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The Use of Pricing Tools to Leverage the Business Partners' Profitability

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Abstract

The profitability set per customer of a given organization implies several challenges, from the calculation of the net pricing to the development of a cost allocation system within the company's processes. Thus, the work proposed aims at exploring the potential of a customer evaluation methodology, using pricing techniques as a supporting tool, where the analysis of the customer clusters profitability will be done, in order to identify profitability patterns, according to the characteristics of the relationship between the customer and the company, including the customer's supply chain role, the dimension and the potential of the business under study, the types of business relationships that are established, as well as the relative effects of each cluster own characteristics in the overall business relationship. After developing the methodology, the customer profitability will be analyzed and recommendations will be set, highlighting and quantifying the possible improvements in the contribution, under leveraging techniques by the average and sensitivity analysis simulations. These insights will support the companies in their pricing decisions also as shifting their focus towards attracting and retaining the customers from the more profitable clusters.

Keywords: pricing, customer, profitability, focus

JEL Classification: M210

1. Introduction

To maximize the potential of customers relationship should be the goal of every company, in fact, customers are responsible by each dollar spent, without them there is no reason to an organization consume resources (Albalaki, 2018; Noone & Griffin, 1998).

Managers are often very surprised to find out that a small number of customers generate a large part of the profits, and the remaining customers are unprofitable or only contribute to a small part of the profits (Elias & Hill, 2010). If the costumer profitability analysis is well done, the company will understand why certain customers are more or less profitable, and those conclusions are appliable at the strategic level, guiding decisions from grow initiatives to marketplace segmentation and, at tactical level, with improvements in profitability (Johnson, Simonetto, Meehan, & Singh, 2009).

2. Customer Profitability Analysis (CPA)

According to Mulhern (1999), customer profitability analysis is defined as "the evaluation of the how profitability varies across customers". Customer profitability analysis is also defined as "the allocation of revenues and costs to customer segments or individual customers, such that the profitability of those segments and/or individual customers can be calculated" (Raaij, Vernooij, & Triest, 2003).

We find differences between several authors about which department owns the accountability of customer profitability analysis. Cardoş, R. and Cardoş, D. (2014) assume that customer profitability analysis is considered as a marketing topic, despite being a management accounting innovation. On the other hand, Miller (2008) considers that, despite the marketing, sales and operations departments being the major users of CPA information, the finance department is in the best position to understand and calculate the customer's profitability, referring that a company who wants to apply the best practices should divide CPA accountability by both departments.

Customer profitability analysis allows organizations to identify and understand its sources of revenues, expenses, and, in consequence, the source of profits and take actions based on customers profitability perspective, instead of a simple revenue analysis approach (Albalaki, 2018; Shapiro, Rangan, Mariarty, & Ross, 1987; Cokins, 2015). So, if each dollar of revenue does not contribute in the same intensity to the profits, the difference between customers comes from differences

in revenues and costs, as Gupta, Foster, and Sjoblom (1996) explains.

Revenue differences:

- Differences in the prices charged per unit to different customers;
- Differences in the volume of sells across customers;
- Differences in the products or services provided to customers; and
- Differences in no charge items delivered to customers.

Differences in cost:

- Differences in the way resources are consumed by different customers;
- Price discounts and other forms of revenue offset;
- Differences in distribution channel; and
- Differences in customer service levels.

We now know that customers have different levels of profitability according to their characteristics, but levels of profitability will vary due to the use of different estimation methods (McManus & Guilding, 2008; Albalaki, 2018).

Noone and Griffin (1998) distinguish between traditional accounting approach and customer profitability analysis in Figure 1, explaining that in the traditional way, the operating department costs, including overheads, are deducted from the department revenues to reach total organization profit. On the other side, CPA approach split operating department revenues by individual customer or customer groups and deduct costs by individual customer or customer group, achieving the profit by consumer group. In CPA the total profit is reached when non allocated costs are deducted to the profit by consumer group.

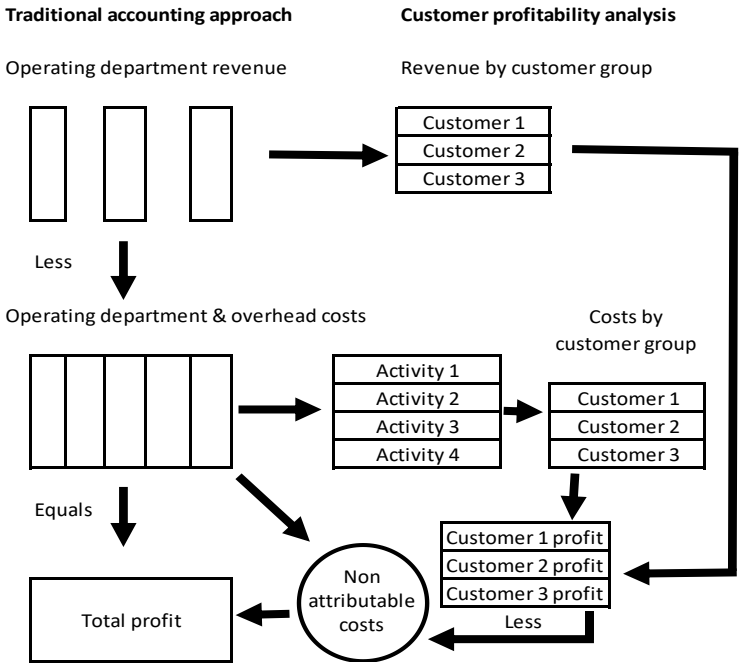

Figure 1. Different accounting flows

Source: Noone and Griffin (1998)

Because customers have different characteristics, it's important to distinguish them through segmentation and, as Wu and Zheng (2005) refers, customer segmentation is "classifying customers by their value, demands, preference and other factors in the circumstances of clear organization strategies, business model and targeted market". The traditional customer segmentation models based on demographic, attitudinal, and psychographic attributes of a customer have low accuracy, companies should use a customer segmentation model based on customer transaction and behavioral data (Lee, & Park, 2005).

Johnson et al., (2009) presents an CPA approach done in a "pocket margin" perspective, calculating the profitability of each transaction by subtracting all the costs related to a singular transaction. As they affirm, these costs can range from

invoice discounts and promotions, to the less obviously ones, like freight costs, warehousing and other activities that may be classifies as "overhead cost". An illustrative example is given by the same authors, with a construction of a so called "price waterfall" chart that portrays the progression from list price to pocket margin, based on cost-to-serve data collected at transactional level.

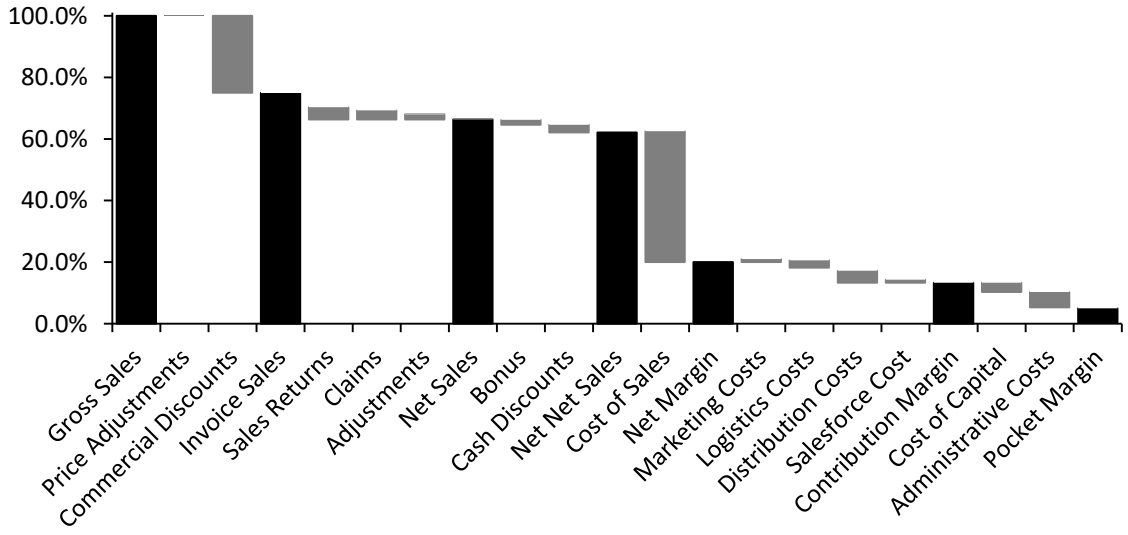

Figure 2. Profitability waterfall

Source: Johnson et al. (2009)

Once the profitability is measured for each customer or customer segment, Elias and Hill (2010) suggest to plot the results into a profit graph, popularly called "whale curve", where the Y-axis of the graph shows cumulative customers or customer segment ranked and from high to low in terms of profitability from all customers and the X-axis shows cumulative customer or customer segment ranked from high to low in terms of profitability. Usually, the graph will show that a low number of customers are responsible for more than 100% of the profits and, the remain customers, are normally on breakeven or generating losses (Kaplan & Cooper, 1998).

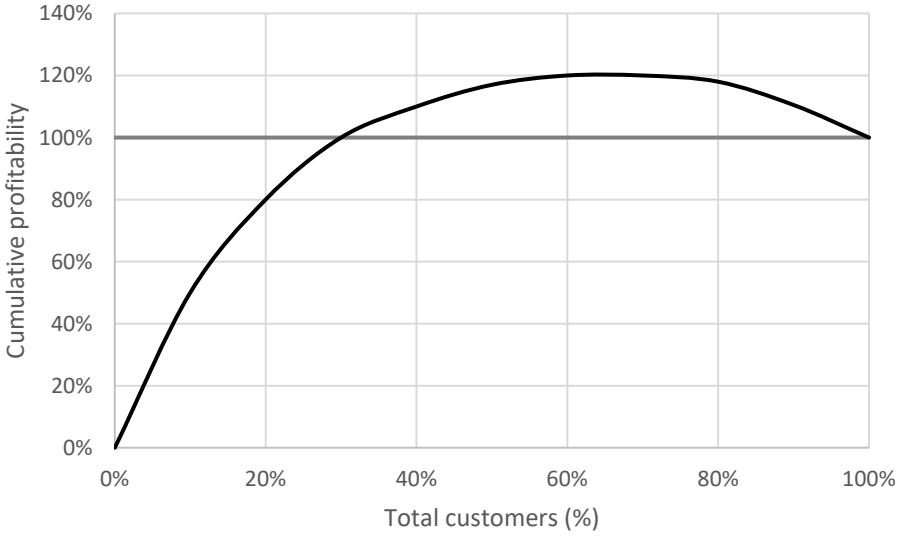

Figure 3. The whale curve

Source: Elias and Hill (2010)

Brown (2010) proposes a "4 box" model to segment customers based on their profitability and their relevance for business strategy, suggesting actions to take in each segment.

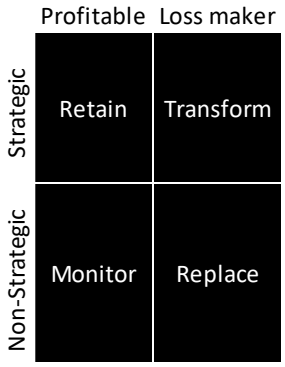

Figure 4. Four box strategies

Source: Brown, 2010

For strategic and profitable customers, the company should retain them and increase their business if possible. For strategic and loss makers the action to take is to transform these customers into profitable or, at worst, move them to breakeven. At non-strategic and profitable customers, the orders and service levels should be regularly monitored to ensure nothing changes that causes them to become non-profitable customers. The non-strategic and loss makers customers sales volumes and contribution needs to be replaced, with increasing of selling prices and with no effort spent developing these customers, in order to move them to the "Monitor" box.

3. Case study

This case was conducted in a subsidiary of one of the largest Portuguese multinational company that operates in the industry of production and transformation of raw materials, being the world leader in its sector.

We will change the original data to protect the company against the disclosure of sensitive business information.

i. Summary

After collect all the transactional data and all relevant costs, we start the study with a general analysis at the company. At the date of the study, the subsidiary analyzed was facing profitability problems as the general profitability waterfall shows.

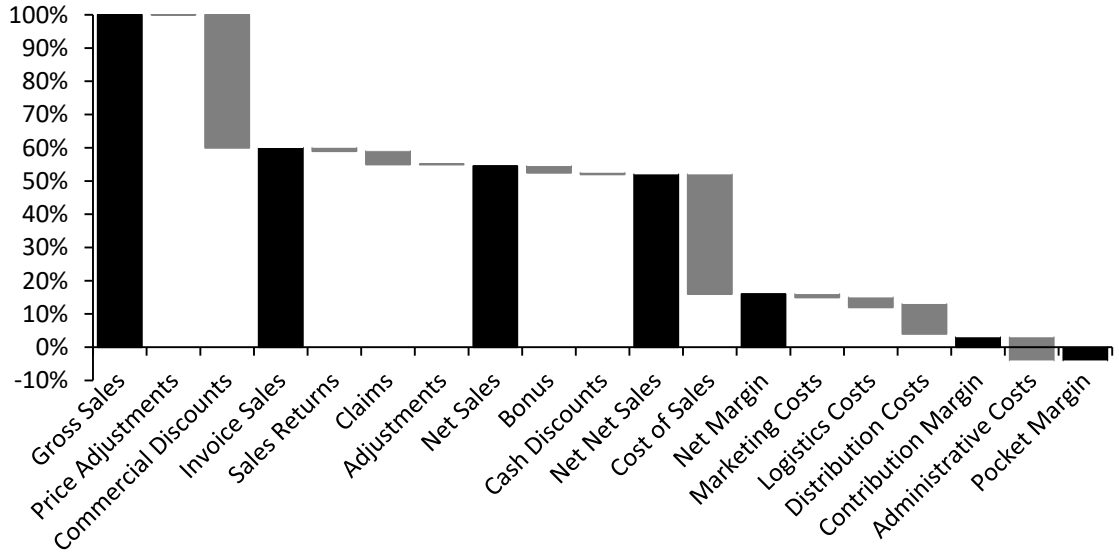

Figure 5. Company general profitability waterfall

Source: Own elaboration

The total Gross Sales represents 100% of the potential income and, slice by slice, the gross sales are deducted by company's cost. As shown in Figure 5, the most representative costs are commercial discounts and cost of sales, with a representation of 40% and 36% of the gross sales, respectively. The contribution margin is still positive by 1%, but administrative costs exceed this margin resulting in a total loss (pocket margin) of 7%.

At the time, there were around 400 customers divided into three clusters (retailers, wholesalers, and others) and 700 different products.

ii. Customer individual analysis

The customer analysis, as we already mentioned, was made in a transactional basis and, will stop on contribution margin, because no reliable method has been found to allocate the administrative costs.

As we show in Figure 6, most of the customers have a positive contribution margin. The company's customers profitability behavior seems to behave like the "whale curve" graph presented by Elias and Hill (2010), mentioned in this work.

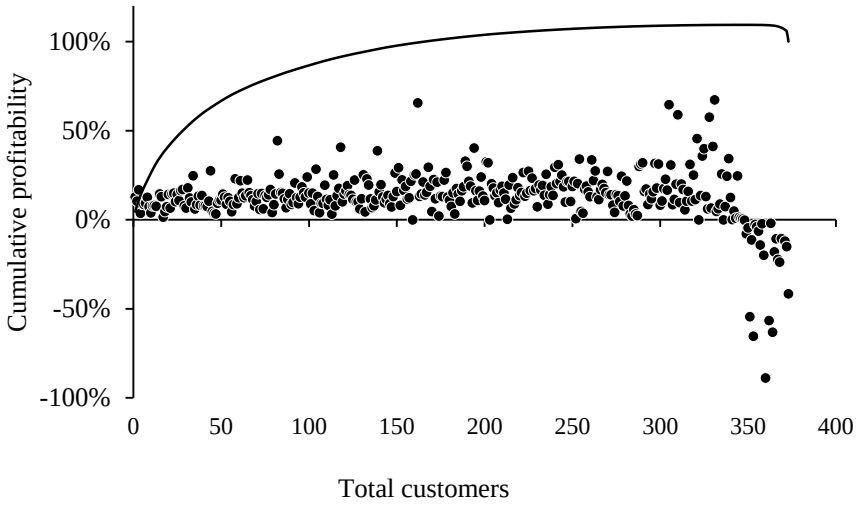

Figure 6. Contribution margin per customer

Source: Own elaboration

In the Figure 6, where each point represents a customer, we figure out that a minority of customers (around 6.5% of total customers) causes a loss of 9.1% of the maximum cumulative profitability. Without them the contribution margin would be around 10% higher. In other hand, around 80% of total profitability was concentrated in 80 customers, 20% of the total customers.

Table 1. Top/Bottom 3 customers

Top/Bottom 3 customers	Gross Sales (% of total)	Contribution Margin (% of total)
Profit maker 1	2.70%	4.50%
Profit maker 2	2.40%	3.20%
Profit maker 3	1.50%	3.15%
Loss maker 3	0.40%	-0.70%
Loss maker 2	0.50%	-0.90%
Loss maker 1	1.00%	-5.72%

Source: Own elaboration

We look at the top three profit/loss makers and conclude that one customer represents a 5.72% loss in contribution margin. In the side of the profits, one customer represents 4.5% of total contribution margin. After Loss makers transactional data

analysis based on individual profitability waterfall, we find out that:

- The Loss maker 1 negative contribution margin was due to three products claims;
- The Loss maker 2 negative contribution margin was due to excessive commercial discounts;
- The Loss maker 3 negative contribution margin was due to high cost of service.

At the profit makers transactions analysis, we conclude that the main cause of their superior contribution margin was result of purchase of products with above-average profitability and low cost of service.

iii. Segmentation

The segmentation was made in two different perspectives:

- Profit comparability;
- Business strategy.

In profit comparability perspective the criteria adopted was the position of the customer in the supply chain row. As we have been already said, the company's traditional segments are:

- Retailers – The ones who sell at the final customer;
- Wholesalers – Distributors or intermediaries;
- Others – All categories not applicable above.

At the strategic view, the customers were classified accordingly to their actual or expected sales representativeness.

- A classification – Clients with large present or expected representativeness of gross sales (≥10%);
- B classification – Clients with solid present or expected representativeness of gross sales (≥5% & <10%);
- C classification – Clients with regular present or expected representativeness of gross sales (≥2.5% & <5%)
- D classification – Clients with residual present or expected representativeness of gross sales (<2.5%)
- E classification – On time customers.

iv. Traditional clusters analysis

As already mentioned in this work, only exist costs because exist customers or future customers (Albalaki, 2008; Noone & Griffin, 1998), so we'll analyze how customers influence total costs using profitability waterfall largest costs' items of each cluster.

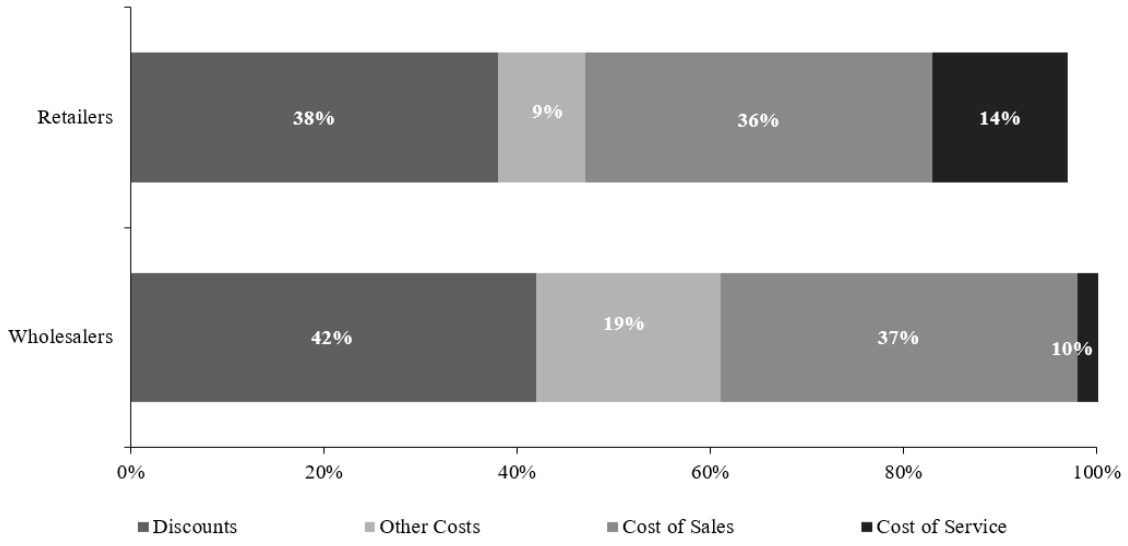

Figure 7. Major costs weight in gross sales of each cluster

Source: Own elaboration

As shown in Figure 7, the total costs sum of retailers is 97%, the rest is contribution margin, and the wholesalers' total costs sum 108%, it means the costs are above the gross sales in 8%. The most relevant differences between both segments are Discounts and Cost of service, and Other costs.

Before went out to the costs' analysis, we will perceive what is the position of customers on gross sales that generates more or less profitable.

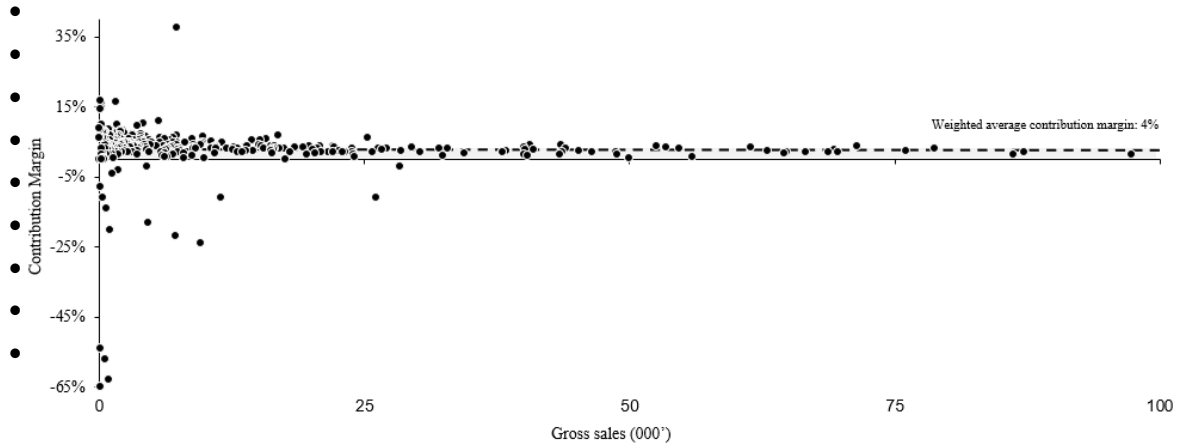

Figure 8. Retailers gross sales vs. contribution margin representation

Source: Own elaboration

Retailers have a weighted average contribution margin of 4%. There are a bunch of customers that have some influence on the average because of their sales representativeness, despite being all with gross sales under 30 000. Here, the customers, at the same volume of sales, theoretically, shouldn't be at different level of profitability because they're on the same position at supply chain row.

- Wholesalers

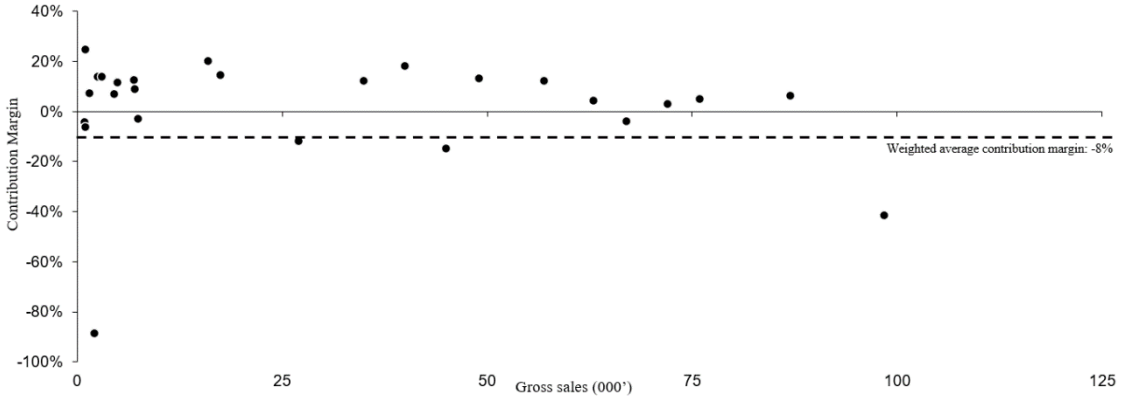

Figure 9. Wholesalers gross sales vs. contribution margin representation

Source: Own elaboration

In the wholesalers' graph is obvious that one customer has a relatively high influence on the weighted average margin of -8%. The trend of margin looks to decrease as we increase gross sales. This segment has a big issue, the largest customer was incredibly unprofitable.

- Others

Because of the multiplicity of characteristics and low relevance at gross sales of this cluster, the analysis at others' customers will not be done.

v. Commercial discounts

Commercial discount is the biggest cost slice of gross sales, the analysis will be done comparing each customer commercial discount with the supposed discount to that sales volume, for both segments.

- Retailers

The retailers have a lower commercial discount than wholesalers, mainly because they involve more cost to serve because of their characteristics.

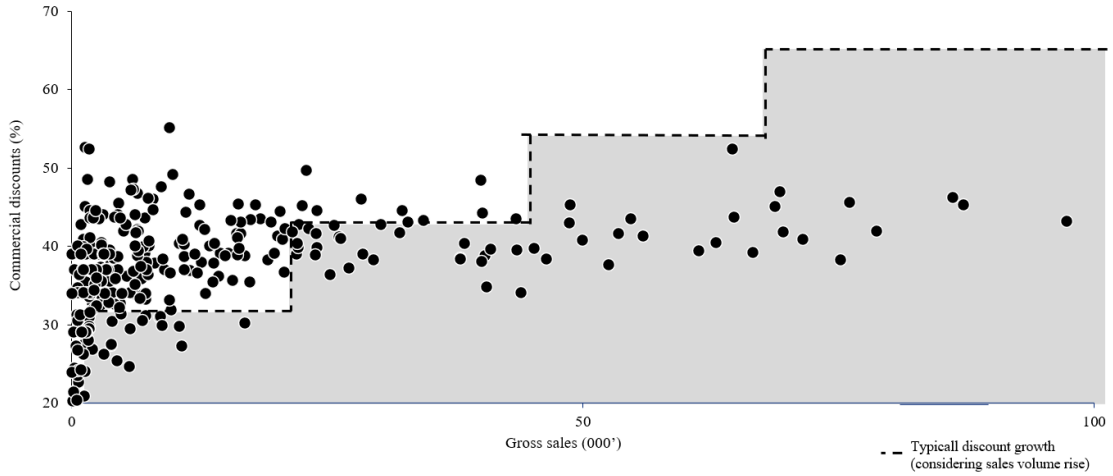

Figure 10. Retailers commercial discounts applied vs. Potential incentives by sales volume

Source: Own elaboration

As we can figure out, there are a lot of customers out of the "stairs", that means the commercial discounts policies aren't being accomplished in the lower sales.

- Wholesalers

The wholesalers, because they are positioned more on the upstream of supply chain row need to get a bigger incentive. The average commercial discount in this cluster is 42%.

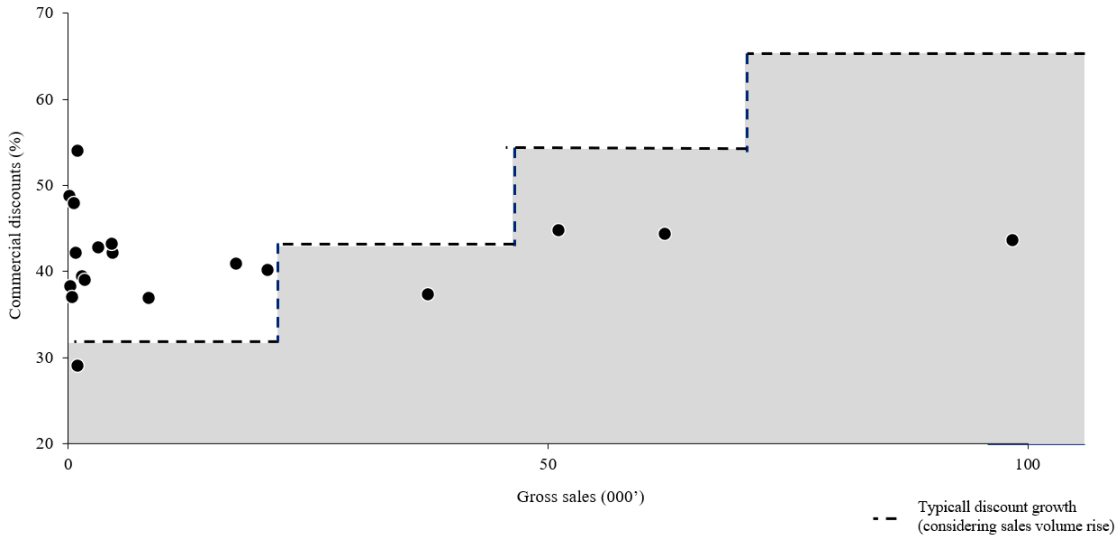

Figure 11. Wholesalers commercial discounts applied vs. Potential incentives by sales volume

Source: Own elaboration

The commercial discounts policies in wholesalers are not being accomplished in at lower gross sales, as the retailers.

vi. Cost of service

The cost of service is composed by marketing costs, logistic costs, and distribution costs. The most relevant cost here is the distribution cost with 9% of gross sales consumption. Marketing and logistic costs are, in part, distributed with subjective criteria, so, to resume the analysis at the most direct and effective cost, marketing and logistic costs will be

excluded of analysis.

- Retailers

Retailers have a distribution cost of 14% compared to gross sales, the analysis is made in a transaction basis, comparing the cost driver (quantity) of distribution costs. If we made this analysis in a gross sales volume perspective instead of quantity perspective, or in a customer global analysis instead transactional based, the cause of high distribution costs (frequency of interactions and units volume) would remain unknown.

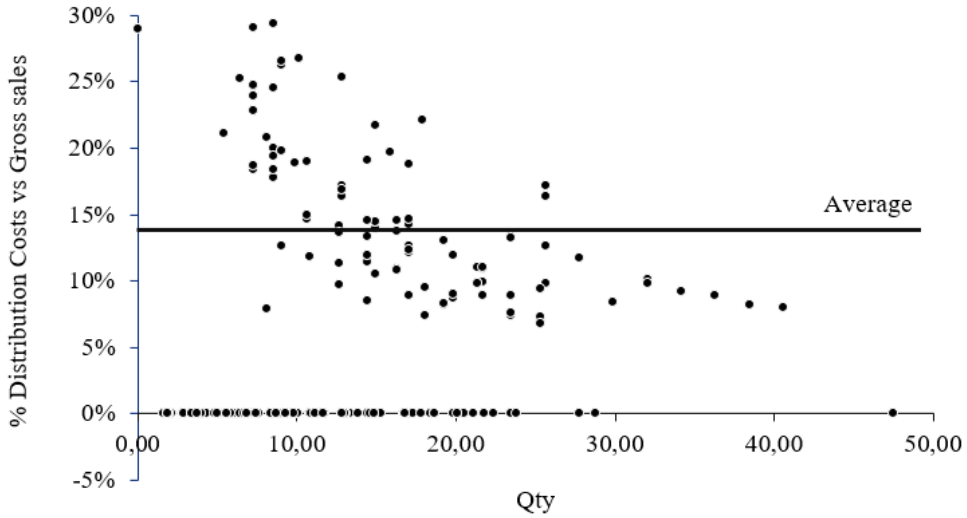

Figure 12. Retailers distribution cost Vs. Gross sales transaction analysis

Source: Own elaboration

In retailers exists multiple transactions with zero costs, it's policy of the company to not surcharge the distribution costs of clients with A Classification (large present or expected representativeness of gross sales). The transactions in the Figure 12 reveal a pattern along the quantity axe, as the quantity increases the less the relative distribution cost.

- Wholesalers

Wholesalers have a lower distribution cost than retailers, in fact, as result of the classification of the client, more efforts are made to please the customer. That policy is, sometimes, a little expensive to the company, as Figure 13 shows, low quantity orders and distribution costs consuming 40-55% of gross sales.

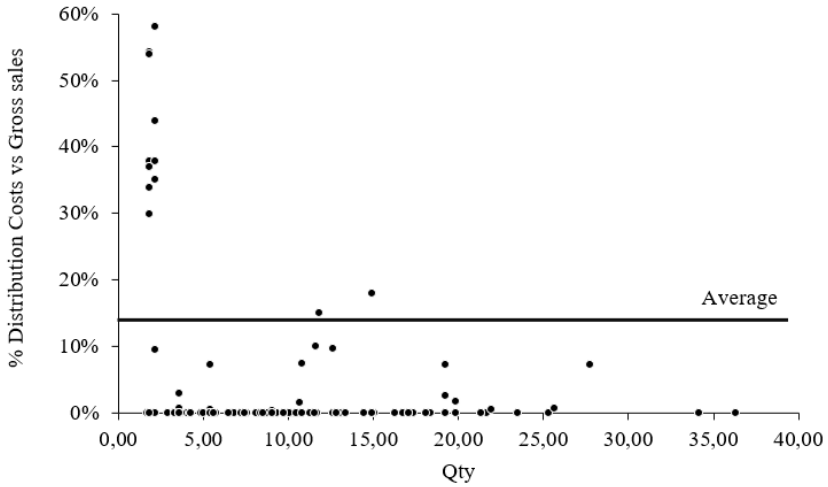

Figure 13. Wholesalers distribution cost Vs. Gross sales transaction analysis

Source: Own elaboration

As the retailers, the distribution costs in this cluster are surcharged only for customers with a classification different than "A".

vii. Other Costs

The other costs represent 12% of retailers and 19% of wholesalers gross sales. These costs are diversified and because of their singular irrelevance, the benefit taken of the analysis would be residual, so we will not include Other Costs' analysis in this work

viii. Strategic actions

In this section the logic it's to apply the "4 box" model proposed by Brown (2010), using the information collected at the previous analysis as guide to price and policies fixation.

In the company strategic view, the company distinguishes customers by classification, as mentioned in section *iii – Segmentation.*

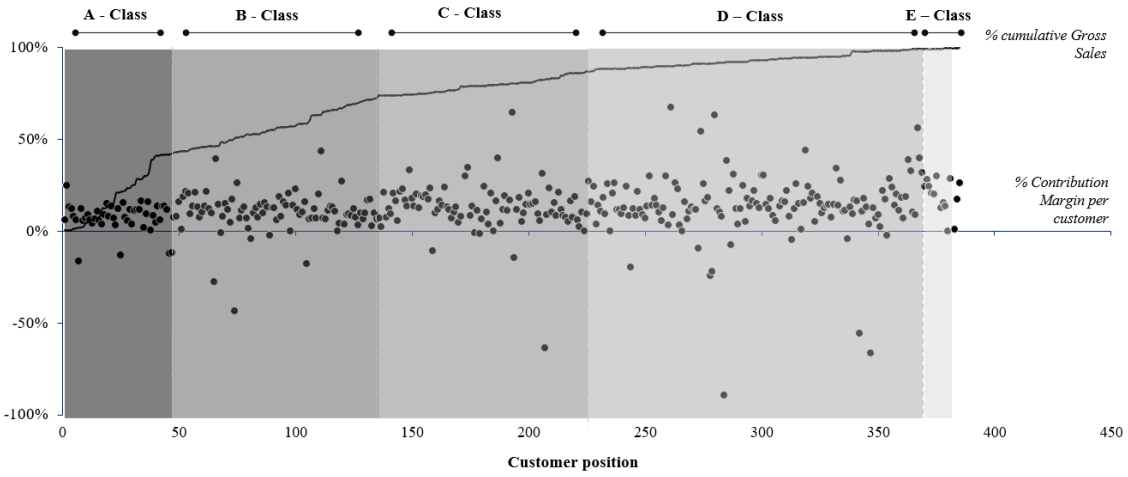

Figure 14. Customer profitability by classification

Source: Own elaboration

Exists more negative contributors in customers classified as D, what is expectable, because they are low sell customers, so any extra cost could mean a larger contribution cost variation. The main problems are the negative customers classified as A and B; they are making the company lose money!

The application of "4 box" model in the strategic process will determine the actions to take to reverse unprofitable situations. To apply the model correctly, we need first to define the strategic customers and unprofitable customers.

- Strategic customers: Customers classified as A, B and C;
- Non-strategic customers: All the others customers;
- Unprofitable customers: Customers with contribution margin >0%.

- Unprofitable and strategic customers

It's maybe the most important analysis, because customers are unprofitable and, at the same time, we want to do business with them. To improve the relation between the company and their customers, Brown (2010) proposes to transform them into profit or, at worst, move them to breakeven. There are a few customers in this type of situation, an individual analysis for each one is deserved, meanwhile, we will only present deep analysis to the top 3 unprofitable ones, and general view of the improvements for this customer classification.

Loss Maker 1 is unprofitable because of claims related to three different products. The cause of the claim is the bad conditions of the products. These products are commonly claiming target. After items profitability analysis for consecutive years, we conclude that these three products aren't profitable in none of the years. We know these three products are important for our strategic customers, and if company want to maintain and increase strategic customers sales, need to fix their products profitability. The recommendations are:

- Implement a more effective audit process on products load and discharge; and
- Create exceptions on customers' discount agreements regarding these products.

The total gains of the recommendations could ascend to 12% of the contribution margin.

Loss maker 2 unprofitability was due to excessive commercial discounts, we analyze Figure X and Figure XI and conclude that a great number of customers are surpassing the commercial discounts limit policies, including this customer. In order to improve general profitability with action on commercial discount we recommend to:

- Give to salesforce penalties on bonuses for each customer with commercial discounts above established limits, except in very special situations; and
- Establish an appropriate action plan for each customer and communicate to customers the changes in their commercial conditions.

If the company implement the recommendations above, will gain up to 27% of contribution margin.

The Loss maker 3 issue is the high cost of service, mostly because of high distribution costs. As Figure 12 and Figure 13 evidence, higher gross sales represent lower relative distribution costs. Distribution costs should not be a reason for loss of customer profitability, to avoid these situations we suggest:

- Level the customers with above average distribution costs to the average distribution costs;
- Fixate a minimum quantity with free charges; and
- Analyse their classifications and evaluate the service model provided to them, in order to adapt and reduce cost of service to customers with low profitability.

Level the customers with above average distribution costs to the average distribution costs lead at 4% gain in contribution margin.

- Profitable and strategic customers

The company should retain this type of customer and increase their business if possible, as Brown (2010) said. To successfully accomplish the task of retain and increase their business, we recommend the following action:

- Reinforce the communications with the customers, visiting or calling them more frequently;
- Reinforce service level provided, with focus on the marketing communication to also attract new customers; and
- Explore all the client potential, if necessary, using commercial discounts as tool to incentivize the customer to increase sales, always on the preestablished limits.

The contributes of the recommendations mentioned could affect the contribution margin volume in a positive way.

- Unprofitable and non-strategic customers

At non-strategic and profitable customers sales volumes and contribution needs to be replaced, with increasing of selling prices and with no effort spent developing these customers (Brown, 2010). This type of customer has more pragmatic recommendations because they are out of the company focus, as follows:

- Identify customers with lower volume of sales and review their discount conditions;
- Provide very low service level;
- Analyse the mix of items purchased by these customers, redirecting their sales to more profitable items;
- Assessing and deciding whether to continue or stop selling unprofitable items, if they exist; and
- Assess and decide whether to serve or stop serving these customers.

The non-strategic customers who aren't profitable are easy to eliminate but, if the company pretends to have business relations with non-strategic customers, it's because the gains are sufficiently attractive and useful. The gains with the negative clients should be brought to the average, taking that action leads at 1% gain in contribution margin.

- Profitable and non-strategic customers

At these customers the orders and service levels should be regularly monitored to ensure nothing changes that causes them to become non-profitable customers (Brown, 2010). Although these customers are not strategic, they give a positive contribute to the organization, so we prefer to adopt the recommendations of "Profitable and strategic customers", although, in a conservative way, because the focus should be on strategic customers.

- Traditional segments

The recommendations at traditional segments are in a anomaly corrections perspective. One useful tool to do that is comparing clusters at most relevant products and find possible inconsistencies.

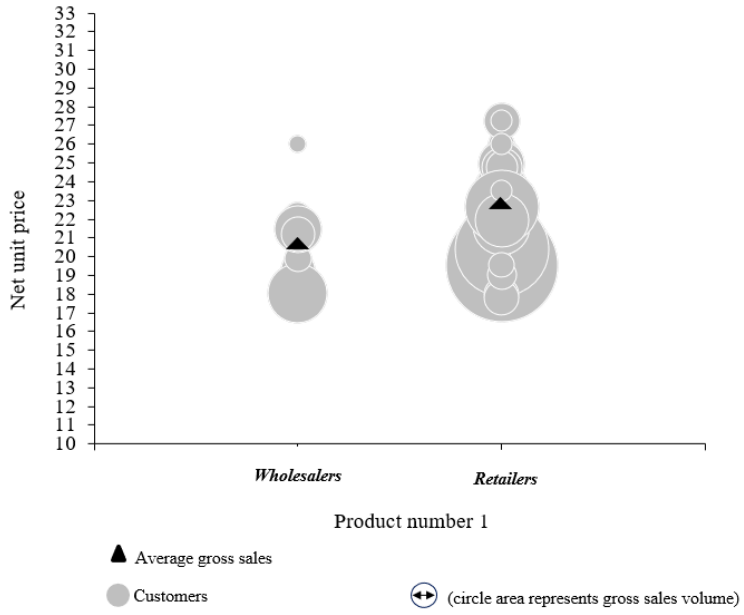

Figure 15. Product number 1 transactions by cluster

Source: Own elaboration

We chose a product to analyze, as Figure 15 shows, retailers have a higher net unit price average, indicating that wholesalers are getting more discounts than retailers, and that is the expected. The bigger the bubble, the lower the net unit price, because the discounts are mostly applied at customers with larger sales. We noticed through Figure 15 that are some smaller circles with a net price below the average, to that customers there is no reason to have that kind of special net unit price, the company should move them to a upper net unit price. For the customers with lower net sales but with an interesting sales volume, the company should try to move them to the average. With this type of analysis, we get a way to pricing every customer and ensuring the fair price for them. Moving customers with net prices lower than average in every product to the average price would result in a gain of 50% in contribution margin.

In Table 2, we resume the actions to take, the basis of an action plan used to implement the methodology, with defined accountabilities and the time to do it.

Table 2. Action recommendations summary

Segment	Actions	Expected impact % contribution margin
Unprofitable and strategic customers	Implement a more effective audit process on products load and discharge	5%
Unprofitable and strategic customers	Create exceptions on customers' discount agreements regarding products with high claims	7%
Unprofitable and strategic customers	Correctly execute commercial discounts policies	27%
Unprofitable and strategic customers	Level the customers with above average distribution costs to the average distribution costs	4%
Unprofitable and strategic customers	Fixate a minimum quantity with free charges	2%
Unprofitable and non-strategic customers	Identify customers with lower volume of sales and review their discount conditions	10%
Unprofitable and non-strategic customers	Analyze the mix of items purchased, redirecting their sales to more profitable items	2%
Unprofitable and non-strategic customers	Stop serving recurrent unprofitable customers	4%
Unprofitable and non-strategic customers	Stop selling them unprofitable items	1%

Traditional segments	Move small sales customers with lower net price than average to their fair position	15%
Traditional segments	Move to average all customers with lower net unit price and higher average sales volume	35%

Source: Own elaboration

The gains are individual and not cumulative. Most of the gains are in the traditional segment analysis, it's because they have a general recommendation that covers a part of the remaining recommendations. The traditional segments analysis is fine to identify abnormal situations in individual customers and using the remain analysis, in an individual base, to identify the causes of each abnormal situation and act on it. The remaining recommendations are the most appropriated to integrate into the company strategy, acting not accordingly to the most profitable action at the time but accordingly to the company strategy, evens if it means lose money now, with the expectation of future return.

4. Conclusion

The analysis proposed was effective to identify the causes of unprofitable customers and focus on general profits. In this case study, the profitability patterns have been identified using the pricing tools. The pricing components, as the net pricing and commercial discounts, have been analyzed to improve the relationship between the company and the customers, with the focus on the strategic ones. The segmentation and cluster frame allowed a deeper analysis leading to the identification and quantification of potential gains. The high potential customers are the most sensible ones in the analysis, revealing some abnormal profitability trends because of their role in the commercial and marketing departments. The analysis efforts need to be coordinated with those departments and a common reading need to be set for the effectiveness of the recommendations.

The successfully implementation of the analysis recommendations depends on the objectives proposed to all the responsible for taking the actions; the actions need to be clear showing the potential gains and need to be followed on periodically reports.

The case study involved 2 sessions with the head of commercial and marketing department, one for preparing and validating the assumptions and the global outlook and the final one to discuss the recommendations. Overall, the reaction was very positive with this methodology and the actions list has been validated and allocated for follow up.

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