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BUSINESS IN PRACTICE

CHANGE MANAGEMENT SIMULATION: THE ELECTRIFICATION PROCESS IN THE AUTOMOTIVE SECTOR. REVIEW OF SIMULATION RESULTS AND SELF-REFLECTIVE JOURNEY INTO TEAM DYNAMICS

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Abstract

For more than a century, the automotive industry was dominated by internal combustion engines, but the paradigm is changing. Sustainability became a top priority for people and governments due to the visible consequences of climate change, which puts pressure on automotive firms to innovate their mobility solutions and underlying technologies. This complex transformation process is influenced by a multitude of factors, constraints, and impacts of all kinds. This paper outlines the learnings and results of a 3-week change management program, covering a self-reflective journal on team dynamics, leadership development, and debriefing of the Einstein Motors' performance after 26 simulation rounds.

Keywords: Sustainability; ESG; Automotive Industry; Business Simulation; Reflective Practice; Team Dynamics; Business in Practice; Business Management; Cross-Functional Management; Theory in Practice; Electification of Cars; Green Mobility; Leadership Development

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1. Individual Personal Reflection

The act of self-reflection is like *"staring down into a pool of water"* (White 2012). Only in waveless water can we perceive our true selves in the projected image - when the mind is clear of distracting thoughts, and we have the confidence to look at this metaphorical mirror. Self-reflection is a vital part of growing as a leader, as it exposes strengths and weaknesses of our innate personalities. It unveils personality traits that are often ignored or forgotten. We see the good, the bad, and the ugly. Ancient wisdom tells us that tremendous success comes from intimately understanding oneself - *"Know yourself and you will win all battles"* (Tzu 2019).

Despite the fast-paced nature of the BiP program, I kept a brief journal that later assisted me in unpacking situations, thoughts, and feelings. From that journal, I chose the two events that had the biggest impact on my personal development. The first concerns my narcissistic tendencies, individualism, and underdeveloped emotional intelligence. If unchecked, those can harm the benefits of teamwork in my future endeavors. The second event involved my suspicions on strategy leaks from my team to the outside. I contributed to pointless intrigue, gossip and undermined the trust the team had built up to that moment. For each event, I outlined the original context, explained my personal response, and summarized the core lessons learned. I finished the reflective exercise with broader takeaways for my future as a business leader.

My personal reflection uses the *Insights Discovery*® personality test as the framework to assess my dominant traits. I am strongly influenced by Cool Blue with a touch of Fiery Red energy, indicating that I am naturally introverted, analytical, questioning and objective. I am competitive and performance-driven but also suspicious, controlling, and indecisive *(Fig. 1)*. While my teammates manifested moderate personalities with better balance in colors, my score was highly dominated, and one-sided *(Fig. 2)*. Different work methods and expectations within our team can be traced back to this test, which proven very useful during my reflection.

1.1 Critical Incident #1 - Every Word has Consequences. Every Silence, too.

1.1.1 The Event

The stakes were very high during the Sales Pitch preparation in Year 2 of the business simulation. The company would be risking $1,9 billion if we failed to secure an extremely important client. As the Innovation Director and the heaviest spender in the group, I couldn't miss that opportunity. In perspective, that budget would cover more than 60% of our entire R&D expenses for the entire 6-year period. At first, I thought only 1 of the 6 teams would get the prize, so I felt pressured by my intense sense of competition to win. I could not absorb the idea of losing that money and falling behind other teams. My competitive mode was ON.

I was completely immersed in the roleplay as everyone in my company could tell. The pitch would be carried out by a group of 3 and, of course, I was the first to volunteer. After getting briefed about what was expected for this task, I went home and started writing the perfect arguments, alone. I spent a good amount of time iterating and refining until I was satisfied with the result: 5 pages of scripted roleplay. Apparently very fluid, almost like a telenovela dialog.

The following day was the "Big Day". I was stressed, but confident that my high-value ticket closing skills, allied with a carefully written script and my freshly laundered suit, would guarantee an edge over the competition. We entered the room; I was introduced as Director of Innovation accompanied by two Analysts. I felt like I was going to be the star of the show.

The moment I finished the first sentence, the grand scheme fell to pieces. The customer was not pleased with the way I introduced our business, accusing us of being opportunistic and not genuinely caring about the client. I tried to come back with no success. My team jumped in to save the day and the client played along with their approach. I felt guilty and envious for not taking control of the situation. Unable to react, I "abandoned" and went silent for the rest of the roleplay. The toxic "silent treatment". In the end, the client was secured, but not on my merit.

1.1.2 Personal Response Analysis

I find this critical event particularly interesting as it brought to the surface my lack of control over emotions when facing unexpected situations and rejection. Although I was fully engaged, I was conscious that it was just a roleplay in a learning environment. Yet, I reacted impulsively as if it was a real-life situation. I will analyze my response in this teamwork context by identifying triggers and stress causes for this reaction, learnings, and proposing future action.

Authoritarism & Self-Isolation

The incident began with me self-excluding and writing the script for the roleplay all on my own. I was still getting to know my teammates at the time, and I wasn't sure if they would work as hard as I did or even if they were as ambitious as me. As a result, I took the situation into my own hands and handled it alone. During the incident, I felt that was the wrong approach, but my controlling personality was more powerful than the willingness to collaborate.

My teammates must have felt underestimated and unheard when I said I would be working on it alone. I didn’t necessarily mean they couldn’t work on proposals, but I dominated the task as I didn’t give space to discuss ideas. Since I was eager to win and we had a quite short time window to craft our sales arguments, I isolated myself to skip team discussions. The perceived benefits of doing so at that moment were higher control over the output quality and less need to validate with others. The following day, the team was impressed by my script and accepted it as the guideline, but they surely didn’t feel committed to that script. I felt they weren’t engaged as they weren’t involved in the writing process.

My Cool Blue and Fiery Red demanding and overpowering attitude clashed with the team since my teammates tended to have Earth Green characteristics, which suggest exchanging ideas, debating, and making sure everyone agrees with the final decision. I imposed my solution and higher control over the team while disregarding the consensus-seeking among my peers.

Latent Narcissism

The client interrupted me several times during my pitch. I was unable to convey the message I had carefully planned. Consequently, I felt embarrassed about my inability to talk, which is one of the biggest fears of Cool Blue (Schwefel 2018). Unpredictability is also known to irritate Cool Blues, and the situation totally missed what I had written the day before. Under pressure, Cool Blues tend to withdraw from the scene, which was what I ended up doing.

As a defense mechanism, I used the "Silence Treatment", the simulated smile, and apparent calmness in facial expressions to show strength and superiority. That I was too important to be interrupted during my introductory pitch. In fact, it revealed more than my incapacity to handle opposition, rejection, and unpredictability. It red-flagged latent signs of Haughtiness, Disdain, and Condescension. A mild level of Narcissism. Narcissists pay close attention to cues that relate to their position in the environment. Depending on the situation, they whether boost their status or lower that of others, either by promoting themselves (Adulation) or denigrate others (Rivalry) through a cognitive process (Grapsas et al. 2019).

Looking back, that roleplay was the perfect opportunity to impress my group while validating my leadership – the Adulation way. The desire for leadership positions has been seen to be greater in narcissists (Brunell et al. 2008). In my case, I wanted to substantiate my superiority. It was evident in the details. First, I thought that I was better than the team by writing the script on my own. Then, I introduced myself as a director accompanied by two analysts, being implicitly above in the company hierarchy. However, as a Cool Blue and mild narcissist, I got irritated once I lost the chance to promote myself as the leader of the group. I then used my Silence to denigrate the client (Rivalry) and punish the interruption *(Fig. 3)*. The silent treatment is a coercive measure to enforce compliance (Najaf and Siddiqui 2021). It is one way narcissists use to become the center of the situation and regain control, possibly making others feel guilty and responsible. In this case, guilty for interrupting me.

1.1.3 Lessons Learned & Future Action

All Plans Can Potentially Fail – Especially Individual Plans

The most immediate lesson: Plans Fail. I must be prepared to manage my emotions under stressful and unpredictable situations, as a group and not as an individual. In fact, today's organizations must prepare for the future like a wolf pack. Because the pack cannot foretell what will happen, it must be adaptable and able to react to unforeseen circumstances (Townsend, DeMarie and Hendrickson 1998). Clients will not always be nice and patient, so I need to keep calm and adapt my strategy, sharing concerns and frustrations with my team instead of acting alone, rogue and thinking my individual plan outperforms the team's plan.

Respect Individualities – Unique Skills Contribute to the Success of the Team

My colleagues had very distinctive skills and I should have trusted more in their work. Although I still think that certain team members have higher/lower standards and expectations than others, any potential gaps should be compensated by the complementarity of the team's idiosyncratic talents and experiences. A team should behave like a pack of wolves. The wolves usually take care to avoid looking alike, each honoring the individuality of the others in the Pack (Johnson, Heimann, and O'Neill 2000). Not all wolves are Alphas, and not all are Omegas. Naturally, Lone Wolves like me can't achieve the same level of coordination as a pack. I need to get out of my "Lone Wolf" mindset and visualize success WITH and FOR my Pack.

Genuine Care Creates Meaningful Relationships

Manipulation techniques, such as the Silence Treatment, won't convince clients to do business with me and will certainly not make them empathize. I went focused on myself and in obtaining leadership, not on the Client or the Team. Nurturing genuine care for others results in outstanding returns while Ego can just destroy valuable connections. If the pitch depended solely on me, my selfish attitude wouldn't have achieved an additional $1,9 billion in sales.

More than being aware of triggers, I want to develop safety mechanisms to facilitate feedback from peers and correct my behavior in time. The stimulating, engaging and healthy workplace culture emerges via regular and transparent communication (Hassell 2013). Also, Google's intense data collection led to the realization that the best teams have managers who are sensitive to needs and feelings (Duhigg 2016). I agree, I need to hold back my desire for personal benefit while nurturing genuine care for others, listening to what they have to say and figure out where I can help.

Identify & Take Action on Workplace Toxicity

Narcissistic attitudes contribute to toxic work environments. They encourage abnormal conduct, such as abusive authority, undermining the fundamental tenets of productive team dynamics. Toxic leadership is destructive and impacts staff morale, creativity, and excitement (Tiwari and Jha 2021). I must keep such tendencies controlled for the sake of the team and myself. These traits will always be latent in my personality and may manifest again, but my growth mindset will hopefully help me suppress them. I'm fully aware that if I leave such traits unchecked, they may build into a permanent toxic personality that will undermine all my interactions and penalize the projects I'm working on. Teams should also be aware of warning indicators among themselves, avoid overreacting and work together to identify the root of and remedy for stress causes (Graniello 2022). A collective effort for a better workplace.

Self-Awareness & Immediate Action

After getting feedback from peers and mentors I had a second chance to pitch. I went more relaxed, confident, inclusive, and adaptable. I presented the same arguments with a different tone, posture, and attitude, and it made total difference in the outcome. The difference was notorious, who said it was the same "client" from the first roleplay. Despite having these negative traits, my developed self-awareness will help me take immediate action.

1.2 Critical Incident #2 - Mistrust is an Open Wound. Treat it Fast or Infection Spreads.

1.2.1 The Event

It was Friday, the end of the day. Two intensive weeks had passed since the beginning of the BiP program. My team had just finished its 3rd year in business and our company occupied 2nd place in the overall ranking. However, 2nd place was not 1st place and my competitive nature was not quite at peace. I was deeply intrigued by what could be the winning strategy of the 1st place. After such a busy week, I wanted to go home and get some rest, but before leaving I pressured the team to incorporate some insights into our strategy for the following week.

By chance, one of our members had access to their planning files, as she was once part of their team and got reallocated at the beginning of the program. They forgot to cancel her access. She saw the opportunity, and I supported it. "Nobody will know, it's just a quick look" – I said. Not the most ethical thing to do, but the information was right there at our fingertips, so we followed our instinct. The findings were really shocking.

Plot twist, this other team had our entire planning files already incorporated into theirs. Our templates, our budget, even our planned sequence of R&D. Every single move we had made or intended to make. We were the ones being spied on. I felt particularly frustrated and betrayed since I had dedicated hours to creating the templates. My documentation provided some mental frameworks that would save time for decision-making. It was supposed to give us a competitive edge and suddenly it was in the competitor's possession. "What happened?" – I asked outraged.

I hypothesized that one of us must have shared the files with them. Oddly enough, one of our team members left earlier, so he was not there when we found out. I immediately pointed fingers at the missing member, which happened to have closer links with our adversaries. If he didn't leave earlier that day, he would have clarified on the spot. Instead, he left earlier and was still logged on the strategy file. The perfect storm for suspicion and conspiracy.

1.2.2 Personal Response Analysis

Because of the way I harmed team chemistry and encouraged a toxic culture of gossip and intrigue, this crucial event is worth reflecting on. My hostile strategy allowed the issue to "infect" our team and even spread to other teams, poisoning the sportsmanship of the game.

Unethical Sportsmanship – Guilty for Supporting Wrongdoing

The way we discovered information leaks was the first factor that made this problem a real challenge to solve. Yes, my coworker pushed the button, but I provided the incentive and validation she needed to execute the wrongdoing. Supporting unethical behavior sets a bad example for other unethical team behaviors including setting up secret communication channels or judging other members without sufficient evidence (like I did). Research suggests that one form of unethical behavior in a team may lead to subsequent unethical behaviors (Zuber 2014).

Hostile Confrontation & Prejudice – The Wrong Approach to Team Clinics

Instead of promoting a transparent discussion on the topic, I acted rashly. I took out his access to sensitive internal documents until further clarification was obtained. Simultaneously, I created a side channel to communicate with the team and convinced them that there was no other possible way the files leaked. I broke the basic principle of “innocent until proven guilty”. I scheduled a team meeting to squeeze the truth from the person. Prior to it, I tried to mask my genuine emotions with fake smiles while I was incredibly upset. I was determined not to believe even before a word was said. In practice, my suspicions were correct, his connection admitted having extracted our strategy. Nonetheless, my approach was wrong. Acting in the shadow and encouraging team intrigues had a negative impact on team dynamics. Because he slacked on timings, came casual for a formal sales pitch, and acted as if it wasn’t important, I thought he had little interest on winning and did it deliberately. How people look, act, speak, think, and feel influences team interactions and may generate conflict at times (Toegel and Barsoux 2016).

1.2.3 Lessons Learned & Future Action

Be Ethically Consistent – Avoid Discrimination of Unethical Practices

Leaders must know that they can't stop one type of unethical behavior while covering for others. A consistent approach to all kinds of unethical behavior leads to better results (Zuber 2014). In this case, I applied double standards. On one hand, I condemned the spread of internal information. On the other, I allowed espionage towards competitors. We must keep reminding ourselves that we are likely overreacting to other people's faults and being too forgiving of ours. I must ensure that everyone commits to consistent moral standards at the beginning and need to let go of my victimization feelings, contributing towards the harmony in the team.

Stop the Bleeding Trust – Act Quickly and Facilitate Apology

Under my influence, the team didn't deal with the issue right away. A few days passed and the alleged offender didn't know what was happening. Instead, I tried to catch him off-guard or right during the act so that he confessed, which didn't happen. He ended up involving others and the internal problem suddenly escalated outside with some heated-up discussions. After things got heated, I realized how badly I had been acting during the argument. My teammates were initially on my side, but they began to urge a fair conclusion not to harm team dynamics.

The main lesson I take is that acting quickly and sincerely is crucial to avoid further decay of trust (Marie 2016). I should have gotten all the facts straight and facilitated an apology from him for letting the information leak happen. This was a safe environment and should be okay to make mistakes. Even if information was disclosed on purpose, I could have simply explained the risks in a real-life situation - for him and the team, a lot could be on the line. We had to quickly rebuild broken trust because the program was too fast paced for slow healing. It turns out that we were all benevolent enough to forgive one another. After that, we enjoyed a healthy environment until the end. Trust is indeed difficult to develop and harder to keep intact.

Understand the Team – Different Backgrounds, Different Expectations

The colleague admitted afterward that he frequently shared tips and information with others about game strategy. Although we both agreed that we wanted to perform well in the simulation, we had different expectations of the outcome. I was way more competitive and liked to keep our strategy a secret, while he was open to discussing it with others. Different team members frequently have distinct perspectives on a group's objectives (Haas and Mortensen 2016). To resolve this conflict, I should have promoted an initial candid discussion on how the team would define its goals and expectations so that we were aligned on good practices.

1.3 Final Considerations

My individualism and mild narcissism were made evident in the first incident. The dominant attitude, silence treatment and isolation traits were triggered by competition and rejection. The second incident showed my inability to resolve team conflicts and my double standard ethics. Both provided evidence that working in a team does not come naturally to me and that I must work harder on this skill. This reflection is the starting point of a deeper self-discovery journey.

Later that week we had the peer evaluation, which was certainly impacted by these two events *(Fig. 4)*. My self-evaluation was consistent with my peers, at least demonstrating an accurate sense of self-awareness. People think that I bring high levels of team contribution, expected work quality, and the necessary knowledge, skills, and abilities. On the other hand, I lack interaction with teammates and don't keep the team on track, which corroborates with my two incidents and reveals the need for more transparent communication, more tolerance, and more empathy towards others. Does this mean that I must now change my entire personality and become a different person? No. Becoming a better leader is not about trying to change nature. It is about changing daily actions and repeatedly taking simple improvement steps as in a gym workout (Tipirneni 2018). For sure, self-reflection is now part of my leadership workout.

2. Firm Analysis

After the global recession of the 2010s, people looked at the 2020s with optimism. Wishful thinking. From the COVID-19 public health crisis and its effects on communities, businesses, mental health, and ways of working to historical movements in social justice, political tensions, and armed conflicts, we are being bombarded with transformational events. On top, climate change urgency became evident after global repercussions increased in frequency. More than ever, the ability to adapt is key to traversing this complicated world.

A new Board of Directors was appointed by Einstein Motors to address the urgent transition from combustion to electricity, navigate the uncertain industry landscape, and capitalize on the most disruptive technologies to build better mobility solutions. Over the course of 6 years, the task force led Einstein to offer a 100% emission-free portfolio and sell over 3,5M EVs. Reforming company-wide operations required adequate resources and capabilities, along with a fresh mindset and internal culture. In this paper, I dive into our main activities and their impacts on simulation performance, using frameworks, theories, and examples from real-world companies. My focus will be on individual and combined contributions that the three functional areas of Strategy, Innovation, and Finance brought to our organizational goals.

2.1 Strategy Review

Understanding why certain organizations outperform others is the central question that guides strategic management. Selecting and implementing a good strategy is key to the success of any business, but there is little consensus on what defines the quality of a strategy. Among many things, it depends on its value proposition to the market (Philippe Lasserre 2017). I used the *AFI Framework* (Rothaermel 2013) *(Fig. 5)* as my reviewing methodology, which helped me understand the contributions of Strategy to gaining and sustaining a competitive advantage.

2.1.1 Strategic Intent

Defining a strategic intent ensured consistency several times throughout the exercise. Einstein envisioned "A world with democratic access to sustainable mobility" and wanted to achieve it by "Leading sustainable innovation in all transportation segments and related services". Totally customer-oriented, and not technology-specific or limited to automobiles. We were inspired by the famous Henry Ford saying, "If I had listened to my customers, I would have built a better horse and buggy" (The Economist 2009). Anticipating customer needs had to be incorporated into our DNA, enabling a flexible approach to future endogenous shocks.

2.1.2 External Analysis: Industry Structure, Competitive Forces & Strategic Groups

Through the *PESTEL* model (Aguilar 1967), I observed that on the *Political* and *Economic* side, the EU and NA regions reached market maturity, while APAC registered the highest sales and relative growth of passenger cars (Statista 2022). Emerging countries such as China represent significant opportunities, as per capita disposable income increases. However, due to political unrest, the US raised tariffs on Chinese cars from 2.5% to 20% in Q7. China retaliated by also raising tariffs in Q9. More frequent trade wars will lead to demand volatility, unpredictability in production planning and rising prices, which drives up the demand for vehicles with higher fuel efficiency. Regarding *Social* and *Technological* factors, people demand greener cities, less traffic, and other forms of mobility that promote well-being, such as electric scooters, and bikes. By Q10, consumers manifested greater appetite for EVs. In Q14 they were already into Connectivity and Autonomous Driving, confirming the fast evolution of consumer preferences. Responding to these trends, Saudi Arabia unveiled *The Line*, a new city that will house up to 9 million people and 0 cars ("The Line" 2022) *(Fig. 6)*. Utilities are accessible within five-minute walks or public transport networks. No cars, just absolute human-centricity. Will better urbanism be the automobile killer? On *Environmental* and *Legal* factors,

governments are implementing more restrictive environmental policies. In Q4 a CO2 scandal wiped out over 20% of diesel car sales and motivated regulators to set premiums of $60 per CO2 gram above allowance, increasing the penalty every year. Einstein acted quickly on reducing its emissions, but eventually, the simplest measures were done, and each additional reduction required exponentially higher costs. We managed to be free of penalties in Q11 and in Q17 we benefited from incentives for having fleet emissions below the limit *(Fig. 7)*. Ensuring legal compliance in this ever-changing complex ecosystem can be an authentic maze.

With *Porter's Five Forces* (Porter 1997) I analyzed the industry's profit potential. The *Threat of Entry* is traditionally low as producing cars requires heavy capital investments, and entrants are exposed to retaliation from existing competitors. It is quite hard to achieve economies of scale for small firms. *Tesla* was a total exception. Meanwhile, reports suggest that Apple filled at least 248 patents, covering everything from car seats, windows, and technology that enables vehicles to communicate with one another, linking to the *Internet of Things* (IoT) (Fukuoka and Shimizu 2022). Tech giants like *Apple* and *Google* seem to be interested in this industry now that smartphones have matured. Manufacturers face a moderate *Threat of Substitutes* as people look for quality in relation to price, despite their loyalty to brands. Small transportation devices like scooters or bikes are serving as substitutes to commute in urbanized areas. The *Bargaining Power of Buyers* is high, as most manufacturers sell to car dealerships and not to the final consumer. *Bargaining Power of Suppliers* is low but increasing. Thousands of undifferentiated agents are involved in manufacturing. However, some may start developing unique products to satisfy the changing needs of the industry. *Zongmu Tech*, for instance, is a Chinese supplier selling proprietary AV hardware, software, and wireless EV charging (Cheng 2021). *Competitive Rivalry* is very high. Several competitors of equal size and power compete for a matured market, which reduces the profitability of the overall industry. From 2015-2020, the average profit for top automakers was 7.5% - low compared to other industries (ZTC 2021).

2.1.3 Internal Analysis: Resources, Capabilities & Activities

Firms in a given industry often face similar opportunities and threats. To find the source of performance differences we must look within (Rothaermel 2013). The *Resource-Based View* suggests that resources are key to superior performance, running on 2 premises: *Heterogeneity* and *Immobility* (Barney 1991). A firm possesses a unique bundle of resources and capabilities difficult to transfer. We can anticipate that competitive advantage is more likely generated by intangible rather than tangible resources. The tangible assets we own can be purchased or transferred, while tacit knowledge, reputation, and internal culture, are unique and must be built.

According to the *VRIO framework* (Barney 1991) *(Fig. 8)*, by having industrial facilities all around the world, Einstein possessed a *Valuable* resource. To boost our production capacity, we invested in more production lines *(Fig. 9)*. These resources are valuable, but other players have them likewise. They represent a *Competitive Parity*. Meanwhile, we achieved efficient factory utilization, the highest among all players (91.33%) *(Fig. 10)* and amassed significant cash reserves to support future business development. Even though those can be replicated, they are *Rare* and offered a *Temporary Advantage*. Committing to sustainability helped us achieve a top ESG Ranking, which attracted additional investor money and made us one of the only two firms attaining it *(Fig. 11)*. To sustain a solid *Economic* performance, we cared for a holistic view including *Social* and *Ecological* factors as equals – *The Triple Bottom Line (Fig. 12)*. In a world with stricter regulations and higher public scrutiny, companies need to extend their scope of action or risk collapsing under a bad reputation (Norman and MacDonald 2004). We also believed that Transportation as a Service (TaaS) would be important, so much so that we pioneered the idea and pitched it as a no-miss opportunity responding to the urbanization trends and resulting in an important $1,9 billion deal with Nova Dealership *(Fig. 13)*. Both Sustainability and TaaS are costly to *Imitate*, therefore offering a longer temporary advantage.

At last, I identified the core competencies that made us lead the charts *(Fig. 14)*. Einstein was *Organized* to capture value of its marketing mix, providing an optimized offering to customers. Despite charging a premium of 10% vs the average price, we ranked among the highest in cumulative E-Car sales and one of the lowest in marketing costs *(Fig. 15)*. We were able to offer a superior marketing mix by prioritizing R&D, which placed cashflow pressure on treasury but enabled us to introduce new features to the market earlier than others *(Fig. 16)*. We kept our Net Income high, our Net Assets low, and generated higher Return on Net Assets, positively impacting *Value Added*, a measure of competitive advantage (Rumelt 2003).

Our dynamic network of strategic activities could also be where competitive advantage emerges (Porter 1996). It is so intertwined that replicating it would be difficult for competitors. I drafted this network *(Fig. 17)*. As reference, by cutting marketing costs and producing models in best-selling locations, saving on tariffs and imports, we reduced costs per car sold and managed to offer innovation at affordable premium prices. To keep high factory utilization, we did seasonal campaigns for higher rotation of stocks, avoiding costs with temporary layoffs. For this network to be relevant in the future, Einstein needs to cultivate its dynamic capabilities and be able to quickly reorganize resources in response to structural background changes.

2.1.4 SWOT Analysis

The *SWOT analysis (Fig. 18)* puts in perspective our *Strengths*, such as higher factory utilization, quicker R&D, and lower production costs, in relation to *Opportunities*, like higher price sensitivity and EV preferences in China and Europe, where we obtained 35% market share with affordable premium EV models *(Fig. 19)*. We failed to penetrate the US market due to their resistance to EVs in certain segments. Our greatest *Weakness* was risk aversion, as we became conservative after seeing good results. The *Threats* we faced relates to becoming even more sustainable and the changing preferences on mobility options which exclude cars.

2.1.5 Strategic Positioning

The *Structure-Conduct-Performance* (SCP) model argues that pricing power depends on product differentiation (Church and Ware 2000). We began the simulation with non-differentiated products and being a low-cost diesel automaker, but it became clear that the market was not responding well when we tried selling low-cost EVs. Then, we decided to pursue a different strategy for EV models. We would offer differentiated products and change to affordable premium prices, leading green innovation and avoiding pointless price wars. At that point, we had invested in more factories to produce large scale, so we couldn't just turn full premium and sell less units. We had to follow an *Integration Strategy*, attempting to merge *Cost-Leadership* and *Differentiation*. In addition to offering the latest features, we focused on low operational expenses to compete in Value, which we measured as the *Price per Feature.*

2.1.6 Cross-Functional Review of Strategy

Cross-functional teams are meant to transform static organizations into living systems through agile decisions, frequent exchange of ideas, and higher engagement of its members. Einstein's executive team was small, multicultural and we had to actively communicate with one another, as crucial information was purposely hidden from individual dashboards, avoiding functional silos and isolation. Therefore, communication was key as managing our departments without knowing about others would be like a "shot in the dark" with a narrow scope of action.

The function of Strategy was shared among all. As such, we defined our mission as "leading green innovation" together. This could only be honored if *Innovation* played its role in ensuring a quick R&D. Yet, even the most innovative products would fail if *Marketing* set prices too high or too low, ultimately impacting our desired positioning as affordable premium. At the same time, we could not become sustainable without *Finance* to raise green funds that

would support this strategy. This cross-functional dynamic allowed us to assess the implications of our decisions in other departments, and brainstorm solutions from multiple points of view.

2.2 Innovation Review

Innovation is a powerful catalyst in the competitive process. It enables firms to reshape markets and create long-term wealth (Rothaermel 2013). Successfully launching a new product enables short-term monopolistic profits. The iPhone, for example, led the smartphone industry to shift from keyboards to touchscreens, forever changing the interaction between device and user. Apple initially had no direct competition, directing the market where it wanted. This process of cyclic and successive innovation waves was depicted by Schumpeter (Adler 2019) as an inevitable feature of capitalism. It states, "creative destruction" as the "process of industrial mutation that continuously revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one" *(Fig. 20)*.

The *IndustryMasters*® simulation environment represented very well what is currently happening in the automotive industry. In real life, there are four main sources of change: Electric Vehicle (EV), Autonomous Vehicle (AV), Connectivity, and Transportation as a Service (TaaS) (Teece 2018). In the simulation, while Hybrids and EVs were gaining popularity and were expected to be widely adopted, Einstein was initially limited to traditional combustion. The relative lack of prior experience in such technologies implied extraordinary R&D expenses for the company. We believed that a small push would be sufficient to early integrate those technologies into our products and become a leading innovative player.

For this Innovation review, I go over the Industry Lifecycle and how it influenced our product launches and R&D, the critical mistakes we made in this functional area, ending with a brief reflection on the determinant choice we had to make between Hybrids and EVs.

2.2.2 The Industry Lifecycle, Product Launches and Critical Mistakes

Technologies are often phased out when they get closer to reaching their physical limits. The replacement of one technology with another follows an S-shaped curve implying a period of introduction, growth, and then a new physical limit (Rothaermel 2013). After 100 years of exploring oil reserves, diesel cars reached their physical limits *(Fig. 21)*. Fossil fuels are becoming scarce, and the repercussions of excessive emissions are now visible to people. Therefore, we had to heavily invest in R&D so we could surf the technological wave.

Einstein's diesel portfolio was entering a declining lifecycle, so we established priorities as to what models should be replaced first. We renovated the portfolio essentially in 3 phases. Phase 1: "*Brand Establishment*"; Phase 2: "*Scale & Access*"; Phase 3: "*Green & Versatile*" *(Fig. 22)*. In Phase 1, Einstein established brand reputation with the Micro addressing a new market segment. A small and pioneer car designed for urban convenience that could potentially yield monopolistic profits. Simultaneously, we launched the Lifestyle, elevating our brand through enjoyable moments. Those first models had very basic features. Phase 2 prioritized reducing fleet emissions and reaching larger consumer bases. The Urban and Executive models came to reach the working segments of people and businesses, offering a moderate level of new features. In Phase 3 we launched Freedom and Deluxe, which had most features available for premium segments like SUVs and Luxury. These customers are generally more demanding and less sensitive to prices, so we offered a superior product, with all Connectivity and Autonomous Driving features, making it worth transitioning from their old loved combustion options.

We had an unplanned Phase 4: "*Joint Venture in Car Sharing*" – A new service that enabled dealerships to establish Car Sharing services through our management software. The reasoning was simple: Real-time insights on *TaaS* trends and consumer commuting habits, promoting a "hands-on experience" inside our newest models, upselling and cross-selling.

As #1 firm of Year 5 in Value Added *(Fig. 23)*, we assumed that our launching strategy was a perfect success. However, when the simulation ended, we were demoted to second place *(Fig. 24)*. We totally ignored the benefits of relaunching vehicles and resetting maturity, which was pure negligence. All models should have been replaced by new models by the end of Year 5, as they were already outdated. Instead, we opted for receiving those profits and not making additional investments in innovative products. As expected, we experienced a decline in the sales of all models *(Fig. 25)* and nearly stagnant growth in Value Added in Year 6 *(Fig. 26)*.

2.2.3 The Choice Between Hybrids & Electric Vehicles

We had the option to go hybrid first, but we thought it was a "halfway technology". Other players went hybrid and made a smoother transition while we were laser-focused on introducing EVs quickly, witnessing an earlier decrease in Value Added during our first years but also a faster rise of the Value-Added curve. In the end, companies that first launched hybrid vehicles were performing lower than totally EV-focused companies like Einstein *(Fig. 27)*. Our rationale aligned with what Former Nissan CEO Carlos Ghosn stated about how hybrids are terrible business. Several other EV companies share his vision including Tesla in the US and BYD in China, which never offered hybrid cars and grow at superior rates.

2.2.4 Cross-Functional Review of Innovation

Innovation played an important role on the direction of the company as it set the pace for R&D, and new products that would ensure the electric transition. Yet, Innovation was highly dependent on Finance for securing the necessary funds, without which it could not proceed, and depended on Operations to coordinate launching timings. At the same time, Finance and Operations depended on Innovation for products that would contribute to growing profits and managing costs with new features. This cross-functional dependency applied to all other areas.

2.3 Finance Review

By Year 6, Einstein Motors owned an entirely electric-powered vehicle portfolio. Based on annual reports taken from the simulation in the form of Financial Statements, this part critically examines the development of Einstein's Financial Condition and Operational Results from 2020 to 2026. I will discuss results and future projections, implying risks and assumptions. Also, I will explain Shareholder Returns and our commitment to creating long-term value for them. Finally, I will discuss our achievements in Sustainable Finance and ESG initiatives.

2.3.1 Financial Statements Analysis

Profit & Loss: Einstein grew its revenues in 5 out of 6 years it has been in business from US$16,5 billion in 2020 to US$26,8 billion in 2026 at an average annual growth rate of 8,6%. The 6th year registered an outstanding growth (15,2% YoY) driven by a successful push on Freedom, Executive, and Lifestyle models. The Cost of Goods Sold (COGS) fluctuated between 55-61% of Revenues (oR) showing our efforts to keep production costs low. For comparison, Tesla, Ford, and Toyota's COGS have ranged between 75-81% oR. Our Gross Profit reached US$10,5 billion in 2026, approximately 39% oR. From 2021 to 2023, our operational expenses, which included Marketing, G&A, CO2 Premium, and Depreciation, ranged from 20-25% oR. Due to the financial incentive of our emission-free vehicles, we fixed that amount at 19%-20% oR from 2024-2026, increasing our EBIT from 13% oR in 2023 to over 20% in the following years. Financial Items systematically accounted for less than 3% oR, benefiting from our debt optimization efforts which decreased Interest Expenses from US$0,6 billion in 2023 to US$0,3 billion in 2026. Einstein lacks fiscal optimization, as our Taxes represented an expense of over 6% oR in the last 3 years, canceling the advantages we built in other P&L accounts. This fiscal optimization should be prioritized in the next years. At last, Einstein registered an average Net Income of 11% oR, consistent with other players like Toyota

(9% oR), Tesla (10% oR), and Ford (13% oR), achieving US$3,7 billion in 2026 *(Table. 1)*. I estimate that in 3 years' time, Einstein can increase its revenues by 53% to US$40 billion in 2029, assuming constant growth rates and a Net Income increase from 13% oR in 2026 to 16% oR in 2029 after Tax expense is optimized from 6% oR to 5% oR *(Table. 2)*.

Balance Sheet: After assuming an affordable premium positioning, we estimated lower demand in E-Car units and decided to stop growing our Long-Term Assets as we were already able to supply the market. After an initial expansion of Properties, Plants, Equipment, Land & Buildings, it reached an all-time high at US$17,1 billion in 2023, followed by sole depreciation which reduced it to US$13,5 billion in 2026, close to the starting figure. Due to early investments in R&D and Operational Efficiency to cut emissions, we were able to accumulate cash reserves up to US$8,1 billion in 2026, preparing for future business development. Cash on Hand represented nearly 28% of our Total Assets (oTA), equivalent to Tesla's cash reserves. We had problems with excess inventory, nearly 13% oTA in 2024, but we normalized to 7% oTA after running seasonal campaigns to stock out inventory. Even though it was an important driver of E-Car sales, in 2025 we suspended our Financial Services, as we realized this figure kept growing, hurting our Value Added KPI. Towards the end, Einstein purchased back shares, leaving only 63M shares outstanding. Regarding Liabilities, we never generated short-term debt and tried to keep Long-Term Debt around 40-50%, by repaying and issuing debt perpetually. Einstein ended with the lowest WACC (%) among all players in Year 6 at 6,50%. *(Table. 3)*.

Cashflows: The Net Cash generated by our operating activities was US$8,1 billion in 2026. In the last period, it increased by 231% from US$3,5 billion in 2021. Net Cash in investing activities was US$1,6 billion in 2026, considerably less than the first two years where we invested nearly US$4,3 billion annually, attributable primarily to purchases of Property, Plant, and Equipment of US$0,8 billion to expand our production capacity, Operational

Investments of US$1,5 billion to reduce emissions and Research & Development for innovative technology of US$2,2 billion. Net Cash used in financing activities was positive during the first two years, as we subscribed to debt to finance our early investments. From 2023 onwards, it became negative as repayments of debt, dividends, and shares outweighed proceeds from long-term loans. We made regular bank deposits with a fixed amount of US$1,2 billion, distributed higher dividends averaging US$1,0 billion per year, purchased back shares accounting for US$5,5 billion, and restructured our debt to achieve optimal company leverage *(Table. 4)*.

2.3.2 Dividend Policy, Divident Payments & Total Shareholder Returns

While carefully weighing the success of the company, the need for additional finance, and the dividend payout ratio, Einstein Motors intends to keep satisfying the expectations of its shareholders for dividend payments. A fixed 30% of Net Income is destined for dividend payment every year. From 2021-2023, we paid an average Dividend per Share (DPS) of $5,69, whereas from 2024-2026 we increased that amount by 259% to $14,74 DPS, showing commitment in returning value *(Table. 5)*. After an initial period of instability, our shareholders were able to benefit from very positive total returns from 2024 onwards due to higher dividend payments and overall better performance of our share price, which evolved from $364,95 at the beginning of 2020 to $592,21 by the end of 2026, an increase of over 162%. *(Fig. 28)*.

2.3.3 Sustainable Finance & ESGs

Green Bonds: In 2021, we issued our first Green Bond amounting to US$600 million, with a term of 4 years, no coupon, and an interest rate fixed at 3,00%. Einstein used these proceeds to carry out its ambitious long-term sustainability strategy while optimizing capital structure and reducing finance costs. We gradually invested in sustainable operational projects *(Fig. 29)* that reduced CO2 emissions in Production, Energy, and Supply Chain *(Fig. 30)*. By

replacing old debt with new green bonds, Einstein obtained better interest rates. Previous loans demanded higher interest rates ranging from 4,00-6,00%. In Q13 nearly 35% of our capital was green, by Q17 nearly 54% and by Q25 we reached 100% *(Fig. 31)*. The Board left an additional US$567 million available to borrow in green bonds for future investments.

ESG Report: Stakeholders are rightfully demanding firms to disclose more about their Environmental, Social, and Governance plans, which motivated Einstein to elaborate its own ESG Report in 2023 *(Fig. 32)*. We realized much more needed to be done. Besides investing in Energy, and Solar Panels, we also had to invest in our people. Despite having qualified workers, they were not satisfied, and diversity was the lowest among all players. We quickly made diversity an investment priority, achieving 49,3% diversity by 2026 *(Fig. 33)*.

2.3.4 Cross-Functional Review of Finance

As the only department capable of moving the quarters, Finance played a crucial part. This was a tremendous responsibility because even a single mistake could result in losing an entire quarter. However, it was also dependent on other departments, such as Operations, who had to prevent our high Fixed Assets from compromising the Value Creation KPI or make sure that our operational projects were sustainable and production costs were kept as low as possible.

2.5 Final Conclusions

This in-depth Firm Analysis from the perspective of Strategy, Innovation, and Finance, sheds light on the evolution of Einstein Motors over the course of 26 quarters. To make sense of this analysis, it must be read in conjunction with my self-reflection on team dynamics, as Einstein was only able to finish in 2nd place because of the way our team interacted, to the way I developed and learned as a person. Disruptive innovation only takes place when there is low resistance to change, free exchange of ideas, tolerance, and an entrepreneurial mindset.

In this essay, I start by using the AFI framework to analyze our Strategy. Consistency in decision-making was made possible by defining a clear strategic intent and being aware of both internal and external conditions. I then described in detail our approach to innovation and how we opted for Electrics over Hybrids. Finally, I used data from the simulation to examine our financial performance. Because we believed that the best alternatives may not always be the most expensive or the cheapest, Einstein discovered its position as Affordable Premium. In the end, we stuck to our vision of "democratizing access to sustainable innovation", which puts us side by side with Tesla. Einstein's core competencies included quick innovation, effective factory utilization, and optimal marketing mix. We have been unable to hold onto 1st place due to poor inventory management, risk aversion and delay on relaunching or replacing products, and excessive financial services. Nevertheless, our enterprise proudly sold 3,5 million E-Cars, reached US$26,8 billion in revenues with perspective to grow further and lead the market, became the 3rd in Sustainability Rating, won the ESG Rating and holded to its original purpose.

The future of Einstein relies on its dynamic capabilities to solve problems, continue innovating, and being sustainable. Without knowing what the dominating technology of the future will be, Einstein will need to invest in several alternatives for less-polluting vehicles, incurring necessary sunk costs if some turn out to be unprofitable. As our geographic markets mature, Einstein must explore alternative mobility options that are more suited for developed nations, which is the case for Europe, the US and soon China. "A developed country is not a place where the poor have cars. It's where the rich use public transportation" – Gustavo Petro, Mayor of Bogotá, 2013. In fact, as societies demand for sustainability, governments and urban planning will respond gradually by eliminating cars and increasing green spaces, totally human centered. Sustainability is more than just a buzzword; it will dictate the future survival of organizations. The Automotive industry will keep being pushed until absolute zero emissions are achieved and we can move around without compromising future generations.

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Appendice

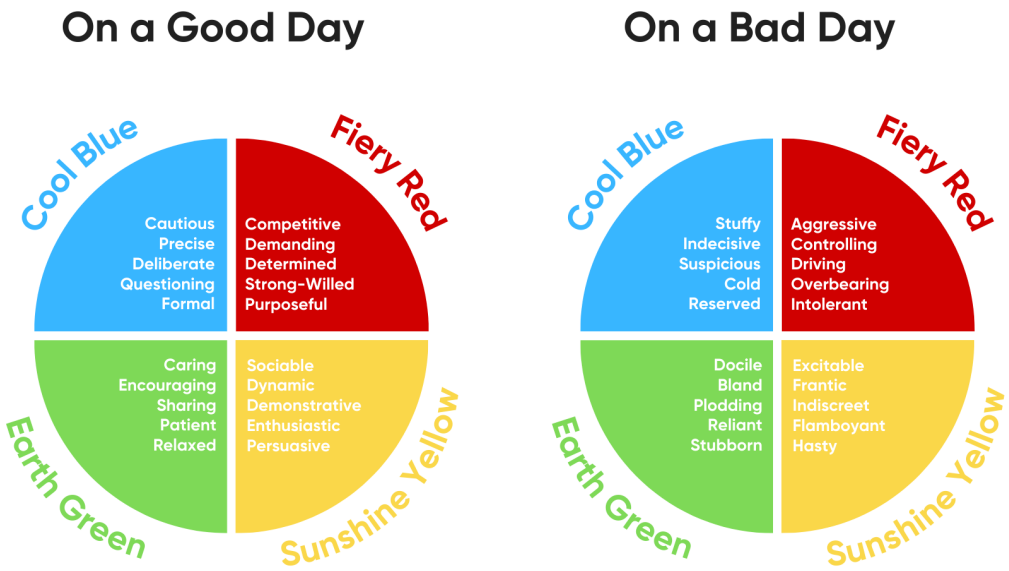


Figure 1: Characteristics of Dominant Colors on Good Days and Bad Days.
Source: Own Illustration. Based on *Insights Discovery*® personality test. 2022.

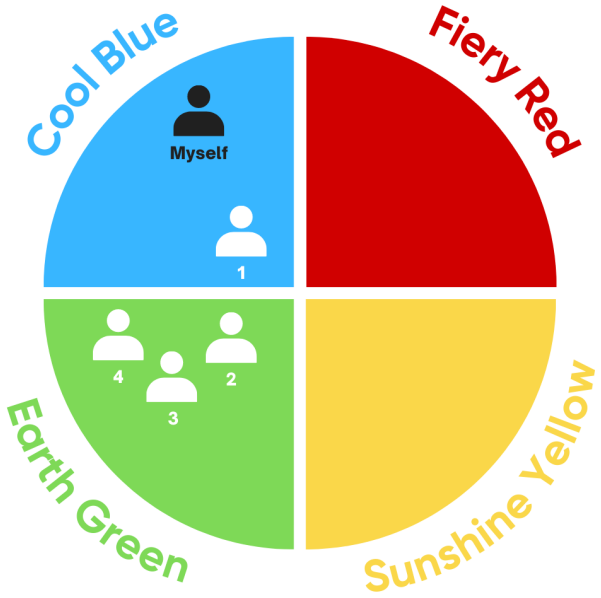


Figure 2: Representation of Relative Personality Scores of Team Einstein – My Position vs Team Members. Scores Obtained During Leadership Workshop of Business in Practice (BiP) by Miguel Fernandes.
Source: Own Illustration. Based on *Insights Discovery*® personality test. 2022.

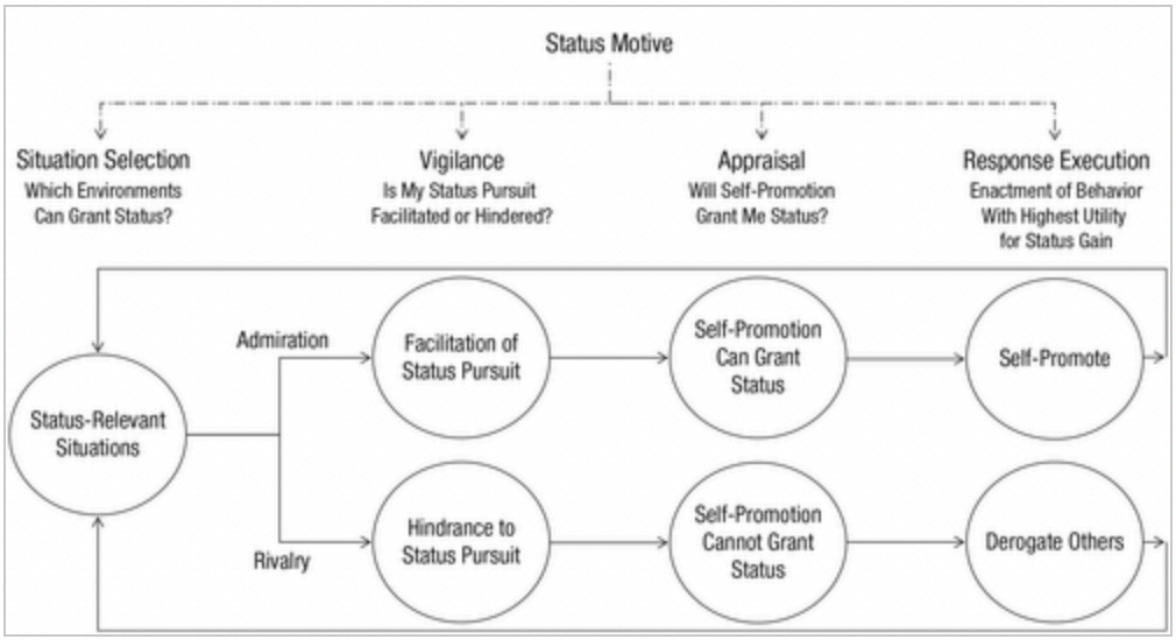


Figure 3: Hypothesized self-regulation model of narcissistic status pursuit
Source: Grapsas, Stathis, Eddie Brummelman, Mitja D. Back, and Jaap J. A. Denissen. "The 'Why' and 'How' of Narcissism: A Process Model of Narcissistic Status Pursuit." *Perspectives on Psychological Science.* 2019.

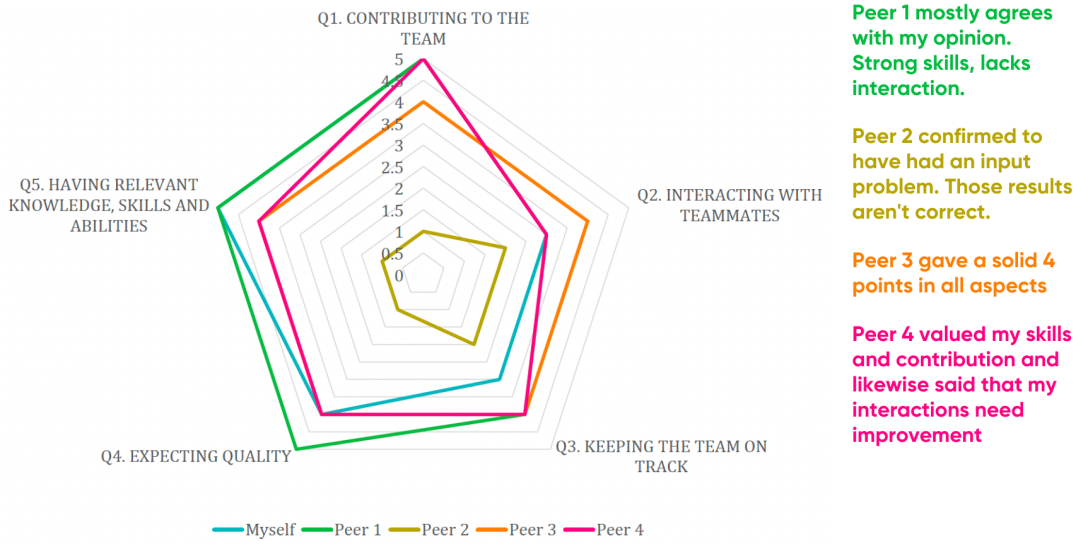


Figure 4: Business in Practice - Peer & Self-Assessment. Self-assessment and Peer assessment were similar, with the exeption of Peer 2 who confirmed to be an error of input.
Source: BiP Industry Master's Simulation – Peer Feedback. 2022.

Figure 5: AFI Strategy Framework links three interdependent strategic management tasks that together help firms conceive of and implement a strategy that can improve performance and result in competitive advantage. AFI Strategy Framework: Analyze, Formulate, and Implement.
Source: Rothaermel, Frank. Strategic Management: Concepts. 2013.

Figure 6: Futuristic Smart City that will House 9 Million People with no Cars. Currently under construction in Saudi Arabia.
Source: "The Line" – NEOM. 2022.

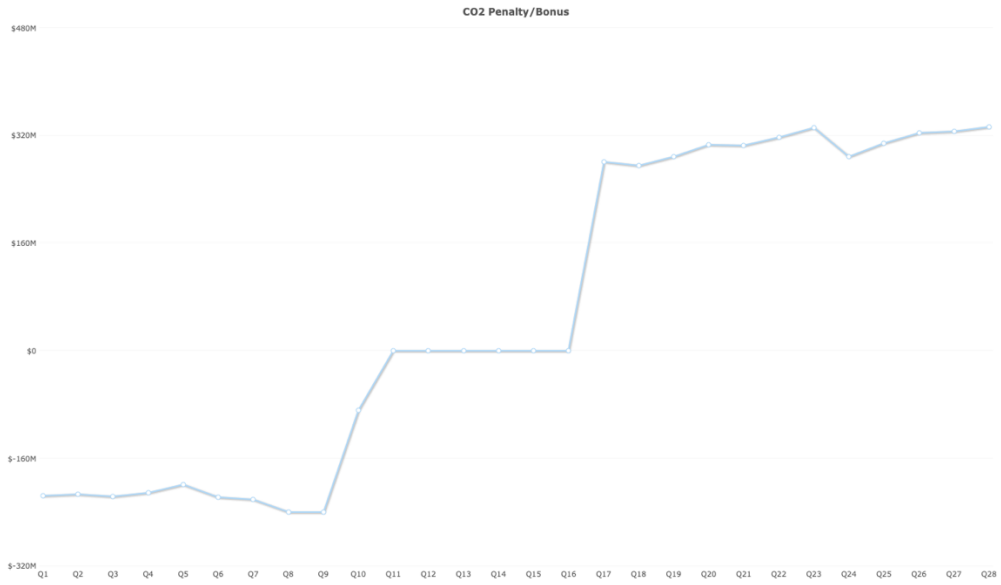


Figure 7: CO2 Penalty/Bonus over 28 game quarters. We stopped paying penalties by Q11 and obtained bonus in Q17. In between we paid and gain nothing from it.
Source: BiP Industry Master's Simulation – Team Einstein. 2022.

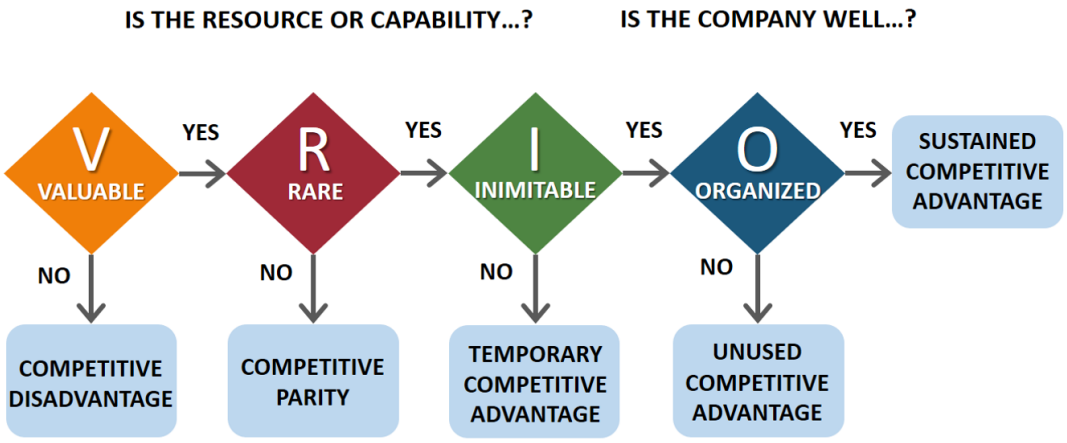


Figure 8: VRIO Framework
Source: Business 2 You based on Barney, Jay. 1991. "Firm Resources and Sustained Competitive Advantage." *Journal of Management*. https://www.business-to-you.com/vrio-from-firm-resources-to-competitive-advantage/. 2016.

Operational Expansions

		Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
Technology	Cost ($M)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q21	Q22	Q23	Q24
China Expansion	800										267	267	267	X															
China Expansion	800														267	267	267	X											
China Expansion	800																	267	267	267	X								
Total Expenditure	2400	0				0				800				800				800				0				0			

Figure 9: Operational Expansions – Einstein Strategy for Industry Master's Simulation.
Source: Own Illustration. 2022.

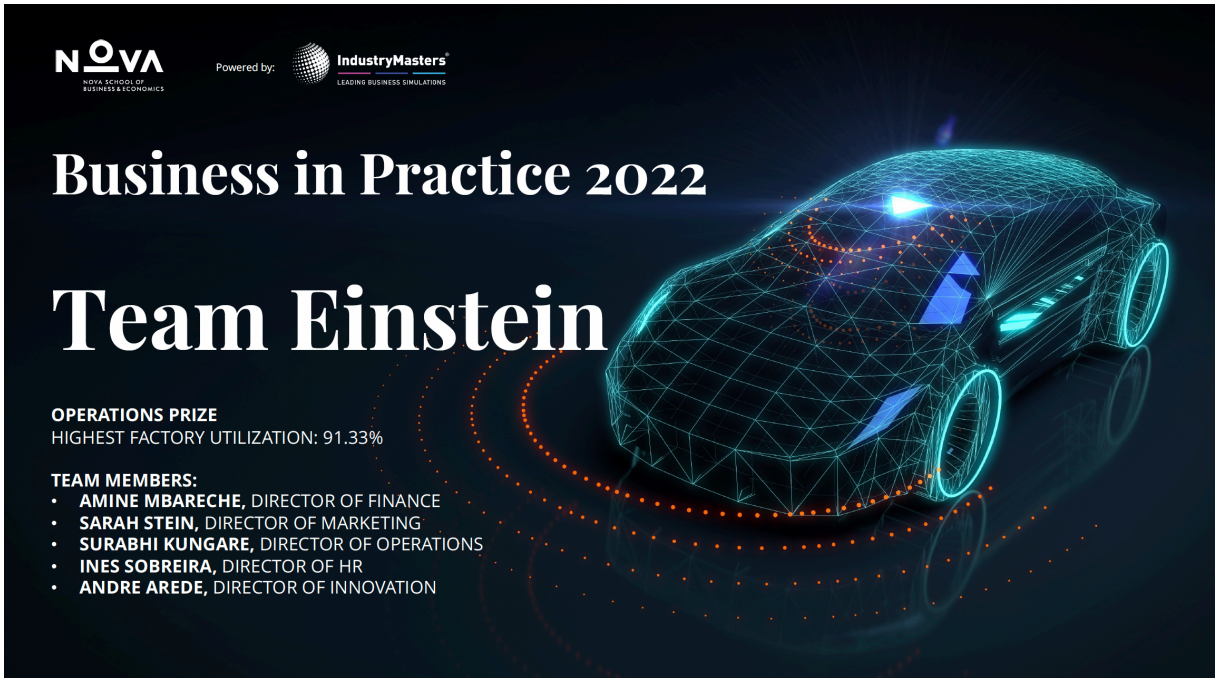


Figure 10: Operations Prize (Highest Factory Utilization: 91.33%) among all teams
Source: BiP Industry Master's Simulation – Team Einstein. 2022.

ESG Report Marking Table - EINSTEIN

Criteria	No evidence (Score 0)	Some evidence (Score 1)	Strong evidence (Score 2)
References other sustainability frameworks		1	
Uses evidence and data from the simulation			2
Uses evidence and data from their own team			2
Describes their company values			2
Shows a link between their company's values and its sustainability activities			2
Provides evidence that all 5 business functions are involved in its sustainability efforts		1	
Gives a long term view of the company and its goals			2
Shows how sustainability and ethics are at the core of this long term view			2
Uses the required presentation format (7 slides including title slide, uses recommended headings, etc)			2
Slides are clearly and professionally presented			2
Total score out of 20			18 - INCREASE

Score of 0 – 10 = divest investment

Score of 11 – 17 = no change

Score of 18 – 20 = increase

Figure 11: Results of ESG Report for Team Einstein
Source: BiP Industry Master's Simulation. ESG Roleplay. 2022.

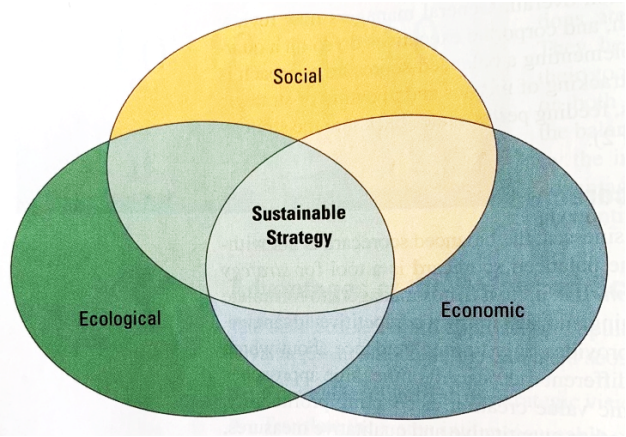


Figure 12: The 3 Priorities of any Sustainable Strategy: Social, Ecological and Economic.
Source: Rothaermel, Frank. Strategic Management: Concepts. 2013.

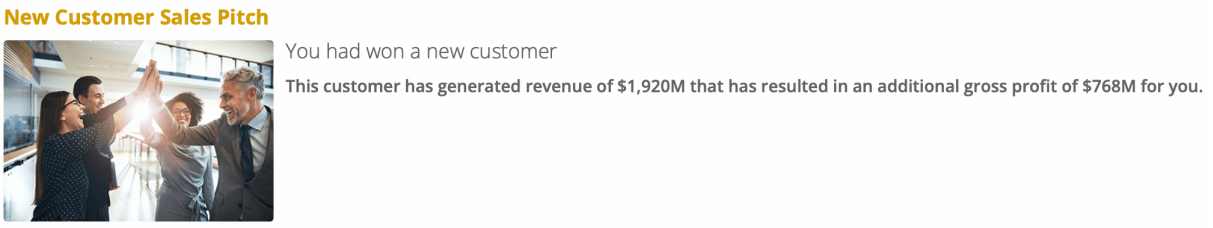


Figure 13: Winning the Sales Pitch as a Team
Source: BiP Industry Master's Simulation. Sales Roleplay. 2022.

Resources & Capabilities	Strategic Objective	V	R	I	O	Competitive Implication
Global Network of Business Units	Global Reach & Influence	✓				Competitive Parity Most players have this
Manufacturing Plants & Equipment	High Production Capacity	✓				Competitive Parity Most players have this
Production Facilities & Industrial Processes	High Factory Utilization	✓	✓			Temporary Advantage Can be copied
Reserves of Cash on Hand	New Business Developments	✓	✓			Temporary Advantage Can be copied
Sustainability Policy (ESG Credit)	Leading Sustainability	✓	✓	✓		Temporary Advantage Hard & Costly to Copy
Joint Venture with Car Sharing Service	Transportation Services (TaaS)	✓	✓	✓		Temporary Advantage Hard & Costly to Copy
Marketing Mix	Having the Right Offering	✓	✓	✓	✓	**Sustained Competitive Advantage**
Brand Reputation	Being Popular & Attractive	✓	✓	✓	✓	**Sustained Competitive Advantage**
Rapid Innovation	Leading R&D Research	✓	✓	✓	✓	**Sustained Competitive Advantage**

Figure 14: VRIO Framework Applied to Team Einstein.
Own Illustration. 2022.

Figure 15: Score Comparison LOWEST 3 Marketing Expenses VS TOP 3 E-Car Sales
Source: BiP Industry Master's Simulation. 2022

Research & Development

Technology	Cost ($M)	Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q21	Q22	Q23	Q24
E-Drive Modules	600	75	75	75	75	75	75																						
Home Charging Stations	300							100	100	100																			
High Power Charging (HPC)	200										100	100																	
Connectivity Technology	250				250																								
Infotainment Services	160						80	80																					
Big Data	150								75	75																			
Cross-Platform Technology	200										100	100																	
Automated Parking	500					250	250																						
Driver Assistance	250								125	125																			
Cloud Connection	300										150	150																	
Secure Infrastructure	400															200	200												
Total Expenditure	3310	550				1210				1000				400				0				0				0			

Figure 16: R&D Plan – Einstein Strategy for Industry Master's Simulation.
Source: Own Illustration. 2022.

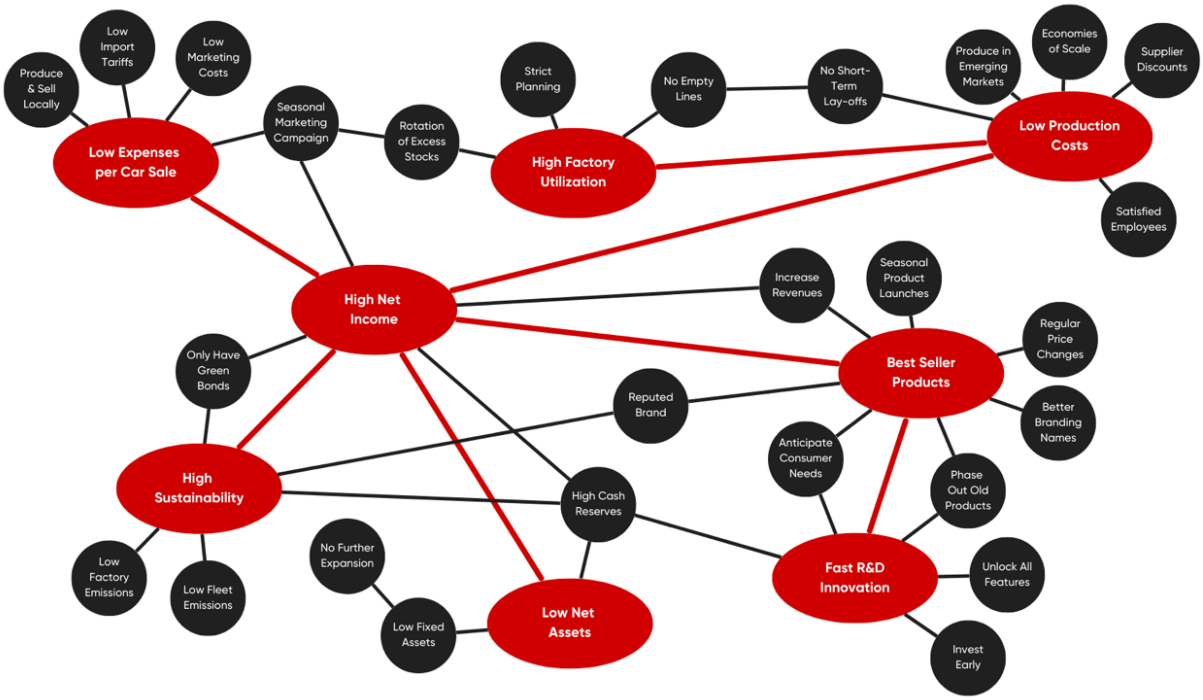


Figure 17: Einstein's Strategic Activity System
Source: Own Illustration. 2022.

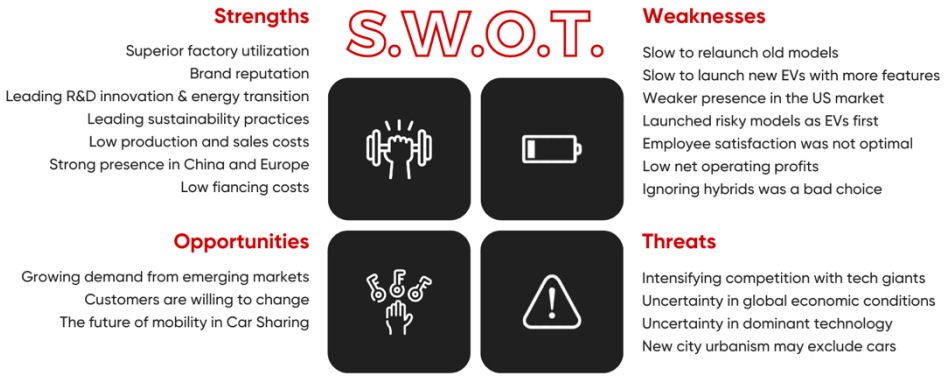


Figure 18: Einstein's SWOT Analysis
Source: Own Illustration. 2022.

Segment Sales Player - Team 1

	Total Sales	Total Revenue	Player Sales	Player Revenue	Segment Market Share
Americas	163,235	$6,861M	46,142	$2,054M	29.9%
Europe	139,853	$5,627M	47,554	$2,003M	35.6%
Asia	203,945	$7,988M	64,714	$2,824M	35.3%

Figure 19: Einstein Market Share per Geographical Region
Source: BiP Industry Master's Simulation. 2022.

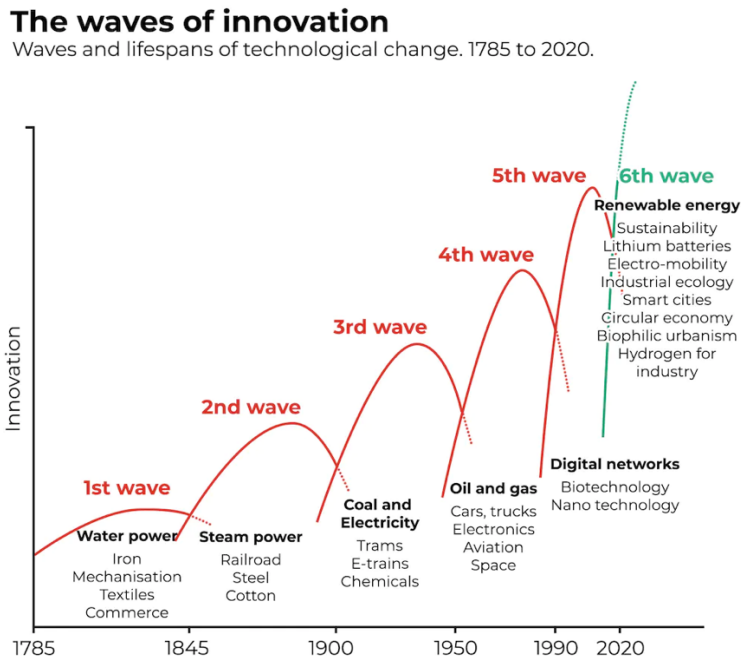


Figure 20: Creative destruction "is the essential fact about capitalism". New waves of innovation come to destroy old paradigms said Joseph Schumpeter in 1942
Source: The Conversation. 2020. https://theconversation.com/creative-destruction-the-covid-19-economic-crisis-is-accelerating-the-demise-of-fossil-fuels-143739

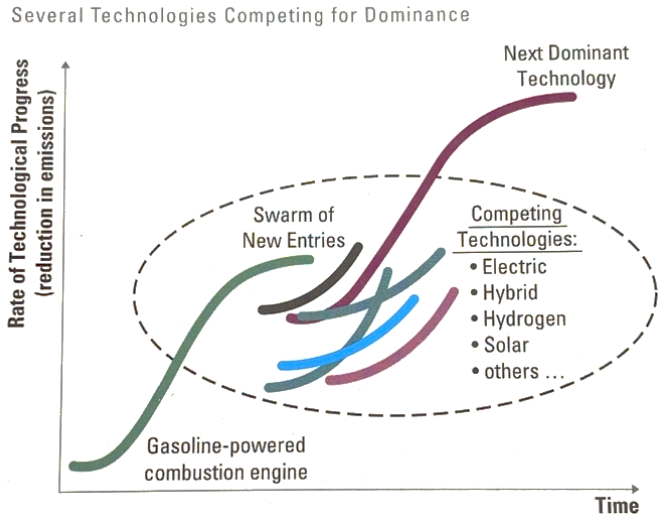


Figure 21: Several Technologies Competing for Dominance
Source: Rothaermel, Frank. Strategic Management: Concepts. 2013.

Product Launch

Model	Cost ($M)	Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q21	Q22	Q23	Q24
EINSTEIN Micro	550	DIESEL PORFOLIO						275	275	PROD								ELECTRIC PORTFOLIO				LACK OF INNOVATION				OUTDATED PRODUCTS			
EINSTEIN Lifestyle	650							325	325	PROD																			
EINSTEIN Urban	500									250	250	PROD																	
EINSTEIN Executive	550									275	275	PROD																	
EINSTEIN Freedom	650												217	217	217	PROD													
EINSTEIN Deluxe	715												238	238	238	PROD													
Total Expenditure	2250	0				1200				1505				910				0				0				0			

Figure 22: Product Launch Plan – Einstein Strategy for Industry Master's Simulation.
Source: Own Illustration. 2022.

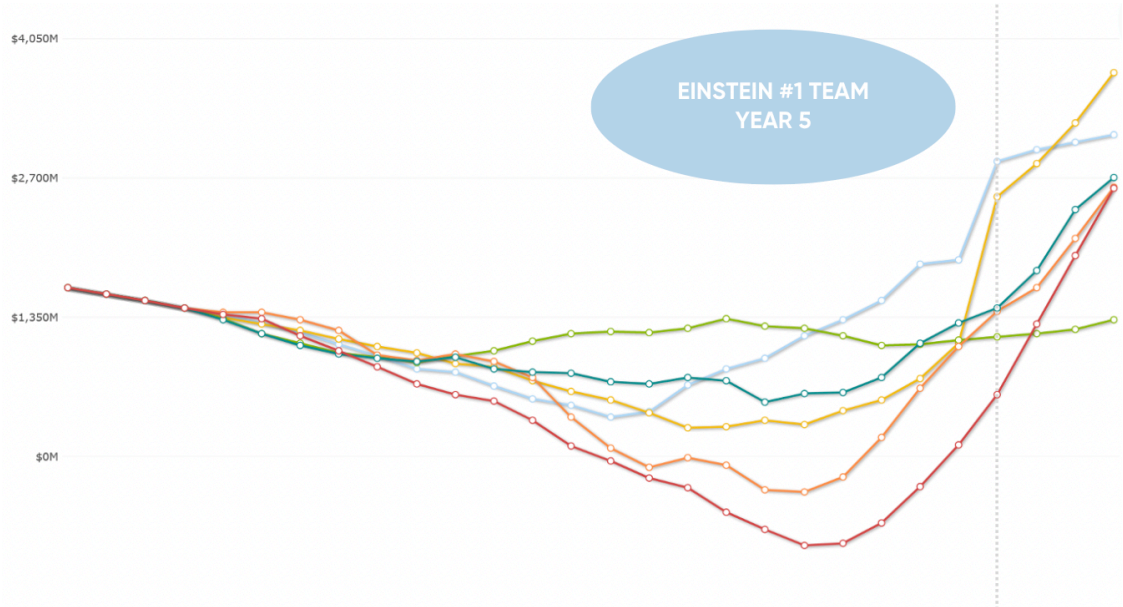


Figure 23: Value Added Scores – Einstein Leading Chart in Year 5.
Source: BiP Industry Master's Simulation. 2022.

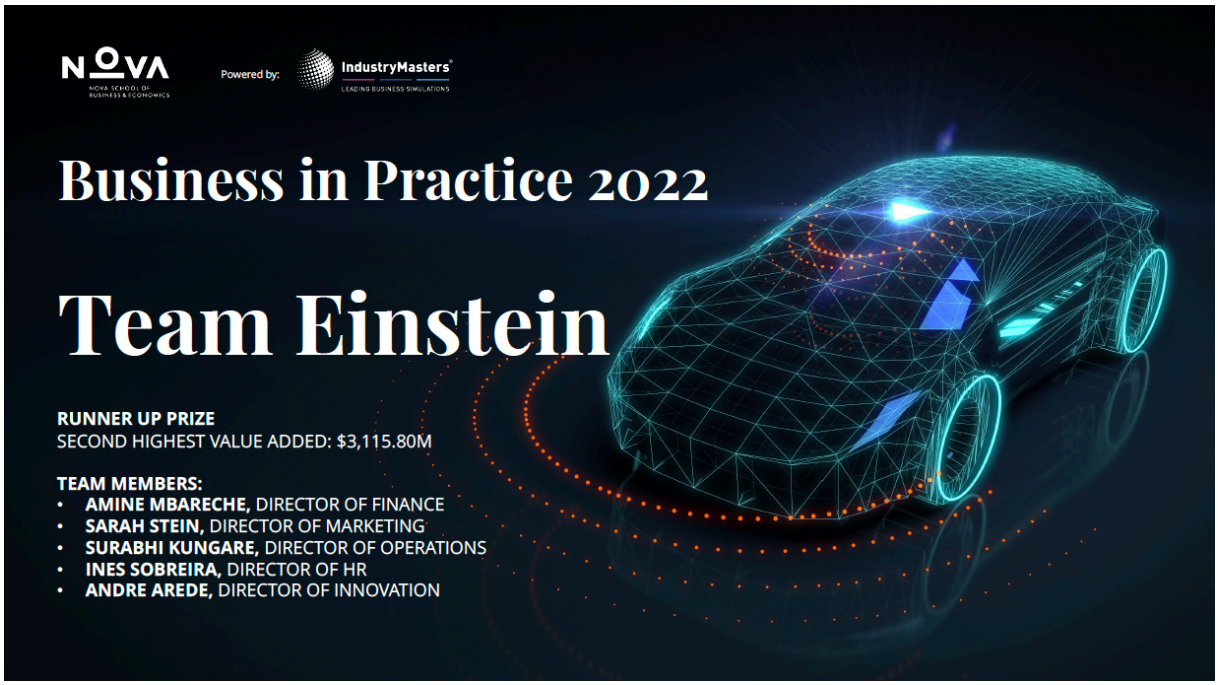


Figure 24: Second Place Prize among all players
Source: BiP Industry Master's Simulation – Team Einstein. 2022.

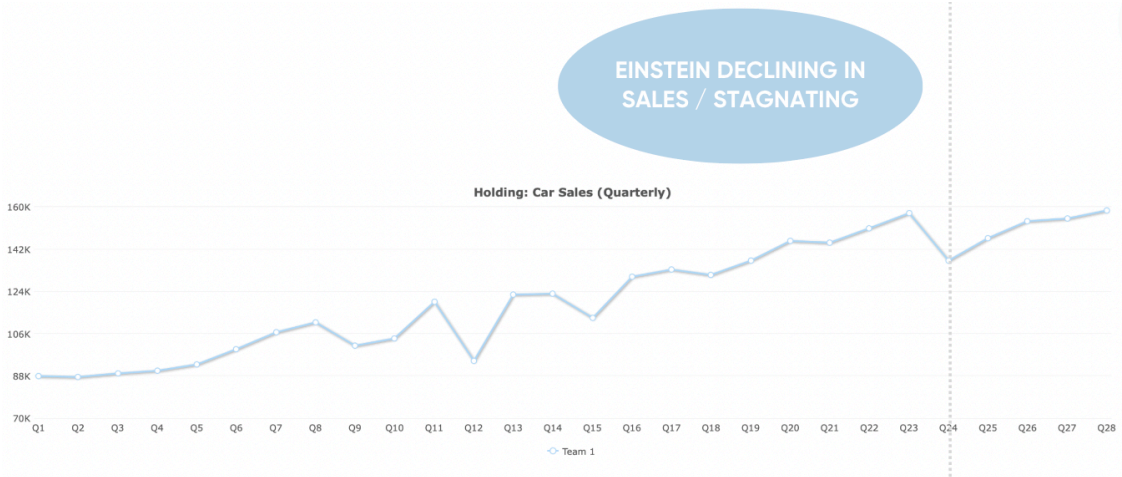


Figure 25: Car Sales per Quarter – The peak fall of sales when entering year 6
Source: BiP Industry Master's Simulation. 2022.

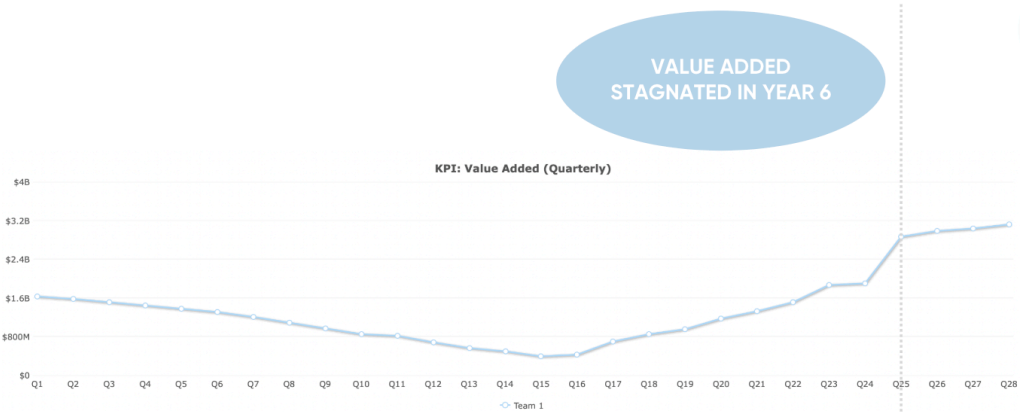


Figure 26: Value Added Quarterly – Flat Growth - Stagnation of Einstein Motors.
Source: BiP Industry Master's Simulation. 2022.

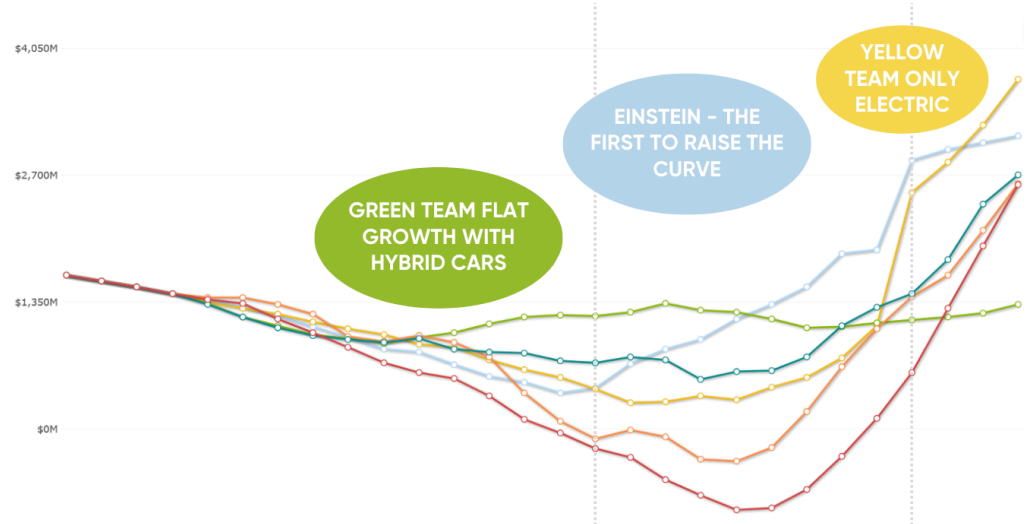


Figure 27: Difference Between 3 Competitors: 2 Fully Electric (Blue and Yellow) & 1 Hybrid (Green). Electric competitors raised faster and higher. Hybrid competitors showed lower growth at a slower pace.
Source: BiP Industry Master's Simulation. 2022.

Profit & Loss ($ in thousands)							
Account	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Revenue	**$ 16 553 518**	**$ 17 860 678**	**$ 19 911 201**	**$ 20 447 082**	**$ 24 002 818**	**$ 23 292 642**	**$ 26 832 529**
- Cost of Goods Sold	$ 9 025 591	$ 10 350 062	$ 11 838 013	$ 12 608 765	$ 14 224 403	$ 13 906 525	$ 16 347 012
% of Revenues	55%	58%	59%	62%	59%	60%	61%
= Gross Profit	**$ 7 527 927**	**$ 7 510 616**	**$ 8 073 188**	**$ 7 838 317**	**$ 9 778 416**	**$ 9 386 117**	**$ 10 485 517**
% of Revenues	45%	42%	41%	38%	41%	40%	39%
- Marketing Expenses	$ 18 013	$ 338 707	$ 503 772	$ 530 166	$ 936 519	$ 941 255	$ 961 105
- G&A Expenses	$ 892 448	$ 1 136 970	$ 1 503 734	$ 2 102 362	$ 1 736 254	$ 1 866 747	$ 1 695 742
- Premium / Bonus	$ 86 001	$ 88 001	$ 329 121	$ -	$ -1 148 727	$ -1 239 435	$ -1 288 690
- Depreciation	$ 1 710 427	$ 2 041 057	$ 2 526 044	$ 2 522 977	$ 2 923 001	$ 3 199 973	$ 3 623 638
= EBIT	**$ 3 884 911**	**$ 3 113 872**	**$ 3 210 517**	**$ 2 682 811**	**$ 5 331 369**	**$ 4 617 578**	**$ 5 493 723**
% of Revenues	23%	17%	16%	13%	22%	20%	20%
+ Other Items	$ -300	$ -33	$ -1 088 974	$ -480 997	$ -182	$ -2 337	$ -30
+ Financial Income	$ -	$ -	$ 29 318	$ 115 239	$ 194 446	$ 202 897	$ 147 273
- Interest Expense	$ 445 683	$ 4 656	$ 599 366	$ 615 807	$ 572 415	$ 516 588	$ 311 101
= Profit Before Tax	**$ 3 438 929**	**$ 2 648 240**	**$ 1 551 495**	**$ 1 701 246**	**$ 4 953 219**	**$ 4 301 549**	**$ 5 329 865**
% of Revenues	21%	15%	8%	8%	21%	18%	20%
- Taxes	$ 1 031 679	$ 794 472	$ 465 449	$ 510 374	$ 1 485 966	$ 1 290 465	$ 1 598 959
= Net Income	**$ 2 407 250**	**$ 1 853 768**	**$ 1 086 047**	**$ 1 190 873**	**$ 3 467 253**	**$ 3 011 084**	**$ 3 730 905**
% of Revenues	15%	10%	5%	6%	14%	13%	14%

Table 1: Einstein Motors Profit & Loss Statement
Source: Own Table – Data from BiP Industry Master's Simulation. 2022.

Profit & Loss ($ in thousands)		
2027	**2028**	**2029**
$ 30 910 388	**$ 35 607 978**	**$ 41 019 482**
$ 18 546 233	$ 21 364 787	$ 24 611 689
60%	60%	60%
$ 12 364 155	**$ 14 243 191**	**$ 16 407 793**
40%	40%	40%
$ 1 107 168	$ 1 275 430	$ 1 469 263
$ 1 953 451	$ 2 250 326	$ 2 592 318
$ -1 484 538	$ -1 710 150	$ -1 970 049
$ 4 174 338	$ 4 808 731	$ 5 539 536
$ 6 613 735	**$ 7 618 854**	**$ 8 776 725**
21%	21%	21%
$ -	$ -	$ -
$ 169 655	$ 178 137	$ 187 044
$ 358 380	$ 412 845	$ 475 587
$ 6 425 009	**$ 7 384 146**	**$ 8 488 183**
21%	21%	21%
$ 1 854 623	$ 1 780 399	$ 2 050 974
$ 4 570 386	**$ 5 603 747**	**$ 6 437 208**
15%	16%	16%

Table 2: Einstein Motors Profit & Loss Statement
Source: Own Table – Data from BiP Industry Master's Simulation. 2022.

Assets ($ in thousands)							
Account	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Long-Term Assets	**$ 13 451 757**	**$ 15 902 503**	**$ 17 020 330**	**$ 17 139 575**	**$ 16 264 160**	**$ 15 323 576**	**$ 13 537 894**
Property, Plant & Equipment	$ 8 751 756	$ 11 302 503	$ 12 520 330	$ 12 739 575	$ 11 964 160	$ 11 123 575	$ 9 437 893
Land & Buildings	$ 4 700 000	$ 4 600 000	$ 4 500 000	$ 4 400 000	$ 4 300 000	$ 4 200 000	$ 4 100 000
Current Assets	**$ 8 399 114**	**$ 10 047 339**	**$ 10 237 835**	**$ 7 917 997**	**$ 9 533 131**	**$ 10 051 038**	**$ 13 636 831**
Cash and Cash Equivalents	$ 3 252 273	$ 4 166 031	$ 3 660 623	$ 3 053 218	$ 2 633 559	$ 5 471 653	$ 8 167 023
Accounts Receivable	$ 2 749 220	$ 3 031 413	$ 3 124 896	$ 2 565 091	$ 2 759 983	$ 2 635 768	$ 3 322 869
Inventory	$ 2 397 621	$ 2 849 894	$ 3 452 316	$ 2 299 689	$ 4 139 588	$ 1 943 617	$ 2 146 939
Equipment on Lease	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Receivables from Financial Investments	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1 210 582**	**$ 1 200 000**	**$ -**
Receivables from Financial Services	**$ -**	**$ -**	**$ 1 956 870**	**$ 3 906 100**	**$ 5 513 122**	**$ 4 072 483**	**$ 2 573 300**
Total Assets	**$ 21 850 871**	**$ 25 949 842**	**$ 29 215 036**	**$ 28 963 672**	**$ 32 520 994**	**$ 30 647 097**	**$ 29 748 025**

Liabilities and Equity ($ in thousands)							
Account	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Shareholder Equity	**$ 11 409 334**	**$ 12 706 965**	**$ 12 464 798**	**$ 14 235 900**	**$ 16 662 977**	**$ 18 770 674**	**$ 15 881 498**
Share Capital	$ 10 350 000	$ 10 350 000	$ 10 000 000	$ 10 350 000	$ 10 350 000	$ 10 350 000	$ 9 300 000
Capital Reserve	$ 796 390	$ 796 390	$ 143 990	$ 731 500	$ 731 500	$ 731 500	$ -3 719 310
Retained Earnings	$ 262 944	$ 1 560 575	$ 2 320 808	$ 3 154 400	$ 5 581 477	$ 7 689 174	$ 10 300 808
Liabilities	**$ 10 441 536**	**$ 13 242 877**	**$ 16 750 238**	**$ 14 727 772**	**$ 15 858 017**	**$ 11 876 423**	**$ 13 866 528**
Long-Term Debt	$ 9 600 000	$ 11 885 000	$ 15 391 085	$ 14 021 957	$ 14 021 957	$ 10 274 952	$ 11 861 712
Short-Term Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Accounts Payable	$ 841 536	$ 1 357 877	$ 1 359 153	$ 705 815	$ 1 836 060	$ 1 601 470	$ 2 004 815
Total Liabilities and Equity	**$ 21 850 871**	**$ 25 949 842**	**$ 29 215 036**	**$ 28 963 672**	**$ 32 520 994**	**$ 30 647 097**	**$ 29 748 025**

Table 3: Einstein Motors Balance Sheet
Source: Own Table – Data from BiP Industry Master's Simulation. 2022.

Cash Flow ($ in thousands)							
Account	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
+ Net Income	$ 2 407 250	$ 1 853 768	$ 1 086 047	$ 1 190 873	$ 3 467 253	$ 3 011 084	$ 3 730 905
+ Depreciation	$ 1 710 427	$ 2 041 057	$ 2 526 044	$ 2 522 977	$ 2 923 001	$ 3 199 973	$ 3 623 638
- Change in Inventory	$ 1 350 921	$ 452 274	$ 784 664	$ -1 086 603	$ 1 839 900	$ -2 195 971	$ 203 322
- Change in Accounts Receivable	$ -233 046	$ 282 193	$ 93 483	$ -559 806	$ 194 892	$ -124 215	$ 687 101
- Change in Uncollectible Accounts	$ 166 284	$ 175 593	$ 176 091	$ 131 916	$ 146 756	$ 163 198	$ 182 446
+ Change in Accounts Payable	$ -50 914	$ 516 341	$ 1 276	$ -653 338	$ 1 130 245	$ -23 459	$ 403 345
- Profit/Loss from Disposal of Assets	$ -	$ -	$ -1 088 903	$ -480 907	$ -	$ -	$ -
- Change in Equipment on Lease	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Change in Receivables from Financial Services	$ -	$ -	$ 1 956 870	$ 1 949 230	$ 1 607 022	$ -1 440 638	$ -1 499 183
= Operating Cash Flow	$ 2 782 605	**$ 3 501 105**	**$ 1 691 161**	**$ 3 106 680**	**$ 3 731 929**	**$ 9 574 094**	**$ 8 184 202**
Investing Cash Flow	**$ -1 839 250**	**$ -4 316 210**	**$ -4 374 440**	**$ -2 925 187**	**$ -1 900 830**	**$ -2 096 190**	**$ -1 655 510**
+ Change in Debt	$ 1 327 166	$ 2 285 000	$ 3 506 085	$ -1 369 128	$ -	$ -3 747 005	$ 1 586 760
- Change in Bank Deposits	$ -	$ -	$ -	$ -	$ 1 210 582	$ -10 582	$ -1 200 000
- Dividends Paid	$ 722 238	$ 556 137	$ 325 814	$ 357 281	$ 1 040 176	$ 903 387	$ 1 119 272
+ Proceeds from New Shares	$ 1 146 390	$ -	$ -1 002 400	$ 93 751	$ -	$ -	$ -5 500 810
= Financing Cash Flow	**$ 1 751 318**	**$ 1 728 863**	**$ 2 177 871**	**$ -788 898**	**$ -2 250 758**	**$ -4 639 810**	**$ -3 833 322**
Change in Cash and Cash Equivalents	**$ 2 694 673**	**$ 913 758**	**$ -505 408**	**$ -607 405**	**$ -419 658**	**$ 2 838 094**	**$ 2 695 370**
Divident % of Net Income	30%	30%	30%	30%	30%	30%	30%
Outstanding Shares	73500000	73500000	70000000	73500000	73500000	73500000	63000000
DPS	**$ 10**	**$ 7,57**	**$ 4,65**	**$ 4,86**	**$ 14,15**	**$ 12,29**	**$ 17,77**

Table 4: Einstein Motors Cash Flow Statement
Source: Own Table – Data from BiP Industry Master's Simulation. 2022.

Shareholder Return																												
	2020				2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
Share Price	364,95	359,43	352,72	327,55	312,31	295,49	270,84	252,22	244,51	246,82	286,4	310,72	267,86	270,74	214,74	227,46	311,41	358,32	444,72	471,76	425,56	424,1	437,85	409,98	442,89	523,24	551,34	592,21
Dif Price				-37,40				-112,73				-54,23				-137,49				106,81				45,03				227,26
DPS				9,83				7,57				4,65				4,86				14,15				12,29				17,77
TSR				-8%				-29%				-14%				-36%				33%				16%				67%

Table 5: Einstein Motors Shareholder Return
Source: Own Table – Data from BiP Industry Master's Simulation. 2022.

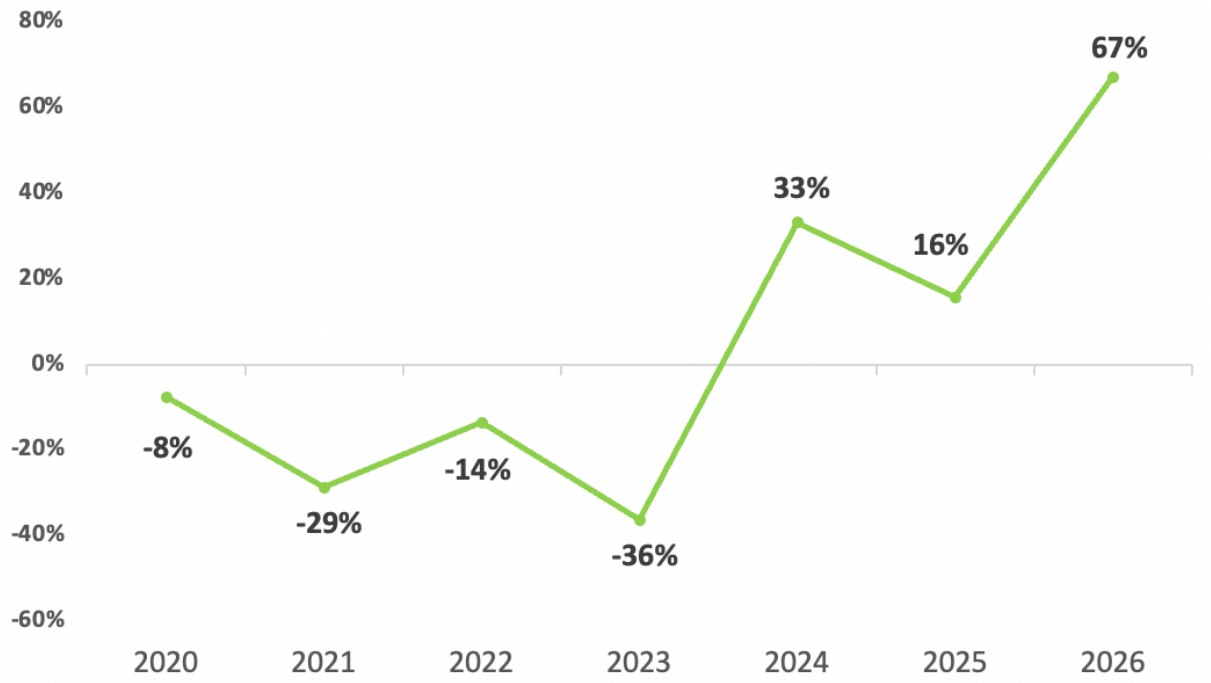


Figure 28: Einstein Motors Total Shareholder Return
Source: Own Illustration – Data from BiP Industry Master's Simulation. 2022.

Operational Investments																											
Technology	Cost ($M)	Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q21	Q22	Q23	Q24
Water Consumption Reduction	200					100	100																						
Waste Reduction	400							200	200																				
ISO14001 / EMAS certificates	500									250	250																		
Energy Efficiency Investment	150						75	75																					
Install Solar Panels	250									125	125																		
Energy Management System	10																												
Offset Suppliers CO2	-							-																					
Choose Sustainable Supplier	10							10																					
Co-Invest with Supplier	50																				50								
Total Expenditure	1570	0				760				750				0				50				0				0			

Figure 29: Einstein Motors Operational Investments
Source: Own Illustration – Data from BiP Industry Master's Simulation. 2022.

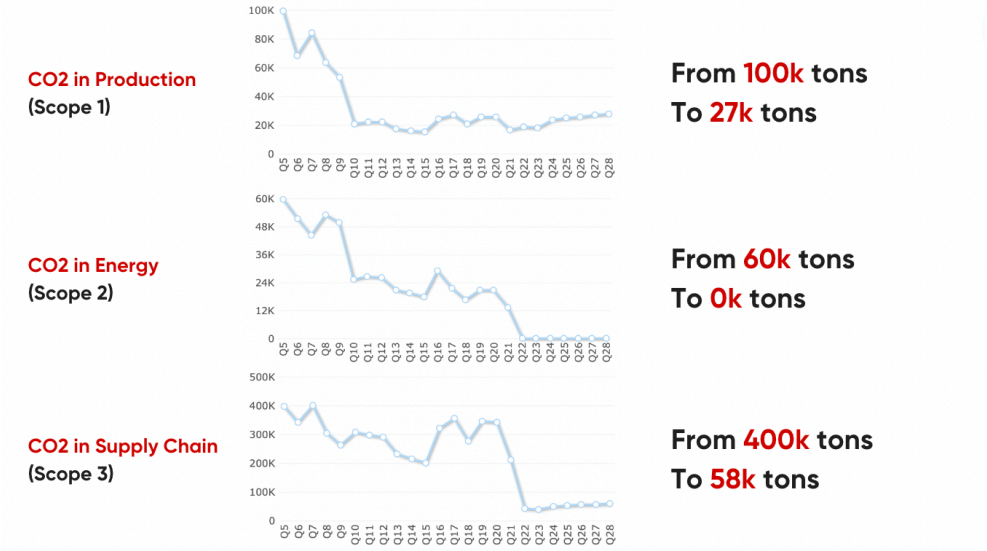


Figure 30: Einstein Motors CO2 Emissions in Production, Energy and Supply Chain
Source: Own Illustration – Data from BiP Industry Master's Simulation. 2022.

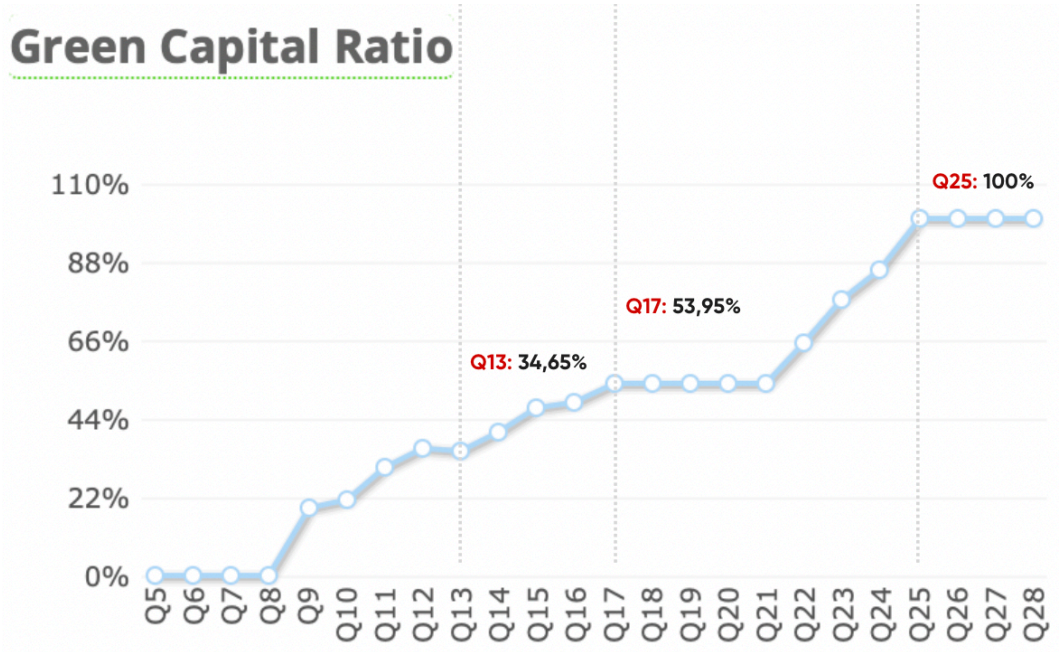


Figure 31: Einstein Motors Green Capital Ratio
Source: Own Illustration – Data from BiP Industry Master's Simulation. 2022.

EINSTEIN

ESG Report
2024

Helping the World Move Forward

June 2022

Einstein is committed to be at the forefront of Innovation and Sustainability

"To create sustainable and high-quality mobility solutions, enriching people's lives around the world while offering safe and comfortable ways of moving people"

In the last years, the car industry has been strongly disrupted by changes in the environmental consciousness of consumers and governmental regulations. As a result, the car industry had to make critical decisions regarding its priorities and find ways to approach the changing market.

For Einstein, both Sustainability and Responsibility have been integrated to be at the core of our business. As Einstein's sustainability board, we meet regularly to analyze Einstein's sustainability level, discuss new ways to act responsibly, and promote a sustainable lifestyle for everyone, while fulfilling our responsibility to our stakeholders by ensuring long-term value creation. We hold ourselves accountable to the highest standard and therefore have developed comprehensive internal frameworks and control systems harmonizing all activities of our business functions.

Starting a few years ago – as per our motto - we put a high emphasis on research and development and, by now, have managed to electrify our entire portfolio while offering the highest quality and most innovative features on the market. Furthermore, we listened to the change in mobility demand of the younger generations. As part of one of our many partnerships, together with our affiliated car dealerships, we introduced a car-sharing service, as we expect mobility offers to be a vital part of the future of the car market.

We pledge to continue taking on responsibility beyond our duty, leading the market and helping the world move forward.

$6 bn.
Revenue in with an EBIT Margin of 19,9%

100%
Of our portfolio composed by EV models

0 g/mile
Fleet Emissions since Q14

$5 bn.
Total investment in Sustainability & Innovation

INNOVATION • RELIABILITY • RESPONSIBILITY • PRIDE • TRANSPARENCY • QUALITY


Amine M.
Head of Finance


Sarah S.
Head of Marketing


Surabhi K.
Head of Operations


Inês S.
Head of HR


André A.
Head of Innovation

Taking accountability for our emissions and preparing operations for the next generation

Water Consumption Reduction
Q5

Reduction in water consumption in our manufacturing process by using water-saving techniques to divert less water from natural resources to keep the environment healthy.

Waste Reduction
Q7

Waste reduction to keep business operating costs low while helping preserve the environment and be more sustainable in waste management.

ISO14001 / EMAS Certificates
Q9

Issuance of the ISO14001/ EMAS Certificates to improve our credibility towards our goal and to help comply with legal requirements better. It enabled quicker improvement of processes and reduced employee turnover.

Future Goals

- Increase our global influence and impact on sustainability. Lead by example;
- Improve efficiency in our production operations to minimize CO2 emissions and contribute to a cleaner, greener, and safer world;
- Enhancing production machinery to develop more sustainable raw goods and materials.

Links to SDGs

Ensuring all energy consumed is generated through clean sources

Energy Efficiency Investment
Q5

Invested in Energy Efficiency to lower our GHG emissions and other pollutants and decrease water use. Consequently, it helped lower individual utility bills, create jobs, and stabilize electricity prices and volatility.

Install Solar Pannels
Q7

Enhanced our energy production with the installation of Solar Energy Systems to reduce air pollution emission of GHGs and support green energy generation. This reduced energy costs and enabled selling excess electricity for lower energy bills to utility companies, thus contributing to a sustainable growth.

Energy Management
Planned for Q21

Future Goals

- Achieve the status of the lowest CO2 emitter and the greenest company in generating energy;
- Become a pioneer in the industry for this cause. We strongly believe we have taken appropriate measures in this direction and will continue to do so;
- Propose to implement an Energy Management System to optimize the performance of the generation or transmission systems.

Links to SDGs

Committed to build and sustain a more sustainable value-chain

Offset Suppliers CO2
Q5

Financed Carbon Offset schemes to fund environmental projects based in developing countries around the world to balance our carbon footprint to contribute to the reduction of future emissions.

Choose Sustainable Supplier
Q7

Decided to choose sustainable suppliers to bring into effect our corporate environmental management strategies and implement Green Supply Management. This decision was made to promote green purchasing and environmental sustainability.

Co-Invest with Supplier
Planned for Q21

Future Goals

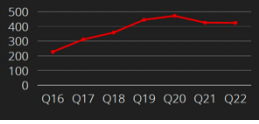
- Commit the necessary resources to engage and keep suppliers in sustainable business.
- Aim to go paperless and strongly promote eco-friendly measures in the value chain.
- Encourage donation of food from canteens. Incentivize business travel with buses or trains by implementing travel policies.
- Work more closely and co-invest with suppliers to lessen environmental and social impact and position us and them for strong growth.

Links to SDGs

In the first 3 years of operation, heavy investments were made in R&D and Sustainability

Financial Highlights 2024

$24 bn.	$3,5 bn.
Revenue	Net Income
(2023: $20,5 bn.)	(2023: $1,2 bn.)
$5,3 bn.	14,5%
EBIT	EBIT Margin
(2023: $2,7 bn.)	(2023: 5,8%)
$238 M.	$47,2
free Cash Flow	Earning per Share
(2023: 328 M.)	(2023: $ 16,2)



According to the ICMA green bonds policy, green bond issuers must disclose and report information regarding the distribution of proceeds.

Research and Development:
To facilitate the general development infrastructure, investments into innovative fields such as E-drive modules, High power charging, and home charging stations, in total amounting to approximately 3.1 Bn $ have been prioritized, which in the long term will strengthen Einstein's position as an innovation leader.

Operational Investments:
Reducing water use came first, followed by waste reduction and solar panel installation. We decided on more environmentally friendly suppliers. This investment totaled $1.5 billion and was made over a two-year period (2022 & 2023).

Green Capital Ratios:
Spread over the last years, total financing of 7.5 Bn$ in green bonds was collected in rolling tranches: 2.2 Bn$, 640 M$, 239 M $, 497 M $, 203 M $, and 1.531 M $, which overall constituted 53.95% of Einstein's overall borrowed funds used for the investments undertaken to become the leader in sustainability and innovation.

Green CAPEX:
Hand in hand with our strategy to heavily pursue being a leader in the sustainability field, a total of 9.077 Bn$ was directed to green projects, realizing a ratio of 43,39% of Einstein's total CAPEX.

CSR Policies:
With an investment of approximately 40 M$ a comprehensive sustainability policy and a respective training has been developed, as well as further promoting the awareness and culture within the company with the help of a sustainability and awareness training.

> “Improved diversification and net pricing throughout the entire year, as well as decreased warranty costs, more than made up for the production losses and higher commodity prices. Because of this, automotive EBIT for 2024 was $5.3 billion with a margin of 14.5% percent, both significantly higher than for 2023.

Amine Mbareche
Chief Financial Officer

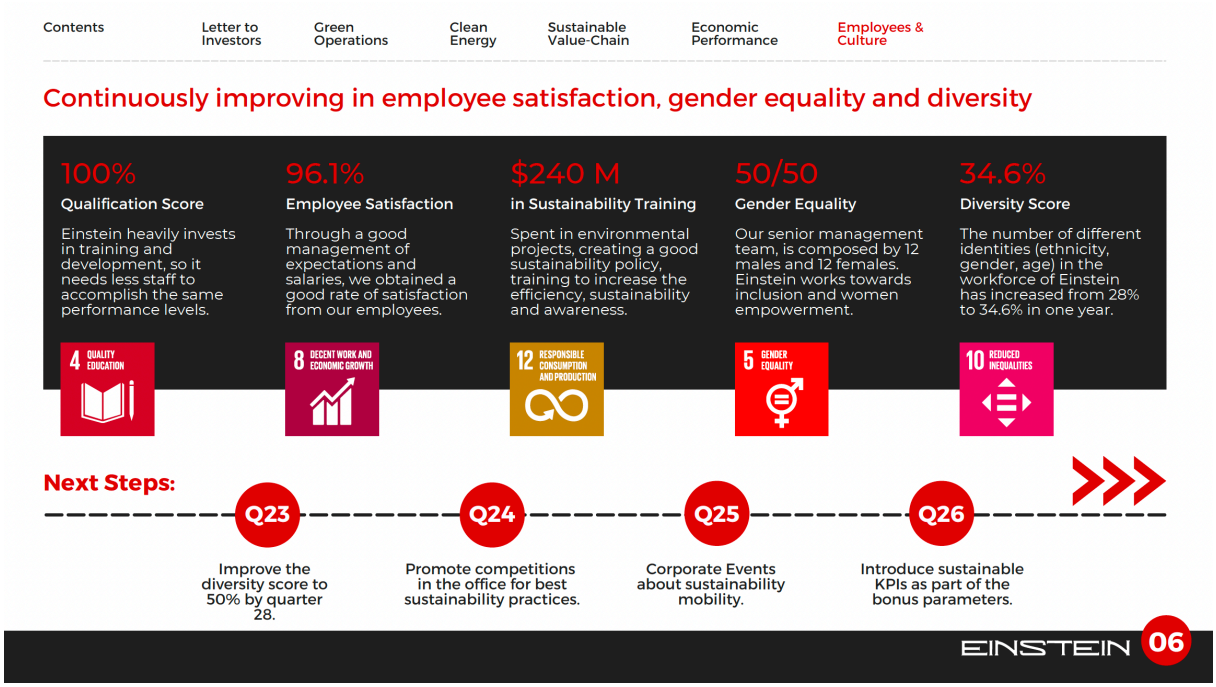


Figure 32: Einstein Motors ESG REPORT 2023
Source: Own Illustration

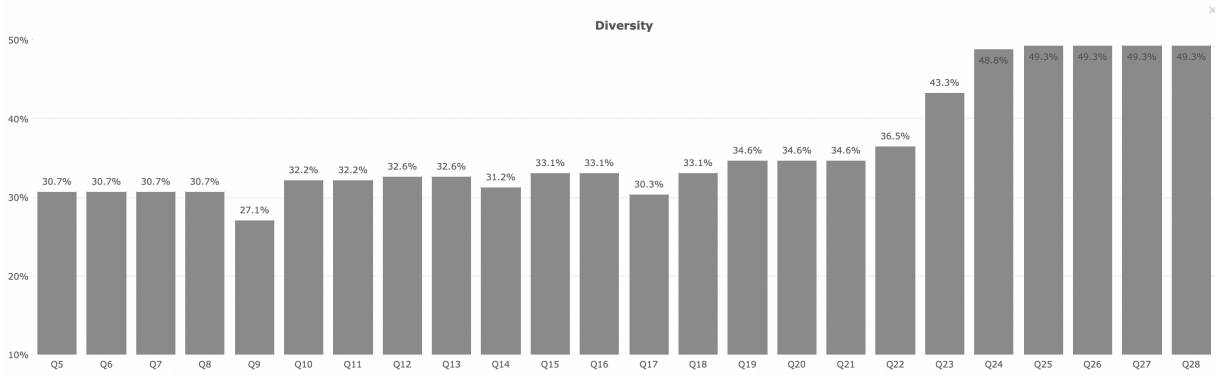


Figure 33: Einstein Motors Diversity KPI Evolution
Source: BiP Industry Master's Simulation. 2022.

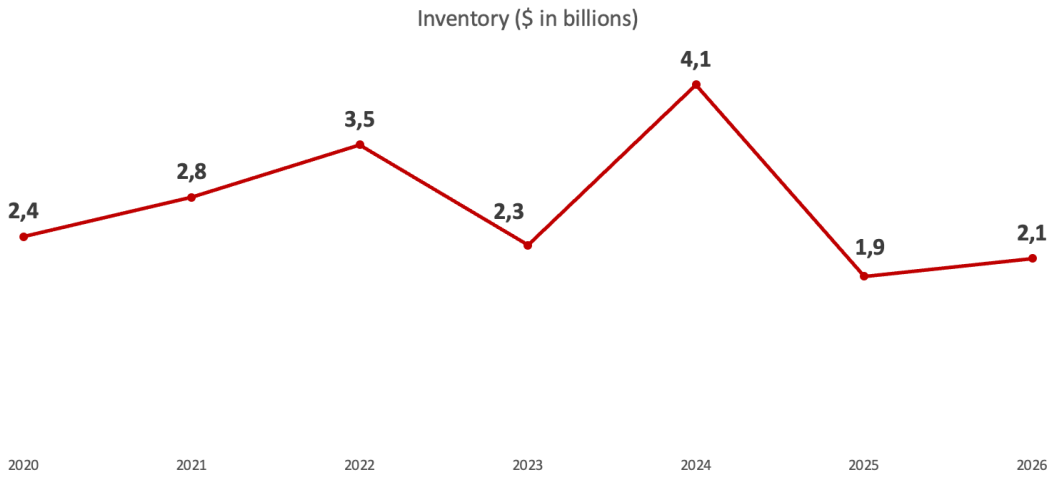


Figure 34: Einstein Motors Inventory
Source: Own Illustration. Data from BiP Industry Master's Simulation. 2022.

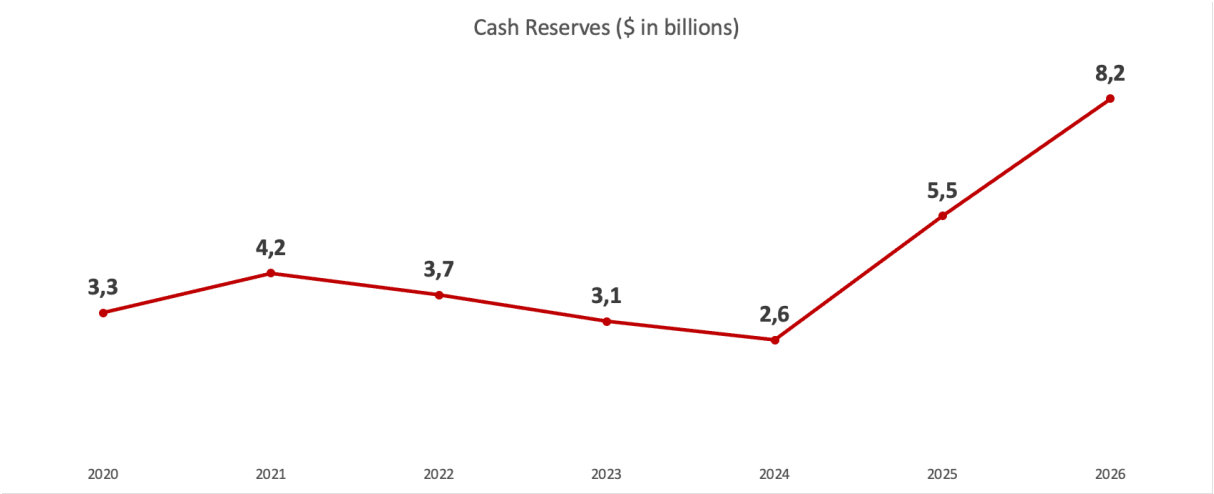


Figure 34: Einstein Motors Cash Reverves
Source: Own Illustration. Data from BiP Industry Master's Simulation. 2022.

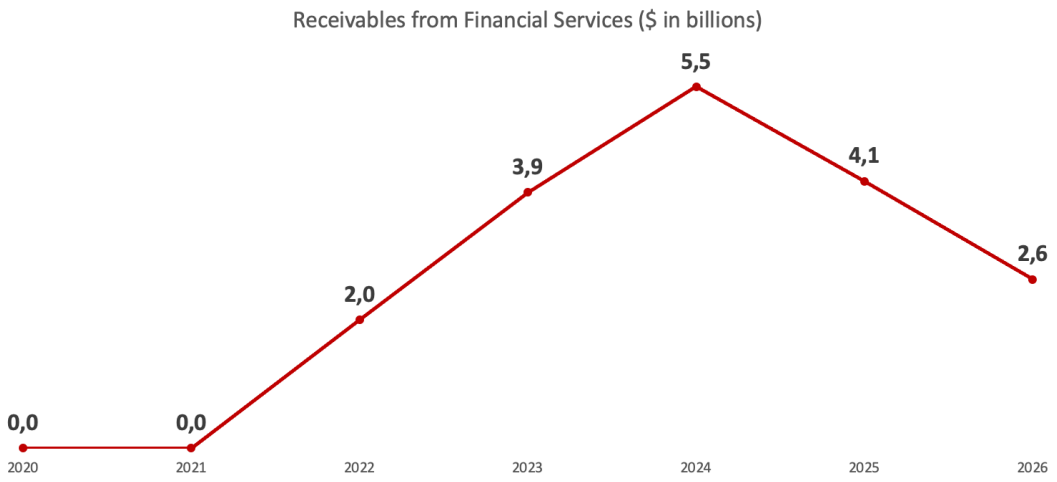


Figure 35: Einstein Motors Cash Receivables from Financial Services
Source: Own Illustration. Data from BiP Industry Master's Simulation. 2022.

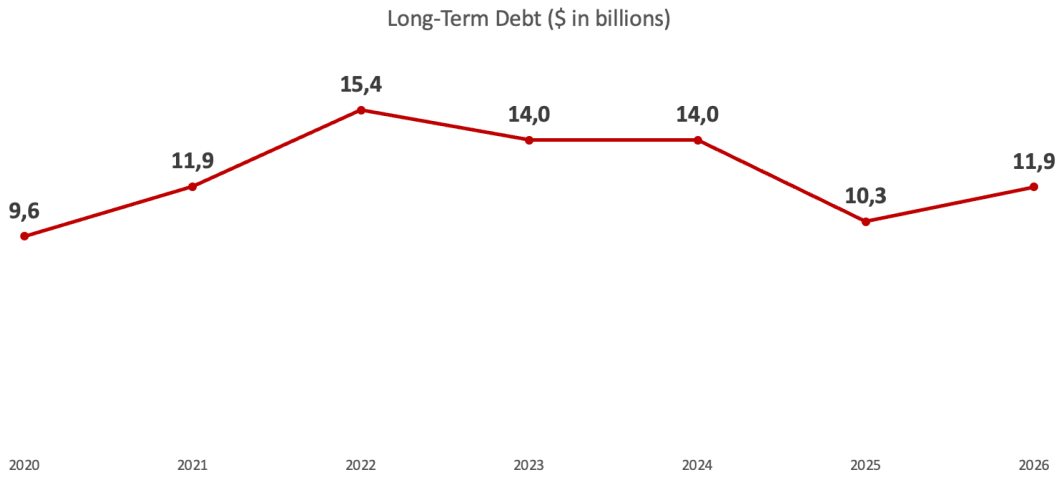


Figure 36: Einstein Motors Long-Term Debt
Source: Own Illustration. Data from BiP Industry Master's Simulation. 2022.

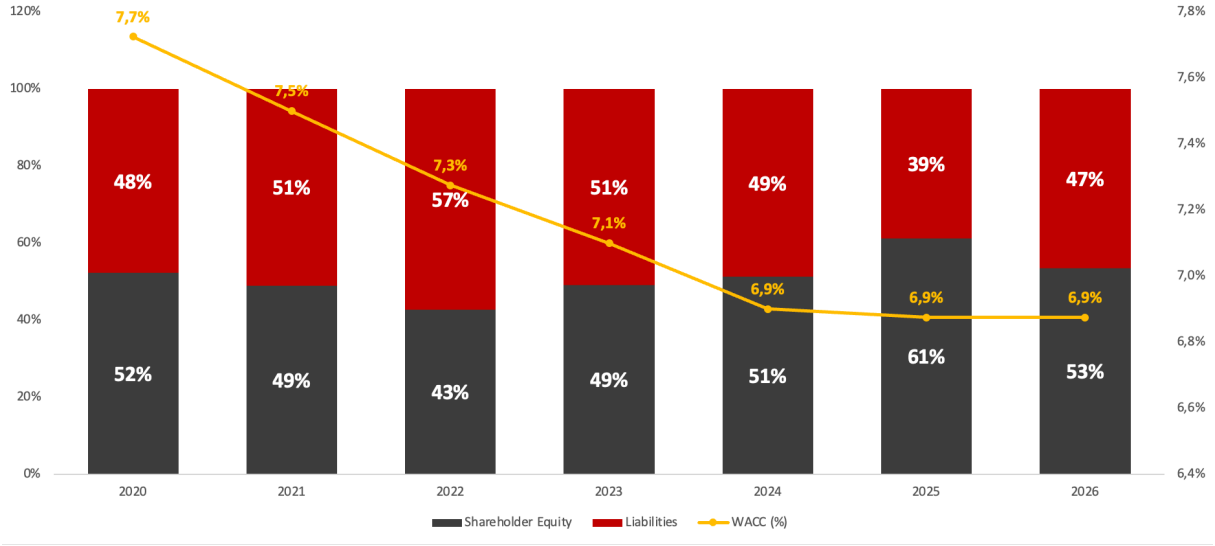


Figure 37: Einstein Motors Equity / Debt and WACC Evolution
Source: Own Illustration. Data from BiP Industry Master's Simulation. 2022.