AKRAPOVIĆ

BUSINESS CASE STUDY

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Faculty of
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UNIVERSITY OF BATH

WHAT? - ABOUT AKRAPOVIČ

Akrapovič is a Slovenian manufacturer of premium exhaust systems for performance motorbikes and cars founded by motorbike racer Igor Akrapovič in 1990[1]. Originally called Skorpion, the company was born out of bike racing. Motivated by the lack of available high-quality exhaust systems on the market, Igor Akrapovič started modifying the exhaust of his own bike using the knowledge of materials and engine tuning gained from the family plastic moulding business and over his ten-year racing career. He started building custom exhaust systems for private racing teams shortly after[2,3].

Akrapovič soon caught the attention of larger racing teams in the Pro Superbike Championship as his systems were made from lighter titanium alloys and delivered more power, while producing a beautiful sound. In 1993, the racing division of Kawasaki responded to Igor's invitation to test out his exhaust system on one of their bikes and they quickly realised that his system was better than their own. This was a breakthrough for Akrapovič and the start of a major and long-standing cooperation with Kawasaki, leading to their first partnered Superbike race win in 1997. Soon after, numerous racing teams such as Yamaha, Suzuki, Ducati and Honda, fitted their bikes with his systems bringing his company a string of wins and championship titles in the next years[4,5].

The success of Igor Akrapovič under the company name Skorpion was so big that Ford, who had trademarked the Scorpio name for one of their vehicles, threatened to take legal action against his company. In 1997, Skorpion became Akrapovič. The unique and exotic name, characterising the product was very well received among his customers and the public[4,5].

In 2002, Akrapovič entered MotoGP, the most prestigious class in motorbike racing, cooperating with Honda, Kawasaki and Aprilia factory teams[6]. After more than a decade of proving themselves and building a reputation of hard work and high-quality products, it was time for Akrapovič to move into a new industry. In 2004, Akrapovič had its first contact with the automobile industry by developing an exhaust system for Honda in the British Touring Car Championship and later in the year, for Formula One team BrawnGP. Ever since, an array of automotive original equipment manufacturers (OEMs) with racing heritage have relied on Akrapovič to build their exhaust systems, namely BMW in the DTM, Audi in the 24h of Le Mans, Aston Martin in World Endurance Championships and the list goes on. Since 2010, Akrapovič also provides over fifteen automotive OEMs with factory equipped exhaust systems for premium, high-performance road cars[7].

By 2012, Akrapovič had such dominant presence, that it guaranted all three titles in GP racing: MotoGP, Moto2 and Moto3[7]. The company was also awarded the prestigious Red Dot design award in 2014 for its titanium exhaust system for the Ducati 1199 Panigale bike[8].

Today, the company is the market leading manufacturer of premium exhaust systems with over 1,300 employees and sells its exhaust systems in over 80 countries[9]. Akrapovič is most renowned for being at the foreground of R&D, innovative design and for pushing the limits of engineering materials to obtain the lightest and strongest solutions. They use the highest quality materials such as titanium, inconel and carbon composites, and the most pioneering manufacturing and casting processes in their state-of-the art facilities in Ivančna Gorica, where the headquarters and titanium foundry are located, and in Črnomlju, where the production site and shipping centre are based. Akrapovič is the only exhaust manufacturer and supplier of automotive components globally to have an in-house titanium foundry and metallurgical laboratory with highly advanced tube bending and hydroforming machinery enabling their products to be manufactured to extremely high tolerances and quality standards[9,10].

The constant investment into engineering and R&D, and the expertise of titanium casting and composites possessed by Akrapovič engineers makes the company an extremely desirable partner for premium vehicle OEMs that know that their race-proven products and the trickling down of racing technology and materials for road vehicle applications will attract a niche clientele willing to pay a premium for the best sounding and best looking products on the market[5].

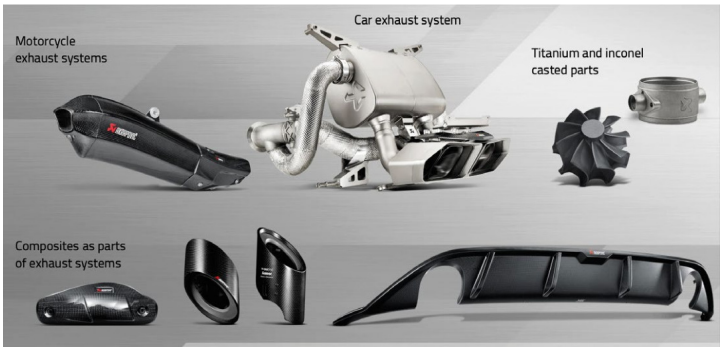


Figure 1. Akrapovič Product Portfolio[11]

Akrapovič is now active in four separate divisions: motorcycle exhaust systems, car exhaust systems, composite-based products and titanium casting solutions in their state-of-the-art foundry. Akrapovič also has a dedicated lifestyle magazine and is building a museum in Ljubljana[12].

The company predominantly operates in the EU market as highlighted by Figure 2. The recognisable name and strong brand identity of Akrapovič is further highlighted by Figure 2 with 53% of sales being to OEMs, who are increasingly equipping their products from factory[9].

Akrapovič Foundry, the subdivision specialising in advanced titanium solutions was established in 2008, and represented one of the largest investments made by the company into developing its facilities and becoming independent. This opened the door to countless new product possibilities and expansion into other industries[10,13].

Over the past decade, it has added value in other fields such as cutting-edge surgical instruments, precision technology in the meat-processing industry, high-end sporting goods and apparel. It also focuses on providing niche services such as chemical milling, hot isostatic pressing and CNC machining, important processes to ensure the achievement of the highest qualities in titanium castings[10]. Their in-house foundry also enables recycling of all metal scraps from exhaust production, so they can be re-used in new exhaust systems[14].

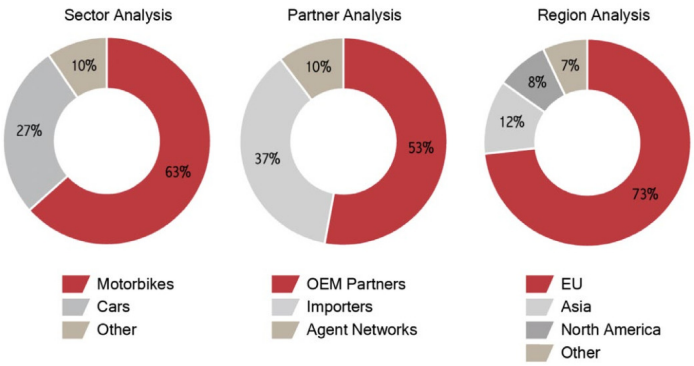


Figure 2. Key Business Performance Indicators 2020[9]

WHY? - THE MARKET

Akrapovič epitomises the evolution of a high-tech startup company originating as a lifestyle business, from the passion of motorbike racing into one which is currently a global niche market player, with the potential for further growth in future years[15].

From the knowledge and experience gained from helping in his family plastic moulding business and from his successful racing career, Igor Akrapovič identified a niche market with a growing demand and a visible lack of supply partly explained by the political tensions dividing Eastern and Western Europe during the Cold War. In the 1980's, amid his racing career and approaching the fall of the Iron Curtain, the exhaust market was scarce. There were no exhaust systems available on the market for amateur racers, which could satisfy the extreme technical requirements of racing such as reduced weight, thermal resistance and improved engine response at different loads. All existing systems available from the West were too expensive and difficult to obtain in the East while the exhaust systems available in the East were of inadequate quality with either bad welds, tube walls that were too thick for racing or tube diameters too small to provide any improvements of exhaust gas flow. For the most part racing exhaust systems were impossible to obtain for the average customer[12].

Although Akrapovič was founded in response to the lack of high-quality high-performance exhaust systems available on the market at the time, and the company's success comes largely from the presence and continuous success in racing, a large part of the exhaust systems produced by Akrapovič were created to improve the performance of the stock exhausts equipped by road vehicles, rather than being new OEM developments designed from the ground up[12]. As a result of the efforts placed into creating a compelling brand identity and building its reputation by being successful in racing year after year and trickling down its technology for road-going vehicles, Akrapovič products have always been an extremely desirable product for amateur but motoring enthusiasts, with an intended use of the product, distant from the racetrack[7].

This phenomenon is highlighted in Figure 2, where in 2020, 47% of exhaust sales were to non-OEMs, namely importers and agent partners. This figure corresponds to the sale of aftermarket exhausts, i.e., exhausts which are not produced by the OEM but are still created to fit the vehicle and improve its performance.

Although one might expect OEMs to provide the best performing solution from the factory, typically a long list of compromises have been battled prior to the signing off of the final product. Factors such as development and production costs, driver and passenger comfort, engine performance across a range of conditions, exhaust noise levels, fuel-consumption, exhaust emission levels etc. have all been carefully considered and drive the final decision-making process to provide the most viable solution, either for financial, regulatory or expected customer satisfaction motives. This means that exhaust systems are not always fully optimised to develop the total engine power and sound from the factory and explains the existence of the market that Akrapovič entered[16].

The aftermarket (AM) of exhausts is historically a niche submarket of the automotive and bike industries that exists as a result of the aforementioned reasons, but which mainly relate to the circumventing of the stock system constraints. They may be otherwise purchased by consumers for cosmetic reasons if performance gains are not the primary buying consideration.

Aftermarket exhausts can also improve the design aesthetics of the vehicle by altering the design, position and diameter of the exhaust tailpipes, which also has the effect of helping the engine to "breathe better"[16]. Akrapovič puts substantial effort into the design of their exhaust tailpipes by pushing the boundaries of titanium casting and machining processes to obtain some of the most unique and intricate tailpipes on the market, as shown in Figure 3. This is a limited edition exhaust created for Ferrari to celebrate Akrapovič's 30-year anniversary[17]. Moreover, due to the properties of titanium, the exhausts change color over time as they are subjected to continuous and prolonged high exhaust temperature exposure, creating blue and purple colour patterns along the exhaust tubing which contribute to the aesthetic factor.

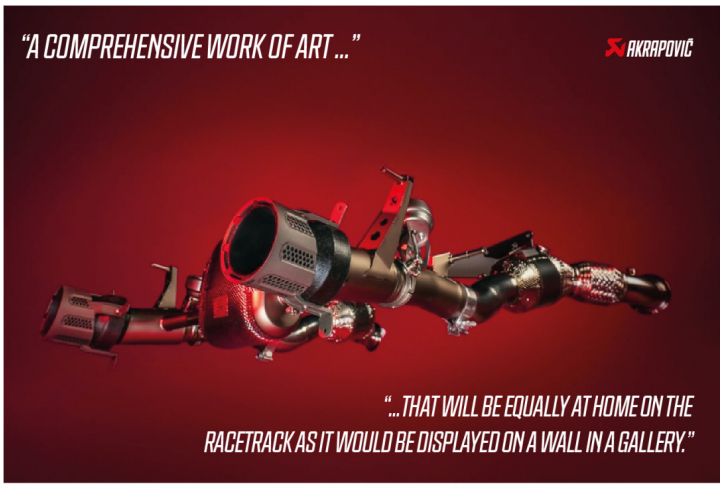


Figure 3. Ferrari F8 Tributo 30th Anniversary Exhaust 1 of 30 Limited Edition[17]

In terms of the market size available to Akrapovič , the company targets a small proportion of the total available market of exhausts, primarily aiming at aftermarket exhaust production for a selection of manufacturers. It also supplies OEMs directly with factory exhausts, as seen from Figure 4[9]. Racing customers, private or OEM teams account for a small proportion of company sales but the rather small submarket is used as a marketing strategy to showcase that the "top dogs" use the expertise of Akrapovič . Any win is a bonus. Racing technology is still transferred to the road products, making them extremely desirable by consumers[6,7]. Akrapovič has increasingly collaborated with vehicle OEMs, mainly from the German premium segment, and especially with those with whom previous racing history exists such as Audi, VW, Porsche, BMW, Bentley and Lamborghini[7]. Even hypercar manufacturer Koenigsegg, offers their exhaust systems to their customers as a factory option, meaning that customers may specify it at an added cost[18].

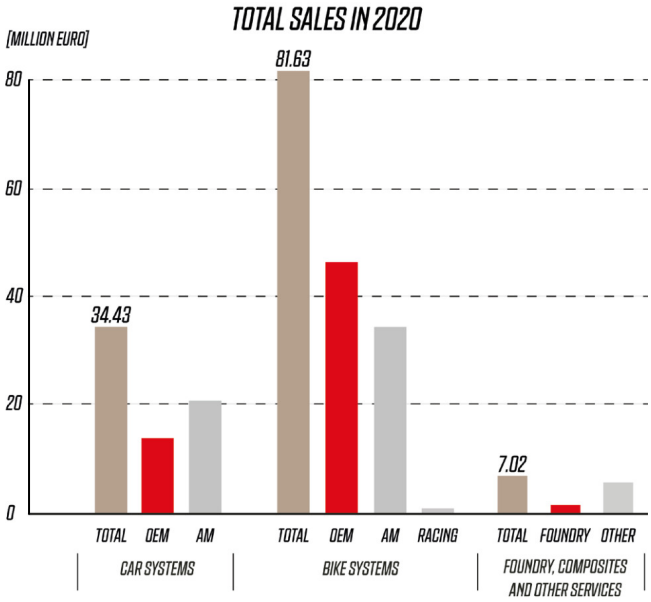


Figure 4. Total Company Revenue in 2020[9]

The brand ethos that Akrapovič has garnered over its history has led to a degree of brand market segregation. In other words, brand arrogance - collaborating only with the most prestigious OEMs. This phenomenon is also seen in the development of their aftermarket exhausts. Developing an exhaust for a vehicle that does not match the ethos of Akrapovič in terms of performance or perceived customer quality may devalue the brand. Furthermore, as explained by CEO, Uroš Rosa in a podcast with EVO Magazine, *"the use of titanium needs to match the car brand's image and the car's use of materials is also a consideration when deciding who we work with. All needs to match and flow.*[19] *"*

This is further exemplified in the April 2021 issue of Akrapovič Lifestyle Magazine, where the collaboration with Automobili Lamborghini is explained.

"THE NATUALLY ASPIRATED V10 ENGINE OF THE HURACAN STO PROVIDES BREATHTAKING PERFORMANCE AND THE FULL EXHILERATION AND EMOTION OF A RACING CAR. IT HAS BEEN PRODUCED WITH SUPERIOR AERODYNAMIC EFFICIENCY AND EXTENSIVE USE OF LIGHTWEIGHT MATERIALS. THIS IS THE PERFECT ACCOMPANIMENT TO AKRAPOVIČ'S OWN ETHOS, AND IT MAKES THE TWO COMPANIES AN IDEAL PAIRING.[20]*"*

For this reason, the market available to exploit is relatively small but Akrapovič currently dominates it. In 2020, the company had an approximate revenue of 127.2 million EUR, 65% of it proceeding from the bike exhaust system market, indicating that although the company has placed an interest in growing within the automotive and foundry sectors in the last years, these sectors still only represent a small fraction of the company's revenue[9]. This information could indicate that the strong brand recognition that Akrapovič has in the bike industry, is yet to reach the automotive sector.

Although Akrapovič occupies a leading position in the bike and car aftermarket exhaust industries, both of these markets are considerably saturated and a wide range of alternative exhaust systems competing at substantially lower price points are available to consumers worldwide, as highlighted by Figure 5. The size of the bubbles indicate the relative company sizes and the figure shows how competitive the market that Akrapovič competes in is.

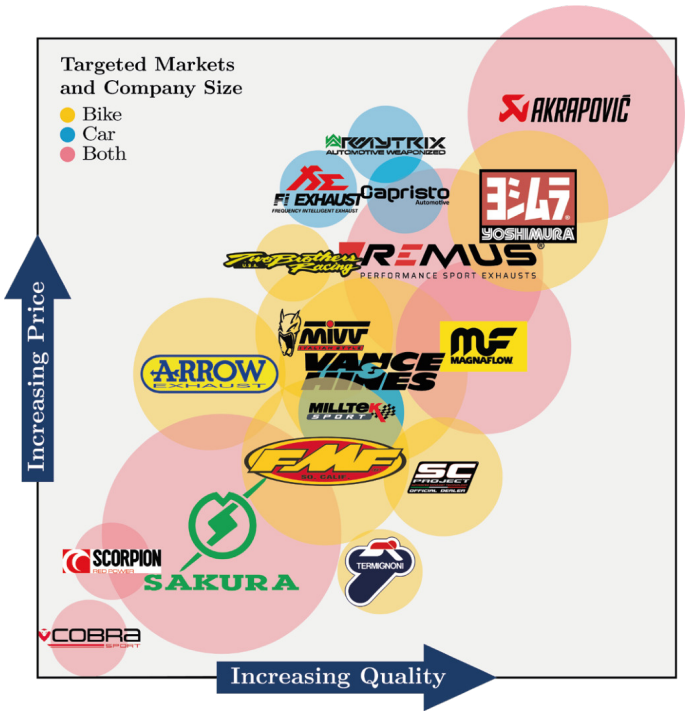


Figure 5. Perceptual Bubble Map for Competitor Analysis[9,21-31]

Out of the main exhaust manufacturers shown in Figure 5, the six companies shown in Table 1 were identified as the main competitors of Akrapovič in terms of either R&D, racing history, price segment or customer satisfaction. The data shows that Akrapovič does not generate the same revenue per employee as some of the other competitors - in particular Remus Innovation, who directly competes with Akrapovič in the EU market, but also has a large presence in the North American (NA) market, and MagnaFlow, who take the largest share of the NA exhaust aftermarket[21,22,25]. The two companies will be studied alongside Akrapovič to explain the marketplace that Akrapovič occupies, which will enable to further develop on its business strategy and provide a critique of its business model.

Table 1. Company Data for Main Car and Bike Aftermarket Exhaust Manufacturers (2021)[9,21,25]

Company	Employees	Revenue (million EUR)	Industry	Main Market
AKRAPOVIČ	1300	152	Car/Bike	EU
MAGNAFLOW	530	123	Car/Bike	NA
REMUS	850	163	Car/Bike	EU/NA
SAKURA	450	100	Car/Bike	Asia
Two Brothers Racing	30	5	Bike	NA
YOSHIMURA	200	26.5	Bike	NA
VANCE & HINES	200	39	Bike	NA

Remus Innovation is an Austrian business unit of the Remus Sebring Group, founded in 1990, specialising in car and bike exhausts, exporting over 90% of its production to over 60 countries. In 2013, the group established Remus Technology in the US to increase sales in the NA market. In 2017, the group took a stake in the Austrian company, ATT – Advanced Thermal Technologies and WeForm, who specialize in material and manufacturing technologies. The group has focused on car motorsports and has been a committed partner of the DTM championship for some years, also serving product development and technology transfer from the racetrack to the road. Remus is also a dedicated lifestyle company with a clothing brand and are involved in ski and golf among other sports[25].

Founded in 1981, in California, home to some of the strictest air quality legislations, MagnaFlow is a subsidiary of Car Sound Exhaust System, Inc., a large company owning nine other companies producing automotive components[22].

It is the largest aftermarket exhaust company in the US with a revenue of 123 million EUR in 2021[21]. Since its founding, it has always targeted car enthusiasts seeking more power and sound in a high quality package. With a large R&D environment, MagnaFlow utilizes advanced technologies - home to multiple in-ground dynamometers, flow benches, and a host of highly sensitive sound testing equipment to ensure that every new part passes stringent quality and performance standards before being approved for manufacturing. "*If it doesn't produce power, we don't make it*", says their company website[22].

The geographical markets that Akrapovič, Remus and MagnaFlow have the largest impact on can be interpreted from Figure 6.

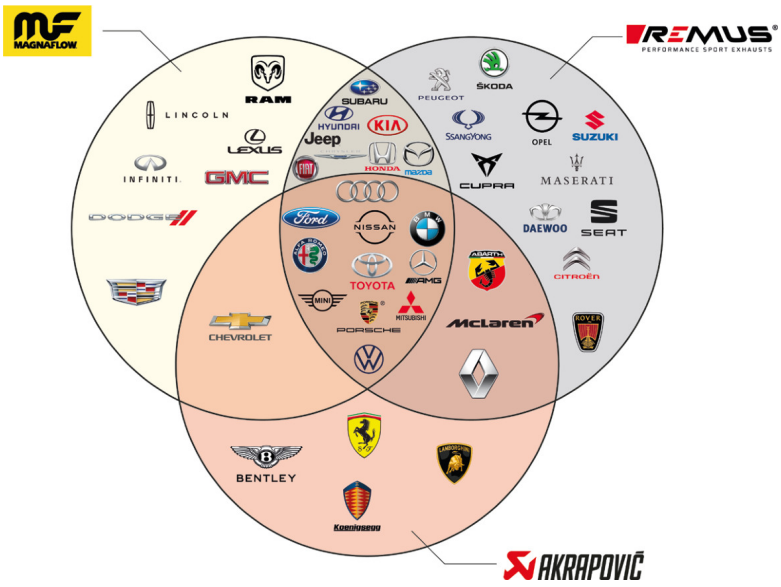


Figure 6. Venn Diagram Illustrating the Automotive Companies Supplied to by the Top Aftermarket Exhaust Manufacturers [1,22,24]

Revenue is a key financial benchmark for companies[32]. The larger annual revenue generated by Remus in comparison to Akrapovič can be attributed to its approach to not perform severe brand segregation, producing and supplying to lower segment Asian and European OEMs such as Daewoo, Peugeot and Rover. Simultaneously, its US subsidiary enables to tackle the NA market by supplying to the intersecting market that MagnaFlow and Remus both target[33].

Tackling the EU and NA markets by supplying to non-premium OEMs without a racing heritage enables the company to generate more in comparison to Akrapovič at a loss of brand prestige. MagnaFlow can be seen to play a large role in the NA market, as it targets predominantly car brands, which are popular in this market[22]. Due to its less intense racing ethos, but still recognised for its quality, the company can supply aftermarket exhausts to almost any company without affecting its brand image or reputation.

In 2020, global economic development was significantly impacted by the coronavirus pandemic, plunging it into a deep recession[32]. Global lockdowns, supply chain shortages and shortages of competent staff greatly affected Akrapovič, who source key components such as damping wool, catalysts and titanium from Japan and the US, but who also rely on extremely skilled employees to develop and manufacture their products[9].

According to the International Monetary Fund, the global gross domestic product decreased by 3.3% in 2020 while the global demand for passenger vehicles also significantly decreased according to the VDA (German Association of the Automotive Industry), resulting in order cancellations to suppliers but also a reduction in the pool of OEM special-series portfolios, i.e., niche sport car production, a segment of interest to Akrapovič[32].

This trend is demonstrated in Figure 7, with a decrease in the company's total annual revenue compared to 2019 and a significant decrease of car exhaust system sales.

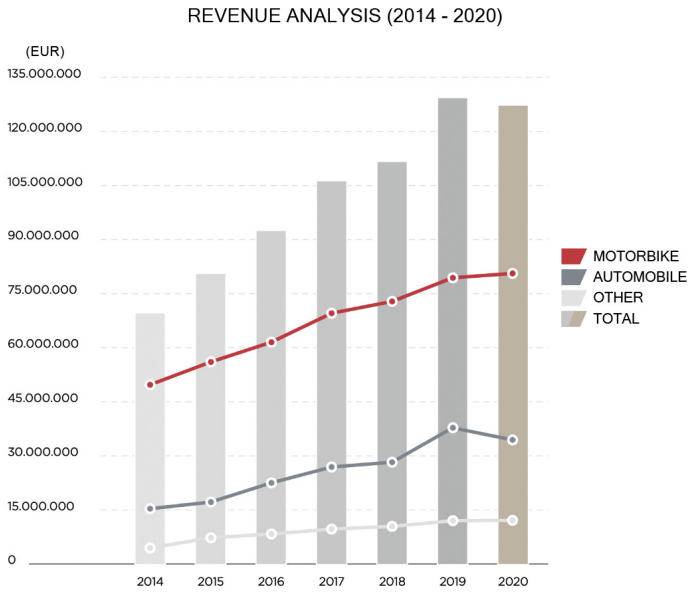


Figure 7. Akrapovič Revenue Analysis (2014-2020)[9]

Interestingly, bike system sales increased by 2.2% which is explained by a hedonic behavioural phenomenon known as *revenge spending* defined as buying discrete or luxury goods to ease the negative emotions provoked by the pandemic through consumption, regardless of their necessity or immediate use[34]. This is illustrated by CEO, Uroš Rosa in the company's 2020 annual report.

"WE ENDED THE YEAR WITH A MINIMAL DROP COMPARED TO THE PREVIOUS YEAR... I DARE SAY THAT THIS IS A REFLECTION OF THE FACT THAT OUR PRODUCTS BELONG TO THE PREMIUM AND LUXURY SEGMENT. OUR CUSTOMERS ARE INDIVIDUALS WHO, DUE TO A NUMBER OF CONSTRAINTS, WOULD SPEND MORE FOR THEIR OWN PASSIONS SUCH AS POWERFUL MOTORCYCLES AND CARS. WE WERE ALSO PART OF THE SO-CALLED "REVENGE SPENDING", WHICH HIT MAINLY BUYERS OF LUXURY GOODS.[9]"

Other key market risks for Akrapovič, which will be more thoroughly discussed in the following sections include increasing global vehicle emission regulation stringency, as the use of mandatory aftertreatment devices such as high-efficiency catalytic converters and gasoline particulate filters (GPFs) restrict exhaust gas flow and hinder the gain of substantial performance and sound benefits[16,32].

Moreover, future mobility and the increasing importance of electric vehicles (EVs) in manufacturer's automotive fleets poses Akrapovič with the threat of a shrinking market as EVs don't require the use of exhaust systems[32]. However, other opportunities surface relating to carbon composite production, seeking to reduce the mass of these heavy vehicles - and development of in-cabin sound actuators to enhance the sound feedback of these otherwise soulless vehicles[9,35].

Other relevant financial risks relate to warranty claims due to the emergence of tougher agreements with OEMs, in particular in the US market, a growing market for Akrapovič, where consumer right legislations are more stringent and warranty claims can be extremely costly in litigation and may even lead to product sale prohibition in some states[32].

HOW? - THE BUSINESS MODEL

"WE DON'T HAVE A SPECIFIED R&D BUDGET. WE INVEST INTO R&D AS MUCH AS WE NEED SINCE INNOVATIVE SOLUTIONS ARE THE ONLY POSSIBLE ANSWER FOR SUSTAINED COMPETITIVE ADVANTAGES.[9]"

- IGOR AKRAPOVIČ

Akrapovič has a company philosophy very different to other competitors, who have substantially more revenue-based business models and aggresively tackle a larger portion of the available exhaust system markets to increase their marketshare like Remus and MagnaFlow. On the other hand, Akrapovič tries to detach itself from the competition by continually investing into R&D, advanced tools and new technologies. It makes unique systems, specifically designed for a particular vehicle, which is very expensive in development costs, but which is required to stay on top of the competition. R&D therefore takes a pivotal position in the company's business model. This culture is deeply engraved in the company ethos as highlighted by Igor Akrapovič above. The importance of racing is also significant for the company's operation and is used as a primary channel of product exhibition[9].

"SOME COMPETITORS PURSUE OTHER STRATEGIES LIKE THROWING MONEY AT ADVERTISING... BUT THAT'S NOT HOW AKRAPOVIČ WORKS. WE BUILD EXHAUST SYSTEMS THAT ARE OPTIMUM IN EVERY RESPECT, USE THEM IN MOTOR RACING AND APPLY OUR KNOWLEDGE TO SERIES SYSTEMS. VICTORIES AND SUCCESS ARE ACKNOWLEDGED, GIVING AKRAPOVIČ CERTAIN PRESTIGE AND STIMULATE OUR BUSINESS.[5]"

- IGOR AKRAPOVIČ

Akrapovič focuses on adding value to all of its processes and this is reflected in the final product that the customer sees. The synergic interrelation of engineering expertise, beautiful design, choice of materials, manufacturing processes and attention to detail yield extremely niche and unique exhaust systems, which in addition to its derived technology from racing make for the company's unique value proposition. The business model canvas displayed in Figure 7 and the quote below illustrate how Akrapovič operates in order to stay as a leader in the saturated market of exhaust systems[9].

"EACH EXHAUST IS UNIQUE, A DEVELOPMENT STORY IN ITSELF. WE DON'T HAVE UNIVERSAL EXHAUST SYSTEMS. EACH EXHAUST IS MADE FOR A VERY SPECIFIC KIND OF VEHICLE, DEVELOPED TO OPTIMIZE ITS POWER, REDUCE ITS WEIGHT, AND SATISFY ANY TYPE-APPROVAL REQUIREMENTS THAT APPLY TO THAT KIND OF SYSTEM. THE BIGGEST BENEFIT TO END CUSTOMERS IS THAT THEY REALLY GET IDENTICAL MATERIALS, SOLUTIONS, AND OFTEN ALSO THE IDENTICAL EXHAUST SYSTEM CONFIGURATION THAT WE CREATE FOR RACING BIKES. END USERS BUY WHAT WE PRODUCE FOR WORLD CHAMPIONS, REGARDLESS OF WHETHER THEY'RE RACERS OR RECREATIONAL RIDERS. THE END USER GETS A PRODUCT THAT'S THE RESULT OF WORKING TOGETHER WITH FACTORY TEAMS. THIS IS REALLY IMPORTANT TO ME.[77]"

- SLAVKO TRSTENJAK, HEAD OF AKRAPOVIČ RACING R&D

KEY PARTNERS

- 1,400+ **procurement partners** in EU and Asia: titanium, stainless steel, catalytic converters, pre-preg composite materials, water, energy etc.
- 1,500+ **sales partners**: aftermarket and OEM (Distribution Centers, Yamaha, Suzuki, Ducati, Audi, BMW etc.).
- **Racing Teams** in MotoGP, DTM, Endurance Racing: 24h of Le Mans, Isle of Man etc.
- **Logistics** and **courier service** providers: shipping delays can have considerable impacts on OEM production lines.
- **Governmental agencies** and **banks.**
- **Motorsport and sport celebrities**

KEY ACTIVITIES

- **R&D**
- **Foundry**: stainless steel, titanium, inconel casting.
- **Manufacturing**: casting, tube bending, deep drawing, hydroforming.
- **Chemical services:** chemical milling, hot isostatic pressing, machining, material quality inspection.

KEY RESOURCES

- **Raw materials:** titanium, stainless steel, composite materials.
- **Catalytic converters**
- **IP:** protecting their intellectual property.
- **Two locations:** manufacturing and distribution centre.
- **Staff**: Extremely skilled and competent staff.

VALUE PROPOSITIONS

- **R&D, Quality and Design:** Akrapovič products are like a piece of art.
- **Strong brand equity**
- **Race proven products**
- **Mass production capabilities and very rapid turnaround times**
- **Stronger lifestyle brand identity than Akrapovič, good presence in motorsport**
- **R&D focus and quality like Akrapovič**
- **Great reputation in NA bike market**
- **Good product portfolio for American vehicle market and good customer support**
- **Sale through e-commerce sites: Shopify**

CUSTOMER RELATIONSHIPS

- **Customer service, intimacy:** partner secrets kept confidential.
- **Sale only through approved centres**
- **Racing partners**
- **Akrapovič Lifestyle Magazine:** reeling customers into the racing, luxury and winning lifestyle.

CHANNELS

- **Distributor network and import agents**
- **Logistics and courier services**
- **Marketing, social media and brand investment**
- **E-commerce**
- **Public relations and events:** Geneva Motor Show, Goodwood FoS etc.
- **Direct online sale**

CUSTOMER SEGMENTS

- **OEMs and Aftermarket**
- **Racing teams**
- **Car enthusiasts**: merchandise, Akrapovič Lifestyle Magazine.
- **Other industries*:** custom titanium casted parts for aerospace and implants for medical and chemical sectors.
- **Apparel consumers**
- **Focus on obtention of long-term OEM contracts**
- **Building customer loyalty very important:** customers of premium brands may own other vehicles which may also benefit from the product

COST STRUCTURE*

- R&D
- Manufacturing infrastructure
- Raw material
- Product distribution
- Employees (training, salary, benefits etc.)
- Marketing and events
- Endorsement / brand ambassadors
- Expansion into NA, Middle East, South Am. markets
- Authorised distribution centres
- Running costs (electricity, water)
- Strong AdSense marketing

*Cost structure applies to all unless specified

REVENUE STREAMS

- Exhaust system sales only through official distributors: limits expansion into other markets
- Racing sponsorship deals
- Social Media (Instagram, YouTube channel etc.)
- Akrapovič Lifestyle Magazine
- Other industries*
- Profits from economies of scale: large volume of sales > high product price
- Motorsport deals with OEM teams
- Atypical focus on e-commerce for industry. Only competitor selling on Shopify.

Figure 7. Akrapovič Business Model Canvas Compared to Competition[9,22,23,25,26,31,36,37]

From the business model canvas shown in Figure 7, it is clear that Akrapovič heavily relies on its brand image and racing heritage in order to increase the perceived value of its product. For this, it uses marketing and brand investment as channels to promote growth.

Moreover, it actively interacts with social media users on platforms like Instagram and YouTube, where racing highlights of vehicles using Akrapovič exhausts in a range of championships, from dirt bike racing to automotive DTM racing are posted. This helps to increase the possible outreach of current and future customers. Akrapovič also shares photographs of customer vehicles on social media which enables the company to generate a sense of intimacy with its customers, which although virtual, has the positive effect of increasing brand loyalty. Participation in public car and bike events and technological fairs also aids to strengthen the relationships with OEM customers and foster new ones with potential new distributors and new industries.

THE BUSINESS STRATEGY

Business strategy relates to the path taken by a company to place itself as effectively as possible in the marketplace in order to gain a competitive advantage and be profitable in the short and long-term. For this, it involves setting overall goals that the company aims to achieve and developing a plan such that a logical set of driving actions can be performed to achieve them[38].

Literature in the field of business strategy has suggested that the foundation for achieving competitive advantages requires the company to select the type of advantage it seeks to attain in relation to the competition. This advantage can be driven by product cost or differentiation. It also requires the company to select the market scope within which the company wants to attain the competitive advantage, namely a broad or focused market[38].

Figure 8 shows that in the context of the exhaust market that Akrapovič tackles, the adoption of different strategies by its main competitors is evident. Akrapovič remains as the predominant company using a focused differentiation strategy, previously described in this report as a form of brand arrogance - a strategic approach that places considerable emphasis on its value chain[38].

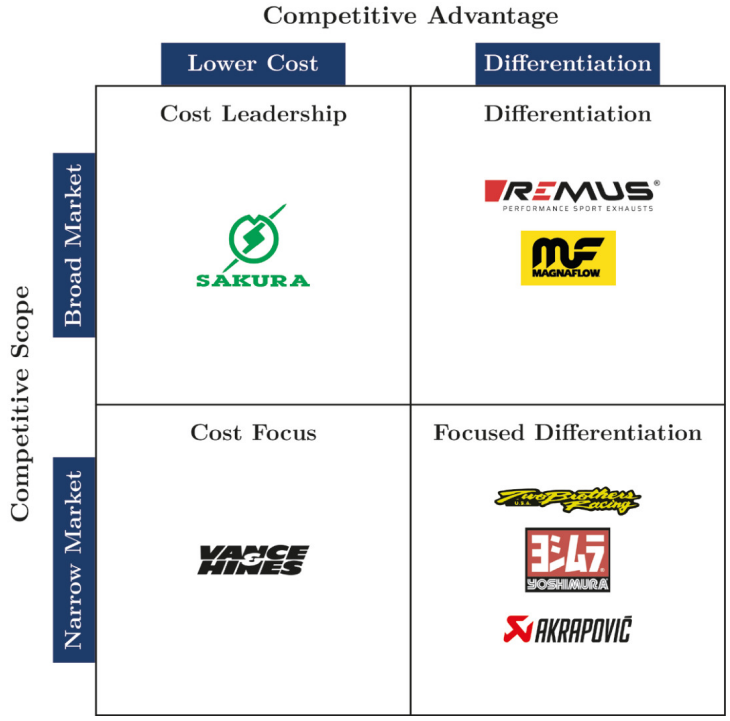


Figure 8. Porter's Generic Strategy Matrix Viewed in the Context of the Market Akrapovič Competes in[9,21-24,31,36-38]

Focused differentiation has an inherent tendency to cap the company's potential of sales and thus its annual revenue. Interpretation of the business strategy may suggest that taking this market position is a voluntary choice made by Akrapovič in recent years to ensure its long-term financial success as a high-tech company and to open the possibility of future expansion into other niche industries where their engineering and design prowess as well as available manufacturing resources may be exploited while staying loyal to its core values.

Akrapovič has selected to be unique in the exhaust industry through its exclusive use of materials and by treating their systems as pieces of art rather than welded pieces of metal. Then, it has demonstrated its engineering excellence and reliability through reiterated racing success and has thus created an extremely compelling brand identity[9,17].

All of these are attributes that customers of differentiation markets perceive as extremely important and valuable, so the company has positioned itself to meet and satisfy these requirements through its strategic approach. Thus, Akrapovič is rewarded for its uniqueness and brand status with a premium price because the customer obtains in return, a product deemed of high value. This phenomenon gives Akrapovič customers very little bargaining power and thus enables the company to increase its profitability through selective pricing rather than large production volumes[38].

Therefore, even though other broad market (Remus or MagnaFlow) or cost-leadership (Sakura) competitors are able to capitalise more efficiently by diversifying their product portfolios and supplying to manufacturers that Akrapovič would not supply to because it would devalue the brand name and its reputation of manufacturing high quality products for high quality products, Akrapovič capitalises more for every system sold in comparison, implying that they have a more valuable product as perceived by the customer.

In terms of company growth through market expansion, a strategic goal that every company defines in its business strategy, thorough analysis of the company presents an array of hypotheses, which I believe form the strategic foundation of the company:

H1. Akrapovič does not aim to be the top selling company in the exhaust market, instead it aims to provide the best quality products.

H2. Akrapovič is satisfied with its current exhaust market position because of the unique value proposition it can deliver to the customer. They are the sole company marketwide that offer the same product quality, heritage, brand status and reputation. No one can debate the company's history or the technical solutions they provide.

H3. Future growth of Akrapovič will not occur through channels which may risk jeopardising the brand image that it has created over thirty years. Such a risk could be a *downward company extension.*

A business parallelism can be drawn to expand on *H3* highlighting the negative consequences of a high-risk strategic approach to market expansion. An example is Danish company Bang & Olufsen (B&O) serving as a lessons learned for Akrapovič and a risk of growth that the company wants to avoid. B&O, founded in 1925, is a high-luxury brand devoted to the production of high-fidelity audio products and is today, similarly sized to Akrapovič with close to 1000 employees but with a notably larger revenue of 363 million EUR in 2021[39,40].

Its founder bore the slogan "*for those who discuss taste and quality before price*" marketing their devices as lifestyle products and targeting highly individualistic and self-motivated customers, cultivated in their interests. Until a decade ago, the company had a very defined focused differentiation strategy, focalising on exquisite craftmanship, material selection and the synergic interrelation of engineering and design, just like Akrapovič[41]. It also shares many OEM customers with Akrapovič as it supplies audio systems offered to customers as an extra to premium car manufacturers like Audi, Aston Martin, Lamborghini and Bentley[42].

In 2012, it launched a sub-brand known as B&O Play in response to the economic crisis which struck the luxury product market in 2008. Aiming to renew interest in B&O and revitalise the company's financial situation, it focused on a new and younger clientele known as the *digital generation*, offering them "fashionable and convenient to use" headphones and speakers at a markedly lower price point than the products of the parent brand. This was not well received by stakeholders and the public. B&O Play cannibalised sales of B&O and in the process, confused customers with the company's market positioning, thus erasing the well-established brand identity it had created. Figure 9 highlights how customer confusion impacted B&O's annual revenue. This is the result of failing to apply a consistent strategic approach it understands and believes in. This also had the knock-on effect of shifting the company from a focused differentiation market to a broad differentiation market. Today, B&O no longer has the same luxury product connotation as it once did and is compared to more affordable mass production brands like Sonos, Sony, Apple and Bose[43]. In the automotive industry, it also supplies to Ford, hardly an exclusive brand and the product they supply is not a sound quality leader. Ford, a considerably less luxurious brand than B&O uses the Danish company to increase its brand equity and position its product higher up in the market[44].

Akrapovič cannot afford to perform a downwards extension to grow in the market because the risk of losing its brand identity is too high and losing it removes its unique value proposition. Moreover, its main competitors are better structured to approach a mass production market. Its business strategy is therefore based around increasing its entire value chain through product development rather than sales volume, as shown by Figure 10.

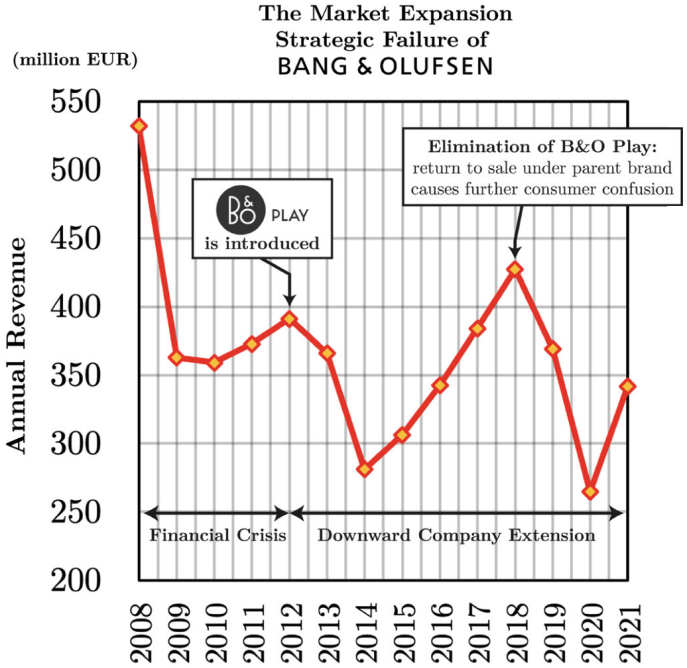


Figure 9. B&O as an Example of Market Expansion Strategic Failure [41,43-47]

Akrapovič invests into R&D and quality assurance to upkeep its brand identity and channel its growth through the strategic drivers highlighted below.

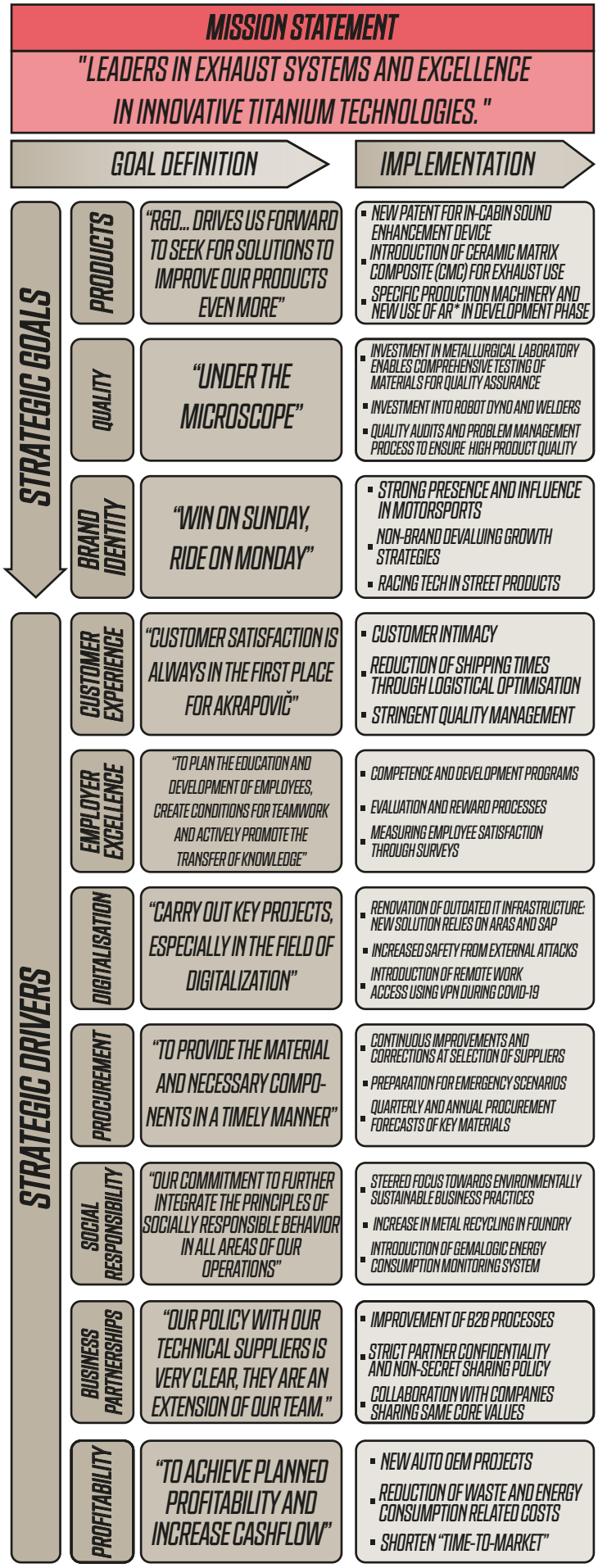


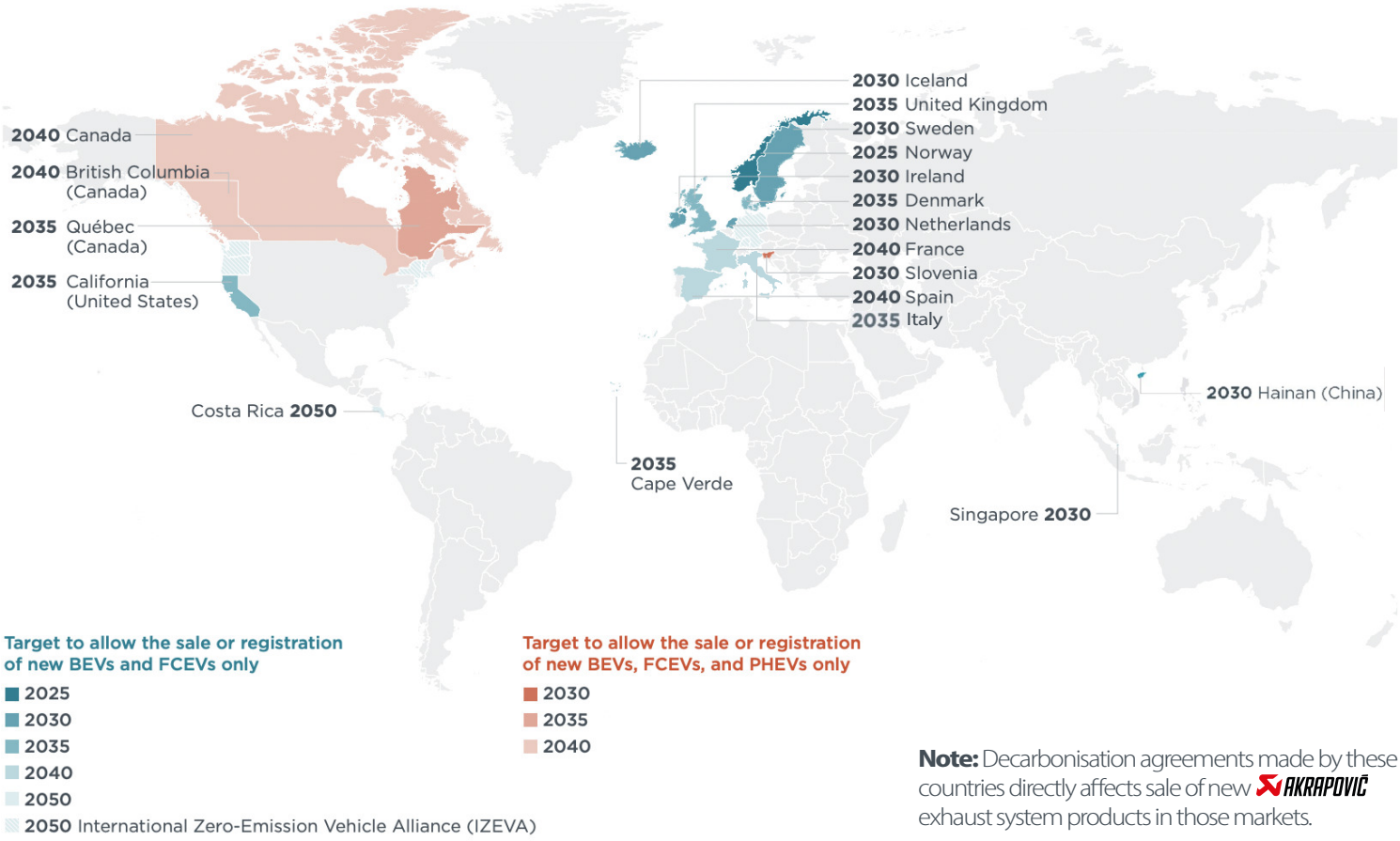
Figure 10. Akrapovič Business Strategy[9,17]

It is evident that Akrapovič has made an effort to position itself as a leader of the niche market of premium exhausts by focusing on a very narrow area of expertise and creating products that they are truly passionate about. In Igor's words: "*What makes us successful is that the workers have to have a passion for what they're doing. They have to have a passion for motorcycles. That way they give 110%.*[48]" This is why the company stuck to a focused differentiation strategy. The company then focused on building very strong brand equity through the use of exclusive materials, extravagant designs, reiterated racing success and by keeping close relationships with its customers. It has stayed loyal to its brand ethos and remained consistent in its strategic approach, thus avoiding threat of new market entrants and substitutes. It has thus become an increasingly profitable company over the years. Nevertheless, the long-term prosperity of Akrapovič is not guaranteed for a number of reasons which will be discussed in this section but mainly because its current strategy is not aligned in the direction that the automotive and bike industries are heading in. This is a problem that I believe intimidates the company's management and founder, Igor Akrapovič and one that should be resolved promptly if the company is to remain succesful in the future.

Global trends in future mobility are favouring EVs due to increasing CO_2 and NO_X emission and noise legislative stringency. The International Council for Clean Transportation has recently layed out a global overview of targets for the phasing out of internal combustion engine (ICE) passenger vehicles in the path to a net-zero carbon world by 2050, as highlighted by Figure 11. Over a dozen countries where Akrapovič produces most of its sales including Germany, France, Italy, Canada and the US have committed to ban of new ICE passenger vehicle sale by 2040. This confronts Akrapovič with the risk of a rapidly shrinking market for its main products because EVs do not require exhaust systems. The phasing out of ICE technology has increased pressure on car and bike manufacturers to adapt their product portfolios[49-51].

Volkswagen Group, BMW Group, Daimler, FCA Group, Renault Group and Toyota, among other customers of Akrapovič in the OEM automotive industry have announced plans to steer their strategy away from ICE vehicles in the next 10 years[50]. Although, this does not propose an immediate risk to the company's daily business, it threatens the securing of future OEM contracts in the automotive industry.

In the short term, the transition of the passenger vehicle market through hybridisation implies that vehicles will continue to use a combination of electric and ICE technologies meaning that Akrapovič will still have a focused market to target. Current megatrends in the automotive industry include engine downsizing and boosting coupled to the use of high-efficiency aftertreatment devices such as catalytic converters and GPFs[32]. These devices, whose use is now mandated by law in all active markets of Akrapovič, "choke the engine" as they convert the noxious exhaust gases leaving the engine into less harmful products at the exhaust tailpipe. In the process, they affect exhaust flow speed, which affects engine performance and also the sonority and tone quality an exhaust can achieve[16]. This problem can give Akrapovič competitive advantage because of its niche expertise of exhaust gas flow dynamics and manufacturing of complex tube geometries. This knowhow will most likely become more valuable in the coming years as premium performance vehicle manufacturers fight to give their vehicles distinguished sound characteristics. However, this transition period is only advantageous in the short-term because by at latest 2035, the company ought to have invested into diversifying its areas of operation, when new ICE sales are banned in Europe in 2040.



* Includes countries, states, and provinces that have set targets to only allow the sale or registration of new battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in hybrid electric vehicles (PHEVs). Countries such as Japan with pledges that include hybrid electric vehicles (HEVs) and mild hybrid electric vehicles (MHEVs) are excluded as these vehicles are non plug-in hybrids.

Figure 11. Global Roadmap of ICE Vehicle Phasing Out by Country by 2050[49,50,52,53]

A risk which greatly jeopardises the company's future and one I believe Akrapovič is failing to acknowledge relates to the future of motorsports because it is one of the main channels through which the company proves the value of its products.

According to a report by Market Data Forecast, the motorsport market size is predicted to expand from 4.3 billion EUR in 2021, to 7 billion by 2026 with a compound annual growth rate of 7.2%[54]. There is a catch in these figures because despite these claims, the motorsport industry faces the same challenges as the passenger vehicle industry relating to decarbonisation. This industry has been critiqued for ignoring air and noise pollution and critics claim that the huge investments made every year to sustain racing infrastructure could be directed to the development of non-obsolete technologies. This has increased interest in environmentally conscious racing with the rise of EV and alternative fuel racing which are not areas relevant to the expertise of Akrapovič[54].

"THE INCREASE OF HYBRID VEHICLES DOES NOT MEAN MORE RISK FOR OUR COMPANY BUT AN OPPORTUNITY FOR NEW APPLICATIONS. THE USE OF TITANIUM EXHAUST SYSTEMS COULD HELP REDUCE THE TOTAL WEIGHT OF THE VEHICLE, WHICH WILL INCREASE DUE TO THE USE OF BATTERIES.[9]"

- UROŠ ROSA , AKRAPOVIČ CEO

Clearly, the company does not appear to be publicly concerned by the threat of hybridisation. This is because of the compatibility between lightweight materials that Akrapovič are experts in and heavy battery-powered hybrid vehicles. However, in my view, failing to realise that the insignificant weight reduction that titanium exhausts provide (approximately 15 kg on automotive systems) in relation to the weight of a hybrid vehicle (over 1800 kg) is not a sufficiently unique value proposition for the customers of a focused differentiation market, can lead to the company's decline[1]. As already discussed, Akrapovič customers are emotional consumers. They are people who buy the product because of the brand image, the exclusive design and the beautiful sound that the systems produce. Therefore, insignificant weight reductions, especially outside a racing environment, most probably play a redundant role in the purchasing decision of Akrapovič customers. This hypothesis is probably also true, even for current ICE vehicles, which are lighter than hybrids, and benefit more from the weight reduction.

Akrapovič should follow the footsteps of German automotive aftermarket tuning companies like ABT Sportsline, Brabus and Techart, who specialise exclusively in VW Group, Mercedes-Benz and Porsche vehicle modifications, respectively. Their products span from improved engine maps to increase power output and torque, to aerodynamic body kits, high-quality alloy wheels and exclusive interior customisations at the highest level of detail, engineering and craftsmanship. These three companies have become the largest tuners for these vehicle makers and this has been recognised by them, offering them OEM collaborations[55-57].

ABT, who has a long-standing history of victories in ICE racing and specialises in the aforementioned services reached an agreement with Audi Sport, the racing division of Audi to jointly run the Formula-E Team Audi Sport ABT. This opportunity emerged as ABT anticipated the future requirements of Audi Sport, its largest customer in 2011, and heavily invested into R&D of regenerative electric powertrains[58,59]. ABT then used its expertise and relationship with Audi to run its Formula-E Team in 2014. ABT, Brabus and Techart have also gained very good reputations and created such a strong lifestyle brand equity coinciding with the one being sold by the OEM. This enables them to sell their modified vehicles at official Audi, Mercedes-Benz and Porsche dealerships, without voiding the original manufacturer's warranty. What these companies have in common other than being very focused differentiation brands is that they have acknowledged that their customers buy emotions and lifestyles. They have then adapted their product portfolios and marketing strategies to become more resilient to changes in market trends.

Akrapovič currently has the expertise and the in-house resources to increase its niche product portfolio outside the market of exhaust systems, as seen in Figure 1. Aerodynamics are playing an increasingly important role in motorsports to increase cornering speeds and stability through the addition of downforce[60]. Akrapovič could exploit its very focused knowledge of fluid dynamics from exhaust sytems to develop aerodynamic packages for motorsport use. It could then benefit from the positive exposure of motorsport and its established business relationships to supply the OEM manufacturers shown in Figure 6 with aesthaetically and aerodynamically enhancing body kits for customers who may desire additional differentiation from the factory. In the passenger vehicle industry, aerodynamics also play a central role in emission and wind-noise reduction as well as enabling achievement of higher top speeds. In the EV landscape, aerodynamics greatly affect the range, an important aspect in the minimisation of *range anxiety*[61].

If Akrapovič were to start producing exclusive carbon composite material aerodynamic body kits targeting the same clientele it has for its exhaust systems, it could greatly lower the future risk of being an expert in obsolete technology. This would enable a market expansion without risk of loss of brand image or without deviating from the company's core ethos of racing.

Figure 12. Techart Aero-kit for Porsche 992 Turbo S[57,62]

Another good example of business model innovation and strategic shielding from future risks that Akrapovič could learn from is done by Austrian company Red Bull. Originally, an energy drink brand, today their cans are the means to serve a radical lifestyle. Their motto *Red Bull gives you wings* motivates customers to trespass the boundaries of established standards by distinguishing themselves from ordinariness and mediocrity[63]. Red Bull customers

do not see themselves as consumers of energy drinks but rather as consumers of a lifestyle. This is thanks to the storytelling approach employed by the company and its enormous marketing investment. Red Bull competes on emotions which enables them to maximise word-of-mouth. This business strategy of becoming an entertainment company through sponsorship and ownership of extreme sports athletes and teams transcends the orthodox business logic of other soft-drink companies like Coca-Cola[63].

By continuously engaging with its customers in a deeper way than traditional advertising ever could, Red Bull enables its customers to feel active and relate to a lifestyle by drinking from a can that shares the same logo as a Formula One car, a record-breaking parachute, succesful football teams or athletes that deliver the most impressive results[64]. This strategy gives the company unlimited business development potential through brand equity and trend engineering.

The reason for this comparison is that Akrapovič is falling behind its main competitor Remus, in the generation of a lifestyle brand despite its claims of being a devoted lifestyle company. Remus has already established an official clothing brand dedicated to high-quality and stylish garments including shoes, socks, shirts and hoodies as seen in Figure 13[26]. Furthermore, I had personally never heard of the Akrapovič Lifestyle Magazine until the writing of this case study, despite being an Akrapovič customer and following their social media. This is because the lifestyle brand is not something that the company is mediatising effectively.

Figure 13. Focus of Remus to Become Lifestyle Brand[26]

Another channel of growth that Akrapovič has failed to successfully exploit in recent years is its subsidiary, Akrapovič Foundry into the aviation industry. Here, the titanium market is expected to grow to 3.8 billion EUR by 2025[65]. The major growth drivers for this market are increasing demand of lightweight titanium components due to increased focus on fuel efficiency by manufacturers and deliveries of aircrafts. The extent of casted titanium applications in the aerospace industry ranges from fuselages and door frames to wing spars[66]. The main problem that the commercial aviation industry faces is that the existence of the duopoly between Boeing and Airbus has stagnated innovation in this sector for the last decade, notably in the use of new materials due to the lack of competition[67]. For instance, the largest scandal in the industry in recent years was initiated by this phenomenon, driven by corporate greed[68].

In March 2019, the US Federal Aviation Administration (FAA) ordered grounding of the entire fleet of Boeing 737-MAX after two separate crashes in less than 4 months killed 346 people[69].

Investigations concluded that design of the new anti-stall system known as MCAS caused the aircraft's nose to pitch down automatically leaving pilots fighting for control. The reason that MCAS existed in the first place was that the launch of the 737-MAX was a rapid response to the release of the competitor Airbus A320neo. The A320neo had been completely re-engineered and threatened Boeing with losing a large share of the market. The 737-MAX was just an adaptation of its predecessor using more efficient engines which had to be installed higher up and farther forward. This changed the aircraft's handling characteristics which had to be corrected for approval by the FAA. MCAS was implemented by Boeing so it could sell it[68-70].

For this reason, Akrapovič should target a niche area of the aviation industry, more invested in R&D and concerned with the use of new materials. The ultra-light glider and electric aircraft sector is the perfect area for this and Akrapovič has the world's leading manufacturer of this sector, Pipistrel, located only 100 km away from its headquarters in Ivančna Gorica. Buying Pipistrel could prove into a succesful form of company extension while remaining loyal to a focused differentiation market and without risking loss of brand equity. There is good potential for this to be well accepted by the public and company stakeholders if it can be linked to the composite automotive aero-kit opportunity. Aviation inspired products for automotive applications would generate a strong unique value proposition, especially if marketed through a strong lifestyle business model. This can be easily achieved as Pipistrel is devoted to manufacturing *the best choice for aircraft explorers all over the world!* [71,72]

Pipistrel was founded in 1989, in a similar context to Akrapovič. It became a pioneer of alternative aviation in Slovenia focusing on ultra-light and electric flight. The company's vision is *to become a leading provider of high-quality, sustainable and innovative aviation products in the global market*. It plans to achieve this long-term goal through the management of four strategic pillars, namely advanced and competive innovative products, efficient and reliable production, tackling a very focused market and obtaining succesful business results. Pipistrel was the first company globally to fly an electric two-seater aircraft in 2007[71]. In 2020, it launched the Velis Electro, the world's first type-certified electric aircraft[73]. In the same year, Pipistrel was also voted second best Slovenian engineering employer, after Akrapovič[74].

Pipistrel's focus on lightweight materials such as titanium and composites would mutually benefit both companies. Pipistrel aircraft and glider fusilages are made using only carbon fiber, Kevlar and fiberglass. Currently, Akrapovič is gaining competitive advantage in Ceramic Matrix Composite material expertise, an ultra-light material, 50% lighter but stronger than titanium[75]. Pipistrel could benefit from this technology and the manufacturing capabilities of Akrapovič to lower its costs, while Akrapovič needs a niche sector of the aviation industry, where the drive for innovation is not hindered by corporate greed. Pipistrel is also planning the development of electric propulsion systems, a field of high-interest to Akrapovič so the merging of the two companies under the Akrapovič parent company is a path for Akrapovič to continue growing without becoming a broad market company or losing its brand equity[71].

Pipistrel reported in The Slovenian Business Registry an annual revenue of 32 million EUR in 2021, suggesting that it is valued at around 130 million EUR[71,76]. If one considers that buying Pipistrel would open the door to a totally new market where Akrapovič's expertise and resources would be greatly valued, this business opportunity seems like a very promising investment that Akrapovič can afford to make[9,71].

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[This report is Chapter 16 of the book *Competitiveness, Social Responsibility and Economic Growth* by Janez Prasnikar. The chapter was kindly sent to me by the author Dr. Drnovšek for free, to be used in this case study, as it contained some relevant information about Akrapovič which was inaccessible through the book itself on Google Books.]

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