introduced service policies are guaranteed to be as economically justifiable as possible, in an effort to ensure the total profitability of the downstream supply chain.

Qualitative function cut-off points

We can recall that segmentation criteria are agreed and defined during the preparation stage. However, whenever qualitative criteria are in place, different questions have a different level of importance. For example, some demographic criteria are more important than others (location, traffic) but the most important of all could be the company’s market share within the customer. For this reason, another important parameter of the segmentation model is the definition of the relative weights of every qualitative survey question. These weights, combined with the actual scores of the customer, determine his final scoring by using a formula like the following:

\[
\text{Qualitative Assessment Function} = \sum q_n w_n
\]

\((q_i = \text{score for each question } i, \ w_i = \text{weight of question } i)\)
The assignment of the weighting in these factors has to be aligned with the strategic direction of the organization. For example, if expanding or defending market share is a top management priority, then more weight should be assigned to the market share factor; if a product line or package is a priority for the following period, then factors for these products should be given more weight.

The model definition component can also act as a what-if scenario tool, on which the project team together with the top management can adjust any parameter and see “within the lab”, the effects of the segmentation in the organization’s key metrics “out in the market”, such as sales force size, service level, total distribution capacity and more. This additional feature is of paramount importance, mainly because the top management can estimate the real impact of their decisions in terms of organisational performance.

(c) The business logic component, where the translation of the segments into real terms takes place.

In the business logic component, the project team and the top management work together to define what it means for a customer to belong to a segment. In other words, this is the definition of the business policies and rules that will apply to all of the customers that belong to the same segment. This is an important strategic decision, because it can effectively change the way the company does business at its bottom line, but also has the potential to successfully align the organisation towards its strategic imperatives.

In this component, these business rules are transformed into quantifiable key business indicators (KBIs) that accurately define what the new service policy will be for all customers belonging to the same group or segment. An example of business logic component can be found in Table 3.

Other KBIs or service differentiators that can be included in the customer service policy defined in this section are:

- Order cycle time (the time elapsed from order to delivery).
- Stock availability (the percentage of the customer demand that can be met from existing inventory – applies to directly served customers)
- Order-size constraints (minimum order size or value)
- Frequency of delivery (the possibility of responding to requests beyond the normal cycle)
- Perfect Order or OTIF (order executed On Time and In Full)
- Documentation quality (invoice accuracy)
- Claims procedure and priority (returns and other requests)
- Technical support (general support or specifically for equipment)
- Order status feedback and tracking ability (adapted from Christopher, 2012)

<table>
<thead>
<tr>
<th>Segment</th>
<th>Gold</th>
<th>Silver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Channel</td>
<td>KBI</td>
<td>Hypermarket</td>
</tr>
<tr>
<td>Distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Order Delivery Time</td>
<td>24h</td>
<td>48h</td>
</tr>
<tr>
<td>Service Level</td>
<td>99%</td>
<td>95%</td>
</tr>
<tr>
<td>Express Delivery</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visit Frequency</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Visit Duration</td>
<td>1h</td>
<td>45m</td>
</tr>
</tbody>
</table>

Table 3: An example of a business logic component

In essence, the business logic component introduces the systematic approach needed to reduce complexity in day-to-day business and serve every customer profitably at the same time. It ensures the implementation of the formulated strategy at the bottom level of the organization, while at the same time shifts the focus towards customers that the organization thinks are profitable now, and will remain so in the future. However, in order to ensure high acceptability of the process by the organization, the segmentation model must be designed in order to incorporate some exceptions to the business rules that will arise after negotiations with the sales and logistics management teams.

These exceptions must be expressed within the segmentation framework and not be arbitrary so as not to add to the complexity of the process. For example,
- Customer A must be upgraded from Bronze to Silver because he started business just now, so sales figures are largely underestimated.

- Customer B must be upgraded from Silver to Gold because the high presence of the competition poses a threat to the company’s market share.

- Customer C must be downgraded from Gold to Silver because his extremely remote location does not allow frequent deliveries.

The inclusion of this kind of exceptions states that the entire process is not disconnected from the reality and accepts a reasonable number of adjustments, in order to ensure smooth adaptation and implementation. However, it is very important that all these exceptions are signed-off by the top management because they constitute a deviation from the official company policy.

**d) The model calculation component, where the actual calculations are performed.**

In the model calculation section, every customer is actually assigned into a segment. The model reads the customer’s attributes, the survey answers, sales data and other parameters the model designer has incorporated, establishes a score for every dimension and places the customer on the matrix. Then, the model compares these scores with the established cut-offs in order to determine the segment in which the customer belongs.

The integrity of this component is crucial to the success of the project; rigorous testing and verification procedures must take place in order to confirm that the model calculation component works flawlessly and incorporates all input defined in other components of the model. Some checks that the model designer can implement include:

- Input data must be comparable (e.g. sales figures).

- In stand-out cases of customers, the model must work as expected (e.g. customers that are known to be of great importance).

- Outliers must be examined one-by-one (customers that receive unusually high score and present unusually high sales figures)

A good practice is that all model components, including the calculations section, start being developed early in the project and in parallel with the data collection, so that any
possible problems with the model itself are dealt with immediately and do not push the implementation stage back.

(e) New and not surveyed customers section

The data collection and modelling stages may take several months to complete, depending on the size of the customer base of the company. During that time, new customers will emerge or change ownership; the model must incorporate this fact using an accepted approach. For example,

- Every new customer is categorized as Silver, until the next update cycle of the model.
- New and high potential customers are categorized as Gold by the sales management and the rest as Silver.
- New customers are subject to a mini questionnaire and their scores are tested against the already established cut-offs in order to assign a temporary segment, until the next update cycle of the model.
- Customers that for some reason could not be assessed should be flagged that they did not go through the assessment process and then be assigned to one of the segments (e.g. Silver). Then they should be assessed through the mini questionnaire process, if it is available, or fully re-assessed through the segmentation model.

The organisation can handle new customers as it wishes, as long as this mechanism is signed off by the top management of sales and/or logistics departments together with the project team.

(f) The organisational outlook section

The ultimate goal of the segmentation process is to redeploy the organisation’s assets in a more efficient way and align them with the pursued strategy. This pinpoints the need for the model to include a crucial component that will illustrate the outlook of the organisation after the implementation of the customer segmentation.

In this section the model integrates the output from the calculation component and combines it with important assumptions in order to calculate how the organisation’s assets will be allocated. Such assets include:
- Sales workforce (salesman working time),
- Customer service workforce (caller time),
- Vehicle routing strategy (company-owned or third-party),
- Loading space of delivery vehicles (in sales units, or cubic meters),
- Additional lease of equipment at the point of sales (depending on the type of the product),
- Promotional investments (shelf space, additional in-store points of sale)

Regardless of the company assets the model will allocate, there is a common rule that defines the number of organisational units needed to serve the customers included in the model:

$$\frac{\text{Organizational units needed}}{t_u} = \sum t_n$$

($t_i =$ time or space needed to serve every customer,
$t_u =$ time or space available per unit)

For example, if the total time needed to serve all customers (in a monthly cycle) is 12,000 hours and the available time for a sales force employee is (8h/day, 20 days per month, 75% allocable time) is 120 hours, then the current segmentation model needs 100 sales force employees.

In this component, the project team together with the top management can directly see the organisational impact of changes made in any parameter of the segmentation tool. These changes are needed in order for the segmentation to match the current assets available to the company. Additionally, the result of this process can be used as input to other planning tools; if combined with the seasonality effects, supply chain planners can forecast the annual needs for leased vehicles or third-party logistics operator services and human resource planners can forecast the need for temporary sales force workers during the peak seasons.

### 7.4 The Embedding Stage

The embedding stage is the process where the model becomes reality in terms of organ-
isational redesign and business process reengineering. Up to this point, the work that is being done is purely theoretical; but the success or failure of the project is largely dependent on the real-life implementation of the differentiated service polices per customer segment by the organization’s workforce.

One major stakeholder that can be an agent of resistance to change is the workforce of the organisation. In order to facilitate the implementation of the drafted strategy, careful change management needs to take place in order for the organisation’s bottom line to be aware of it, support it and embed it in its daily routines.

The other major stakeholder is the customer that may notice some differences in the service he or she receives from the company. The customer needs to be informed up front and not be caught out during the transformation the company may go through. It is a common fact that especially when a change in business relationships is imminent, there is no such thing as “over-communication”.

In order to propose an effective embedding stage approach, we adopt a combination of the change management style principles from Johnson et al. “Exploring Corporate Strategy”. Judging by the needs of the two main stakeholders of the project, we propose a blend of communication, education and participation strategy.

**Communication** with the customers must be carefully planned in advance, with different interaction scenarios designed for each customer channel and for when the service level is reduced or increased. The general notion is that the customer must be left with the feeling that the only thing that is being changed is the way of service and not the service level itself. Customers must be well aware when the change is happening and how it will affect them.

Examples:

“We are now going to visit you fewer times a month, but we will spend more time with you.”

“We will increase the lead time by 24h in order to achieve better fulfilment, starting next month.”

**Education**, according to Johnson et al, involves the explanation of the reasons for and the means of strategic change. This means that your workforce needs to be educated appropriately in order to understand what the change is, when it is happening and how it
will affect the way they work. The education process needs to start as early as possible, so that the bottom line of the organisation has enough time to assimilate the new information and get on-board with it. After the implementation of the new segmentation, the material used at this stage must be incorporated in the regular induction material to complete the embedding.

For instance,

- the load planner must know why he must not leave any gold customer’s order out of the next day’s delivery schedule.
- the back-office employee must be aware that in case of limited stock availability in some products he must give priority to more important segments when allocating stock.
- the field sales employee must not skip the visits of gold customers because they increase the risk for lost sales.

**Participation** on the other hand, according to Johnson et al, is the active involvement of those that will ultimately be affected in the change process. This involvement fosters a more positive attitude towards change and an increased sense of ownership. Involvement of the bottom line is very important, as the segmentation approach has the potential to change routines and ways of doing business established for many years and perceived as the right ones, in an effort to align the organisation towards the pursued strategy.

The project team needs to organise regular workshops during the project, with each phase going into more detail about the new way of working. The workshop phases can be divided using the different change management styles introduced above:

*Step 1:* Communicate the new approach (e.g. what are the benefits).
*Step 2:* Educate about the new way of work (e.g. real life examples).
*Step 3:* Encourage participation and active discussion (e.g. role-play, exercises).
*Step 4:* Ensure ownership by allowing a maximum of 5% of changes to the final result proposed as a result of these workshops.
*Step 5:* Recap and post-implementation review to strengthen embedding.
An embedding process like this can be tailored by the organization in order to fit to its specific needs. Whatever the process steps, the ultimate goal of embedding is to build readiness for the new way of doing business and capabilities needed to support the new strategy. If implemented successfully, the organisation can have in place a vehicle to reshape its market supply chain strategy, an important asset during these highly competitive and financially challenging times.

7.5 Post-Embedding / Rollout Stage

After the embedding stage, the new segmentation needs to find its way to everyday business routines as quickly as possible. There are several guidelines on how to achieve this result, but different organizations can follow other possible routes depending on their capabilities and readiness level. We can propose the following steps that can be followed in the post-embedding stage:

- **Update IT systems:** The central customer database, sometimes called a CRM system, should be updated with the new classification. The new segments must appear at every information system that serves as a point of contact with the customer either directly or indirectly (CRM screens, load planning applications, handheld terminals, etc.).

- **Update training material:** Training material should be always updated with the latest customer classification and service policy so that new members of the company’s workforce can get on board quickly and existing employees can use it as reference.

- **Keep the model updated:** The customer assessment needs to be rerun periodically (e.g. annually), especially if the market landscape is changing very fast. New customers should be handled as soon as possible, while suspended customers should be removed.

- **Adjust and review the model:** There is no right or wrong answer to the segmentation approach; therefore, the results and the model itself should be revisited periodically, even more frequently during the first implementation.
- **Establish management reporting:** The company’s KPI system must be adjusted in order to measure the impact of the implementation of the segmentation on the core performance of the organization. Existing indicators can be modified or new specialised can be introduced, but overall, management needs to monitor:
  - the amount of discipline and endorsement of the new approach by the workforce in business routines,
  - the impact on operating sales, revenue and profit, overall and per segment,
  - the level of coverage of the new approach and the number of exceptions implemented and
  - the new cost structure, overall and per segment, in comparison to the past.

- **Adjust management incentives:** Segmentation can be combined with another managerial system used in assisting to achieve the pursued strategy, namely management incentives. In most cases, sales and distribution employees are rewarded for their performance against standards or periodic targets for financial or business performance indicators. These indicators can be adjusted in order to:
  - achieve the required discipline:
    “A sales employee qualifies for monthly incentive pay-out only if he achieves 98% visit schedule compliance in gold and silver customers”.    “A delivery planner qualifies for yearly bonus only if 95% of the total gold customers’ orders are delivered on time”.
  - confirm the alignment on strategy by focusing on cluster performance:
    “Maintain market share in gold customers and establish sales growth rate in silver customers”.    “Keep service level above target for gold and silver customers, while reducing “cost to serve” by 1% in the remaining segments until the end of Q3”.    “Gold customer satisfaction rate exceeds 95% for the supply chain offered service by the end of the year”.

Some other options available to companies include the decision to incorporate the new service policies per segment in internal control procedures. The aim is to highlight the importance of the discipline in the new business and service policies and to underline the commitment of the top management towards the strategic goal.
Organizations can go even further and implement network optimization tools and techniques using the quantified customer service that emerges as output from the segmentation model. This enables the organization to iron out details at the tactical level while also optimising the daily execution processes (sales visit or delivery).

The segmented customer base and the tools that can be built around it present an opportunity for the organization to work as a well-oiled engine in an effort to break down walls created by silo management, and make cross-functional strategic planning a reality. The traditional approach of using simple demand forecasts to minimise costs is no longer effective, as the extremely competitive environment dictates a supply chain function that is not only cost-optimized but also market-aware.
8 Customer Segmentation Framework for CPG Customers

The different nature of the CPG customers requires further specialization of the main framework in order to ensure correct fit of the segmentation to all customer groups. Organisations can choose to implement customer segmentation in every group by creating a separate model that follows the main guidelines tailored to the special characteristics of every customer group. In this chapter, we present a brief proposal on how to specialise the established framework to the different customer types of a CPG organisation; a more thorough analysis would exceed the size limits of this thesis.

8.1 Customer Segmentation for Supermarkets

CPG companies antagonise for the sometimes limited available in-store shelf space in supermarkets by investing in sales workforce time, in-store promotions and service level in an effort to increase turnover and ultimately revenues. As we have already described, the shelf space allocated to each company is largely decided during the negotiations of the company with the central administration of the supermarket chain.

However, some chains tend to leave some room for modifications to the central agreement to be made by the store managers. This constitutes an additional point of negotiation at the store level that the company can use to its advantage in order to achieve more points of sale within the store and thus increase turnover. This is a significant differentiation point that can drive overall sales, as each store presents unique characteristics that the company's representatives can take advantage.

This ability to influence, that can be called the in-store “degree of freedom”, combined with the store revenue can be a segmentation basis for the supermarkets. The degree of freedom per customer is the qualitative function score and for each store is determined by a survey that quantifies:

- the ability to influence the order size beyond the ordinary
- the potential to increase in-store presence of the company beyond the central agreement
- the ability for data exchange between the customer and the company (e.g. check-out data)
- the overall relationship of the customer’s staff with the company’s representatives

Based on these principles, the customers can be segmented following the steps well established in the previous chapter. Using two dimensions, sales revenue and “degree of freedom”, the new clusters are created and the segmentation matrix can look like this:

![Supermarkets segmentation matrix](image)

_Figure 7: Supermarkets segmentation matrix_

Customers located in area 1, generate the most revenue while at the same time score higher in the degree of freedom. These customers should attract the attention of the company the most, as they are the most profitable and the most receptive to influences by the company representatives that can push revenues and profitability higher. As we move to the lower and/or to the left end of the matrix towards area 4, the service level is reduced in order to maintain the profitability of these customers and ensuring optimal deployment of the company’s resources.

Companies can make fine-tuning adjustments to the final result, as described in the previous chapter. One common example is to upgrade customers with very low degree of freedom but with high revenue, so as not to risk losing the volume generated in these
stores. Any adjustments to the final results, need to be signed off by the top management and need to be in line with the strategic direction towards each chain.

8.2 Customer Segmentation for Distributors

Distributors are essentially partners that resell the company's products to smaller retailers; they are an important part of the supply network that depending on the sector can constitute a large percentage of the total sales revenue of the company. But these partners present a rather large variation in their characteristics, like overall size, supply chain role, organisational and business capabilities.

Even more importantly, these partners do not necessarily distribute one company's products exclusively, making them another intense competition point for the CPG companies. This leads the CPG companies to spend a big percentage of their promotion and discount benefits budget for these partners, in an effort to keep channelling as much volume as possible through these distributors. This relationship between company and distributors requires a careful negotiation and management of priorities that over the years, has been based on personal relationships.

In order for the CPG company to ensure across-the-supply-chain profitability and business relationships that will drive volumes and market share higher, it needs to implement an official, systematic and standardised approach for distributor management that will:

- align the distributor relationship management with the strategic priorities of the company,
- regularly assess each partners strengths and weaknesses in order to establish joint development planning,
- clearly establish an approach to set optimal trade terms (discounts, promotions, pay-for-performance rewards),
- enable an approach for fact-based negotiations with the distributors towards a win-win situation,
• install a structured partner performance review procedure based on key operational indicators

This approach starts by identifying and segmenting all distributors of the company based on (a) their volume contribution in the region’s sales and (b) the quality of the business relationship as assessed by the regional distribution manager and/or sales representatives working with each distributor.

The quality of relationship is a qualitative questionnaire that evaluates the partner’s mind set and his commitment to growth; sales representatives can rate partners in the following areas:

• Does the distributor present a win-win attitude to invest in the long-term relationship with the company or is he focused in short-term transactional profit only?

• Does he have a real ambition to expand or grow his business?

• Does he possess a scalable infrastructure required to support potential growth initiatives?

• Will the distributor’s overall financial health impede any growth initiatives or does he have the capital sufficiency to support them?

After plotting the customers on the matrix using sales data and the questionnaire, the new distributor segments can be defined, while establishing the business policy for each segment. As usual, fine-tuning adjustments can be allowed, as long as they are signed-off by the top management team. An example of distributor clustering is the following:
**Current Stars** are partners with a high quality relationship with the company that also have a big market share in the region they operate. These distributors are the first candidates for any joint development initiatives and the most likely to return the biggest return on investment (ROI). Any capability gaps per distributor must be remedied as soon as possible, as these partners need to operate at optimal efficiency.

**Future Stars** are partners that maintain a very high quality relationship with the company but they are still small players in their region. Distributors in this segment are also first in line for new initiatives but the company should invest in joint planning and capability building only if the expected impact is significant enough to justify such investments (a break-even analysis might be needed).

**Challenges** are partners that need careful relationship management in order to build trust and confidence in them, because they possess the market share and the potential to become stars. A pay-for-performance improvement scheme is a very attractive solution to consider in this segment, as the weak relationship between the company and the distributor makes any joint development efforts difficult to implement.

**Core** partners are the average company distributors, where ROI of any development initiatives is usually limited; companies should handle these distributors in a way that normal business is ensured and any promotional or discount packages should be justified and implemented carefully.
Tactical partners have a very low market share in their region; the company must minimise risk exposure on doing business with these distributors while at the same time retaining presence in his own distribution network and providing the end customer with a standard service level.

A successful implementation of distributor segmentation allows the company to optimise investment levels and costs by creating a transparent and structured approach of collaborating with all its partners. Subsequently, best practices can be leveraged and business priorities can be tailored per distributor depending on his capability, while at the same time not deviating from the overall business strategy of the organisation.

8.3 Customer Segmentation Framework for Small Drop Outlets

Small drop outlets are stores with little to no available storage space, that constitute the main customer base of the company’s third party distributors, and an important point of sales for the company’s products. Their large number, diversity and volatility makes having a clear, organised, structured and straightforward approach in serving them an imperative.

The approach we propose for mapping these customers, apart from their size, is the growth potential of the customer and the performance gap when compared to the ideal “state”, differentiated per segment. This means that at the early stages the company must define (a) how the growth potential is determined and (b) what the ideal “state” (often called “picture of success”) of the customer is per segment and channel.

When determining growth potential using the customer survey, the project team can consider:

- the traffic outside the customer (higher possibility for a sale),
- the customer’s location (urban, rural, city centre, etc.),
- the overall trend of the customer’s own revenue,
- the current relationship of the company with the customer and
- the current market share within the customer’s store versus the channel average.
When comparing the current with the ideal state of the customer in order to determine the performance gap, the project team can consider:

- what equipment needs to be present at the store in order to uplift sales,
- if the equipment is at the correct place (e.g. within reach of the consumer)
- if the current delivery frequency is not adequate and stock-outs occur,
- if the customer is satisfied with the distributor he is working with, etc.

The company can adjust these factors according to its business sector and the pursued strategy at the time. Customers with high growth potential and significant performance gaps are considered a priority, while customers with already high generated revenue and low potential are considered the core customers of the organisation where the focus should be on maintaining market share and sustaining the high volume. An example of clustering using this approach is the following:

Note that the clusters can be named as the company desires, as long as these names are meaningful and understandable across the bottom line that will ultimately implement this strategy. The usual modifications and adjustments to the final result can be implemented (up to a certain small percentage), in order to achieve ownership and understanding of the new mapping. As described previously, a specific action plan and service policy is defined per customer segment with the following general principles:
**Platinum** customers, although clear winners that generate high revenues, exhibit significant room for improvements and good chances to grow their business. The goal for these customers will be to improve the offered service level, while at the same time invest in development initiatives that will close the performance gap and take advantage of the growth opportunities.

**Gold** customers are already generating high revenues and profit but their potential to grow is limited. The aim for these customers is to maintain market share and service level in order to sustain the already high volumes. Development initiatives should be limited but no compromise must be made in the offered service, as the customers in this cluster effectively are the “cash cow” of the company.

**Silver** customers are high potential stores that have either just started business or are currently overwhelmed by the presence of competition. These relatively high potential customers require careful evaluation; if the customer is new in business, the focus should be on building solid trust relationships, while customers that the company has low market share must be handled aggressively.

**Bronze** customers usually occupy the biggest percentage of the customer universe. Their potential is relatively low but their large number renders them a cluster that cannot be ignored. The strategy for this segment is to implement little to no business development, but at the same time maintain a minimum service level so as not to lose a significant amount of revenue.

**Iron** customers are very low volume stores that the company strategically chooses to maintain a minimum presence. The company usually relies on the distributor for servicing these customers, while the service offering from the company’s part can be as simple as few phone calls for order taking.

A successful implementation of small drop outlets segmentation provides the company with a structured approach in an effort to profitably serve this very crowded and diverse channel. Updating this customer mapping regularly will enable the company to identify and satisfy different customer needs while ensuring optimum deployment of the company’s assets and sales force.
9 Conclusions

Not many years ago, Consumer Packaged Goods companies that sought to gain a competitive advantage would invest in more physical assets or increase the service level offered to their customers, in an effort to stand out from competition. Moreover, in order to stimulate sales growth, most of them offered benefits and high service levels to most customers without any substantial differentiation or any feasibility study, by relying only on interpersonal relationships and personal judgment.

In today’s volatile business environment, it is imperative to utilise the same, current assets and re-deploy them towards achieving profitability across the supply chain while at the same time provide customers with a reliable but differentiated service. Implementing customer segmentation in the downstream supply chain will reduce uncertainty and increase accountability, since a fact-based and structured approach to service customers allows companies to reduce “cost to serve” while delivering on promises.

This study established a segmentation framework that Consumer Packaged Goods companies can follow in order to achieve alignment of their supply chain strategies with their overall strategy, by defining solid business policies for serving every customer segment profitably. The customer mapping that stems from this process can be used by other business units of the company, propagating financial and service benefits throughout the organisation.

Implementing customer segmentation in the supply chain successfully is not a silver bullet in any way; the mentality of serving the customers profitably in accordance with the established service policies needs to be incorporated in the corporate DNA. More importantly, the highly volatile business environment requires that the customer mapping is updated at least annually to incorporate any changes in the business landscape.

It is no wonder that during these unfavourable times of capital shortage and uncertainty, more and more successful businesses choose to adopt supply chain segmentation strategies; moreover, for Consumer Packaged Goods organisations that face tremendous pressures to their already narrow profit margin, it should be considered a top priority.
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