

A Work Project, presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics.

BUSINESS IN PRACTICE:
A RETROSPECTIVE ANALYSIS OF RELYON THROUGH THE OPERATION
DIRECTOR'S EYES

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Abstract

In the “Business in Practice” simulation, my group and I managed a fictitious car manufacturing company called “RelyOn”. In this work project, I will analyse my behaviour during the team decision process, and I will determine improvements that I can develop in my future career.

Furthermore, I will perform an in-depth analysis of RelyOn, reviewing the decisions made by the Operations, Marketing and Finance departments.

The main objective of this academic work is to underline the interdependences across different business functions.

Keywords

Business Simulation, Business in Practice, Automotive Industry, Reflective Practice, Team Dynamics, Firm Analysis, Interdependences Across Business Functions.

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1. PERSONAL REFLECTION

1.1 Introduction

Through reflections on two critical incidents, this section will describe and analyse my behaviour during the 3 weeks of intense program of “Business in Practice”. The personal reflections will help me to determine my strengths and weaknesses and find areas of my personality where I can improve in my professional future career. Smith and Martin (2014) demonstrated “that being professional is strongly associated with skills of reflection and lifelong learning”.

To carry out this personal reflection, the feedback from my group members and the “Leadership in Practice” session helped me to develop a critical thinking about my actions during the program. “Whilst reflective practice can be a solitary pastime, peers have a definite role to play in helping and supporting others” (Helyer, 2015).

For each critical incident, the event and the circumstances that prompted me to act in a certain way will be described in the first part. This section will be important to define the general context. In the second part, my behaviour will be critically analysed, using academic articles and research studies with the aim of determining why I acted in a certain way and what effect it had on my team. Finally, I will put forward some actionable changes, through the combination of theory and practice, that I will adopt in my future career.

1.2 First Critical Incident: my Behaviour During Discussions in the Team

1.2.1 Description of the First Critical Incident

During the first week of the program, my team and I had numerous meetings to define the future strategy we wanted to adopt during the simulation. We all agreed on the importance of defining a long-term strategy from the beginning that would allow us to make short-term operational decisions that were both consistent and efficient. In one of the last meetings, another member of team and I got into a rather significant disagreement regarding which strategy to undertake. Both strategies were valid, but instead of creating a constructive debate in the team in order to find the best strategy for our company, my colleague and I got into a heated conflict with the aim of changing the others person's mind regarding the matter. I define myself as a very competitive and ambitious person, and in that moment I was convinced that the only way to win the simulation was to follow my strategy. Due to my stubbornness, I did not consider other solutions.

As a result, we lost a great amount of time discussing things in an unproductive manner, and not letting other members of the group to talk or expressing their opinions. To end the debated, the team decided to vote on which strategy to adopt.

1.2.2 Analysis: Conflict Management and Cultural Differences in the Team

First of all, I would like to underline the fact that conflict is not always associated to a negative outcome. In fact, "conflict is central to team effectiveness because conflict is a natural part of the process that makes team so effective. Less effective team avoid conflict altogether or allow it to produce negative consequences that hamper their effectiveness" (Amason, 1995). According to Esquivel and Kleiner (1996) "A positive outcome to a work team conflict depends on the type of differences that led to the disagreement. These differences dictate the type of conflict, C-type or A-type, which will ultimately impact the work team's decision-making

ability. While C-type conflict fosters creativity, open and honest communication combined with the utilization of members' skills and abilities, A-types conflict does the opposite. A-type conflict decreases the effectiveness of the group by allowing personal feelings or someone's own agenda to deter the members from the team's objectives".

The conflict described above is a clear example of an A-type conflict where my ideas and beliefs were affecting the efficiency of my group. The creativity of my team members was limited, and this created a loss of commitment to team's decision-making process. We therefore lacked an environment with open and honest communication.

During the team dynamics clinic, through feedback received from my colleagues, I realized that my very direct and passionate behaviour during discussions led, in the long run, to inefficiencies of the group. In fact, due to my behaviour and tendency to always wanting to take the floor, I often did not allow to others the opportunity to share their ideas and proposals, as they were not comfortable speaking up, due to their personal or cultural reasons.

In fact, to my surprise, this element was extremely present in my "Peer Evaluation", as the grades regarding my "Interaction with Teammates" were extremely varied. I instead believed I had the same interaction with everyone. During a team meeting, it turned out that, while for some colleagues my strong public disagreement was an indication of great commitment to the project and interest in improving performance, for others my behaviour made them uncomfortable and created more distance for communication.

According to Togel and Barsoux (2016), "members from cultural that place a high value on "face" and group harmony may be averse to confrontation because they assume it will descend into conflict and upsets dynamics. In other cultures, having a "good fight" is actually a sign of trust."

This difference of cultures surprised me as, I was not aware that there could be such a marked cultural difference in the management of discussions and conflicts. This episode challenged some of my behaviours up to that point. In the next section, I will talk about some of the adjustments my group and I made in the team dynamics during the second half of the simulation and some future improvements I will make in my career.

1.2.3 Learnings and Future Improvements

After becoming aware of some of my weaknesses, during the second half of the simulation, I tried to change my attitude during team discussions. I therefore opted to be more open to confrontation and tried to involve all the group. When I disagreed with a particular decision, I always asserted my opinion, but I tried not to be intrusive towards my colleagues by not always speaking first and in turn, often asking them for their opinions.

Furthermore, in order to improve the efficiency of decision-making as a team during the simulation and to allow everyone to express their opinion, we decided to set up 5-minute slots per department to give an overview of each division and to make suggestions in order to improve performance. From the beginning, with this new structure, the improvement in communication was tangible. It was possible to have a clear overview of the situation so that decisions could be made in an informed manner. The limited time to speak and the need to follow an order allowed more impulsive people, such as myself, to take more time to think and present my point of view in a schematic way, while for the more introverted people in my group, it gave them the opportunity to present their idea in the given time without needing to raise their voice to assert their idea.

In addition, my team and I realized that even the structure of the meeting table could help to reduce potential conflict. In fact, we used to be seated around a rectangular table, in which we were arranged along the two opposite sides. We realised this created distance between us.

Furthermore, it was not possible to look at what the people on the other side of the table were working on.

According to Amason (1995), “It is essential to provide the appropriate environment to increase the team’s performance and reduce A-type conflicts”. We decided to change the shape of our meeting table to a round table that helped to neutralize status or power and facilitate communication.

A further improvement regarding the structure of the meetings, could be giving more attention to the seating location. Moreover, the seating allocation might be done in advance to avoid appearances of coalitions. “Having team seated in a neutral order that keeps members from the same department separate may foster the development of networks and friendship within the total team” (Esquivel and Kleiner, 1996).

Lastly, I will use the “5 Conversations” methodology to prevent conflict if I ever have to manage a team in the future. In fact, “disparate opinions are not the root of the problem. Most destructive conflict stems from something deeper: a perceived incompatibility in the way various team members operate due to different: personality, industry, race, gender, and age” (Toegel and Barsoux, 2016)

In order to prevent conflicts, Toegel and Barsoux developed a methodology that focuses on five areas: how people look, act, speak, think, and feel. The objective of this procedure is to facilitate a series of 30 minutes conversations among team members, where everyone can describe their preferences and expectation in each area in order to recognise possible areas of disagreement in advance.

Five Conversations	Justifications	Possible Questions for the Discussion
Look: Spotting Differences	Colleagues routinely make fast judgments. The goal is to help team member reflect on how they intend to come across to others.	<ul style="list-style-type: none"> - What makes a good first impression? - What do you notice first about others?
Act: Misjudging Behaviour	Clashing behavioural norms are common sources of disagreement.	<ul style="list-style-type: none"> - How important is punctuality? - What is a comfortable physical distance?
Speak: Division by Language	Communication styles have many dimensions and the possibilities for misunderstanding are endless.	<ul style="list-style-type: none"> - Which is most important: directness or harmony? - Do interruptions signal interest or rudeness?
Think: Occupying Different Mindset	The various personalities and experiences make team members alert to varying signals and cause them to take different approaches to problem solving and decision-making.	<ul style="list-style-type: none"> - What is the attitude towards failure? - Is uncertainty viewed as a threat or an opportunity?
Feel: Charting Emotions	Team members may differ widely in the intensity of their feelings.	<ul style="list-style-type: none"> - What emotions are acceptable and unacceptable to display in a business context?

Table 1: "Five Conversations" to Pre-empt Team Conflict (Toegel and Barsoux, 2016).

1.3 Second Critical Incident: My Reaction to a Failure

1.3.1 Description of the Second Critical Incident

During the beginning of the second week, my group and I had a role play regarding client acquisition. The professor Helga Stewart had a lesson about sales theories, teaching us few frameworks and techniques useful to best approach a meeting with a potential client.

The next day, we had a fictitious meeting with the professor, putting into practice the knowledge acquired to attract a new client. Since the time to prepare this meeting was really limited, two members and I offered to prepare all the materials for this meeting in few hours.

Unfortunately, during the role play, my colleagues and I clearly underperformed, failing to meet all the professor's requirements. Furthermore, the part I had prepared the previous day, was

criticized by the professor. I immediately felt inadequate and, in part, guilty, as I felt responsible for my group's underperformance during this exercise, despite all the hard work and effort.

The professor gave my team the opportunity to work again on the role play by giving us two additional hours to improve our performance.

During the following meeting with the team, I behaved in a closed off manner and I was very reactive, trying to defend myself from criticism. I was not ready to openly accept the feedback received from my group because I felt judged and attacked, when I had only done my best.

1.3.2 Analysis: The Importance of Accepting Feedback

I decided to include this specific incident in my analysis because it is a clear example of how I react to a failure, and how I deal with criticism. I like to define myself as a very proud and confident person, and elements such as vulnerability and failure are issues that I often struggle to accept.

Usually, when I'm underperforming in the work environment, I have the instinct to defend myself from criticism, trying to emphasise my commitment and I often avoid blame and try to make others responsible. This behaviour stems from my conviction that in the work environment, leaders must not show themselves to be vulnerable or open to failure because they may risk losing recognition from their colleagues. I adopted this behaviour, even in the group where maybe I should not have, as it was a team where leadership was shared among all members.

During the 3 weeks simulation, I realized that my attitude towards failure had several negative impacts on my interaction with other group members.

Firstly, rejecting failure and criticism leads to lack of self-reflection and self-reformation but it also means there an increased probability of repeating the same mistake. Constructive criticism

and feedback from my colleagues, could actually help me to have alter my self-perspective but also alter the way I face problems and adversities. As Argyris (1990) states “being able to accept and show vulnerability can be seen as a sign of strength and it signals one’s genuine desire to reflect on, inquire into and advocate for one’s own position”.

I had the opportunity to appreciate the importance of criticism for my personal development during the “Team Dynamics Clinics”, where I first became aware that my attitude during the team discussions was actually reducing my team’s efficiency (See Paragraph 1.2).

Secondly, openly accepting criticism can also help to create a positive culture within the team. As Edmondson (2004) states, “leaders who explicitly demonstrate their own vulnerability by admitting mistakes, inviting questions and feedback, reduce defensiveness among colleagues. Leader’s disclosure of their own vulnerability engenders the development of more trusting relationships”. The creation of a group climate in which criticism and advice are openly accepted leads to greater group efficiency and the creation of a competitive advantage. In fact, when team members are more willing to openly share their own thoughts and provide more accurate, relevant, and complete information about concerns and areas of improvements, the team’s productivity increases significantly.

This critical incident also gives me the opportunity to reflect on the importance of having an effective communication in a team. In the example presented, some of the criticism I received concerning my work was structured in a negative manner, only focusing on how I had failed to achieve rather than also including what I did to help my team to succeed.

This type of approach to criticism led me to feel personally attacked by my colleagues and, consequently, led to my reduced participation in the group discussion. “Feedback is not effective regardless of the content and manner in which it is given and regardless of the

receiver's sensitivity to the information. Support mechanisms are needed to ensure that feedback is understood and used to set goals for improvement" (London, 1997).

In the next section, I will present some frameworks that will enable me in the future to constructively accept criticism and learn how to give feedback effectively.

1.3.3 Learnings and future improvements

Nowadays, standards of performance are increasing in numerous firms, and higher quality work is expected from employees. In order to reinforce effective behaviours and reduce ineffective actions, receiving meaningful feedback is essential. For my future personal growth, it will be important to change my attitude towards feedback. Rather than viewing it negatively, I will actively try to seek out feedback, with the aim of improving my future performance. To help me in the process of accepting criticism, I have prepared a table presenting the logical steps I plan to take.

Receiving Feedback	Justification
1. Recognize good intentions	-Assume that the feedback is constructive until proven otherwise. -The feedback process can be emotionally challenging. It will be important to control my emotions and think about it as an opportunity for my personal growth.
2. Be aware of my responses	-Try to avoid putting up barriers. "A discouraging body language and tone of voice can be seen as a negative message by the colleagues" (Whetten, 1995)
3. Understand the Message and Be Open	-Effective listening is a very powerful skill that allows a clear understanding of the issue. -Pause and think before responding. -Focus on understanding the feedback first, and not immediately adopting a defensive attitude. -Ask for clarification and examples if statements are general or unclear.
4. Reflect and Follow up	-It is important to value the feedback, process it and then decide whether or not to develop an action plan to tackle the issue.

5. Be Proactive	- “Asking for feedback regularly can help open lines of communication between colleagues” (Ashford, 2017). In the long run, my colleagues will become more comfortable giving me honest feedback.
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Table 2: Receiving Feedback from Team Members.

On the other hand, “It is essential to structure the criticism so that it can be received positively by the recipient. Most managers recognize that giving feedback is an important part of their role, and which are not only provided to subordinates but are also requested by superiors” (Baron, 1988). In order for feedback to be more positively accepted, it should also be structured in a certain manner. Below, a table is presented with some examples.

Giving effective feedback	Justifications
1. Prepare and prioritize my ideas	<ul style="list-style-type: none"> - It is important to prepare in advance, to structure the discourse to motivate and show areas of improvement. - Too much feedback provided at a single time can be overwhelming to the recipient. - The feedback should be aligned with organizational values and not on personal leadership beliefs or preferences.
2. Private environment	<ul style="list-style-type: none"> - It is important to establish a safe place to talk where I will not be interrupted or overheard. - “While public recognition is appreciated, public criticism should be avoided”. (Hardavella, 2017)
3. Concentrate on behaviour, not on the person	<ul style="list-style-type: none"> - Focusing on behaviour implies that it is something related to a specific situation that might be changed. - A specific behaviour can be changed, rather than the personality.
4. Be specific and realistic	<ul style="list-style-type: none"> - Avoid general comments that may be too vague and therefore, of not much use to the receiver - Include specific examples.
5. Be timely	- “Delayed feedback can also cause feelings of guilt and resentment in the receiver if the opportunity for improvement has passed” (Hardavella, 2017).
6. Offer continuing support	- I believe it to be of vital importance to create an environment in which performance is continuously reviewed and the appropriate recognition is given when improvements are observed.

Table 3: How to Give Effective Feedback to Team Members.

2. FIRM ANALYSIS

2.1 Introduction

In this section, I will perform an in-depth analysis of the RelyOn company, and I will review the decisions made by the team during the simulation. The RelyOn company as a whole will be briefly presented below, while in paragraphs 2.3, 2.4, 2.5, I will analyse the operations, marketing, and finance departments, respectively. To support my analysis, I will use relevant frameworks, data from the simulation, and interesting comparisons with real automotive companies. In conclusion, I will present a general overview of the company, emphasising the interdependencies of each department and my personal learning experience.

2.2 Company Overview

RelyOn is a car manufacturing company, committed to producing high end cars with a high level of technology and a great attention to sustainability. In the last 6 years, RelyOn experienced an important turnaround, from a company focused on producing cars with traditional internal combustion engines to producing high innovative electric powered vehicles.

In RelyOn, the attention to innovation and sustainability is central. The company is committed to building electric vehicles that customers can “rely on”, both in terms of security and performance.

The focus on environmental and social protection issues stem from the desire to achieve economic growth that is truly sustainable. In addition, as research by A. Yoon has demonstrated, “when companies focus their sustainability efforts primarily on material social and environmental factors, they significantly outperform the market” (Porter al, 2019). The company is committed to reach certain Sustainable Development Goals (SDG) such as Gender Equality, Decent work and Economic growth, Reduce inequalities and Responsible consumption and production.

2.3 Operation Review

The operation department was critical in developing and improving the organisation. The operation director focused on achieving the highest level of efficiency in the production process, converting raw materials and resources into goods to maximize profit.

In accordance with RelyOn’s strategy, the operations department focused on producing high end, technologically advanced cars that fully satisfied demand. The strategy of the operations department was to produce fewer vehicles than competitors, using a limited number of factories, but with efficient utilisation of resources and management of inventories to maximise the contribution margin of each vehicle (Appendix 1).

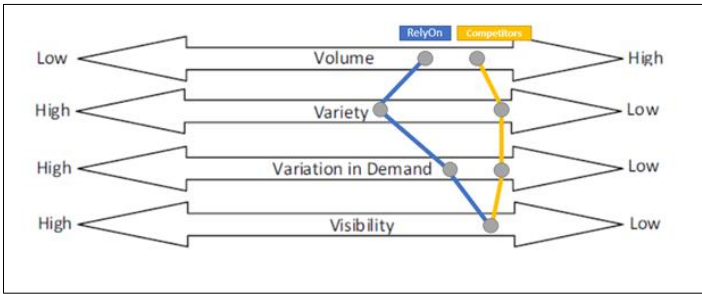


Figure 1: The 4Vs of Operations, Comparison between RelyOn and Competitors

To optimize the sales of each car, the production lines were built based on the target and type of vehicles. In China and Europe, we decided to build multiple product lines (five factories per geographical area) as they were the target market for various products and exports there were favoured over imports due to the higher import tax. In the US, two production lines were built to support the production of luxury and SUV cars (Appendix 2).

During the simulation, the operation director constantly monitored the days of inventory (DOI), a financial ratio that indicates the average period in days that a firm takes to turn its inventory into sales. The targeted values were between 31 and 60 DOI for each product. The days of inventory ratio was particularly important because a value lower than 31 DOI meant that the production could not fully satisfy demand. This situation would lead to opportunity loss in sales,

a reduction in customer satisfaction and, in the long run, a reduction in brand loyalty. On the contrary, a high level of inventories led to reduction in production efficiency and in the contribution margin of each car. If the level of inventory is higher than 120 days, the factory utilization decreases sharply because the warehouse is full of stocks and the production is reduced accordingly. In addition, having numerous stocks can lead to a higher risk of inventory, as stocks may become obsolete, and higher maintenance costs can be incurred.

To evaluate the effectiveness of the operation function, the operations performance was measured through five aspects: quality, speed, dependability, flexibility, and cost advantage (Appendix 3).

Objectives	Challenges	Justification
Quality	- All RelyOn models on the market have a higher level of technology than competitors.	- Prevision of error-free products that fulfil customer requirements. - RelyOn used skilled workforce, with adequate job satisfaction to produce technologically advanced cars.
Speed	- It was challenging to forecast future demand and change the level of production accordingly in order to minimize the inventories.	- RelyOn implemented the “Material Requirements Planning” (MRP), an inventory management based on sales-forecast. - The MRP method helped to efficiently plan next investments, but it is highly dependent on the veracity of the predictions made.
Dependability	- MRP poses difficulty in providing on-time delivery of vehicles to meet customer demand.	- In some quarters, due to errors in forecasts, insufficient supply led to opportunity loss in sales.
Flexibility	- MRP approach requires forecasting of demand to plan the production, however this method impacts the flexibility of the production (Aggarwal, 1985).	- Each factory could only produce a fixed number of 15,000 cars per quarter at full capacity, while demand was variable and influenced by numerous factors. - At least 3 quarters are needed to introduce a new model of car. - Impossibility to make investments in more versatile equipment to improve flexibility.
Cost Advantage	- The focus on high quality led to higher cost in the production.	- Technologically advanced cars require a higher production cost per units.

<ul style="list-style-type: none"> - High variety of models led to difficulties in achieving economies of scale. 	<ul style="list-style-type: none"> - In 2023 and 2024, the low factory utilization, due to high level of inventories, led to an increase of cost per units.
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Table 4: Operations Performance Objectives

As described in the table, one of the main problems faced by the operation department was the inflexibility in car production, which led to excessive inventories in case of reduced demand. To limit reductions in the manufacturing process, the production level of each model was set according to the forecasts made by the marketing department (MRP approach). However, between Q18 and Q24, due to an overestimation of market demand for two car models, Alaskan-E (SUV) and Oyashio-E (Luxury), the average DOI reached the maximum of 113 days and the average factory utilization dropped to 55%. To counteract the significant reduction of contribution margins for each car model, the operations department rotated production of certain models in the factories. On the other hand, the marketing department launched a new car model in Q21, the “Falkland-E II”, to better meet customers preferences and implemented price reductions to stimulate sales. Thanks to this strategy, it was possible to keep the number of inventories down and continue full production from Q23 (Appendix 4).

In the future, it will be important to change the manufacturing operations from a traditional approach to a lean production, used for the first time by Toyota in 1950. “The main goal of a lean manufacturing system is to manufacture products of higher quality at the lowest possible cost and in the least time possible by eliminating waste” (Dennis, 2007). The lean system is represented by two pillars: the first is “*jidoka*”, an automated production process with human supervision, to prevent the production of defective products and eliminate overproduction and the second is “*just in time*”, an inventory system to increase efficiency and decrease waste by receiving goods only at the time they are needed in production process.

In conclusion, “the operation function was central to build the sustainable value chain from suppliers and manufacturing processes to distribution channels” (Nidumolu, 2009).

As stated before, RelyOn gave central attention towards the sustainability issues. Considering the Sustainable Development Goals, the operations department was committed to the realisation of the SDG 12 “Responsible Consumption and Production”, with a specific target on: “12.2 Sustainable management and use on natural resources” and “12.5 Reduce waste generation”.

To achieve these objectives, it was decided to invest in projects to reduce Scope 1 emissions during the first two years, as these are directly attributable to the company and are more easily quantifiable. Between Q5 and Q12, it was possible to sharply reduce CO₂ emissions in production by 79%. Subsequently, from Q10 to Q15, investments were made to reduce Scope 2 and 3 indirect emissions, from the generation of purchased energy and from the value chain of the company respectively (upstream and downstream emissions). In both cases, it was possible to reduce CO₂ emissions to zero (Appendix 5). According to the World Resources Institute (2011), “the attention toward GHG reduction is significant to businesses. It can pose the risk of regulatory, emission-related cost, and reputation if a company falls to achieve. At the same time, it is also the opportunity for efficiency, cost-saving, and competitive advantages if a firm can meet the requirements”.

2.4 Marketing Review

The marketing department was central in adjusting the marketing budget for each vehicle line, defining the marketing mix (4 Ps), and reviewing marketing research to analyse customer preferences and relevant trends in the automotive industry. In accordance with the RelyOn strategy, the marketing department focused on advertising and selling high quality cars, with particular attention given to innovation and sustainability.

The marketing strategy was characterised by higher vehicle prices and marketing expenditure compared to the competitors and selling cars with a high level of technology and a strong focus on customer satisfaction (from Q14 onwards the customer satisfaction remained stable at 100%).

During Q5, as the first step was to prepare an efficient marketing strategy, the marketing department carried out a situation and opportunity analysis regarding: context, customers, company, competition, and collaborators. This step was crucial for the in-depth analysis of the characteristics inside and outside the company, in order to find areas of improvement and new opportunities that could arise in the industry. From the situation analysis in which a SWOT and PESTEL analysis were performed, it turned out that there was a great opportunity in the Electric Vehicles (EV) market as consumers were becoming more environmentally conscious and governments were progressively introducing more CO2 penalties (Appendix 6 and 7).

Subsequently, the Segmentation Targeting Position (STP) process was carried out. “A central aspects of marketing strategy involve the tasks of identifying and choosing who the desired customers are and how to get these customers to purchase the firm’s offerings” (Webster, 2005). Although in the simulation it was not possible to analyse in detail the different tastes of customers, the ideal RelyOn’s targeted customer is a person who is passionate about driving and interested in protecting the environment (Psychographics characteristics).

The new RelyOn’s positioning statement was: “For upscale customer who want climate-aware automobiles (*Target market*), RelyOn is the most innovative and sustainable oriented car manufacturer (*Competitive set*) that offers a superior driving experience (*Value proposition focused on Benefits*) because it produces electric vehicles with the most advanced technological features on the market (*Reason to believe*)” (Appendix 8).

Finally, the marketing mix was prepared considering the 4Ps: product, price, promotion, and place. “The marketing mix can be defined as a combination of all the factors which managers may leverage to satisfy market needs” (McCharty, 1964).

Product. In the current product portfolio, RelyOn has 7 car models, in 6 different categories. In order to maintain the correct balance between market coverage and product cannibalization, caused by the overlap of products, a critical decision was made by the marketing and innovation department to initially only launch one model per product line.

In Q22, a product line expansion of the “Electric Micro-Car” was executed with the aim to increase the product mix depth. Although the initial “Falkland-E” model had few innovative features, the sales were still excellent, around 36.000 units per quarter, with a gross margin of 45%. RelyOn decided to launch a new version, the “Falkland-E II”, with a higher price point and high innovative features, making the “Falkland-E” an entry point product. (Appendix 9). In addition, to monitor the market share and the potential of growth for each model, the marketing department used the BCG matrix in every quarter (Appendix 10).

Price. RelyOn used a premium pricing strategy, characterised by high price points based on uniqueness and high value, in line with the company’s products. RelyOn customers were willing to pay a relatively elevated price for a technologically and ecologically advanced car. To determine the price for each type of vehicles, the marketing director considered the level of competition, ease of comparison and the willingness of customers to pay for each car model.

During the life cycle of a product, a price skimming strategy was used, setting an introduction price 10 % higher than market price and then decreasing it over time. The objectives were to satisfy the demand of our first customers, who were interested in cars with innovative features. Later, prices were lowered to attract other customers and to respond to the entry of competitors in the market, with cars with similar features. “Research has shown that the effectiveness of the

marketing mix decreases with order of entry, for first entrants in the market the pricing power is higher” (Spann, 2015).

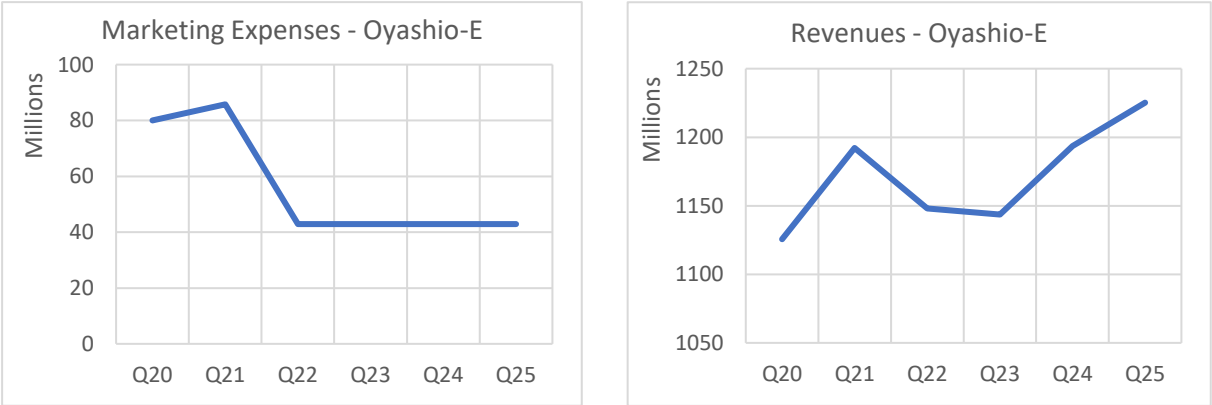
Promotion. From Q5 onwards, RelyOn has been characterised by a profound transformation in both vision and values. To communicate the new brand positioning to customers, the marketing expenditure was higher than the industry benchmark. Furthermore, during the first part of the simulation, the marketing mix was the principal tool used to increase the sales and to reduce the level of inventories. In fact, to maintain RelyOn's premium positioning, no significant price reductions were made to stimulate sales.

Place. In the simulation, the distribution network of RelyOn was managed through relationship with car dealers. However, this traditional way of selling was leading to inefficiency and a reduction in customer satisfaction. “A 2019 Digital Quotient analysis, which is a McKinsey method for evaluating an organization’s overall digital maturity, revealed that the average automotive business has a clear need to digitize, with the industry earning a below-average score compared with other business-to-business players. The remote selling models are becoming the next normal, and some players are already preparing for that in reaction to consumer demand” (Hofstätter al, 2020). A successful example is represented by Tesla, being the first car manufacturer to establish online sales offering, including a clearly structured online shop, contactless test-drive and home deliveries. “Tesla had the opportunity to gain advantage in the speed of its product development and to create a better customer buying experience, allowing a greater personalization of the vehicles, and reducing potential conflict of interests with car dealerships” (Han, 2021).

In conclusion, one of the main problems faced by the marketing department concerns the excessive level of marketing expenditure caused by an incorrect spending strategy. During the first part of the simulation, since RelyOn had positioned itself in the premium segment, the

marketing department tried to stimulate sales by increasing the marketing expenditure instead of price reduction. The objective was to maintain higher prices than the competition, justified by the higher quality, and to target customers who were inelastic to price changes.

However, between Q15 and Q21, the marketing expenses were around 34% higher than the industry benchmark, causing a deteriorating of the EBIT (Appendix 11). Furthermore, the benefit on sales with a very high marketing expenditure was rather limited. From Q21, RelyOn decided to change strategy, lowering all marketing expenditure by - 50% and reducing prices by 2/3%. To examine the effect of this decision, the revenue trend of the RelyOn Oyashio-E which was the most luxurious model in the portfolio and with the highest price, was analysed.



Figures 2 and 3: Marketing Expenses and Revenues of RelyOn Oyashio-E from Q20 to Q25

Analysing the graphs presented above, it is possible to appreciate that an excessive level of marketing brings only marginal benefits on revenues. In Q21, following a 50% reduction in marketing expenses, the revenues decreased by 3,7%. A 2% price reduction in Q22 was sufficient to reverse the trend and increase sales.

It is therefore clear that consumers in the simulation were elastic to prices, and that the optimal mix between marketing expenses and price is crucial to further stimulate sales and increase revenues.

2.5 Finance Review

The Finance department was concerned with maximizing shareholder value through short and long-term financial planning. The Finance director was responsible for: determining the budget, finding additional fundings, making decisions regarding customer and supplier payments, and providing insights from a financial perspective for other departments.

During the 6 years of the simulation, RelyOn experienced an important transformation in order to be a technologically advanced and sustainable car manufacturer. The RelyOn’s investment strategy can be analysed through the variations of Free Cash Flow (FCF), “defined as cash flow beyond what is necessary to maintain assets in place and to finance expected new investments” (Richardson 2006).

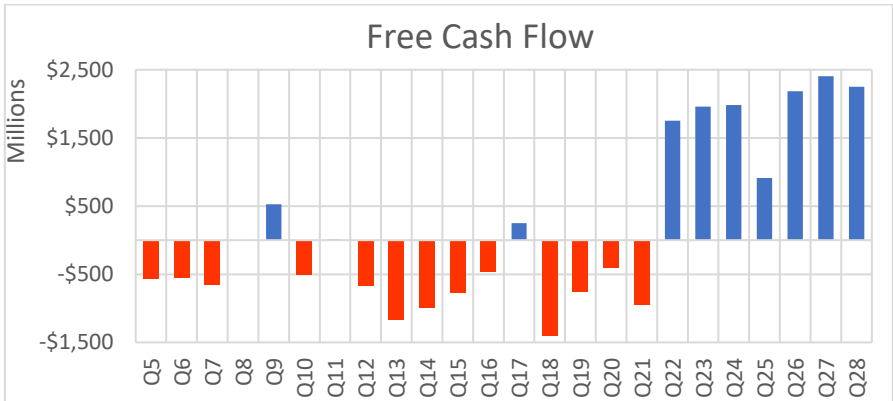


Figure 4: Line Graph of the Free Cash Flow During the Simulation

From Q5 to Q21, RelyOn mainly experienced a negative FCF, because of the numerous investments made to gain competitive advantage over competitors. To counter the negative values of FCF, the finance department had a central role to uncover additional fundings to keep the company solvent.

In order to improve the FCF, from year 4, the boards of directors tried to improve the EBIT reducing costs, while the finance director reduced the customer credit terms and increased supplier payment term. Although changing the payment term had a negative impact on revenue

(-2%) and increased the material cost (+0.5%), this decision allowed to reduce the need to find external funding and decreased the D/E ratio. From Q22 the Free Cash Flow returned positive, thanks to the improvement of the operating cash flow and the reduction of investments.

The company had two different sources of finance: equity and debt. During the whole simulation, the finance director focused on determining the optimal capital structure of the company, the best mix of debt and equity that maximised RelyOn's market value while minimizing the cost of capital. The weighted average cost of capital (WACC) is the average after tax cost of all sources. The WACC served as the discount rate for calculating the Net Present Value (NPV) of the business and to evaluate investment opportunities.

According to the Modigliani Miller theorem with taxes (1958), there is an advantage for firms that use debt leverage since they can deduct interest payment thus having lower tax payment. The optimal capital structure suggested by MM is 100% of debt, to maximize the tax shield and the value of the company. "In reality, there is a limit to the amount of debt a company should have because an excessive amount of debt increases interest payments (deterioration of credit rating), the volatility of earnings, and the risk of bankruptcy" (Bradley, 1984).

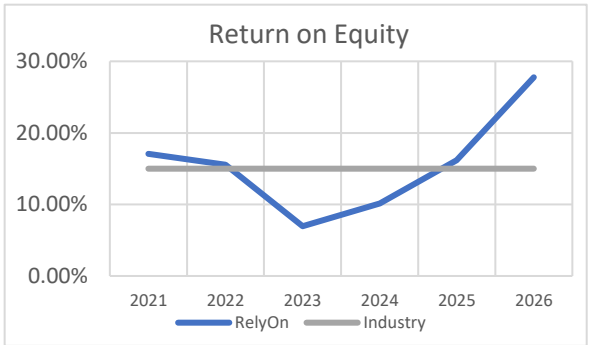
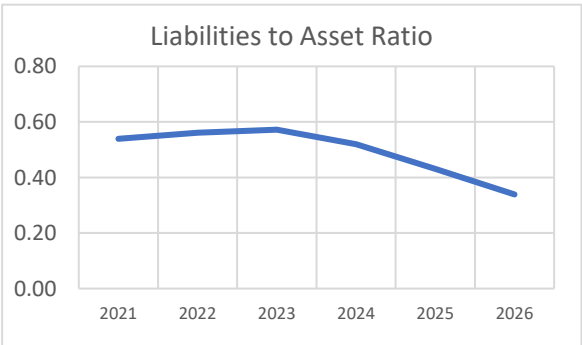
In the first half of the simulation, the finance department gradually increased the debt ratio in a controlled way until it reached 54,9% in Q16, due to negative Free Cash Flow. The most frequent form of RelyOn's debt was the Green Bonds, a subsidized financing instrument available in lieu of companies that are investing in sustainable projects. The Green Bonds were cheaper than loans (3% annual interest payment) and the interest rate was not influenced by the credit ratings.

In the second half of the simulation, the debt ratio was progressively reduced to 31% (in Q28). Although the Free Cash Flow generated was sufficient to run the company, loans were still sought to avoid raising the WACC level. In fact, sharply decreasing the debt ratio leads to an

increase in cost of equity, which is superior to the cost of debt (Appendix 12). This occurs because equity investors face a greater level of risk than debt holders. For instance, the dividends do not have a fixed amount and in the event of liquidation debt holders receive priority over equity investors.

Another important role performed by the finance department regards the monitoring of valuable financial ratios and Key Performance Indicators (KPI). “The financial statement analysis is essential to decrease the uncertainty of business analysis, because reduces reliance on guesses and intuition for business decisions” (Babalola and Abiola, 2013). To examine the solvency of the company, the finance department had to monitor the “Level of Liabilities to Asset Ratio”, which shows the percentage of assets that are being funded by debt. As seen in the graph (Figure 5), the optimal ratio value should be between 0,57 and 0,34, thus determining a low financial risk for the company. Usually, creditors use the ratio to see how much debt the company already has and assess whether or not the company can repay its existing debt (Appendix 13).

Another important ratio constantly monitored is the Return on Equity (ROE), which shows how much in profit the company earns from each dollar of shareholder equity. When comparing RelyOn’s performance with the average of the automotive sector over the last 5 years (15%), it is evident that, during the transformation phase (year 2023 and 2024), the ROE was lower than the benchmark. It then increased over the last two years, reaching 27,77%. A Du Pont analysis was carried out to break down the ROE calculation and reveal which factors are contributing the most to the company’s ROE (Appendix 14).



Figures 5 and 6: Line Graphs of “Liabilities to Asset Ratio” and “Return on Equity”.

Nowadays, due to the growth in popularity of the sustainability movement, many investors are now not only considering financial data, but also ESG rankings when it comes to their investment decisions. Environmental, social, and corporate governance (ESG) is an approach used to evaluate a company’s ability to achieve social goals that go beyond the maximization of profits. “Research by Serafeim has shown that companies that today score better on the environmental and social dimensions of their business trade at a premium relative to their peers” (Porter et al, 2019). In the future, it will be important for RelyOn to also include some frameworks for the ESG reporting such as GRI, SASB and EU Taxonomy in its financial analysis.

3. CONCLUSION

At the end of the simulation, RelyOn was able to increase the revenue by 165% reaching \$7,605 Billion of revenues. The value added reached \$3,717 B, allowing RelyOn to take first place in the competition.

I think this experience was very formative as it gave to me the opportunity to put into practice all the knowledge acquired during my academic pathway in order to run a company in the automotive industry. I learned the importance of having a more holistic view of a company, and not just focus on the departmental level. In fact, often in university lectures, each subject is treated separately and distinctly, not emphasising the fact that all the departments are extremely interrelated. On numerous occasions during the simulation, it was evident that decisions made in one department led to direct effects on another department. For instance, the decisions between Operations and Human Resources department were extremely interconnected. Any decision made by the director of operations to reduce or increase the production of a product line would lead to changes, even significant ones, in the number of employees needed for each factory. Similarly, the director of HR had to set up sustainability training sessions for employees

to enable the director of operations to make investments in sustainable projects. It was therefore important to consider the fact that individual decisions made at department level had a noteworthy effect on the entire company.

In addition, I was able to learn how very often the objectives and needs of departments can be very different and sometimes conflicting, thus necessitating a common compromise to make decisions. For example, the objectives of the operations department and those of marketing and innovation were often in conflict regarding the strategy for the introduction of new car models. The operations department preferred few product variants and a large number of cars in order to utilise the factories efficiently and experience economies of scale. On the contrary, for the Innovation and Marketing departments, it was preferable to have numerous variants of cars in order to better meet consumer tastes. To be consistent with RelyOn's differentiation strategy and market focus, efforts were made to produce different vehicle categories without having extensive product lines.

In conclusion, thanks to this simulation I had the opportunity to appreciate the fundamental importance of having efficient communication between different departments. Communicating effectively within the organisation allowed for more informed decision-making, an overview of activities and the coordination of efforts to achieve important goals.

In order to keep the level of inventories under control, the operations department in cooperation with the marketing director made forecasts on future demand for each car model, so it was possible to forecast in advance whether it was necessary to increase or reduce production capacity and the marketing effort. The finance department had an important role, providing important financial ratios to other departments in order to monitor the efficiency. For example, the finance department was monitoring the Asset Turnover Ratio to improve the operation efficiency, or The Return on Sales to monitor the marketing performance.

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4. APPENDIX

4.1 Operations

Appendix 1: Detailed Analysis of the 4 Vs

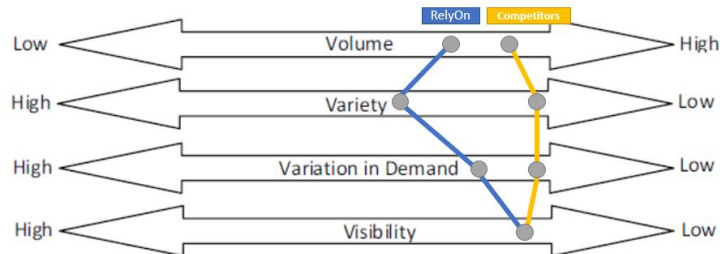


Figure 7: Graphical Representation of the 4Vs: Volume, Variety, Variation and Visibility

The 4 Vs model is an important tool to analyse the difference between companies regarding the operational management. The four Vs are known as volume, variety, variation in demand and visibility. RelyOn's strategy focused on a limited quantity of vehicles produced (12 factories), offering a greater possibility of product variety than its competitors with different vehicle models.

Variability is higher than competitors as the production of high-tech cars leads to uncertainty in customer tastes and variable demand.

The visibility, which indicates how much the process is exposed directly to its customers, is limited because RelyOn is a business focused solely on car production.

Appendix 2: Factory Allocation in Q28

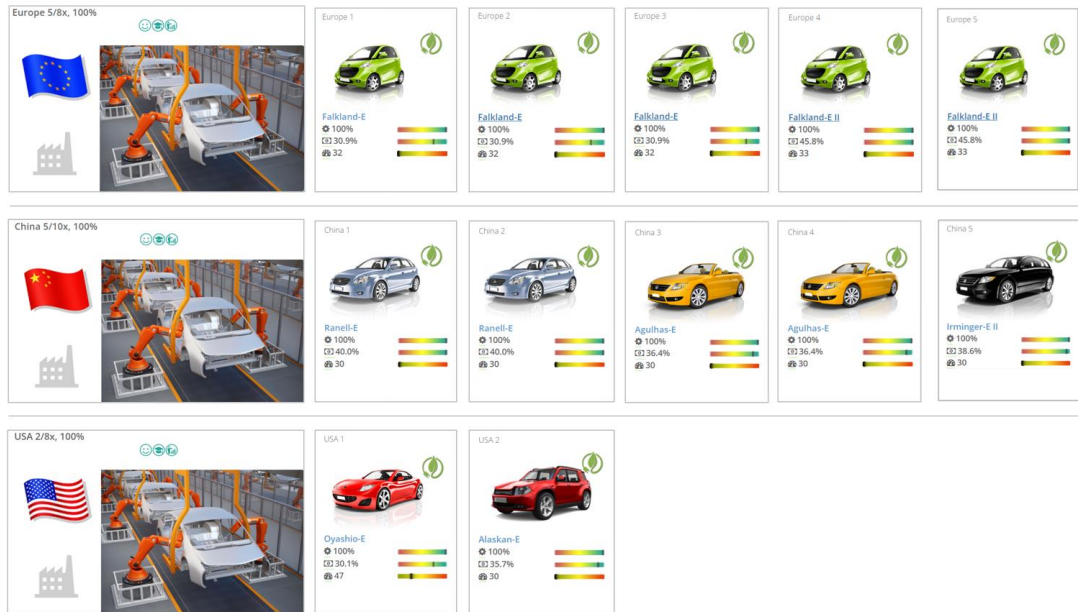


Figure 8: Factory Allocation in Different Regions

The factory production in Q28 is presented above. In Europe, there were five factories producing Falkand-E (45,000 units produced) and Falkland-E II (30,000 units produced). In China, there were 5 factories, producing Ranell-E (30,000 units), Agulhas-E (30,000 units) and Irminger-E II (15,000 units). In the USA, RelyOn produced Oyashio-E (15,000 units produced) and Alaskan-E (15,000 units).

Appendix 3: Polar Representation of Operation Objectives during the Simulation

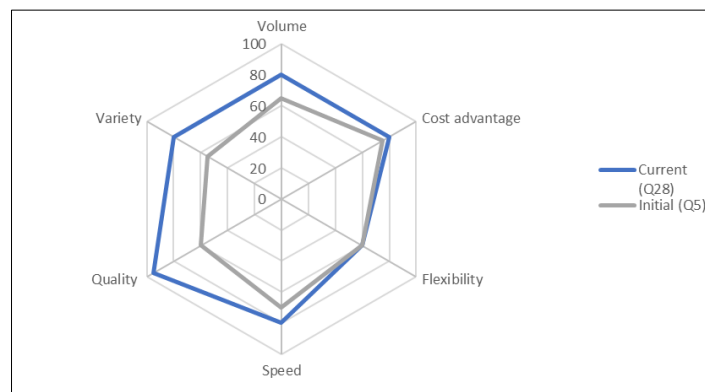


Figure 9: Polar Representation of Operation Objectives

Through this graphical representation, it is possible to highlight the objectives on which the operations department focused the most. Compared to its initial situation, RelyOn has significantly increased the quality of its products, focusing on technologically advanced car models. The number of car models was also increased, in order to increase the variety of the offer to meet customers' needs. It should also be noted that the flexibility of the production apparatus remained unchanged as no changes to improve flexibility could be made in the simulation.

Appendix 4: Days of Inventories and Factory Utilization

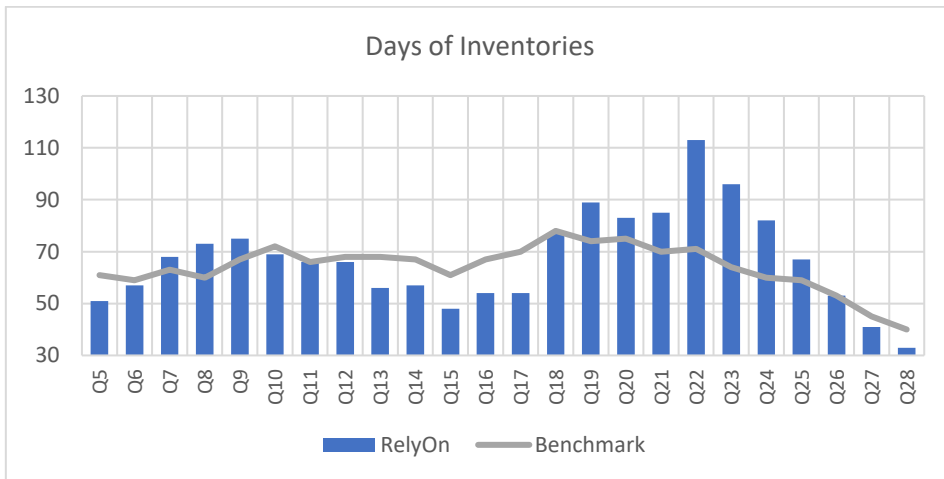


Figure 10: Line chart of Days of Inventories

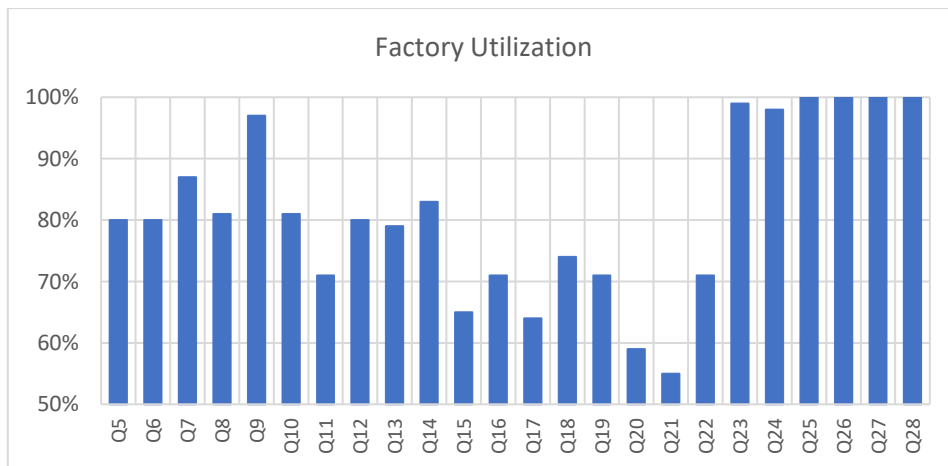


Figure 11: Line chart of Factory Utilization

The two graphs presented above represent the “Days of Inventory” and “Factory Utilization” respectively. It can be seen that as the quantity of stocks increases, factory utilisation decreases, and vice versa. If the level of inventory is higher than 120 days, the factory utilization decreases sharply because the warehouse is full of stocks and the production is reduced accordingly

Appendix 5: Graphs Scope 1,2 and 3 (Reduction of CO2 Emissions)

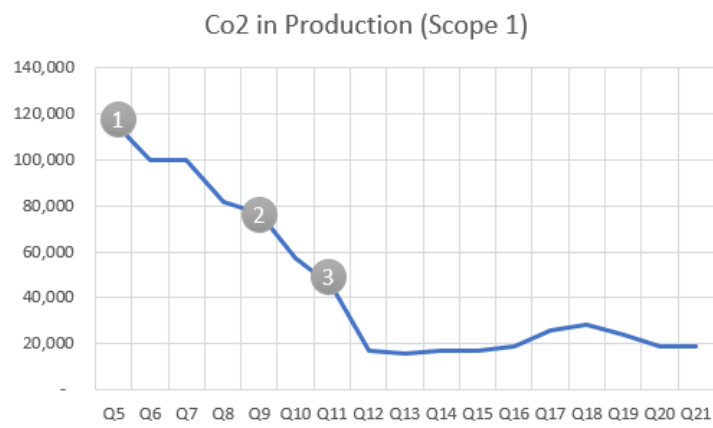


Figure 12: Reduction of Scope 1 Emissions

In Q5 (1): Investment in water consumption reduction using water-saving techniques during the manufacturing process.

In Q9 (2): Waste Reduction Investment, reducing the environmental footprint while keeping the business operating costs low. Great attention to improve the use of materials.

In Q11 (3): Achieved the ISO 14001/EAMS certificates. Provides assurance to company management, employees and external stakeholders that the environmental impact is being measured and improved.

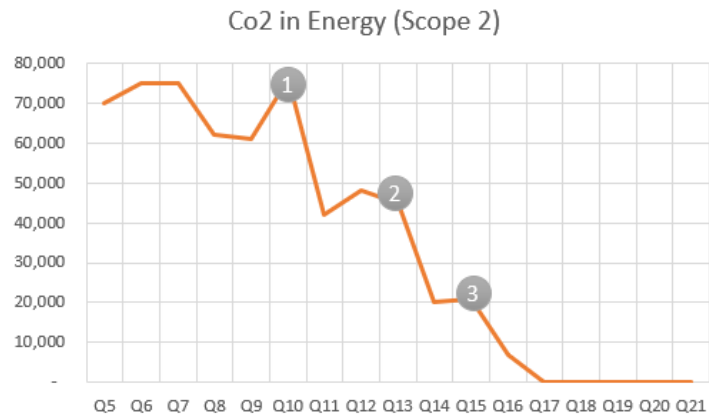


Figure 13: Reduction of Scope 2 Emissions

In Q10 (1): Energy efficiency investment, improving energy efficiency to lower the emission of GHG and other pollutants.

In Q13 (2): Solar Panels Installation. Solar panels have allowed 100% of energy consumption to be delivered from renewable energy, reducing costs and CO2 emissions.

In Q15 (3) Energy management system. Implemented computer-enabled tools to monitor and optimize the performance of the energy system have further optimized energy consumption.

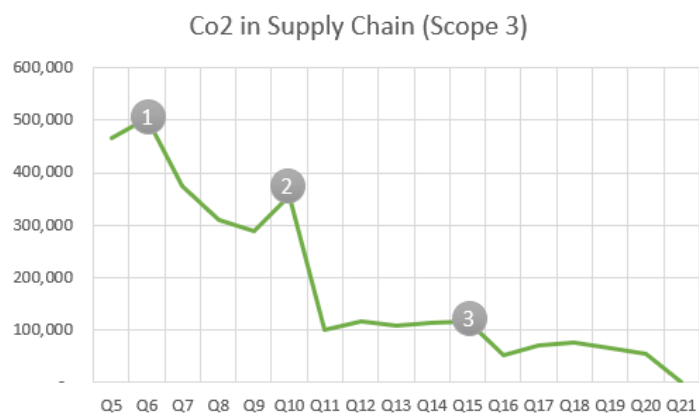


Figure 14: Reduction of Scope 3 Emissions

In Q6 (1): RelyOn provided its partners the opportunity to invest in environmental project around the world to reduce their carbon footprint.

In Q10 (2): RelyOn invested in searching for new certificate sustainable suppliers aligned with its sustainability goals.

In Q15 (3): RelyOn collaborated with partners in numerous projects with aims to lessen the environmental and social impact across its value chain.

4.2 Marketing

Appendix 6: SWOT Analysis of RelyOn at Q5

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> - Vehicle lines that are popular and selling well (< 60 days of inventories). - Initial stages of investments in electric vehicle are expected to bring revenue growth in the short term. - Excellent employee relations leading to good productivity achievements. 	<ul style="list-style-type: none"> - The product portfolio consists exclusively of conventional vehicles. - Three vehicle line with > 60 days of inventory. - A restructuring of the business in the short term is required.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> - Electric market is sharply increasing. E-Drive modules can be used in 3 quarters. - Green investments that can be financed with green bonds are available. - New product offerings with up-to-date technology. 	<ul style="list-style-type: none"> - Older model lines are a drain on resources. - Expensive debt due to current credit rating and access to new borrowing. - Increasing competition in the electric vehicles market. - Continuing aggressive government regulations that threaten profitability. - Volatility in the cost of raw materials.

Table 5: RelyOn's SWOT Analysis at the Beginning of the Simulation

Appendix 7: PESTEL of Automotive Industry

POLITICAL	ECONOMIC	SOCIAL
<ul style="list-style-type: none"> - The government introduced carbon emission regulations to address the public concern. - Trade wars between USA and China, the export tariff can be increased by governments. 	<ul style="list-style-type: none"> - Pandemic Covid-19. - Many countries have imposed taxes on luxury items which have increased their price. - Inflation drove up the cost of raw materials. 	<ul style="list-style-type: none"> - Popularity of driving is growing. - It is becoming a commonplace for family around the world to own one or more vehicles.

- Safety policies.		- Greater attention of customers to sustainable companies.
TECHNOLOGICAL	ENVIRONMENTAL	LEGAL
- Introduction of Autonomous drive technologies. - Longer battery range. - Improved Connectivity levels.	- The issue of carbon emission has gained global attention. - Polluting materials such as steel, rubber, glass, plastics, paints are needed to manufacture cars.	- Strict safety regulations. - Pollution regulations.

Table 6: PESTEL Analysis of the Automotive Industry in the Real World

Appendix 8: Positioning Map

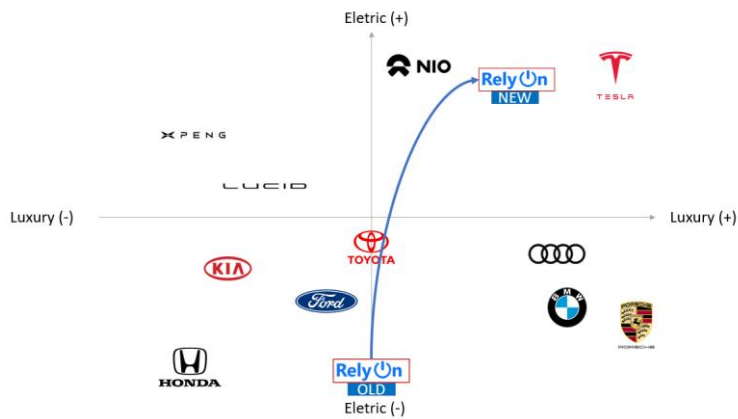


Figure 15: Positioning Map of RelyOn Compared to Existing Car Companies

In the positioning map, it is underlined the new positioning of RelyOn. From a tradition car manufacturer, RelyOn transformed itself. Now it is positioned in the premium category, producing only electric vehicles.

Appendix 9: Product Portfolio Management in Q28

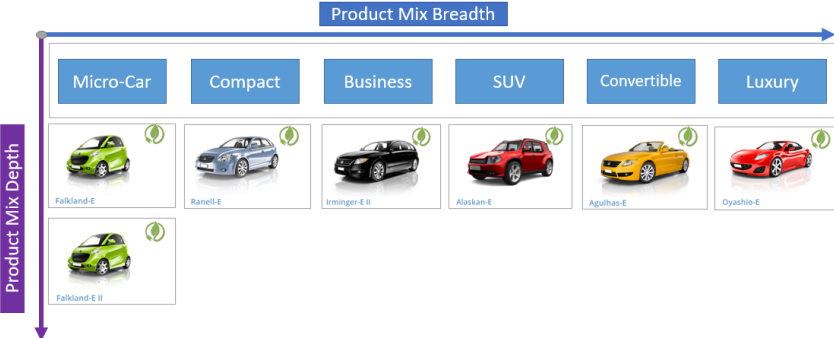


Figure 16: Graphical Representation of the RelyOn’s Product Portfolio

It is presented above a schematic representation of RelyOn's portfolio at the end of the simulation. RelyOn was producing 7 electric cars models.

The product portfolio included all the vehicle categories (6 categories), namely: Micro-Car, Compact, Business, SUV, Convertible and Luxury.

Appendix 10: BCG matrix in Q28

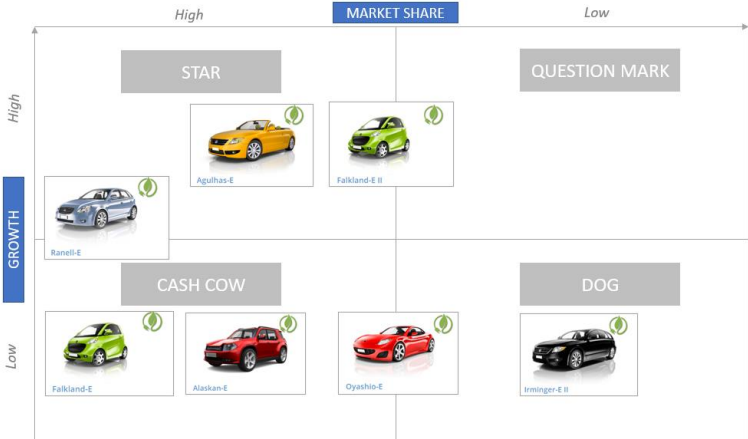


Figure 17: BCG Matrix with RelyOn’s Products.

The Boston Consulting Group (BCG) matrix is a planning tool that uses visual representations of a company’s products and services, to monitor the performance of each product. This

planning tool was used every quarter to decide if the company should invest more or disinvest on a particular product line.

As an example, the matrix above represents the RelyOn’s portfolio in Q28. The models Agulhas-E, Ranell-E and Falkland-E were characterized by a high growth rate and high market share (Star quadrant). The Falkland-E, Alaskan-E and Oyashio-E were in the Cash Cow quadrants. These products were characterized by a high market share but a low growth rate because they were launched on the market several quarters ago.

The model Irminger-E had a low growth rate and low market share. In the future, it will be important to monitor the performance of this model, and if these are not sufficient, the company should close this product line.

Appendix 11: Marketing Spend by Revenue

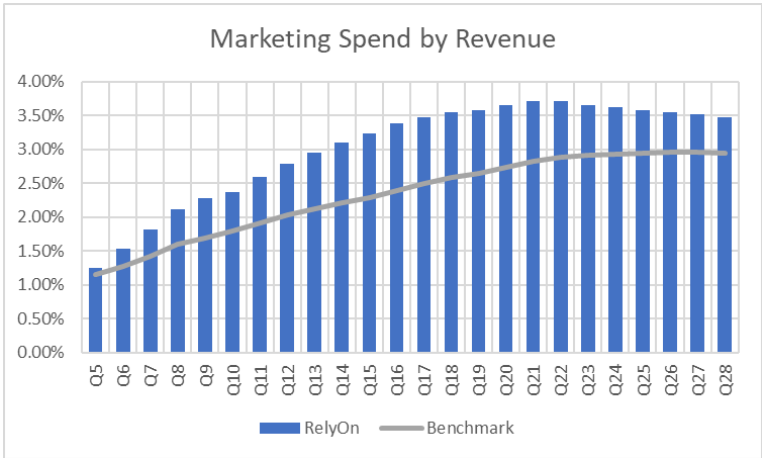


Figure 18: Line Chart of the Marketing Expenditure by Revenue. Comparison between RelyOn and the Industry Benchmark.

The line graph above, presents the marketing expenditure by revenue. As it can be analysed, RelyOn’s marketing expenditure was on average higher than the industry benchmark. In Q21, the values reached 3,71%. Subsequently, the marketing director progressively reduced the marketing spend until it reached 3,40% in Q28.

4.3 Finance

Appendix 12: The Debt Ratio

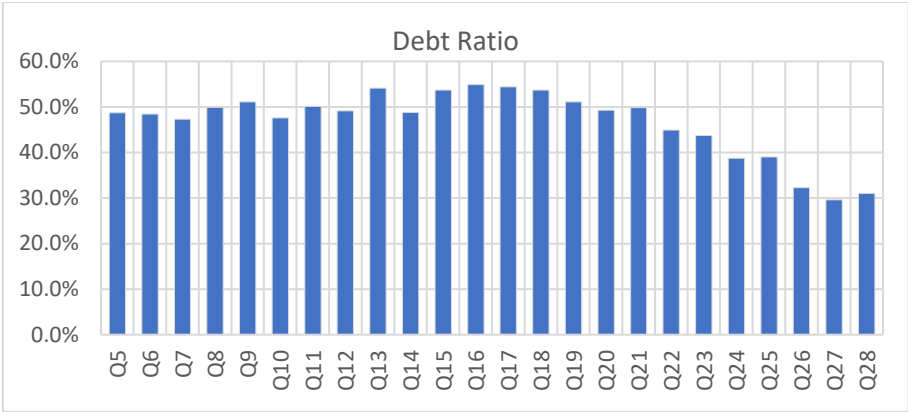


Figure 19: Line Chart of the RelyOn’s Dept Ratio

The line graph is presenting the evolution of the Debt Ratio during the simulation. It is possible to analyse that the debt ratio reached the maximum of 54,1% in Q13 and it decreased over the time reaching 29,6% in Q27.

Appendix 13: Liabilities to Asset Ratio

	2021	2022	2023	2024	2025	2026
Total Liabilities	13.658.099	16.718.880	18.294.378	18.037.090	14.255.807	10.412.496
Total Assets	25.314.081	29.797.191	31.976.478	34.730.045	33.081.043	30.72.227
Liabilities to Asset Ratio	0,54	0,56	0,57	0,52	0,43	0,34

Table 7: Detailed Calculations Used to Determine the Liabilities to Asset Ratio

It is presented above in detail the calculations used to derive the Liabilities to Asset Ratio, i.e. Total Liabilities were divided by Total Assets.

Appendix 14: Du Pont Analysis

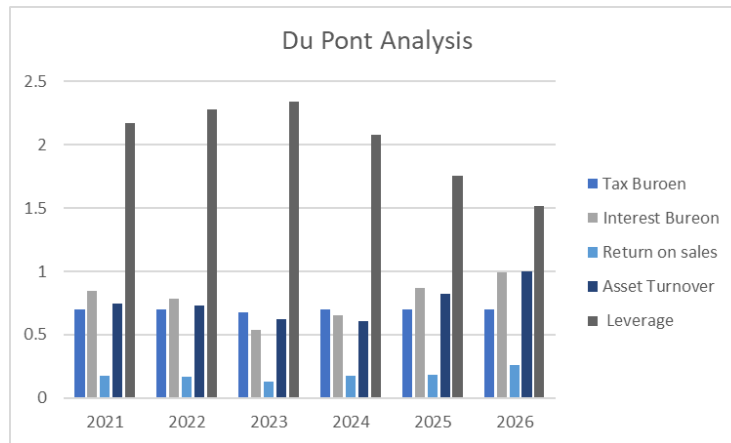


Figure 20: Graphical Representation of the Du Pont Analysis

Du Pont	2021	2022	2023	2024	2025	2026
Net Income	1,989,952	2,031,915	951,984	1,691,489	3,046,117	5,639,826
EBT	2,842,789	2,902,736	1,404,413	2,416,413	4,351,596	8,056,909
Tax Buroen	0.70	0.70	0.68	0.70	0.70	0.70
EBT	2,842,789	2,902,736	1,404,413	2,416,413	4,351,596	8,056,909
EBIT	3,352,506	3,711,860	2,598,089	3,715,010	5,005,822	8,102,310
Interest Buroen	0.85	0.78	0.54	0.65	0.87	0.99
EBIT	3,352,506	3,711,860	2,598,089	3,715,010	5,005,822	8,102,310
Sales (Revenue)	18,796,193	21,724,266	19,887,922	21,178,423	27,116,616	30,827,921
Return on sales	0.18	0.17	0.13	0.18	0.18	0.26
Sales	18,796,193	21,724,266	19,887,922	21,178,423	27,116,616	30,827,921
Assets	25,314,081	29,797,191	31,976,478	34,730,045	33,081,043	30,723,227
Asset Turnover	0.74	0.73	0.62	0.61	0.82	1.00
Assets	25,314,081	29,797,191	31,976,478	34,730,045	33,081,043	30,723,227
Equity	11,655,981	13,078,311	13,682,100	16,692,954	18,825,236	20,310,731
Leverage	2.17	2.28	2.34	2.08	1.76	1.51

Table 8: Detailed Calculations Used for the Du Pont Analysis

The Du Pont analysis is a framework useful to deconstruct the different drivers of the return on equity (ROE). The breakdown of ROE allows investors to focus on the key metrics of financial performance individually to identify strengths and weaknesses.

As it is possible to see in the graphs, In the last two years, there has been a general improvement in all analysed ratios. In particular, there has been a gradual increase in the asset turnover ratio which highlights how effectively the company uses its assets to generate revenue. The Return

on sales increased from 0,17 to 0,26. This indicates that the company is improving the amount of profit produced per dollar of sales.

The Du Pont Analysis formula (1):

$$\frac{\text{Net Income}}{\text{Equity}} = \frac{\text{Net Income}}{\text{EBT}} \times \frac{\text{EBT}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

↓ Tax burden
 ↓ Interest burden
 ↓ Return on sales
 ↓ Asset turnover
 ↓ Leverage