



OPERATIONAL STRATEGY ANALYSIS OF ERP MUESLI INC.

Prepared by Soudabeh Rafieisakhaei

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Executive Summary

This analysis was conducted during the 2023 fiscal year to share Enterprise Operations analytics with the CEO of ERP Muesli Incorporated. The data for this analysis was retrieved from an SAP S4 HANA server at the California State University, Chico using an OData connection and the analysis was performed using Tableau Desktop 2022. Among the many operational database tables, only the relevant data for this analysis were used.

The findings of this analysis could be used as the foundation for the organization's strategy execution for the 2024 fiscal year. Our analysis finds that:

1. The comparison of the financial statements of all companies revealed that company codes CC and VV were respectively the best and worst-performing companies. Company CC was the most profitable with €2,072,048 profit and a revenue of €5,396,56. Company VV was the least profitable with a profit of €375,222 and a revenue of €3,076,490. The difference between the profit and revenue of the two companies indicates that company VV struggles

to generate profit. Company CC's marketing expenses and production improvement expenses are higher than company VV's. Marketing: CC €1,797, VV €285. Production improvement CC €125,000, VV €0 which could have been a reason for the higher profitability of company CC. The higher liabilities of company CC €7,551,719 mark the financial stability of the company, and the lower liabilities of the company VV €8,073,521 denotes the company VV's more reliance on debts.

2. Hypermarkets, distribution channel 10, has the highest contribution margins percentage in Gottingen, one of the top markets in sales region North for products of all 10 companies. The high contribution margin of distribution channel 10 in Gottingen could be related to the absence of the other distribution channels and the efficiency of the supply chain.
3. München, Berlin, Göttingen, Dusseldorf, and Magdeburg with net values over €1,000,000 are top markets for all products of the 10 companies that account for 22 percent of the total net value of the sales in the North. The significant contribution of the cities to the total revenue of the region could be relevant to population, market size, and the stronger economy of those cities compared to the other places.
4. Company CC's marketing expenses cover all 12 products, but company VV's marketing expenses exclude 500gr Original Muesli. Company CC advertises seven products in sim rounds one, two, and three and five products in sim rounds two and three. Company CC's marketing expenses in sim round two for the products not advertised in sim round one are higher than products advertised in sim round one.

For example, for 500gr original Muesli with the highest marketing expenses in total, €253 company CC spent similar amounts per sim round. Sim Round (one) €85, Sim Round (two) €85, Sim Round (three) €83. However, for 1kg original Muesli with a total marketing expense €173 which was only advertised on sim rounds two and three company CC spent €126 for sim round two and €47 for sim round three. Company VV's marketing expenses for nine products are the same, €18 per product in sim round one. 1kg Original Muesli and 500gr Raisin Muesli are the only products advertised in sim rounds one and two.

5. Company CC maintained relatively stable prices throughout all three quarters of the year without any change in prices. Company VV maintained stable prices throughout the first two quarters, but the prices almost doubled in the third quarter, which indicates that company VV may have adopted a new pricing strategy in the third quarter. The higher prices may increase the profit but could reduce sales.
6. Despite the different average prices for each product, every company had the same sales quantity, marketing expenses, and net value for all the products. Contrary to company CC, company VV had higher average prices for all products, but lower sales quantity, marketing expenses, and net value.
7. Company CC has a lower number of stock transfers and a larger quantity of stock transfers, which means that the stock transfers of company CC contain larger quantities than those of company VV. Company CC's manufacturing efficiency and transfer efficiency are higher than those of company VV. Company CC transferred more than 1 million products

in 174 transfers, while Company VV transferred 661,000 products in 185 transfers. Company CC manufactured 28,105 products per order and Company CC manufactured 20,030 products per order. For each transfer, company CC transferred 5,777 products, and company VV transferred 3,753 products to the Storage Locations. Efficient logistics, inventory management, and use of technology may have contributed to company CC's higher transfer efficiency.

8. The numerical values representing the company CC's manufacturing efficiency were greater than those of company VV for every sim round. Accordingly, Company CC had more effective production strategies than company VV. Company CC received 14 orders for the target quantity of 572,000 products in sim round one and manufactured 40,857 products per order. Meanwhile, company VV received 15 orders for a target quantity of 338,000 products, and manufactured 23,867 products per order. Though, the manufacturing efficiency of both companies decreased in sim rounds two and three.
9. Company CC ordered more small boxes than the large box in sim rounds one and two. However, in sim round three the company ordered fewer small boxes than the large boxes. Company VV also ordered more small boxes than the large box in sim rounds one and two. Company VV's order in sim round three excluded small boxes. The larger quantities of company CC's orders for boxes implies compared to company VV, company CC sells more products. The change in the company's purchase pattern could be a result of a decrease in small box cereals demand in sim round three and the production reduction.

10. The distribution channels contributed to the company CC and company VV's sales similarly. Grocery Chains with 543,219 sales for company CC and 271,027 sales for company VV were the main distribution channels of the products of the worst and best-performing companies. Independent Groceries with 333,117 sales for company CC and 253,026 were the second distribution channel. Hypermarkets with 124,402 sales for company CC and 136,946 sales for company VV were the only distribution channels that sold larger quantities of the products of company VV than products of company CC.

Operational Strategy Analysis of ERP Muesli Inc.

ANALYSIS OF OPERATIONAL DATA

This analysis was conducted during the 2023 fiscal year to provide the CEO of ERP Muesli Incorporated the ERP Muesli company with insights for informed decisions that could move the business closer to its long-term goals such as increasing sales in different sales regions and generating more profits. The analysis aimed at helping the business understand the operation capacity of the company and identify the areas of growth, strategies, and resources needed to optimize the company's operations. First, the two best and worst performing companies of the ten subsidiary companies of the ERP were identified. Then a comparative analysis focusing on the best and worst performing companies is conducted. The analysis addresses the marketing expense strategies, pricing strategy, marketing to sales strategy, supply strategy, product strategy, procurement strategy, and sales per distribution channels.

About the Business

The line of business is breakfast cereal which manufactures and sells 6 different products in two sizes, which makes 12 products in total. The product names for 500g cereals are \$\$-F01 through \$\$-F06 and the product names for 1kg cereals are \$\$-F011 through \$\$-F016. The products are sold by many different subsidiary companies under their own product names. \$\$ in the product name indicates the company code that sells the product; for example, product AA-F01 is sold by subsidiary company code AA.

The ERP Muesli cereals are sold to final customers in three different sales regions: North, South, and West through three types of distribution channels which include Hypermarkets, Grocery Chains and Independent Groceries respectively known as DC10, DC12, and DC14. The company has storage locations in all sales regions, and transportation cost is \$1,000 per transfer.

The Best and Worst Performing subsidiary companies

Financial analysis is an important tool for businesses to determine their financial health and performance. Financial statements such as Balance sheets and Income Statements are the key indicators of the performance of a business. They provide insight into the amounts of revenues and profits, the costs, the efficiency of the cash management, the assets, and liabilities. Comparing the Income Statements of all companies revealed that company codes CC and VV were respectively the best and worst-performing companies. Company CC was the most profitable with €2,072,048 profit and company VV was the least profitable with a profit of €375,222, Figure 1. The comparison of the Balance Sheets of the companies revealed the same information, Figure 2.

Income Statement

Fs Level 1	Fs Level 2	Fs Level 3	COMPANY CODE (Financial Postings)	
			CC	VV
Income Statement	Cost of Goods Sold		1,387,476	904,788
		Total	1,387,476	904,788
	Sales, General, and Administrative Expenses	Interest Expenses	154,923	154,275
		Marketing Expenses	1,797	285
		Production Improvement ..	125,000	
		SG&A	480,000	480,000
		Total	761,720	634,560
	Inventory Change		-14,382	-17,580
		Total	-14,382	-17,580
	Operating Expenses		1,189,700	1,179,500
		Total	1,189,700	1,179,500
	Revenues		-5,396,561	-3,076,490
		Total	-5,396,561	-3,076,490
	Total		-2,072,048	-375,222

Sum of Amount broken down by COMPANY CODE (Financial Postings) vs. Fs Level 1, Fs Level 2 and Fs Level 3. The view is filtered on Fs Level 1 and COMPANY CODE (Financial Postings). The Fs Level 1 filter keeps Income Statement. The COMPANY CODE (Financial Postings) filter keeps CC and VV.

Figure 1. Income Statement Under Review

A further review of the financial statements informed the reasons for the significant differences in the amounts of the revenue and profit of the two companies. The operating expenses of the two companies were similar; nevertheless, there was a big gap between the marketing and production improvement expenses of the two companies; €1,797 for company CC and €285 for company VV. In addition, company CC spent €125,000 on production improvement; but company VV spent no amount on production improvement.

Marketing helps businesses reach success by creating and maintaining demand. It makes the customers aware of products or services and provides insights into their buying decisions. Marketing expenses of company CC were significantly higher than those of company VV. Spending more money on marketing means that company CC had more efficient marketing strategies, which could be a meaningful reason for the higher revenue and profit of the company. Production improvement increases efficiency by refining manufacturing and production quality. The process boosts the reputation and improves reliability. Zero production improvement expense of company VV implies that the company had no plan for production improvement, a process that could enhance profitability through cost reduction and faster processing.

Despite company CC's higher production improvement expenses, company CC's cost of goods sold €1,387,476 was more than company VV's cost of goods sold €904,788. Company CC's production quantity sum could have been more than company VV's. The cost of goods sold is not per unit and does not necessarily mean that Company CC had higher costs of the production of goods than Company VV. The more goods produced, the more the total cost of goods sold. The higher revenues of the company CC modified their cost of goods sold, leading to a higher profit margin.

Balance sheet provided more insights into the financial status of the companies. The higher liabilities of company CC, €7,551,719, highlight the financial stability of the company. The lower liabilities of the company VV €8,073,521 denotes the company VV's more reliance on debts.

Fs Level 1	Fs Level 2	Fs Level 3	COMPANY CODE (Financial Postings)	
			CC	VV
Balance Sheet	Assets	Current Assets	3,263,767	3,063,742
		Long-Term Assets	26,360,000	25,385,000
		Total	29,623,767	28,448,742
	Liabilities and Owners' Equity	Equity	-20,000,000	-20,000,000
		Liabilities	-7,551,719	-8,073,521
		Total	-27,551,719	-28,073,521
	Total		2,072,048	375,222

Sum of Amount broken down by COMPANY CODE (Financial Postings) vs. Fs Level 1, Fs Level 2 and Fs Level 3. The view is filtered on Fs Level 1 and COMPANY CODE (Financial Postings). The Fs Level 1 filter keeps Balance Sheet. The COMPANY CODE (Financial Postings) filter keeps CC and VV.

Figure2. Balance Sheet Under Review

Global sales Analysis

Global sales analysis could help a company understand the global market and implement effective marketing and sales strategies. A better understanding of the sales patterns in different cities helps the companies identify areas for growth and make informed decisions. The GIS map indicates that Gottingen is one of the top markets in the North, figure 3.

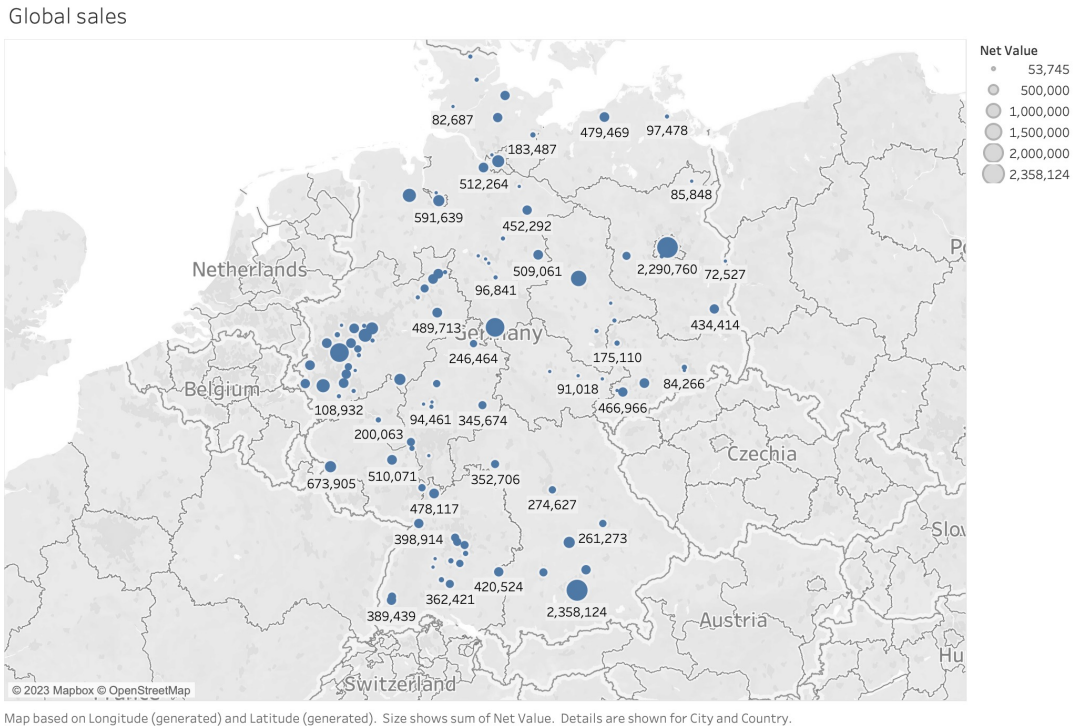
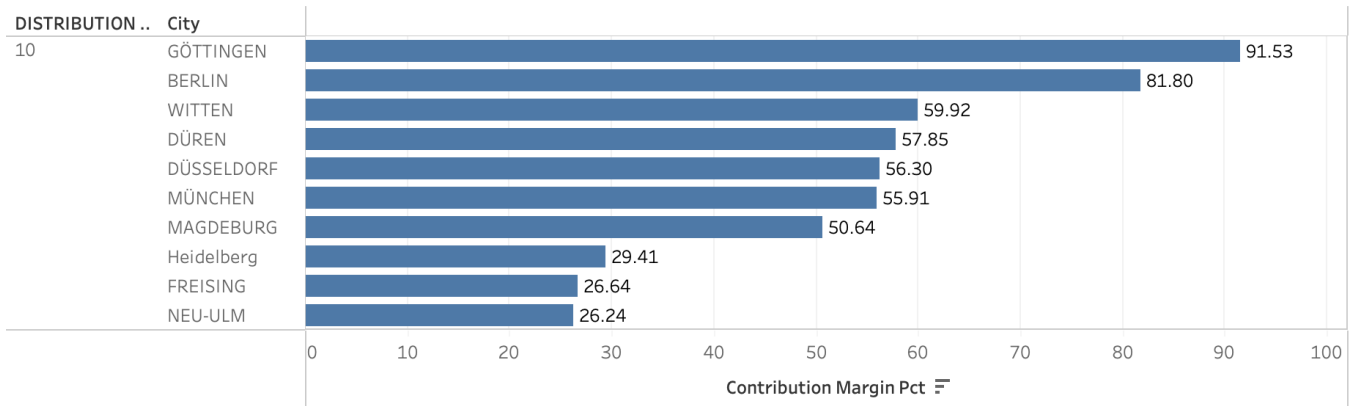


Figure 3. Global sales

The net value of €1,867,113 suggests that the sales in Gottingen were higher than expected, which could be due to the season of the sales. Within 197 records, product EE-12, 1kg Nut Muesli, had the highest quantity of sales. %75 of the sales belonged to distribution channel 10, %25 of the sales belonged to distribution channel 12, and distribution channel 14 had no share in the sales of 1 kg Nut Muesli. The details about the market in Gottingen indicates that with a contribution margin Pct of 0.644010152 distribution channel 10 had a significantly high margin of profit. Figure 4 indicates how the profit margin of distribution channel 10 in Gottingen compares to other cities.

Contribution Margin Pct



Sum of Contribution Margin Pct for each City broken down by DISTRIBUTION CHANNEL (Sales). The view is filtered on DISTRIBUTION CHANNEL (Sales), which keeps 10.

Figure 4. Distribution Channel 10 Under Review

According to Figure 4, hypermarkets had the highest contribution margins percentage in Gottingen for products of all 10 companies. The average contribution of distribution channel 10 was %53.62. Distribution channel 10 had the maximum contribution margin, %91.53 in Gottingen, and the minimum contribution margin, %26.11 in Neu-Ulm. Distribution channel 10 had the highest contribution margins percentage in Gottingen for products of all 10 companies. The high contribution margin of distribution channel 10 in Gottingen could be related to the absence of the other distribution channels. Still, the supply chain management strategies of the companies could impact the high contribution margin and profitability of the channel. For example, if distribution channel 10 could not provide any supplies for two weeks, the customers may try a new cereal, and depending on their experience with the new cereal, they may switch to the new cereal.

Furthermore, the global sales map was helpful in identifying the top-performing cities in the North, figure 3. München, Berlin, Göttingen, Dusseldorf, and Magdeburg with net-values over €1,000,000, were top markets for all products of the 10 companies that account for 22 percent of the total net -value of the sales in the North. The city's significant contribution to the total revenue of the region could be relevant to population, market size, and the strong economy of those cities compared to the other places.

The more the customers, the higher the net values. The stronger the economy, the more businesses and customers are attracted. Thus, higher net values are generated. Still, any change to the economy could affect the market could change. For example, if inflation or recession reduces the purchasing power of the customers, then the market will downsize.

The Marketing Expense Strategies

Figure 5 displays the sum of marketing expenses for each product broken down by the best and worst-performing companies. The bar chart reflects the marketing strategies of company CC and Company VV. The amount spent on marketing reflects the promotion component of marketing in a company. Promotion is related to advertising and refers to how a company promotes the products and presents information about those products to its customers. Promotion may include digital marketing like social media or commercials.

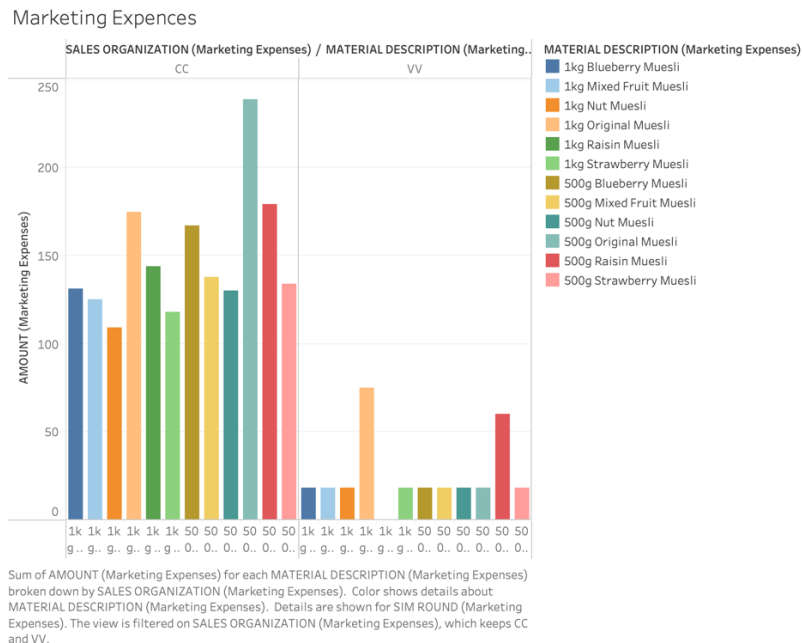


Figure5. Marketing expenses of company CC and company VV per product

Company CC advertised all 12 products, but company VV advertised 11 products and did not advertise 500gr Original Muesli. Company CC advertised seven products in sim rounds one, two, and three and five products in sim rounds two and three. Company VV spent no money on marketing in sim round three. Expenses are limited to sim-round one and two; then, they stop marketing. A comparison of the company

CC's marketing expenses per product for each sim round revealed different patterns. The company allowed more money for marketing products not advertised in sim round one compared to the products advertised in sim round one. For example, for 500gr original muesli with the highest marketing expenses in total, €253 company CC spent similar amounts per sim round. Sim Round (one) €85, Sim Round (two) €85, Sim Round (three) €83. However, for 1kg original Muesli with a total marketing expense of €173 which was advertised on sim rounds two and three company CC spent €126 for sim round two and €47 for sim round three. Adding the five products that were not advertised in sim round one could be due to lower sales than expected in sim round one. Company CC reduced the amount of marketing for all products in sim round three. Company VV spent the same amount on advertising nine products, €18. 1kg Original Muesli and 500gr Raisin Muesli are the two products that were advertised in sim rounds one and two. The amount of marketing expenses for these products was significantly increased in sim round two. Company CC's marketing expenses for the products seem to follow a sales pattern, but there seems to be no pattern in the company VV's marketing expenses.

Figure 6 provides more insights into the marketing strategies of the companies. Both companies changed their advertising patterns from Quarter to Quarter. Company CC advertised its products in more Quarters than company VV. Company CC advertised seven products in Quarter one and added five other products in Quarter two. The company continued with advertising all products in Quarter three. Company CC advertised only four products in Quarter four. Company VV advertised 11 products in Quarter one and continued to advertise two of the products in Quarter two.

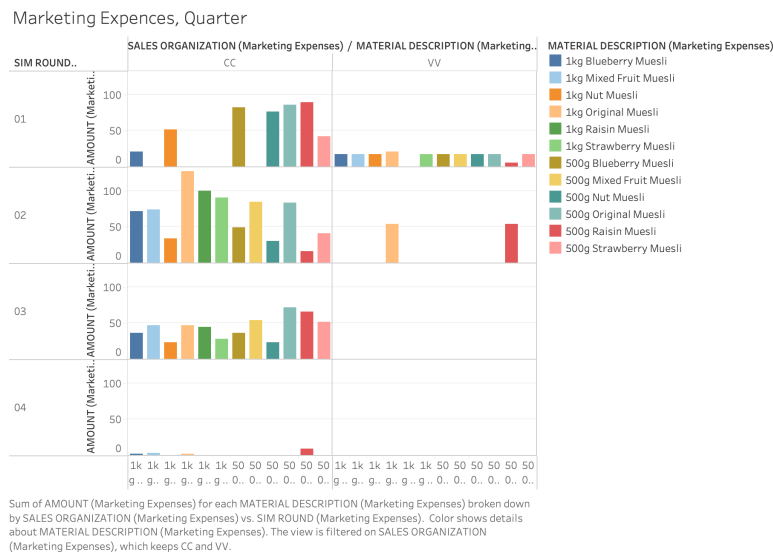


Figure6. Marketing expenses of company CC and company VV per product and quarter.

Figure 7 indicates that the marketing expenses of company VV had the same pattern in all three areas, which indicates that either the target audience of the company had a similar taste, or the company was inattentive to the diversity in audience's taste in different regions. The pattern of the marketing expenses of the company CC was not the same in all regions. For instance, 500gr Muesli was one of the top three in all three regions. But the amount spent for advertising the product in the West €110 was significantly higher than the amount spent in the North €66, and the South €63. The product was advertised in the West more than the other regions, this means that the Company was attentive to the differences in the market and the diverse customers in different areas.

Marketing Expenses/Slaes Regions



Figure7. Marketing expenses of company CC and company VV per product, quarter, and region

Pricing Strategy

Figure 8 displays the price charged for company CC and company VV's products per fiscal quarters one, two, and 3. The chart provides more detail about the pricing strategies of company CC and company VV. Company CC maintained relatively stable prices throughout all three quarters of the year without any change in prices. Company VV maintained stable prices throughout the first two quarters, but the prices almost doubled in the third quarter, which indicates that company VV may have adopted a new pricing strategy in the third quarter. The higher prices may increase the profit but could reduce sales.

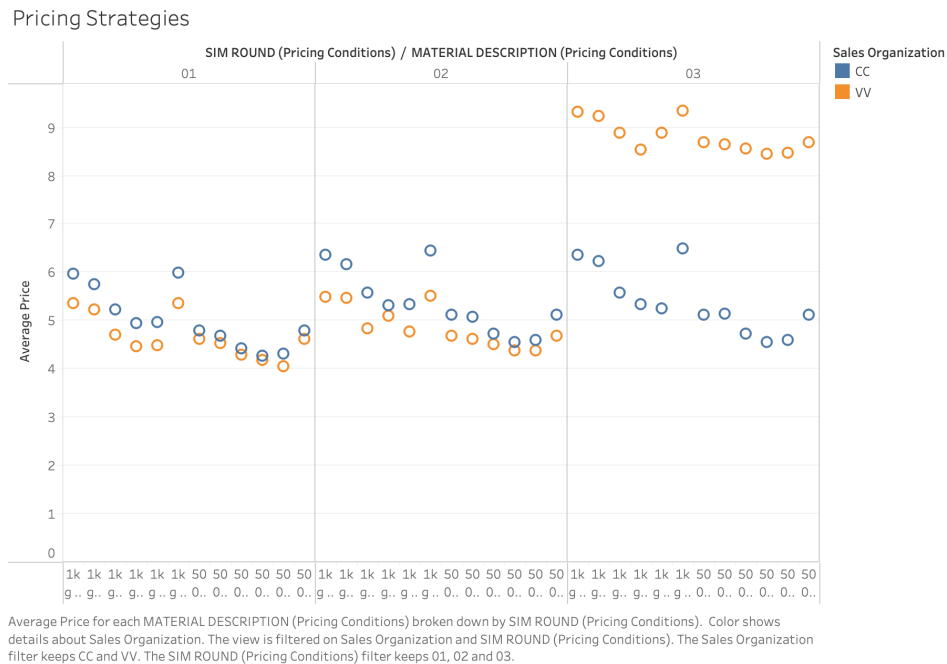


Figure 8. Average Price for Each Material

Marketing to Sales Strategy

Figure 9 indicates that despite the different average prices for each product, every company had the same sales quantity, marketing expenses, and net value for all the products. Compared with company CC, Company VV had a higher average price for all products, but lower sales quantity, marketing expenses, and net value.

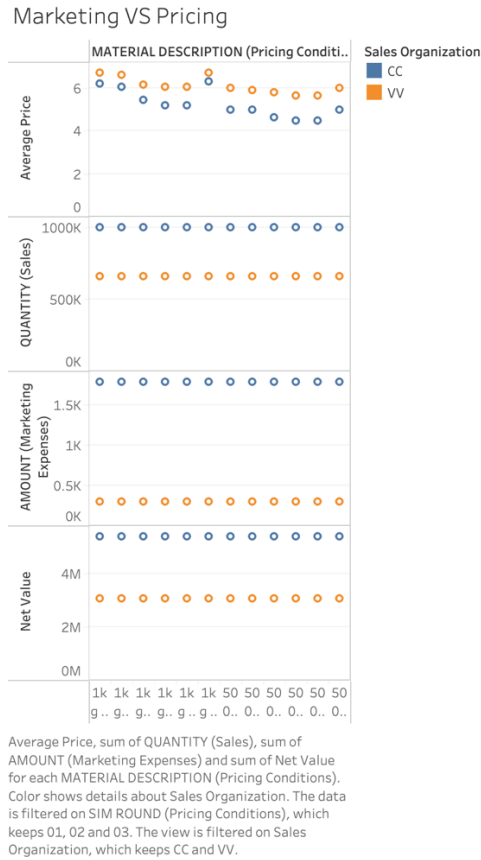


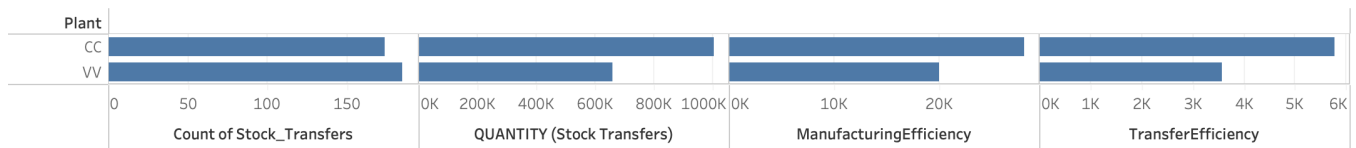
Figure 9. Comparison of Average Price, Quantity, marketing expenses and Net Value

Marketing expenses could have a positive correlation with the sales quantity, which means that increasing or decreasing the marketing expenses could affect sales quantity the same way and affect the net value. Marketing expenses could have a negative correlation with the average price, which means that increasing or decreasing the marketing expenses could affect the average price oppositely. Marketing could help the company VV reduce the average price by increasing the demand. Higher demand could result in higher sales quantity. Then, the revenue generation by higher price could be substituted with revenue generation by a high quantity of sales. The average price could have a negative correlation with sales quantity. The higher the price the lower the sales and consequently the lower the net value. The negative correlation of the average price with marketing expenses, sales quantity, and net value explains the company VV's lower marketing expenses, sales quantity, and net value despite the higher average prices.

Supply Chain Strategies

To analyze the supply chain strategies of company CC and company VV Manufacturing Efficiency and Transfer Efficiency were calculated for each company. Manufacturing efficiency signifies the number of products manufactured per order. Transfer efficiency represents the number of products transferred to the Storage Locations for each transfer, transportation costs are reduced with higher product transfers. Figure 10 indicates that company CC had a lower number of stock transfers and a higher quantity of stock transfers, which means that the stock transfers of company CC contained higher quantities than those of company VV. Company CC's manufacturing efficiency and transfer efficiency were higher than those of company VV. Company CC transferred more than 1 million products in 174 transfers, while Company VV transferred 661,000 products in 185 transfers. Company CC manufactured 28,105 products per order and Company VV manufactured 20,030 products per order. For each transfer, company CC transferred 5,777 products, and company VV transferred 3,753 products to the Storage Locations. Efficient logistics, inventory management, and use of technology may have contributed to company CC's higher transfer efficiency.

Transfer Efficiency



Count of Stock_Transfers, sum of QUANTITY (Stock Transfers), ManufacturingEfficiency and TransferEfficiency for each Plant. The view is filtered on Plant, which keeps CC and VV.

Figure 10. Supply Chain Under Review

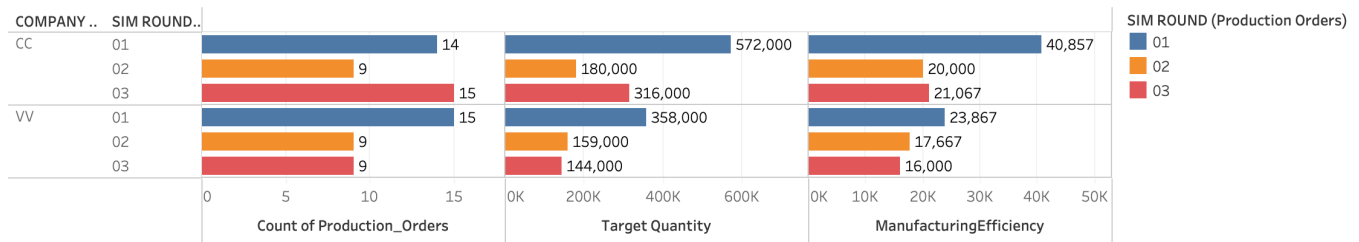
Production Strategy

A comparison of the count of production_orders, target quantity, and manufacturing efficiency of company CC and company VV explained the production strategies of the two companies, figure 11. The output of the sum of the target quantity divided by the count of production_orders is a number for manufacturing efficiency.

The numerical values representing the company CC's manufacturing efficiency were greater than the efficiency of company VV for every sim round. Accordingly, Company CC had more effective production strategies than company VV. Company CC received 14 orders for the target quantity of 572,000

products in sim round one and manufactured 40,857 products per order. Meanwhile, company VV received 15 orders a target quantity of 338,000 products, and manufactured 23,867 products per order. Though, the manufacturing efficiency of both companies decreased in sim rounds two and three. Each manufacturing facility can produce 24,000 boxes of cereal per day. However, when switching manufacturing from one product to the next different product, there would be 8 hours of downtime. This may explain the decline in the manufacturing efficiency of the two companies. Company CC and company VV may have switched manufacturing to different products and experienced eight hours of downtime which decreased productivity.

Manufacturing Efficiency



Count of Production_Orders, sum of Target Quantity and ManufacturingEfficiency for each SIM ROUND (Production Orders) broken down by COMPANY CODE (Financial Postings). Color shows details about SIM ROUND (Production Orders). The view is filtered on COMPANY CODE (Financial Postings), which keeps CC and VV.

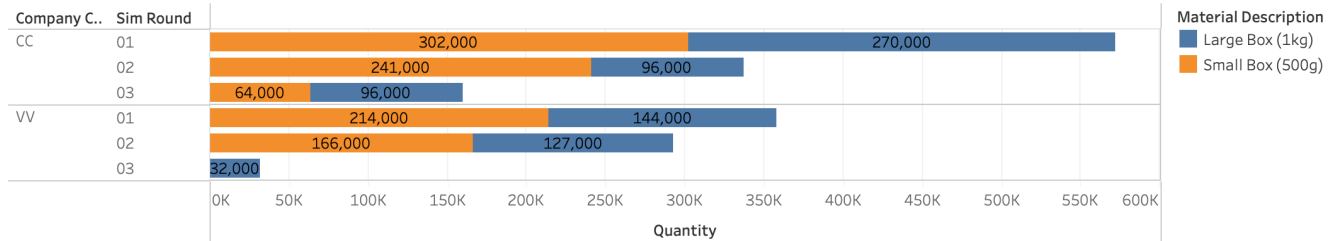
Figure 1: Manufacturing Efficiency (higher is better)

Procurement Strategy

Company CC ordered 572,00 boxes in sim round one, 337,000 boxes in sim round two, and 160,000 boxes in sim round three. Company VV ordered 358,00 boxes in sim round one, 293,000 boxes in sim round two, and 32,000 boxes in sim round three. Both companies reduced the quantity of the orders in sim rounds two and three. Company CC ordered more small boxes than the large box in sim rounds one and two. However, in sim round three the company ordered fewer small boxes than large boxes. Company VV also ordered more small boxes than the large box in sim rounds one and two. Company VV's order in sim round three excluded small boxes. The larger quantities of company CC's orders for boxes implies compared to company VV, company CC sells more products. The changes in the company's purchase pattern could be related to a decrease in small box cereals demand in sim round three and the production reduction. Another reason for purchasing less or no small boxes in sim round three could be the

excessive purchase of the small boxes in sim rounds one and two, which implies an inefficient resource management of the company.

Order Per Fiscal Quarter



Sum of Quantity for each Sim Round broken down by Company Code. Color shows details about Material Description. The view is filtered on Material Description and Company Code. The Material Description filter keeps Large Box (1kg) and Small Box (500g). The Company Code filter keeps CC and VV.

Figure 2: Amount of Small and Large orders per Fiscal Quarter (Sim Round)

Sales Per Distributions channel

Figure 13 displays sales per distribution channel per sim round for company CC and company VV. Distribution channels DC10, DC12, and DC14 respectively signify the Hypermarkets, Grocery Chains, and Independent Groceries. According to Figure 13, the maximum sale quantity per distribution channel and sim round belongs to the Grocery Chains in sim round two for company CC's products. Company CC's highest sales in Independent Groceries was in sim round one. The largest sales of company CC in Hypermarkets were also in sim round two; however, the sales quantity of 68,860 is significantly smaller than the Grocery chains' sales quantity of 265,431. The minimum sales quantity per distribution channel and sim round belongs to independent groceries in sim round three for company VV's products.

Sales Per Distribution Channel Sim Round

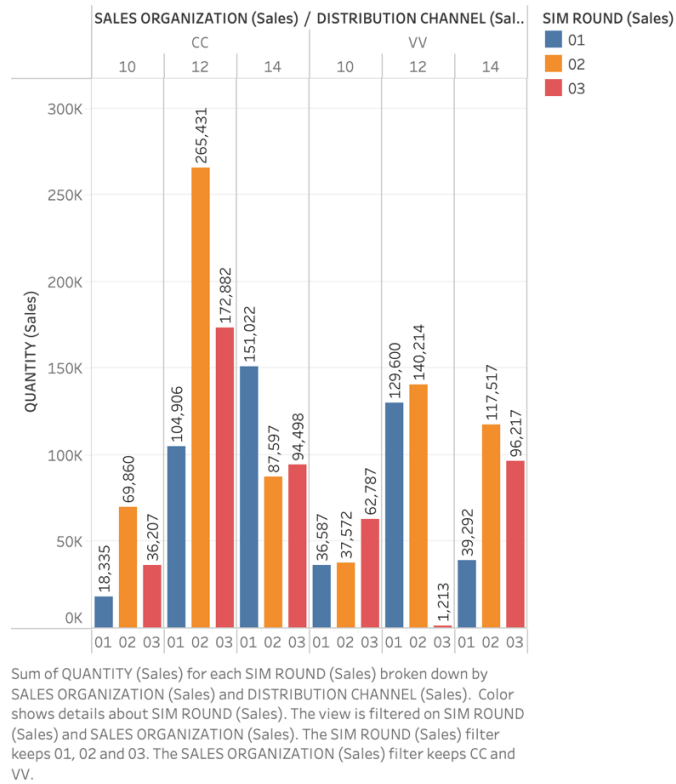


Figure 3: Sales Per Distribution Channels Broken Down by Fiscal Quarter (Sim Round)

Total Sales Per Distribution Channel

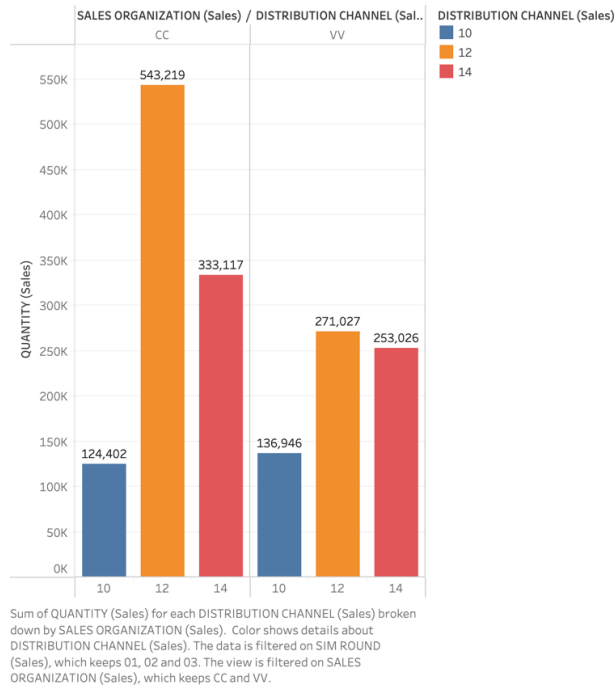


Figure 4: Total Sales per Distribution channels

The contribution of the distribution channels to the company CC and company VV's sales were similar. Grocery Chains recording 543,219 sales for company CC and 271,027 sales for company VV were the main distribution channels for the products of the worst and best-performing companies. Independent Groceries recorded 333,117 sales for company CC and 253,026 were the second distribution channel. Hypermarkets with 124,402 sales for company CC and 136,946 sales for company VV were the only distribution channels that sold more quantities of the products of company VV than products of company CC.

ANALYST RECOMMENDATIONS

Marketing and production: It is recommended to company VV increase the marketing and production improvement spending. Advertising will make the customers aware of company VV's products and will increase the demand which could increase the profitability through effective operational strategies. The higher demand requires production improvement. Production Improvement will increase efficiency and help the company to accommodate the higher demand by refining manufacturing and production quality. The production improvement could increase profits by contributing to cost reduction and faster production. Furthermore, better quality and products will increase customer satisfaction, improve the relationship with stakeholders, improves reliability, and boosts the reputation. Production improvement will result in the company's financial and performance excellence.

Production Strategies: A high Manufacturing efficiency represents an efficient production process, and a low manufacturing efficiency denotes a problem in the production process. Low production efficiency could affect the supply chain and may increase costs. Production strategy analyses indicated that the manufacturing efficiency of company CC and company VV decreased in sim rounds two and three. This was due to manufacturing from one product to the next different product, which resulted in 8 hours of downtime. To optimize the production process, it is recommended that companies control the frequency of switching from one product to another.

Logistic: Company VV should employ quality management processes to eliminate waste and improve the supply chain. Through the Six Sigma method, the company will define short-term and long-term goals, measure the performance of the current unaltered processes, analyze why the defects exist, improve the

process by addressing and eliminating the causes, and control the updated processes by adjusting accordingly for future performance.

Pricing: The pricing analysis indicated that company CC maintained relatively stable prices throughout all three quarters of the year, with almost no changes in prices. Company VV maintained stable prices throughout the first two quarters, but the prices almost doubled in the third quarter which indicates that company VV may have adopted a new pricing strategy in the third quarter. The higher prices may increase the profit but could reduce sales. Furthermore, long-term stable prices could increase customer satisfaction and make loyal customers. Company VV's sudden increase in cost could be due to changes in raw material cost or transfer cost. It is recommended that company VV increases the root cause for a sudden price increase, otherwise, the price increase may continue.

Procurement: Procurement strategy analysis indicated that company CC ordered fewer small boxes in sim round three and company VV excluded the small boxes in their order. The change in the company's purchase pattern could be related to a decrease in small box cereals demand in sim round three and the production reduction. Another reason for purchasing less or no small boxes in sim round three could be the excessive purchase of the small boxes in sim rounds one and two. It is recommended that the companies recognize and define their needs first; then, research the solutions and suppliers, evaluate the services and the supplier, and then make plans accordingly.

ANALYSIS CONCLUSION

The comparison of the Income Statements of all companies revealed that company codes CC and VV were respectively the best and worst-performing companies. Company CC was the most profitable with €2,072,048 profit and company VV was the least profitable with a profit of €375,222 euros. The higher liabilities of company CC €7,551,719 mark the financial stability of the company, company CC is ready to grow and expand its market share. The lower liabilities of the company VV €8,073,521 denotes the company VV's more reliance on debts.

The comparative analysis of the operational strategies of company CC and company VV indicated that in many aspects company CC has adopted more effective strategies. Company CC's manufacturing efficiency was higher than those of the company. Company CC was able to produce more products per order.

Company CC and company VV's marketing strategies were meaningful predictors of their revenue generation the marketing strategies of the companies. Both companies change their advertising patterns changed from Quarter to Quarter. Company CC advertised its products over more quarters than company VV. Company CC advertised seven products in Quarter one and adds five other products in Quarter two. The company continues with advertising all products in Quarter three and four products in Quarter four. Company VV ad advertised 11 products in Quarter one and advertised only two products in Quarter two. Company CC and company VV adopted different advertising strategies. Company CC's pattern of marketing expenses per product indicates a long-term plan that follows the sales patterns for each product. Company VV has ineffective marketing strategies which is reflected in the inconsistent low spending of the company on marketing. Marketing expenses could have a positive correlation with the sales quantity, which means that increasing or decreasing the marketing expenses could affect sales quantity the same way and affect the net value.

Marketing expenses could have a negative correlation with the average price, which means that increasing or decreasing the marketing expenses could affect the average price in the opposite way. Marketing could help the company VV reduce the average price by increasing the demand. Higher demand could result in higher sales quantity. Then, the revenue generation by higher price could be substituted with revenue generation by a high quantity of sales. The average price could have a negative correlation with sales quantity. The higher the price the lower the sales and consequently the lower the

net value. The negative correlation of the average price with marketing expenses, sales quantity, and net value explains the company VV's lower marketing expenses, sales quantity, and net value despite the higher average prices. Thus, company VV should reconsider its pricing strategies. Increasing the marketing expenses of the company could be a more effective strategy to increase the revenue and profit than increasing the prices.