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**Management in the World of Motorsport**

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## ***ABSTRACT***

Motorsports have evolved in history and nowadays there's a motorsport industry and racing teams are out-and-out businesses. The motorsport industry plays a non-negligible role in the world economy, with the car racing industry directly generating €58.8 billion in gross output and €25.0 billion in value add and indirectly generating €99.4 billion in gross output and €41.9 billion in value add, for a total contribution of €159.2 billion in gross output and €66.9 billion in value add in 2019. This contribution was higher than the combined gross output of the world's 25 smallest nations. Furthermore, in the same year the industry generated 576,000 direct paid jobs and 924,000 indirect paid jobs, for a total of 1.5 million paid jobs.

The motorsport business involves a complex system, which comprises a shifting network of relationships. These elements and business relationships can be conceptualized within a value chain framework. This framework provides a classification scheme for all firms within the motorsport sector and illustrates the interrelationships between the firms as a motorsport supply chain, which culminates in the delivery of a motorsport event to an audience.

Even though racing teams are now out-and-out businesses, applying standard managerial strategies to such businesses proves difficult. Standard managerial analyses such as the Porter's five forces framework, the PESTEL analysis and the business model canvas need to be modified and adapted in order to be used in the analysis of racing teams. The absence of standard players and factors of managerial analyses such as customers and products in the business of a racing team call for new ways of interpreting these roles in managerial analyses, substituting them with de facto customers and products in the form of fans and points. These creates a product that, however, cannot be sold, which brings to the interpretation of sponsors and partners as de facto customers as well, with their interest being the advertisement that a well performing team will get them.

The work made to adjust analyses frameworks to make them perfectly fitting for a racing team culminates in the application of said adjusted frameworks in a case study on the Ducati racing team in the MotoGP World Championship. The analysis highlights the main practices and strategies that brought Ducati to where it is in the MotoGP World Championship such as its incredible strive to research and develop new technologies that will change the future of the sport like aerodynamic wings and ride height devices.

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## *Introduction*

The motorsport world has evolved to become an industry and, with it, racing teams have evolved to become out-and-out businesses. This thesis focuses on racing teams as business and aims at adapting a series of managerial analysis frameworks to the peculiarities of racing teams. The first chapter aims at making the reader familiar with the world and history of motorsport. Following the evolution of car racing and Formula 1 and that of motorcycle racing and MotoGP, we learn how the sport became to be an industry, exploring the immense diversity that motorsports offer. However, we will concentrate on the discipline of car racing and motorcycle racing and, specifically prototype racing, i.e., the Formula One World Championship and the MotoGP World Championship.

The second chapter focuses on explaining the economics behind the motorsport industry, starting from the motorsport value chain. The analysis of the value chain will allow us to better understand all the players taking part to the motorsport industry. After studying the value chain we'll go on to discuss about the costs and revenues of a racing team. This will give us an insight on the economical aspects with which team managers have to deal on the daily. Furthermore, the study of costs and revenues will allow us to delve deeper into the mechanics of this industry by taking interest in said industry not only in a theoretical way, but also through the presentation of real-life figures, survey results and anecdotes from the world of motorsports. The end of the chapter looks at the bigger picture, analyzing the impact of motorsport on the world economy. The third chapter focuses on the adaptation of three managerial analysis frameworks (the Porter's five forces framework, the PESTEL analysis and the business model canvas) to the peculiarities of a racing team. Starting from the Porter's five forces framework we'll see how to work around the absence of buyers in order to be able to evaluate all five of the forces. After, with the PESTEL analysis we'll be able to notice how the main concern in terms of "laws" for racing teams are not the laws of the countries they operate from or race in, but rather the rulesets of the championships they compete in. Finally, with the business model canvas we'll again touch upon the absence of buyers/customers, to then move onto the absence of products and channels of distribution. In doing so we'll propose fans, sponsors and partners as customers, given their interest in the team's performance, and media coverage and social media as the channels of distribution through which customers can follow the team throughout the season and during breaks.

The fourth and last chapter aims at studying Ducati's MotoGP team from a managerial point of view in a case study which will make use of the three frameworks discussed in the previous chapter and many other.

This thesis proposes a journey in the world of motorsports, getting to know the history and the evolution of such sports, passing through the economics to then land on the managerial aspect, ending the journey with an analysis of what is currently the best team in MotoGP. This process aims at creating a strong base onto which a deep discussion on the managerial aspects of motorsports can be held.



# *Chapter 1*

## *The World of Motorsports*

Motorsports have been a part of our history for about as long as the combustion engine has been. Since the dawn of vehicle engineering, the masterful creations of engineers have been accompanied by the endeavors for speed, adventure and glory of daredevils all around the world. This passion went hand in hand with business: manufacturers were the first who wanted to know the limits of their creations in order to be able to improve them. The improvements made in competition would then be adapted to the necessities of street vehicles and would go on to be of benefit to the consumers (e.g., disc brakes and rear-view mirrors<sup>1</sup>). More than a hundred years have passed since the dawn of motorsports and though rules, technology and societies have changed, the passion of racers and manufacturers has always remained the same, making motorsports some of the most followed sports around the world and, hence, also a major business.

### *1.1 History of Car Racing and Formula One*

It didn't take long after the combustion engine as we know it was invented (in 1876), for the first ever car race to be organized (in France, 1887, just one year after the first commercial production combustion engine powered cars were produced) when the French newspaper *Le Vélocipède Illustré* announced the holding of a "reliability" trial. The event, which only involved a short run from Paris to Versailles, saw only one competitor show up and was thus cancelled. Despite this first inconvenience, the following year the event was once again organized and this time two automobiles were present. Nevertheless, little to no importance was given to the result (and hence the race) since the two vehicles taking part were produced from the same manufacturer, the Comte de Dion. Hence, it can be stated that motorsports came into being in France in the 1890s. Motorsport was born as the testing ground for newly invented motorized vehicles as early races gave manufacturers the opportunity to test the reliability of

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<sup>1</sup> Both of these nowadays standard features on production road cars and motorbikes were first introduced in F1.

their cars over long distances on public roads. The proven reliability of a car would then be the main selling point for this new mean of transportation towards which people were still skeptical.

### ***1.1.1 The Major Role of France and its Aristocracy***

In order to understand why France was the pioneer in the birth of motorsports, even though the combustion engine was invented by Gottlieb Daimler in Germany, it is important to look at the infrastructure of the country. As a matter of fact, France's infrastructure was incredibly more apt at hosting the new motorized carriages, due to its highly developed road network, a consequence, mainly, of Napoleon Bonaparte's urban planning. Another important factor was the ease with which family-run businesses were able to convert themselves from metal and wood working activities to car manufacturing. This conversion brought France to have more than 600 manufacturers at the start of the XX century while there were less than 100 in the rest of Western Europe and the USA combined.

Given the costs and the economic interests of car manufacturing and racing, it was the aristocracy who initially invested in the organization of the first events. In pretty much the same way, it was the aristocracy who made the first attempts at codifying the sport. The Count de Dion, Baron de Zuylen and Paul Meyan (a journalist with *Le Figaro* and editor of the newsletter *La France Automobile*) met in September 1895 to create the ACF (Automobile Club de France), the world's first automobile club. Nine years later, in 1904, the Association Internationale des Automobile Clubs Reconnus (AIACR) was founded and would go on to essentially be, instead of a governing body of its own, the body with which the ACF organized its international races. The AIACR would then go on to become the Federation Internationale de l'Automobile (FIA), the governing body for the most famous international car racing events (e.g., Formula One, World Rally Championship, World Endurance Championship, etc.). Furthermore, aristocracy which heavily invested in newspapers as well, wanted to exploit the continuously increasing interests in sports in order to increase the papers' readership: covering a sporting event that took place over a number of days meant having the guarantee that people interested in receiving news and updates on that event would inevitably buy the newspaper for as long as the event lasted. It was only a matter of time before this practice was adapted and used as a model to promote a motoring event: in 1894, Pierre Giffard, the main organizer for the Paris-Brest-Paris bike race, decided to organize a reliability trial for cars with the same format between the cities

of Paris and Rouen. Thanks to Giffard's constant promotion of the trial on the frontpage of Le Petit Journal (his newspaper) the event generated a lot of interest and what has been qualified as a significant crowd turned out in Porte-Maillot for the departure on 11 June 1894. Even though 102 competitors had entered the event, only 21 showed up for the start and just 17 of them made it to the finish line. The event being a reliability trial, the first-place prize would not necessarily be awarded to the car which crossed the finish line first.

### ***1.1.2 The Advent of Institution-organized Events and International Races***

Following Giffard's example, the ACF decided to hold city-to-city races on an annual basis. While Paris always remained the starting point of the races, the destination constantly changed in order to guarantee bigger distances until, in 1898 the ACF decided for a shorter race but one that would, for the first time in history, link two countries: the Paris-Amsterdam. The great success of this international race brought the ACF to repeat the venture by organizing other international races such as the Paris-Berlin, the Paris-Vienna and the Paris-Madrid. The latter was the largest sporting event to take place in 1903, with as many as 200,000 spectators showing up for the race start in Versailles. A further two million people lined the roads from Paris to Bordeaux and, according to newspaper reports the entire 200,000 population of Bordeaux came out to see the arrival at the end of the first major stage of this race. However, the Bordeaux-Madrid stage of the race was cancelled due to the high number of fatal accidents occurred in the first stage. Among the victims was Marcel Renault, brother of Louis, and co-founder of the company that still manufactures cars today. The tragic events of the Paris-Madrid led to the banishment of city-to-city car races in France now considered too dangerous. However, this led to the first attempts of circuit-like racing: to avoid the difficulties in marshalling the races on open roads, the roads would be closed to public use.

### ***1.1.3 The Gordon Bennet Cup and the Internationalization of the Sport***

While France was the birthplace of motorsport, it wasn't just the Frenchmen who had developed an interest in car racing and, a non-French sponsor was just what motorsport needed to really go international. Gordon James Bennet, an American journalist, was the main sponsor of the

first ever international race. As a sports fan, seeing sports promotion as a means of improving newspaper readership and with the intent of expanding motorsports into an international phenomenon, Bennet announced the creation of the Coupe Internationale. Bennet also went on to establish the rules for the races, which were, however, enforced by the ACF. Each annual race was open to a maximum of three entries per nation and they were to be held in the country of the winner of the previous year's race.

Despite Bennet's efforts towards an international environment, in the first years only France would fill its quota of three cars. However, things changed in 1902 when a British racer, Selwyn Edge, on a British car, a Napier, won the Paris-Vienna race: it was the first time the French were defeated. This brought a breath of fresh air and fueled the enthusiasm for the following year's race. As the 1902 race had been won by a British driver, it was now Britain's responsibility to host the race: this was the first example of an international motor race taking place outside of France; it was also the first time motor sport was attracting global attention. Camille Jenatzy, driving a Mercedes, won the race, taking the Gordon Bennett Trophy to Germany along with the privilege of hosting the following year's race.

The final two Gordon Bennett races in 1904 and 1905 took place in a highly charged political atmosphere. The Franco-Prussian war of 1870 was still part of mentalities and this was no more evident than in Alsace, which had been ceded by France to what was to become Germany in the aftermath of their high-profile military defeat. Léon Théry's 1904 victory on German soil and subsequent triumphant return to France through Alsace where he and his supporters were ordered to hide their Tricolors demonstrated the potential of the motor car to become a symbol of national pride. In 1905, Léon Théry's triumph for the second year in a row was front page news simultaneously in France, Britain and the USA among other countries and, in doing so, relegated the Russo-Japanese War to page 2.

The Gordon Bennett Cup (1900–1905) internationalized motor sport at a time when it seemed that France would continue to monopolize the sport for years to come. Bennett harnessed the French method of organizing racing, even going so far as to use the ACF to organize his races. He based his initial race in France but, by stipulating that the winner must host the following year's event, he opened the door for other nations, in time, to establish themselves in motor racing; this also provided a focal point to develop this growth.

### ***1.1.4 The End of The Bennet Cup and the First Grand Prix***

Bennett's cup acted as a catalyst for motor sport development as it evolved into a phenomenon visible on the world stage. These races, however, left France increasingly frustrated. While other nations often struggled to assemble a team, France held annual qualifiers to choose its representatives. Thus, with only three French cars out of 29 qualifying for the 1904 race, manufacturers such as Clément-Bayard, Darracq, De Dietrich, Gobron-Brillié, Hotchkiss, Panhard, Serpollet and Turcat-Méry found themselves absent from the international sporting spotlight and were hence deprived of an important occasion to showcase the capabilities of their cars to potential customers even though their products were at times better than the non-French competing ones. When the Gordon Bennett Cup was born in 1899, the motor industry was still struggling to make its products viable, but by 1905, the USA had overtaken France as the world's largest automobile producer. Turn-of-the-century motor racing was a reliability exercise more so than a sporting event; however, the success of the Gordon Bennett Cup meant that the sport was becoming, to an even greater extent, an arena in which constructors marketed their products. Responding to the French inability to cater for all its manufacturers, the ACF decided to boycott the 1906 Gordon Bennett competition and inaugurated a race in which all car producers could have a chance to compete without limiting entries. Bennett, in turn, withdrew sponsorship from his motor race and went on to sponsor events in sports other than car racing.

Now that Bennett had lost interest in sponsoring car racing, the organization of the international races went back into the hands of the ACF which announced that in 1906 a Grand Prix would be held. This new Grand Prix would allow each manufacturer three entries to race, thus solving the problem of the overabundance of French manufacturers wanting to qualify for the Bennett Cup. Various proposals were made as to where the race should be held but, in the end, the proposal made by Georges Durand on behalf of the Circuit du Mans convinced the ACF the most. Hence, in 1906 with the help of the Automobile Club de la Sarthe (which was founded for the occasion) the ACF held the first Grand Prix in history on the Circuit du Mans. Le Mans would go on to host races and create the infamous 24 Heures du Mans, becoming one of the most important cities in the history of motorsport and, in particular, car racing.

The ACF's Grand Prix however, would have ill fortune: after having the win snatched from them by German competitors for two years in row, French manufacturers would then decide to pull out of international competitions. The decision made by French manufacturers brought the

ACF to stop organizing Grand Prix after only three years. However, grand prix were still organized in all of Europe and soon the various automobile clubs came together to try and sketch a first set of rules to use during every grand prix. Everything came to a halt when WWI started, with Europe being the center of the conflict it was impossible to hold grand prix like before.

### ***1.1.5 Post-WWI Racing and the First World Championships***

The end of the conflict brought a new era for racing, with the AIACR deciding to rely on the Commission Sportive Internationale (CSI) to build a first ruleset for grand prix and international racing in 1922. This would also be the year of the first mass start<sup>2</sup> in grand prix racing. The formula of rules had as its strictest limitations weight and engine size.

The first talks regarding the institution of a world championship date back to 1923 but the first World Championship wouldn't take place until 1925. This first World Championship would only be for manufacturers and consisted of only four races: the Indy 500, the European Grand Prix<sup>3</sup>, the Italian Grand Prix and the French Grand Prix.

In 1928 the previous set of rules would be replaced by the "Formula Libre". The one of Formula Libre was a period in which the organizers decided that strict rules were unnecessary and there was no reason to make all the manufacturers align to certain engine sizes or weights. The advent of Formula Libre brought new enthusiasm to the sport which would see its popularity rise in the following years: the number of grand prix in a year skyrocketed from 5 in 1927 to 18 in 1934. 1931 was the year which saw the first establishment of a driver's championship: the European Driver's Championship, which only included the major grand prix races of the year. In 1933, at the Monaco Grand Prix, the starting grid was, for the first time in history, decided by the times obtained during the qualifying session. This would then become a central point of competitions not only in Grand Prix racing but in all of motorsports. Before the use of

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<sup>2</sup> In racing, it's referred to as a mass start, a starting situation in which all the participants are lined together and start at the same time, depending on the space available and the number of participants some might be starting at a greater distance from the start line than others.

<sup>3</sup> Introduced in 1923, the European Grand Prix was, until 1977, an honorary title assigned to a race in a European nation already hosting a grand prix event on a different course on a different date. In 1925 the European Grand Prix was held in Belgium.

qualifying sessions, the starting line was decided by luck in a casual draw. The decision to qualify based on lap times is a clear indicator of the further shift of the sport from reliability trials to a competition determining the fastest car and driver.

### ***1.1.6 World War II and the Birth of Formula One***

The advent of World War II brought grand prix racing to a halt once again. However, this abrupt stop to racing brought along the possibility of a fresh start: Formula One. F1 was first defined in 1946 by the CSI, on behalf of the FIA<sup>4</sup>, as the premier single-seater racing category in worldwide motorsport to become effective in 1947. The formula was however initially a mixture of old pre-WWII rules and new post-WWII rules. This brought a lot of confusion which makes it difficult to clearly distinguish the first Formula One race in history, the main candidates being the 1946 Turin Grand Prix (raced however before the formula was officially in place), the 1947 Swedish Winter Grand Prix (raced however on ice and probably under Formula Libre rules) and the 1947 Pau Grand Prix.

Initially known with various names (Formula A, Formula I and Formula 1), just like F2 (Formula B, Formula II and Formula 2), it will officially be titled Formula 1 when the 500cc formula will be internationally recognized as Formula 3 in 1950 (never being called “Formula C”) hence sanctioning the choice of enumerating the different formulas for their official naming. 1950 was, as well, the year which saw the institution of the first ever official World Driver’s Championship. In fact, it wasn’t until the introduction of the Motorcycle World Championship in 1949 that the FIA thought about instituting a world driver’s championship (F1 had only gone as far as organizing the European Driver’s Championship). This first iteration of the World Driver’s Championship only took into consideration 7 out of the around 20 races carried out during the season: the British Grand Prix, the Monaco Grand Prix, the Indy 500, the Swiss Grand Prix, the Belgian Grand Prix, the French Grand Prix and the Italian Grand Prix.

The first constructor’s championship would be established, instead, in 1958, under the name of International Cup for F1 Manufacturers. This cup assigned points to the first six cars, but each manufacturer could only score the points of their best placed car (i.e. if a manufacturer had two cars cross the line as first and second, it would only score the points for the first position and

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<sup>4</sup> In 1946 the AIACR had reorganized and changed name to Federation Internationale de l’Automobile (FIA).

the points for the second position would go lost and not be assigned to anyone). In the same year, constructors would realize the advantages of mid-engine<sup>5</sup> cars (until that year cars were traditionally front-engine) when the mid-engine Cooper lined up by Rob Walker's private team managed to win the first two grand prix of the season (Argentine and Monaco) even though it was powered by an undersized engine (Coopers used a 2.0 liters Coventry-Climax engine whereas most manufacturers raced with 2.5 liters engines). This was possible thanks to the better handling of and the lesser stress put on the tires by mid-engine cars. This would also be the first occasion in which a car powered by an engine supplied by a company different from the car's manufacturer would be able to take the win of a grand prix as well as the first occasion in which a GP would be won by a private team's car.

### ***1.1.7 The “Garagists” and the Development of Racing as a Business of its Own***

The new mid-engine English cars brought a substantial change to F1: road car manufacturers started to withdraw from the competition, with private teams, the so called “garagists”<sup>6</sup>, taking over. These teams focused all of their production exclusively on racing and, especially, F1 cars, building chassis and body parts and buying engines from other companies. This was the first instance of racing not as a way to showcase the validity of a company's road cars but as a pure exercise of building the best possible racecar and managing a company whose only business is racing. Ferrari managed to survive the road car manufacturers “purge” thanks to the atypicality of the company: rather than racing to sell road cars, Ferrari aimed to sell road cars in order to be able to finance its racing ventures.

The discovery of racing as a business of its own brought an incredible deal of innovation in the following years, from the monocoque<sup>7</sup> chassis of the 1962 Lotus 25 to the introduction of full-face helmets for drivers in 1968. Amidst the great deal of innovation, an historical concession

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<sup>5</sup> In the automobile industry a car is referred to as mid-engine when the engine is mounted approximately in the middle of the car. On the same note, cars are referred to as front-engine when the engine is mounted at the front of the car and as rear-engine when the engine is mounted at the back of the car.

<sup>6</sup> History attributes the term to Enzo Ferrari who, given the fact that English private teams built their cars in garages referred to them as “garagisti”, Italian for “garagists”.

<sup>7</sup> A monocoque is a structure in which the loads are supported the structure's skin, rendering internal frames unnecessary. In cars this allowed for important weight reductions.



would be made by F1 to the teams: the introduction of unrestricted sponsorship. An evident consequence of the evolution of F1 teams as standalone business ventures, unrestricted sponsorships gave the possibility to teams of being sponsored by non-automobile industry related businesses. This allowed teams to achieve higher sponsorship fees thanks to the great deal of money brought into the sport by the tobacco industry, which would go on to support the sport until the early 2000s, when concerns about the morality of this industry first arose.

### ***1.1.8 Introduction of Aerodynamics and Ground Effect and Safety Improvements***

The surge in sponsorships would bring about, in the late 1960s, a great deal of money to invest in car development: one of the most significant developments would be aerodynamic wings and spoilers which, first introduced in 1968, would go on to revolutionize the sport, becoming one of the most studied aspects when developing an F1 car in modern times.

With such a fast technological development, safety became of prime importance as well. Starting from the 1968 season, scarred by the death of two times world champion Jim Clark, considered to be one of the best drivers, if not the best of all time, by colleagues and fans, drivers began advocating for higher safety.

During the 1970s the teams would go on trying to innovate and gain a competitive advantage: in 1977 Lotus brought the ground effect to Formula One. This was achieved through shaping the underside of the car's floor with Venturi-like channels. The aim with ground effect was to achieve a greater grip without having to generate more drag by using the channels to speed the flow of air hence reducing the pressure and "sucking" the car to the ground. The technology was groundbreaking and would go on to be a central part of Formula One until this day: the development of the floor was one of the main themes for F1 teams' R&D departments during both the 2022 and 2023 seasons. The introduction of ground effect, together with that of turbocharged engines, spiraled a series of controversies and fights among teams which stole the spotlight from the racing and engineering in the following years. These disputes, mainly promoted as fights in the name of safety and/or performance balancing for the good of the sport, usually had economic reasons behind them instead: the turbo technology was costly and, thus, prohibitive for garagists, while the layout of turbo engines limited ground effect and, hence, big

manufacturers wanted ground effect to be gone. It took many tragedies to finally make the two factions realize that it was time to end the dispute for the good of the sport.

### ***1.1.9 The Development of Driver Aids and Sponsorship Expansion Thanks to Better TV Coverage***

The early to mid-1980s would go on seeing continuous restrictions on turbo engines, not leaving much room for innovation outside that of refining the turbocharging technology. The study made on the technology would heavily accelerate the progress on turbocharged cars for everyday use which are nowadays the preferred choice of most manufacturers thanks to the higher power outputs despite the lower displacement.

The late 1980s and early 1990s however, would present heavy innovations right from the start. From an engineering point of view, active suspension, semi-automatic gearboxes and traction control would be introduced by Lotus in 1987, Ferrari in 1989 and Ferrari in 1990 respectively. These technologies mostly seen as unsportsmanlike and rapidly banned by F1 would go on to become the standard in production vehicles in modern times. The bans however, were not that effective since the FIA did not have the means to actually check whether teams were actually implementing the aids or not. Hence, the choice of not using driver aids pretty much depended only on the teams' morality and sportsmanship.

From a strictly business-related point of view, the most important innovation of the 1990s in Formula One was that of cameras mounted directly on the cars. This brought higher audience to the sport and attracted sponsors other than the one's from the tobacco industry which had flooded the sport since the introduction of unrestricted sponsorship in the late 1960s.

### ***1.1.10 The Shocking San Marino GP of 1994 and the All-Out Focus on Safety***

From 1986 to 1994 the mood in the F1 paddock became increasingly carefree: after the death of Elio de Angelis during testing in 1986, there had been no fatalities in Formula One and the sport had started to seem extremely safe to people both inside and outside the paddock. The enthusiasm was however brought to an end by the San Marino GP of 1994, when Roland Ratzenberger lost his life in qualifying and the following day, during the race, 3-times World

Champion Ayrton Senna lost control of his Williams at the Curva del Tamburello, crashing into the barriers and losing his life. The shocking events of that weekend marked the start of the FIA's uncompromised commitment to safety. For the 1994 season cars were slowed down both by reducing downforce and banning high-performance fuel, forcing teams to use fuels similar to the ones used by everyday production cars.

Starting from 1995 new restrictions were put in place: the car's design had to follow a template given by the FIA themselves and specific size ranges had to be observed when designing aerodynamic wings. Hence, the teams' work in designing the car was complicated and a lot more R&D effort would be necessary to create a car far superior to the competitors' ones.

The increase in capital needed to manage a Formula One team brought about the end of the great "garagists" era. Private teams struggled to find the money to stay competitive and, at the same time, manufacturers from the automobile industry would find again interest in the competition thanks to the improvements in safety. From the 2000s onward the situation stabilized with mainly manufacturers as teams. Things started to change with the economic crisis of 2008 which brought many manufacturers to abandon the sport or reduce their involvement. To contrast this trend Formula One modified the regulations aiming at making managing an F1 team less expensive (e.g., in 2009 it was established that each driver could use at most 8 engines during a season), objective that has remained until today.

## ***1.2 History of Motorcycle Racing and MotoGP***

Not at all different from what happened with car racing, the first mass-production of a motorcycle happened in 1894 (the Hildebrand & Wolfmüller) and the first race was held in France just a couple years later. However, manufacturers were still experimenting and the races initially included both two-wheeled and three-wheeled "bikes"<sup>8</sup>. The first race which only involved two-wheeled vehicles would only take place in 1987 in Surrey, England.

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<sup>8</sup> The first prototypes of motorbikes were nothing more than bicycles that had small engines attached to the rear wheel.

### ***1.2.1 Pre-WWII Motorcycle Racing***

On September 25<sup>th</sup> 1904 the International Cup race was organized in Dourdan (France) and Austria, Denmark, France, Germany and Great Britain all took part. The hosts won the race, but not without controversy. This brought the five countries to found, on December 21<sup>st</sup> 1904, the Fédération Internationale des Clubs Motocyclistes (FICM).

The first historical motorcycle competition dates back to 1907: the infamous Tourist Trophy on the Isle of Man. On the 28<sup>th</sup> of May 1907, the first edition of the Isle of Man TT would become the world's first official motorcycle race.

The one of motorcycle racing is not a story simple to track back, information has gone lost in history and the only things we know for certain dating back to before WWII are that races on street circuits were held all throughout Europe while in the US the discipline of track racing<sup>9</sup> was developing.

In the late 1930s Europe saw the arrival of the first motorcycles with supercharged engines, engineered by BMW, Gilera and DKW. This brought the motorcycles to be incredibly more powerful but also incredibly more complex and, hence expensive, which reduced the competitiveness of smaller manufacturers. This would, in the end, be the reason behind the abandonment of supercharged engines after WWII.

Another certain fact is that in 1938 the FICM announced a European Championship for circuit racing which, however, was short-lived and would be interrupted by the start of the Second World War.

### ***1.2.2 The End of WWII, the FIM and the Birth of the First World Championship***

It took some time after the end of WWII for fuel to be again readily available and for the FICM to reorganize itself. The Fédération went through some changes and, in 1949, became the Fédération Internationale de Motocyclisme (FIM) which is the organization still in place today and organizes the most important motorcycle racing world championships (e.g., MotoGP,

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<sup>9</sup> Track racing is the discipline of racing on an oval track which is unpaved (the surface depends on the specific discipline of track racing and can go from dirt to ice and anywhere in between).

World Superbike Championship, ...). The FIM put itself to work and organized the first World Championship in 1949 (which, as we've seen will give the FIA the idea for their World Driver's Championship of 1950). The championship was divided in classes (a habit that had caught on since the first years of motorcycle racing): 500cc, 350cc, 250cc and 125cc<sup>10</sup>. Furthermore, a parallel 600cc sidecar championship was raced.

### ***1.2.3 The First Years and the Italian Dominion***

The 1950s saw Italian manufacturers sweep the floor with their opponents thanks to a strong industry which "produced" strong manufacturers like Mondial, MotoGuzzi, Gilera and, especially MV Agusta. The latter was able to win all four categories for three consecutive years (1958-1960) and would go on to win the 500cc class for another 14 years, adding up to a total of 17 years of dominance in the class (1958-1974). To this day this is the longest streak ever achieved by a manufacturer. Not only that, Giacomo Agostini who rode MV Agusta bikes for many of those years still holds the record for the rider with most championships won (15) and most races won (122). MV Agusta's dominion would only come to an end when the FIM would decide in favor of cost-cutting rules.

The early 1960s had seen Japanese manufacturers appear on the scene of world motorcycle racing. But, despite the success enjoyed in the lower categories (a 50cc category had been introduced in 1962), by the end of the decade only Yamaha had remained, the others being drove out by the escalating costs. This brought the FIM to limit the number of cylinders in bikes engines to 1 for the 50cc category, 2 for the 125cc and 250cc categories and four for the 350cc and 500cc categories.

### ***1.2.4 The Leveled Playing Field***

It took around half a decade after the introduction of the limits for the playing field to finally be leveled with Yamaha finally managing to win the 500cc class in 1975. The period also saw

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<sup>10</sup> It was of use in motorcycle racing to base the classes on engine displacement, measured in cubic centimeters (cc).

the increase in the use and efficacy of two-stroke engines, which would go on to become the standard in the championship until the advent of MotoGP.

The 1980s would see some changes in the classes and in the rules: the 350cc class would be abandoned after 34 years (1982) and the 50cc class would be replaced by the 80cc class (1984) which would in turn be abandoned after only six years (1989); furthermore, the start procedure would change, becoming a standing start (previously the bikes were pushed at the start).

The use of two-stroke engines had rendered the bikes' acceleration difficult to control, frequently causing high-sides<sup>11</sup>. The threat of implementing new rules in the name of safety by the FIM made the teams work heavily on systems to reduce this effect and, in the late 1980s teams developed electronic engine management. "At Laguna in 1990 I went to turn 11 to watch bottom-gear acceleration. To my surprise the hectic jumping and jerking were gone, replaced by stronger, smoother drives. Engine torque was being limited in lower gears, and could be reduced instantly by electronic spark retard. This was the beginning of electronic rider aids."(Cameron, 2021)

The 1990s saw a change in the classes as well: the sidecar class went on to become a championship of its own (Sidecar World Cup) in 1997.

### ***1.2.5 The Birth of MotoGP***

It wasn't until 2002 with a regulation revision, that 4-stroke engines made it back to the "premier class". The revision established that the bikes could have 990cc 4-stroke engines. This was done with the idea of better aligning with modern engineering and production trends. "In the marketplace, meanwhile, four-stroke sportbikes in the three iconic displacements 600, 750, and 1,000/1,100cc had fostered intense competition in showrooms and in production racing. In the opinions expressed by pundits, the 500 two-strokes had become...almost irrelevant. Motorcycle GP racing had evolved from an arcane specialty sport, rich in tradition, run by older Swiss gents in blue blazers, to become a major force in European sports television. TV rights for FIM roadracing had come into the hands of the Spanish sports marketing firm Dorna, who would challenge Formula One on the small screen. They saw strong manufacturer competition

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<sup>11</sup> In the motorcycle world, it's referred to as a high-side, the accident in which the rear tire of the bike momentarily loses grip on the asphalt making the bike go sideways and then, when the tire grips the asphalt again, the motorcycle rapidly goes back into an upright position with such an energy that it "shoots" the rider in the air.

in the sportbike sector as a force that could drive GP bike racing even higher.”(Cameron, 2021). The revision also brought with itself the rebranding of the 500cc class as MotoGP, while the 125cc and 250cc classes still raced under the World Championship name. The 250cc class and the 125cc class would later be renamed Moto2 (2010) and Moto3 (2012) when changed in displacement and incorporated in the MotoGP calendar.

In 2007 the engine size was changed once again, being reduced to 800cc. This, along with the restriction on the number of tires used on Grand Prix weekends, brought balance to the field. The displacement rule lasted however only five years and, in 2012 the teams switched to 1000cc engines. This happened because the 800cc rule was implemented by the FIA with the intent of reducing speeds and hence, increasing safety. The result however, was that maximum speed decrease was almost unnoticeable, and the lighter bikes were able to corner at higher speeds making crashes even more frequent.

### ***1.3 Different Categories: Different Rulesets and Opportunities***

When analyzing the world of motorsports, it is important not to forget about the intrinsic differences that arise among the different disciplines and categories. The umbrella term “motorsport” encompasses all the sports which make use of motorized vehicles. As already stated, for the purpose of this work, only motorcycle and car racing will be taken into consideration. Furthermore, the main focus will be on prototype racing and hence, on the two major world championships: MotoGP and Formula One.

But why the need to be so specific even though we’re still discussing motorsports? Other than the evident difference between the types of vehicles (motorcycles, cars, etc.) there are many less apparent differences. For example, when talking about car racing the rulesets are extremely different based on the surface the cars have to race on (track, off-road, public roads, etc.), the

type of car (prototype/production-derived<sup>12</sup>, one-seater<sup>13</sup>, open-wheeled/close-wheeled<sup>14</sup>, etc.), the type of engine the car has (internal combustion/hybrid/electric) and so on. These differences might be clear to anyone that has even just a minor knowledge of motorsport and/or the automobile and motorcycle industries or simply has a trained eye. What most people wouldn't expect is that two series which are particularly similar as, for example, Formula 1 and Formula 2 have completely different technical rulesets, even though F2 is a feeder series<sup>15</sup> for F1. This happens because, while for Formula 1 each team develops a chassis and a body for the car and then develops an engine or chooses to use the engine developed from another team, in Formula 2, in an attempt to level the playing field in order to make the best driver shine, the teams simply work on the setup of a car whose body and chassis are manufactured by Dallara and whose engine is produced by Mecachrome. This is actually a very common practice in motorsports: while main series are there to showcase not only the racers' talent and the teams' ability in setting up the vehicle but also the manufacturers' ability in designing the perfect race machine from scratch (or almost), feeder series usually focus only on the racers' talent to drive/ride the machine at its maximum and the teams' ability to set up the machine in the way that suits their racer's style the most. In an effort to make the system more akin to our everyday life, we could say that minor and feeder series are the "schools" and "universities" of the world of motorsport, where racers, mechanics, team managers and so on, move their first steps, learning what will one day hopefully make them the best in the world and showcase their competences and abilities hoping to be noticed and hired from world-renowned manufacturers and teams in top series. Another clear example of the difference between main and feeder series can be found in the way MotoGP and Moto2 are structured: while MotoGP has 5 manufacturers which produce

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<sup>12</sup> In racing, vehicles are usually referred to as prototypes when they have been engineered from scratch for the purpose of racing in a predetermined competition (e.g., F1 cars or Le Mans prototypes) or as production-derived when the racing vehicle is a modified (heavily or mildly) version of a vehicle previously produced to be sold to the public.

<sup>13</sup> One-seaters are cars engineered with the precise idea of them being able to accommodate only the driver and no passenger.

<sup>14</sup> Open-wheeled cars are cars which are engineered so that the wheels are not covered by any part of the car's body (a major example are formula cars). This term is opposed to that of "close-wheeled" which means that the wheels must be covered by the car's body (an example are the cars we see every day on the road).

<sup>15</sup> The term "feeder series" is used to refer to a series in which racers take part with the sole purpose of being able to climb through the different series and earn a spot in the main series (in our example, Formula One).



both engine and chassis for the motorcycles and run their own factory teams<sup>16</sup>, Moto2 has only one engine manufacturer (Triumph) and a few chassis manufacturers (Boscoscuro, Forward and Kalex). This also allows for different types of business opportunities for manufacturers: depending on the size of investments and on the return on image they aim to get, companies invest in different categories. Once again, MotoGP and Moto2 make for a wonderful example. Triumph, a company which doesn't have any sportbikes in its catalogue, but still sells high-performance bikes (e.g., the Triumph Street Triple 765) does not have a team of their own in any of the three categories of the world championship since the company would gain little from marketing itself as a manufacturer with great expertise in racing and extreme sportbikes design. Cleverly, Triumph decided to reach an agreement with Moto2 to become the sole engine manufacturer of the category. for which it produces a 765cc three-cylinder engine. This markets the company as a manufacturer with great expertise in engine design and gives it a great stage to showcase its engines' power, reliability and efficiency. Unsurprisingly, the engine produced for street use on some of the company's high-performance street bikes is very similar to the one produced for Moto2. Triumph in fact claims the street production engine to be directly derived from the Moto2 racing engine. This is a wonderful marketing operation, especially in a market where the customers are mainly passionate about the sport and do not buy the product out of necessity: who wouldn't like the idea of riding a bike with an engine directly derived from the one that powers the bikes rode by the most interesting prospects of the sport? It's not a coincidence that Triumph has closed 2022 with record-breaking sales "Triumph Motorcycles, the original British Motorcycle Brand, closed 2022 with record-breaking global sales results. Since 2020 Triumph's sales have increased by a record 31% with 83,389 riders worldwide purchasing a Triumph motorcycle in 2022, enabling the Hinckley-based brand to break every previous retail-sales record."(Roadracing World and Motorcycle Technology, 2023). And it is most certainly not a coincidence that this positive trend on sales began in 2020, just one year after the company's first entry in the category (2019). The ability to regain sales as soon as soon as the Covid-19 pandemic ended shows how well the marketing operation worked: while other companies had to endure a severe blow due to the crisis, Triumph was able to swiftly get back up on its feet as soon as the safety measures were lifted. However, results are hardly ever

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<sup>16</sup> The term factory team in MotoGP refers to the teams which are directly managed by one of the five manufacturers (Aprilia, Ducati, Honda, KTM and Yamaha) as opposed to "satellite team" which is the term used for private teams which do not engineer their own bikes but rent bikes engineered by the manufacturers and only work on the setup of such bikes.

reached without hard work and Triumph worked hard: the Moto2 engine has broken speed records and lowered all-time lap records at almost every track proving to be a remarkable work of engineering. It's not a coincidence that Moto2 and Triumph were both enthusiastic in 2023 at the idea of extending the agreement for another five seasons "Triumph Motorcycles has signed a new contract to continue as Exclusive Engine Supplier for the FIM Moto2™ World Championship for another five seasons, from 2025-2029. This will see Triumph reach the milestone of powering the Moto2™ teams for a decade, enabling riders and teams to thrive and develop using its record-breaking 765 triple engine."(MotoGP, 2023).

But why should companies bother with a racing team when simply being the sole engine supplier of a minor category can bring such results? The answer is in the different needs of different companies. Ducati, as opposed to Triumph, has various sportbike models in its catalogue (e.g., the Ducati Panigale V4 and Ducati Panigale V2). Not only this, the Italian company heavily bases its image on their role as one of the major experts in motorcycle racing. The Ducati aficionados follow the company's racing endeavors with pride expecting their beloved manufacturer to always be at the top. Such a company would never get the right return from simply investing on being an engine manufacturer, it needs to establish itself as the very best by competing against others and beating them directly in championships. It is not a surprise that the company reached a new record, by overcoming 1 billion euros in revenue for the first time in history, in 2022, year in which the Italian manufacturer managed to win both the riders' and constructors' championships in both MotoGP and WSBK (World Superbike Championship).

## Chapter 2

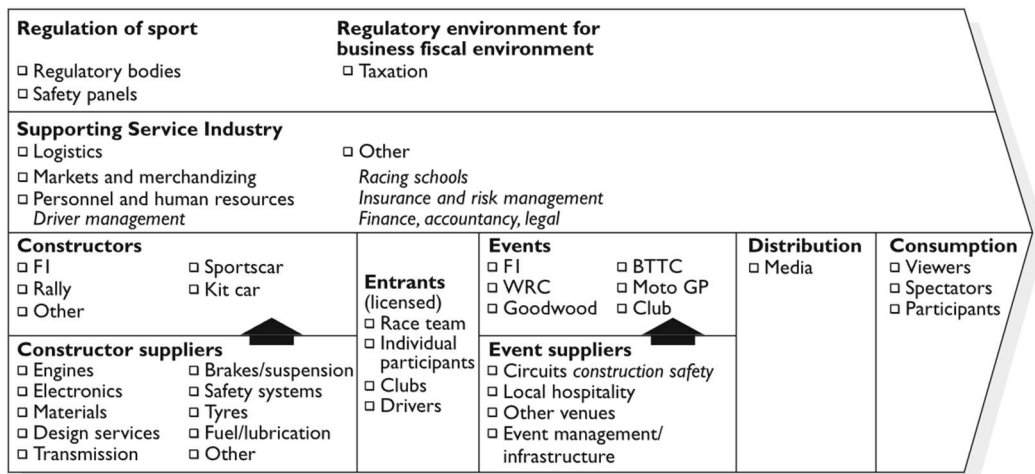
# The Business of Motorsports

In order to better understand motorsport teams' management, one must first outline motorsport as a business, from the relationships that make motorsports events possible to the impact of the motorsport business on the global economy. Furthermore, a focus on costs and revenues is necessary in a sport, or better, a business which relies so heavily on R&D and sponsorships.

### 2.1 The Motorsport Value Chain

“The motorsport business involves a complex system, which comprises a shifting network of relationships... These elements and business relationships can be conceptualized within a value chain framework. Figure 1.1 depicts the Motorsport Value Chain. This framework: provides a classification scheme for all firms within the motorsport sector; and illustrates the interrelationships between the firms as a motorsport supply chain, which culminates in the delivery of a motorsport event to an audience.”(Henry, Angus, Jenkins, Aylett, 2007). In the following paragraphs we'll look into each of the elements of the motorsport value chain.

**Figure 1.1 Motorsport Value Chain**



Source: MRA 2005

Figure 1.1

### ***2.1.1 Regulation of Sport and Regulatory Environment for Business Fiscal Environment***

When it comes to regulation, the teams have to keep in mind different frameworks. The main, and the only unchanging one during the season, is the competition's ruleset, the other ones being the local laws of each and every country the team will race in during the season. A clear example of the latter case influencing the teams' work is that of sponsorship laws: not every country allows all kinds of sponsorships. For instance, not many of the countries present on the F1 calendar take tobacco sponsoring lightly. This has brought to curious livery changes on Ferrari F1 cars in many seasons. Since the early days of sponsorships in Formula One, Ferrari has been in partnership with Philip Morris, mainly promoting their cigarettes brand Marlboro. When the first bans on tobacco sponsorships appeared in Europe and F1 started advising against the use of tobacco sponsorships, Ferrari and PMI had to work around those obstacles to keep their partnership going. The latest solution proposed by PMI was that of launching the shell company Mission Winnow, presented as "a content lab focused on stories and content which ask difficult questions and contribute to the important conversations of our time" and which "is striving to play a positive role in the changing world by supporting innovation through storytelling, partnerships and open dialogue."(Mission Winnow, [missionwinnow.com](http://missionwinnow.com)). The partnership, however, was met with backlash and was investigated into by both the FIA and local institutions of some of the countries present on the F1 calendar, the main problem being the possible underlying and unofficial goal of the partnership of keeping Philip Morris present and relevant in the F1 paddock and, hence, the F1 world. The backlash brought Ferrari to, at times, take the Mission Winnow logo off the car livery (mainly during European races) in order not run into penalties and fines. The ill-fortune of the venture brought to the modification of the sponsorship agreement between Ferrari and PMI in 2021, removing the Mission Winnow logo from the livery of the car but leaving PMI as a partner of Scuderia Ferrari and, hence, present on the official site of the Italian manufacturer.

### ***2.1.2 Supporting Service Industry***

Teams participating in world championships make use of many services offered by companies in different industries, such as logistics, legal, insurance and so on. The need for such high-

quality services, often brings teams to strike up sponsored partnerships with firms who are leaders in their industry. The relevance of such partnerships has often been highlighted by F1 team principals “to be honest, the sticker on the car is just the icing on the cake. It’s more the relationship that you have”(Toto Wolff<sup>17</sup>, 2023)<sup>18</sup>. Perfect examples of agreements of such kind are given by Scuderia Ferrari’s logistics-driven partnerships with CEVA Logistics who “will provide all logistics support services for Scuderia Ferrari’s presence at Formula One events, the GT racing series and other events. Thanks to its leading global network across air, land and sea, CEVA has been trusted to ensure the road and sea shipments for Scuderia Ferrari cars and equipment to race sites around the world.”(Ferrari, ferrari.com) and Iveco who “provides its heavy-duty trucks for the transport of the Formula 1 cars and equipment to the world championship race tracks.”(Ferrari, ferrari.com).

### ***2.1.3 Constructors and Constructor Suppliers***

The term constructor encompasses all the firms which “produce” a vehicle used in a competition (e.g., Ferrari in Formula One and Ducati in MotoGP). To create their vehicles constructors often rely on suppliers for some specific parts (e.g., brakes, exhausts, seatbelts). Sometimes however, constructors don’t have a choice on whether to rely on suppliers or not, since some supplier parts are mandated as standard by the ruleset. This is the case of ECUs in MotoGP, which must be BAZ-340 ECUs produced by Magneti Marelli. Other times, constructors decide of their own free will to rely on suppliers. This is the case of the partnership between Ferrari and Sabelt which began in the 1970s and aims at equipping the prancing horse’s cars with the highest quality seatbelts produced by the Italian company: “Thanks to innovative solutions in terms of structure and components and to the introduction of new materials, the overall weight of the Sabelt F1 seatbelts used by Scuderia Ferrari passed from nearly 1 kg to around 500 gr weight”(Ferrari, ferrari.com).

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<sup>17</sup> Wolff is the team principal of Mercedes AMG F1

<sup>18</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH))

### ***2.1.4 Entrants***

The term “entrants” encompasses all organizations and individuals who decide to enter a vehicle in a competition. The first type of entrant that comes to mind is obviously manufacturers, this is the case of entrants like Ferrari and Mercedes in Formula One or Ducati and Yamaha in MotoGP. However, oftentimes entrants are not manufacturers, this is the case of the majority of teams in MotoGP (there’s six non-manufacturer teams and only 5 manufacturer teams) like Pramac Racing and VR46 MotoGP Team which do not produce the bikes they race with but simply use bikes manufactured by Ducati. Furthermore, entrants might even be individuals, even the racers themselves. This is most common in lower amateur or semi-professional categories where aspiring racers and passionate amateurs enter competitions with cars or bikes bought with their own money and on which they work by themselves or with the help of friends and family.

### ***2.1.5 Events and Event Suppliers***

Every championship and, more specifically every race, are referred to as an “event”. The latter encompasses to the whole race weekend, from the moment the teams arrive at the circuit, to the race on Sunday. Examples of events are the Gran Premio d’Italia and the Belgian Grand Prix in Formula One or the Grande Prémio de Portugal and the Gran Premio di San Marino e della Riviera di Rimini in MotoGP.

For events to take place, events suppliers are necessary. This term comprises the components without which it would be impossible to hold an event and, of course, the first things which come to mind are the circuits on which the races take place, like the Circuit de Spa-Francorchamps in Belgium or the Misano World Circuit Marco Simoncelli in Italy. However, circuits are not enough for the events to take place, local hospitality and event management and infrastructure are of the utmost importance. Let’s take the example of street circuits, like the Circuit de Monaco, in such cases the circuit is not there all year round but is “built” in the streets of the Principality in a very short time and, afterwards, is dismantled just as quickly to allow locals to use the streets as soon as possible.

### ***2.1.6 Distribution and Consumption***

Distribution includes all the media and platforms which broadcast the events and the press which publishes articles on the matter. Distribution includes both first-party medias such as F1TV, a direct-to-consumer broadcasting service through which Liberty Media Corporation (the American mass media company which owns F1) live streams Formula One races, and third-party medias such as Sky Sports in Italy. Distribution is crucial for most groups identified by consumption, such as spectators and viewers. Drivers and riders, as participants, are part of consumption as well.

Distribution and consumption are of the utmost importance for sports such as Formula One and MotoGP. Better distribution captures the attention of a higher number of consumers, which in turn entails not only the possibility of selling distribution rights at higher prices, but also that of reaching more people. This in turn makes sponsors willing to spend more money on sponsorships and distributors willing to spend more on distribution rights, in a vicious cycle which allows for the sums circulating in the industry to grow exponentially.

A great example of distribution driving up audience and, in turn, benefitting the sport, is Netflix's Formula One: Drive to Survive. The documentary series follows Formula One's circus all around the world in order to give viewers "an in-depth, behind the scenes look into the world of the Formula One World Championship, introducing us to various drivers and races"(Loud and Clear, 2023). The series managed to bring "existing fans and those new to the sport to the heart of the action like never before"(Loud and Clear, 2023) and, in doing so managed to achieve its objective of reaching new audiences and driving awareness of the F1 brand. "The success of Drive to Survive has made it one of Netflix's most successful original docuseries, and, as a result, more brands are realizing its potential reach and are beginning to invest in creating custom content around each driver's story. This allows them to tap into a highly engaged audience while showcasing their brand positively."(Loud and Clear, 2023). With the great success on a streaming platform such as Netflix, Drive to Survive was able to bring "unprecedented awareness about F1, particularly in the United States. It has helped increase viewership of F1 races, drive ticket sales, attract younger viewers, and bring in more sponsors from the US"(Loud and Clear, 2023). The US market was in fact one in which Formula One long struggled to reach audiences. Although the United States have a vast car culture, Formula One was never able to appeal US racing fans, who always preferred the "native" NASCAR and IndyCar series. However, the arrival of Drive to Survive, together with a series of other

investments in the US market, such as increasing the number of Grand Prix held in the USA from 1 in 2021 (the United States Grand Prix in Austin, Texas) to 3 in 2023 (the Miami Grand Prix, the United States Grand Prix in Austin and the Las Vegas Grand Prix), gave Formula One the boost it needed in the US market. Furthermore, Drive to Survive did not bring higher audiences only in the US, but attracted new fans from all over the world, contributing in making Formula One the fastest growing sport in the world. But how did a series achieve so much for a sport? It was thanks to its ability to show all the aspects of the sport that were once a mystery for the fans: “It has illuminated the expansive logistical and financial burdens of a Formula One team, highlighted the peculiarities of the racing world, and brought to light the intense competition within and between teams. It has portrayed the sport as a Darwinist battle in which a driver is only as good as his last race, and contracts can dry up in the blink of an eye. The series has also brought out the sport’s human side. It has shown the world that behind the helmets and the racing suits, the drivers are just as human as the rest of us. They have their fears, hopes, and dreams. They experience joy, disappointment, and everything in between. And it is this human element that has made the series so relatable and engaging. Drive to Survive has also highlighted the importance of teamwork in Formula One. It has shown that while the drivers may be the ones in the spotlight, the collective effort of hundreds of people behind the scenes makes their success possible. From the engineers who design the cars to the pit crew who ensure everything runs smoothly during the race, everyone has a crucial role to play”(Loud and Clear, 2023). It’s unsurprising and fairly logical that MotoGP decided to launch its own series, MotoGP Unlimited, in 2022 on Amazon Prime, in an effort to reach the same results that Formula One did.

## ***2.2 The Costs of a Motorsport Team***

When analyzing a business’ costs, these are usually divided as fixed or variable. Fixed costs are those that do not change with the level of output while variable costs are the ones that change with the level of output. This begs the question: what’s the output of a racing team?

Many people when asked what racing teams produce would be tempted to answer with words such as “entertainment”. However, that’s not really what the teams are aiming at in a competition, right? Or better, it’s not their primary objective. Entertainment is certainly important, especially if we think about how important it is to gather large audiences in order to



attract investments in the form of sponsorships, but what the teams are really after is winning the championship (both the teams' and the drivers'/riders'), or, for the back markers, scoring a good placement at the end of the season. Hence, points are the output of a team, the more points "produced" (scored) the higher the team and its drivers/riders will be in the championship standings.

### ***2.2.1 Fixed Costs***

As already stated, fixed costs are those that do not change with the level of output and hence, all the costs a team has to bear when it decides to enter a competition. While the main fixed costs of a team are salaries and the cost of designing and building the car/motorcycle, there also are other costs, which cannot be ignored. For example, when talking about costs Honda provided travel costs for their MotoGP season which amounted to €1,200 per team member, per race<sup>19</sup>. This makes the traveling cost of a team of 30 people around €700,000 per season.

#### ***2.2.1.1 Salaries***

The present discussion of salaries will not include the issue of drivers' and riders' salaries, for the latter are not, unlike the salaries of other team members, a completely fixed cost. Driver's and riders' salaries will be discussed at a later time, and this paragraph will instead address the salaries of all the other employees of a racing team – employees without which the team would have no chance at surviving, let alone being successful.

To better give an estimate of the salaries paid by a team we're going to refer to Mourão's (2017) work, which focuses on Formula One: "if an administrative secretary's salary is considered as the base of the other salaries paid by a Formula One team (the 2015 mean value for an administrative secretary's yearly salary is around 24,000 euros), then you tend to find the following salaries:

- Marketing assistant: equal to the base

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<sup>19</sup> As reported by MotoSprint on 30/03/2022.

- Communications assistant: 1.46 times the base (i.e. 46% higher than the administrative secretary's salary)
- Motorhome employee: 1.5 times the base
- Trucker: 1.67 times the base
- Chief trucker: 1.88 times the base
- Mechanical employee (races): 1.88 times the base
- Responsible for the hospitality: 2.08 times the base
- Junior manager of marketing operations: 2.08 times the base
- Resident technician (factory): 2.08 times the base
- Junior engineer: 2.08 times the base
- Chief of communications: 2.5 times the base
- Chief logistics officer: 2.5 times the base
- Mechanic number one: 2.5 times the base
- Senior manager of marketing operations: 2.92 times the base
- Data analyst: 2.92 times the base
- Chief mechanic: 3.33 times the base
- Department chief (factory): 3.33 times the base
- Sports director: 3.33 times the base
- Track engineer: 4.58 times the base
- Chief engineer: 6.25 times the base

Of additional interest are the (not low) costs of other special managers, such as the team principal, chairman, CEO, managing director, and so on, whose official payments tend to be at least eight times the base”(Mourão, 2017). Hence, it is not difficult to estimate a team's salary costs reaching tens of millions of euros, especially when the top teams' team principals Toto Wolff (Mercedes AMG F1) and Christian Horner (Red Bull Racing) are understood to be paid €16M and between €8M and €12M respectively<sup>20</sup>.

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<sup>20</sup> As reported by Express.co.uk's Luke Chillingworth on 29/01/2023.

### *2.2.1.2 The Cost of a Racing Vehicle*

When talking about the design and production of a racing vehicle it is important to keep in mind that that said machine is composed by a high number of high-tech components, each of which must go through an intense work of research, development and production before it becomes a finished product. Having to work so much before being able to manufacture the final product makes costs soar. MotoGP teams spend €3M on their bikes, and this is without taking into account spare parts and repair costs. Looking at Formula One, when asked to put a cost on the McLaren MCL60<sup>21</sup>, Zak Brown, CEO of McLaren Racing, answered “They cost about 50 million dollars to develop, and they’re a couple of million dollars to actually build one”(Zak Brown, 2023) and, when posed the same question regarding the RB19<sup>22</sup> Christian Horner, Red Bull Racing’s team principal, said “These cars here probably two and a half million dollars each car”(Christian Horner, 2023) and then highlighted the short life of an F1 car stating “It lasts for one season...And then they go in a museum”(Christian Horner, 2023)<sup>23</sup>. But how are these costs divided between the single components? To answer this question, we once again refer to Mourão’s (2017) work, who estimated the percentage weight of the cost of various components on the total cost of a Formula One car:

- power units made up circa 68% of the total cost;
- monocoque (per chassis) made up circa 7.5% of the total cost;
- front wings made up circa 2.4% of the total cost;
- rear wings made up circa 1.3% of the total cost;
- fuel tanks made up circa 1.3% of the total cost;
- steering wheels made up circa 0.7% of the total cost;
- suspensions and brakes made up circa 2.4% of the total cost;
- gearboxes made up circa 9.1% of the total cost;
- cooling systems made up circa 1.7% of the total cost;
- other items (such as tires, exhausts, software, telemetry, etc.) made up circa 5.6% of the total cost.

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<sup>21</sup> McLaren F1 Team’s car for the 2023 Formula One season.

<sup>22</sup> Red Bull Racing’s car for the 2023 Formula One season.

<sup>23</sup> Both Zak Brown and Christian Horner were asked the question in an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

### ***2.2.2 Quasi-Fixed Costs***

Drivers' and riders' salaries cannot be considered fixed costs nor variable costs since the contracts always contain a base salary, which is fixed, and a plethora of bonuses (e.g., number of podiums, number of points) which teams usually use to encourage drivers and riders to get better results. To understand the impact that such variable bonus parts of a driver's/rider's salary can have on a team's economy, we can use an anecdote which, after more than a decade, still amuses Formula One fans from all over the world, that one time when Finnish driver and Formula One World Champion Kimi-Matias Räikkönen almost made his team, Lotus, go bankrupt because of how well he performed. In 2011 Räikkönen, who had become Formula One World Champion in 2007 with Ferrari, decided to sign a two-year agreement with Lotus. No one expected big things from the team which had just been founded, nor did anyone expect much from Räikkönen, who had left Formula One in 2009 and had in the meanwhile competed in rallying and NASCAR<sup>24</sup>. However, Lotus was ambitious and, to get the best out of the Finnish world champion, came to an agreement with Räikkönen which established that the Finnish racer would get a bonus of €50,000 for each point he would be able to score. "His performances for the team were exceptional as he scored 390 points across the two years, including 13 podium finishes and two race wins at the 2012 Abu Dhabi Grand Prix and the 2013 Australian Grand Prix"(Woodhouse, 2024). This meant that Lotus had to pay him €19.5million in bonuses, a salary that most racers can only dream of. Lotus went behind with the payments and almost went bankrupt, all because they had underestimated the importance of such a bonus and the capacities of their driver.

### ***2.2.3 Variable Costs***

As already stated, variable costs are those costs that change with the level of output. Do motorsport teams costs rise in relation to the number of points "produced"? Of course they do, and significantly. Especially considering how the main variable cost for teams is R&D (40-50% of all variable costs) which is a major cost and a major aspect of any prototype racing series:

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<sup>24</sup> Driving a Formula One car is so demanding and peculiar (much more than any other racing car) that even a one-year absence from the sport can put a driver in a position of strong disadvantage with respect to their competitors, especially if in the meantime they raced in totally different categories like Räikkönen did.

when asked about the importance of R&D, Zak Brown answered “R&D is the biggest single investment. If you took the car that starts the year and it was on pole and you didn’t touch it, by the end of the year it would be last...It’s a prototype race. You’re never sitting still”(Zak Brown, 2023)<sup>25</sup>.

However, R&D is not the only non-negligible variable cost of a racing team, others are:

- training drivers/riders (like all sportsmen, racers need to train to maintain or develop the abilities necessary to stay on top);
- clinical care and recovery expenses for the racers (as sportsmen racers need to always be at the top of their form; furthermore, accidents often happen in motorsports and recovering from certain injuries might be costly);
- consultancy and advisory reports (useful in improving the performance of the team);
- additional tests on circuit;
- hospitality for additional support staff;
- development of supplementary software programs;
- entry fees (e.g., in F1 the constructors’ champions must pay \$657,837 plus an additional \$7,893 per point scored while the other teams must pay \$657,837 plus an additional \$6,575 per point).

#### ***2.2.4 Hidden Costs***

Hidden costs can only occur under three circumstances:

- after the good or service has been bought;
- in case such costs were not thought about before the agreement (either by the customer or the buyer);
- in case such costs depend on forces external to the demand and supply of the good/service.

In motorsports there are four major types of hidden costs:

- technological downgrading (occurs when the engineers are not able to work effectively with the most advanced technologies);

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<sup>25</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

- staff training (these costs concern drivers, engineers, managers and everyone else in the team and depend on the necessity to align the team’s competences to the latest technologies, rules, etc.);
- inferior engines/chassis (teams with less financial resources might opt for inferior parts in order to spend less, however these parts might require being adapted to fully function in the context of a competition and might also experience more frequent failures);
- damage to reputation (when a team’s reputation gets damaged finding investors and sponsors becomes incredibly more difficult and restoring the team’s image might be costly).

### ***2.2.5 Sunk Costs***

Sunk costs are those costs that cannot be refunded. The world of motorsports is not free from sunk costs. On the contrary, many costs faced by teams are actually sunk costs, the main one being R&D: once a team has invested in the production of a new component, whether the components do or do not produce the expected results, the money spent on the realization of the new component cannot be reimbursed and is hence a sunk cost.

However, R&D is not the only possible sunk cost for racing teams, and a few other significant sunk costs include:

- fuel (teams have to buy more fuel than strictly necessary since they can’t predict how much track time the engineers and racers are going to need to best set up the vehicle at each track);
- staff training (when training staff, money is spent with the objective of having a more performing team post-training, but however the training goes, the costs will never be reimbursed);
- advertising;
- consultancy.

Sunk costs generate the sunk cost dilemma, which is common in motorsports, “every team manager has lived it from the most successful to the most forgotten names. During serious financial difficulties, the owners of teams may choose to keep running them, assuming that conditions will be better in the next race or season. However, if conditions do not improve, the teams may be more vulnerable to failure. On the other hand, if conditions do not improve, the

team managers are blamed if they opted to close the team. Such a dilemma is only resolved at the immediate end of the season, which is the right time to consider whether or not to continue... rational managers ignore sunk costs (it is not worth crying over spilled milk) and only consider the costs that change with the planned outputs”(Mourão, 2017).

### ***2.2.6 What if Costs Were Regulated?***

Formula One has recently introduced a budget cap (from the 2021 season) with the intent of reducing spending to ensure the long-term viability of the championship. “The blueprint was the American leagues where, when the salary caps were introduced, the businesses became sustainable. That was introduced two years ago, with also the aim not only to make the business sustainable, but also to create a more leveled playing field. Small teams basically having the same budget like the big ones. Long term, there will be many more teams capable of winning races, but also it made our business very profitable”(Toto Wolff, 2023)<sup>26</sup>. Wolff isn’t the only manager enthusiast about the introduction of a budget cap, even though his team is not yet profitable ““Becoming profitable, I hope we achieve it this year or next year...In the moment, I think we are close to break even. But we will become profitable because every business to assure that you continue, you need to be profitable because it cannot be just an investment project”(Steiner, 2023)<sup>27</sup>. When asked whether the budget cap is a good thing, Günther Steiner (team principal of Haas F1 Team from 2016 to 2023) replied “Absolutely. Anybody investing in it knows how much you’re going to spend, before somebody investing in a race team didn’t know if he would spend \$200 million a year, or half a billion a year. There was everything in between”(Steiner, 2023)<sup>28</sup>. The enthusiastic response given by managers is a consequence of the incredible opportunity that the budget cap grants Formula One teams: becoming profitable. Formula One teams were never profitable businesses, throughout their history they’ve always been investment projects and the introduction of a budget cap gives them the possibility to make profit by keeping revenues high and lowering costs. This happens without loss of entertainment and, on the contrary, as stated by Wolff (2023), there are many reasons to believe that the

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<sup>26</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

<sup>27</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

<sup>28</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

introduction of the budget cap will level the playing field in the long run, making the sport even more unpredictable and hence entertaining.

There is however a downside to the introduction of a budget cap and it has to do with R&D. “Before if we wanted to develop a new front wing, you could develop ten and pick the best one. And you didn’t mind that you kind of wasted money on nine front wings. Now you don’t want to develop ten to land on one, because that nine wings that you’ve wasted money on, that’s money that you should be spending somewhere else”(Zak Brown, 2023)<sup>29</sup>. Hence, teams now have to be significantly more careful when deciding to develop a new component. Furthermore, this also means that if a team has developed a car far inferior to its competitors it will be very difficult for the team to change their project in a short time, and it might actually take seasons for their initial error to be corrected (as happened, for example, to Mercedes in 2022).

However, we can confidently say that the upsides clearly outweigh the downsides and that budget caps can and will revolutionize motorsports for the best, like they did for other sports. It is certainly no coincidence that rumor has it that the idea of a budget cap is starting to circulate in the MotoGP paddock, with Massimo Rivola, racing sports director of Aprilia Racing, hinting at the possibility since 2022.

### ***2.3 The Revenues of a Motorsport Team***

For their revenues, teams mainly rely on sponsorships, for example “A median Formula One team gets most of its budget revenues from commercial sponsorships (70%-90%)”(Mourão, 2017). However, sponsorships are not the only possible source of income for the teams, depending on the championship there might be bonuses for the teams participating (entry bonuses, prize money, TV right’s money, etc.). Furthermore, teams can also rely on owners’ investments, merchandising and money brought by pay racers (racers who “buy” their seat by bringing wealthy sponsors).

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<sup>29</sup> In an interview with CNBC’s Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).



### **2.3.1 Sponsorships**

As already stated, sponsorships are the main source of income for teams and there are usually two main types of sponsorships in the motorsport world: technical partnerships and advertisement sponsorships.

The first one is a way not only for the team to get money but also to get premium services and products from firms which are leaders in their respective sectors, while their partners benefit from the opportunity to showcase the validity of their product and brag about being chosen as partners by a team. In fact, being sponsored on a livery is a plus for technical partners but it's not their main goal, "to be honest, the sticker on the car is just the icing on the cake. It's more the relationship that you have. How can we help them to increase their sales or help them with their marketing targets? What we're doing is tailor made for the specific partner"(Toto Wolff, 2023)<sup>30</sup>.

Advertisement sponsorships on the other hand, only bring money to the teams in exchange for visibility. With regards to Formula One, "There are three attractive prime spots—air boxes, large logos on side panels, and rear wings. The values of these three prime spots (usually awarded to title sponsors) totals around 75% of a car sponsorship."(Mourão, 2017). But how are those spots decided and what makes a team reserve the spot for a certain sponsor rather than another? "We measure precisely how much exposure a sponsor gets by being on the car. So, depending on the size of the sponsorship deal you're getting more spaces"(Toto Wolff, 2023)<sup>31</sup>. But how effective can having your logo or brand name on a Formula One car be? "Two sources (SDNA Global and Sponsorlink)...reveal that 66% of the respondents of a survey agree that sponsorship contributes greatly to the success of sports and 54% of the surveyed sample agree that sports sponsorship often promotes more positive feelings towards the sponsoring brand...61% of Formula One fans tend to choose a sponsor's product over that of a rival brand and 47% of these fans have consciously made purchases from motor racing sponsors because of the sponsorship"(Mourão, 2017) hence, we might say that more than a fourth (28.67%<sup>32</sup>) of Formula One fans all over the world will consciously buy a product from a Formula One

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30 In an interview with CNBC's Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

31 In an interview with CNBC's Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

32 The 47% of 61%.

sponsor and, considering Formula One had a total of 445 million unique TV viewers in 2021<sup>33</sup>, we can say that, for the 2021 season, approximately 128 million people<sup>34</sup> bought Formula One teams' sponsors' products or services. That's an incredible opportunity for brands willing to pay the right price for a sponsorship and, such a situation is extremely difficult to replicate for many other sports or other events in search of sponsoring: "Formula One, when compared to the Olympics, the PGA Tour, the Soccer World Cup, the Skiing World Cup, the ATP Tour, and the America's Cup, has a higher event frequency, a larger season duration, more significant media coverage, a comparable spectator audience, less significant weather dependence, and lower sponsorship cost. And undoubtedly, Formula One is highly successful and efficient at targeting customers who are very impressed by the glamour, the technological innovation, the coolness, the velocity, and the message of risk that every race transmits"(Mourão, 2017).

But why are Formula One fans so willing to buy products from the teams' sponsors? Is it because they want to support the teams? Or is there more to the psychology of printing a brand's name and logo on the most sophisticated cars on the planet? It seems like the latter might be the case, since "the respondents of a survey stated that Formula One sponsors are identified as 'market leaders, cutting edge, or premium brands'. These companies use the expensive advertising of Formula One, with the equivalent purpose of product development, to signal the superior quality of their products, to exhibit a certain power status in their respective industries, and to expand their partnerships and strategic positions"(Mourão, 2017). Hence, sponsoring in worldwide renowned motorsports series such as Formula One is not only an investment in advertisement, but at the same time it is an investment in the image of the company and of its products. People are naturally brought to think that if a company is present as a sponsor in the "pinnacle of motorsport" (as Formula One is often called), then it must be a top-level firm in its field.

### ***2.3.2 Payouts from the Championship***

Since the dawn of motorsports, winners have been receiving prize money for their efforts and accomplishments. With time, this practice evolved and today every championship gives

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<sup>33</sup> As reported by Formula One themselves (<https://corp.formula1.com/formula-1-announces-audience-and-fan-attendance-figures-for-2021/>).

<sup>34</sup> The 28.67% of all Formula One unique TV viewers (in millions of people) rounded up.

bonuses to teams (or racers, depending on the championship) for various reasons. For example, in MotoGP independent teams receive around €7 million per season.

Formula One is no exception, having numerous bonuses:

- each team receives approximately \$36 million for participating (coming from various sources, mainly TV rights);
- each team receives a sum based on its placement in the championship (in 2021 Mercedes received \$61 million for winning and Williams received \$13 million for arriving last);
- other bonuses tied to various reasons, some examples being:
  - Ferrari’s \$68 million bonus (received for being the only team participating in each single season since the birth of the series);
  - the constructors’ championship bonus of \$35 million awarded to Ferrari, McLaren, Mercedes and Red Bull (for past performances in the series);
  - the heritage payment of \$10 million given to Williams for their past in the championship;
  - a bonus of \$36 million given to Red Bull for being the first to endorse the latest Concorde Agreement<sup>35</sup>.

## ***2.4 The Role of Motorsports in the World Economy***

Motorsports play a non-negligible role in the world economy. In 2021 the FIA decided to engage EY-Parthenon BV “to estimate the economic contribution of the global motor sport industry in 2019”(EY-Parthenon Report, 2021). The report highlights how “The economic contribution generated by motor sport is driven by 2.7 million participants who take part in over 60,000 events that utilize over 7,200 tracks, venues and facilities across the globe.” and mind you, it states that “The FIA defines motor sport as: ‘any competition or related sport activity restricted to vehicles that (i) have at least four non-aligned wheels and (ii) are constantly and entirely controlled by a driver on board the vehicle’.” (EY-Parthenon Report, 2021). Hence, the study actually takes as sample just a fraction of motorsport, leaving out several important disciplines (e.g., each and every kind of motorcycle racing). The choice is however highly

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<sup>35</sup> An agreement between the FIA, F1 teams and the Formula One Group establishing, among other things, how TV rights and prize money should be divided among the teams.

reasonable, since the FIA is the international automobile federation. The data was collected from the 145 FIA member countries.

In 2019, the motorsport industry directly generated €58.8 billion in gross output and €25.0 billion in value add, where direct contribution is, by the report, defined as “the economic activity directly generated by all elements of the motor sport industry, including activity generated by motor sport participants, governing bodies, Local Motor Sport Clubs, facilities, tracks and circuits, events, (semi) professional teams and auto-related industries.”(EY-Parthenon Report, 2021). Gross output, on the other hand, is “the market value of goods and services (i.e., gross revenue) produced by each segment of the motor sport industry, after accounting for intra-industry sales (to avoid double counting).”(EY-Parthenon Report, 2021). Finally, value add corresponds to “the market value of goods and services produced by the motor sport industry, after deducting the cost of goods and services used. That is, Value Add is a subset of Gross Output and represents the marginal/additional economic value generated by the motor sport industry. As such, direct value add is commonly put forward as the most appropriate measure of the relative contribution of an industry to the economy.”(EY-Parthenon Report, 2021). The report goes on to state that the indirect contribution, defined as “‘flow on’ effects to other industries, including supplier demand for intermediate goods and services and additional consumption by people employed in the motor sport industry”(EY-Parthenon Report, 2021), amounted to €99.4 billion in gross output and €41.9 billion in value add, for a total contribution (the sum of indirect and direct contributions) of €159.2 billion in gross output and €66.9 billion in value add. The constant growth of the motorsport industry (90% from 2007 to 2019) made it so that its economic contribution in 2019 was higher than the combined gross output of the world’s 25 smallest nations.

Furthermore, in 2019 the industry generated 576,000 direct paid jobs – defined as “the people employed as a direct result of the €59.8b direct output generated by the motor sport industry in 2019.”(EY-Parthenon Report, 2021) – and 924,000 indirect paid jobs, for a total of 1.5 million paid jobs. Additionally, 302,000 unpaid formal officials, marshals and volunteers contributed to the industry (ca. 11% of all motorsport participants). It is important to also highlight how “In addition to directly benefiting motor sport, volunteerism has been shown to deliver broader benefits to the volunteers themselves and the broader community.”(EY-Parthenon Report, 2021).

## *Chapter 3*

### *Analyzing a Motorsport Team*

*(adjusting analyses to fit the motorsport industry)*

Even though teams are businesses, when managing a motorsport team, it is difficult to make use of the exact same strategies, analyses and frameworks managers implement in other fields. The reason for this is that motorsport teams have different characteristics and necessities with respect to most other businesses. For instance, while evaluating a company's performances and strategies requires evaluating its profits, when evaluating a team, the profits are not the most important aspect to look at: racing results are higher in the list. It's not unlikely for racing ventures to end the year in the red: "we were losing seven, eight, nine figures when I got started"(Zak Brown, 2023)<sup>36</sup>.

This chapter aims at acknowledging the peculiarities of racing teams as businesses in order to be able to propose a way of adapting various analyses frameworks to the motorsport world. However, we will try not to give too many general answers on the world of motorsports since every competition has its peculiarities, as does every team, and it is hence best to work on a case-to-case basis.

### *3.1 Porter's Five Forces Framework*

The first aspect that we're going to analyze is the environment in which the teams operate. To do so we're going to rely on the tools provided by Porter's five forces framework. The framework is helpful in analyzing competition in the operating environment of a business. The five forces framework can help in:

- determining if a company should stay in the industry or not;
- giving a justification for raising or lowering the resource commitments;
- determining ways to strengthen the company's position in the market;
- determining the potential profit for a particular industry.

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<sup>36</sup>In an interview with CNBC's Sara Eisen ([https://youtu.be/fobN\\_XSOQ5s?si=LMU29hIqeBaU3SyH](https://youtu.be/fobN_XSOQ5s?si=LMU29hIqeBaU3SyH)).

Michael Porter created the Five Forces Framework as a tool for business analysis. Businesses can use this framework to assess the competitive dynamics within an industry, gauge the level of competition, and pinpoint possible opportunities for strategic advantage.

The forces are the following:

- rivalry among existing firms;
- threat of new entrants;
- threat of substitutes;
- bargaining power of suppliers;
- bargaining power of buyers.

By evaluating these forces, businesses can create strategies to reduce risks and take advantage of opportunities. Furthermore, businesses may navigate the competitive landscape and make wise decisions to increase their overall competitiveness by having a thorough understanding of these dynamics. In the following paragraphs I will expound on each of these facets by seeing how they may be applied to a racing team.

### ***3.1.1 Rivalry Among Existing Firms***

In order to address the topic of industry rivalry, we must first introduce the concept of concentration, both absolute and relative.

Absolute concentration describes the number and size distribution of businesses that compete in a given market. Hence, when talking about motorsports we could say that the absolute concentration is given by the number of teams in the competition and their size. But how do we evaluate size? In the second chapter we assumed points to be the product of a team and, considering the absence of buyers for such product, we might say that the whole production is considered as “sold” as soon as produced. This being established, we can say that the size is given by the market share of a team, i.e., the number of points made by the team with respect to the total number of points awarded in a season (e.g., if 1000 points are awarded in a season and my team scores 200 points, we can say that my team’s size is given by its market share, which will be of  $200/1000$ , that is,  $1/5$ ).

Relative concentration is given by the Herfindahl-Hirschman Index (or HHI for short) which is a measure of the size of firms in relation to their industry and, at the same time, an indicator of

the amount of competition among them. The HHI is computed by summing the square of the market size of each firm competing in the market:  $H = \sum_{i=1}^N s_i^2$ . If the HHI:

- is lower than 1,500 the market is considered competitive;
- is between 1,500 and 2,500 the market is considered moderately concentrated;
- is higher than 2,500 the market is considered highly concentrated.

Other factors affecting rivalry between established competitors are:

- product differentiation (obviously, if a team's product is points, product differentiation is not to be kept in mind when analyzing a racing team);
- slow industry growth (not to be taken into consideration since, in absence of regulation changes, each year the same number of points is awarded and what changes is only the “market share” of each team);
- levels of demand and offer:
  - demand offer ratio (the demand offer ratio is also not to be considered since it is fixed at 1:1 because, as already stated, we're considering each “product” as “sold” as soon as it is “produced”);
  - industry life cycle (the life cycle of an industry such as that of Formula One or MotoGP can be considered to be the time between major regulation changes, i.e., regulation changes which impose heavy changes on the way the car/motorcycle is designed, e.g., Formula One's 2022 rule change which introduced a new “generation” of cars).
- exit barriers:
  - strategic interdependences (might be present in motorsports, e.g., a constructor's results in MotoGP depend also on client teams' results and a client team's results partly depend on how good the constructors project is);
  - institutions (usually not to be taken into consideration, since, in motorsports, institutions rarely have ways of denying exit to a team);
  - sunk costs (highly present in high-level motorsports as seen in chapter 2);
  - fixed costs (highly present in high-level motorsports as seen in chapter 2);
  - plants' idiosyncrasy (highly present in high-level prototype-racing motorsports since producing high-performance prototypes requires particular machines such as wind tunnels).

### ***3.1.2 Threat of New Entrants***

Threats of new entrants refers to the risk that the profitability of established enterprises in the industry may be diminished by new competitors. The combination of current competitors' reactions and entrance restrictions determines how serious the threat is (e.g., when there are significant obstacles to entry, but new players can predict how established businesses will respond, the threat of entry is lower). Barriers to entry are elements or circumstances, in an industry's competitive environment, that make it challenging for new companies to enter that market. There are three types of barriers:

- institutional barriers (present in the motorsport world, e.g., teams who want to race in Formula One need to have a license to do so, but such licenses are limited, hence, most of the time teams who want to enter have to buy a license from an already competing team who wants to leave);
- structural barriers:
  - economies of scale (these can be seen at work between constructors: constructors with more clients are able to better spread their costs);
  - economies of scope (concentrating mostly on racing, racing teams experience no economies of scope);
  - capital requirement (is highly present and a major aspect when talking about motorsports barriers to entry);
  - access to channels of distribution (there are no actual channels of distribution for a racing team since there are no actual customers to which distribute the product).
- strategic barriers;
  - product differentiation (as already stated in the previous paragraph, if a teams' product is points, product differentiation is not to be kept in mind when analyzing a racing team);
  - switching costs (being there no customer, there's no switching cost);
  - advantages independent from scale or size:
    - proprietary products (even though we've stated various times that a team's product is points, we can say that proprietary products, in the form of proprietary technologies and components fitted on the



cars/motorcycles, are some of the main aspects able to give an edge to a team in prototype racing motorsports);

- favorable access to raw materials (usually all teams have similar access to raw materials);
- favorable government policies (if we analyze rulesets and regulating entities rather than governments, we can say that favorable policies are clearly a part of motorsports, e.g., the, already cited in chapter 2, bonus payment Ferrari receives for being the only team to have taken part to each and every single Formula One race since the establishment of the series in 1950).

### ***3.1.3 Threat of Substitutes***

A substitute product is one made by a different industry that provides the consumer with benefits comparable to those of the product made by companies in that industry. Customers' inclination to replace and the price-performance attributes of substitutes determine how much competition there is from manufacturers of alternatives. If we momentarily bracket the definition of “points = product” we have so far relied on, in the motorsport field such threats could come from other championships bringing away viewers and hence, lowering TV rights and sponsorships income (e.g., MotoGP teams might be threatened by WSBK teams).

The threat of substitutes is high when:

- there are minimal switching costs for consumers (this might be evaluated in terms of attachment to specific characteristics of a championship like the fact that it is prototype racing rather than production-derived racing or maybe the power being generated by an ICE<sup>37</sup> rather than an electric motor);
- a replacement product costs less than an original product (this might be evaluated in terms of lower subscription costs to streaming services; however, most threatening “rival” championships are usually transmitted by the same streaming services, e.g., Sky Sport having rights for both the MotoGP and the WSBK in Italy);

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<sup>37</sup>Internal Combustion Engine.

- product quality of a substitute is on par with or better than that of an industrial product (this might be evaluated in terms of how well the championship and all the entertainment around it are structured);
- performance of a substitute is on par with or better than that of the industry product (this might be evaluated in terms of how exciting the racing produced by the rival championship is).

### ***3.1.4 Bargaining Power of Suppliers***

When analyzing the environment in which a business operates it is imperative to look at which are the business's suppliers and how they behave when dealing with the business.

Suppliers can use threats as a means of negotiating by:

- raising prices;
- reducing the quality of purchased goods and services.

Supplier groups are powerful when:

- only a small number of companies control a large portion of the market (this is the case with high performance parts producers to whom racing teams outsource the production of certain components);
- no substitute products compete in the market (it is usually difficult, if not impossible, to find substitutes for high performance components);
- suppliers deal with multiple industries (usually suppliers of such specific components only manufacture the precise component for the team);
- products are differentiated (high performance components are highly differentiated);
- products have switching costs (switching from a supplier to another might require significant work in terms of adapting the new part to the machine and, hence, would be costly);
- forward integration is feasible (forward integration is not feasible or, at least, extremely costly, and suppliers wouldn't profit from creating their own racing team).

### ***3.1.5 Bargaining Power of Buyers***

Obviously, there are no actual buyers in championships such as Formula One and MotoGP. However, depending on the championship, client teams might play a role similar to that of a buyer. Furthermore, it is important to remember that in Formula One and MotoGP there is no actual “market” since the constructors’ products are usually offered at a fixed price mandated by the rules.

Buyers threaten an industry by:

- forcing down prices;
- negotiating for better or more services;
- pitting rival businesses against one another.

Relative bargaining power of suppliers is given by:

- the size and concentration of buyers in relation to suppliers: the greater the purchase volume and the lower the number of buyers, the higher the risk of losing one;
- the information possessed by buyers: a well-informed buyer has better bargaining power;
- the ability to integrate vertically.

Buyer power is strong if:

- the concentration of buyers exceeds that of sellers (usually the concentration is similar, e.g., in MotoGP there are five constructors and six client teams);
- there are minimal switching costs for buyers (as already stated, prices are usually mandated by the rules, making switching costs minimal);
- there is a strong risk of backward integration (there is very little risk of backward integration, however the risk is not zero, e.g., Red Bull Racing only recently decided to become an engine manufacturer in Formula One, it previously was a client for more than fifteen years);
- the buyer is price conscious (given the fixed prices, the price consciousness of the buyer is irrelevant);
- the customer is knowledgeable about the product (client teams are usually very knowledgeable about the constructors’ products);
- buyer purchases product in huge amount (the amount is proportionally high);
- a significant amount of seller sales come from buyer purchases (all of sellers’ sales come from buyers’ purchases);

- the product lacks differentiation (the product is highly differentiated, each machine/component has its own peculiarities and no two machines/components are overall similar).

### ***3.2 PESTEL Analysis***

Going further in our analysis of the business we're going to address how external factors affect businesses. In doing so we're going to rely on the method proposed by the PESTEL analysis.

PESTEL is the acronym for the six elements of the analysis:

- political;
- economical;
- social;
- technological;
- environmental;
- legal.

The political analysis establishes the potential impact that governments and their policies may have on a particular business. For a racing team the analysis of the political element mainly revolves around the political stability in hosting countries since instability might compromise the race.

The economical analysis establishes the potential impact that economic factors have on the economy and how well it functions, which in turn directly affects the business and how profitable it is. For a racing team the economic stability of hosting countries is of the utmost importance since it impacts event organization, local sponsorships and overall attendance. Furthermore, fluctuations in currency exchanges might make international travel expensive.

The social analysis focuses on how recognizing not only the emergence of new trends, but also the fabric of the social context allows marketers to better understand the requirements and desires of customers. Although teams have no actual customers, aligning with social trends is of vital importance in order to more easily secure sponsorships. For instance, nowadays a team that shows interest for and is active with regards to the topic of climate change is more likely to be supported by younger audiences and is hence more marketable from a sponsor's point of view.

The technological analysis focuses on the potential that technical innovation and development has to impact a given market or sector. A few possible contributing factors are technological advancements, AI advancements, automation, and research & development. Obviously, the technological aspect is of major importance in the motorsport world making it one of the core aspects on which teams should concentrate when conducting such an analysis. Technological advancements can profoundly change the sport and teams must be able to pinpoint which innovations are going to be central in the future of the sport in order to research such technologies beforehand and gain an advantage. Such technologies aren't exclusively limited to the production of components that directly increase the performance of the vehicle but also encompass those technologies that allow for data collection and analysis, which can in turn help perfect the vehicle.

The environmental analysis focuses on the impact of ecological variables and the surrounding environment on the business or the industry it is part of. This is a central theme for racing teams since they have to analyze the issue from two different perspectives:

- the need to become more sustainable given the high level of pressure put on motorsports for their environmental impact;
- the need to prepare for the impact of weather on events and hence, to develop both strategical and technical measures to ensure their performance is not impacted by such natural phenomena.

Lastly, the legal analysis focuses on the need each business has to be aware of what is permitted and what is not in the areas in which it operates. Furthermore, changes to the law might affect the industry or how the businesses operate in it. For teams, such an analysis concerns not only local governments' legislation on matters such as employment, occupational safety or trade but also, and most importantly, the ruleset of the competition. When adapting such an analysis to racing teams it is imperative to give priority to the ruleset of the competition: this must be taken as the main "legal" system to which teams are subject.

### ***3.3 Business Model Canvas***

The last aspect of the business that we're going to analyze is its model. To do so we're going to make use of the business model canvas. The business model canvas was first presented by Alexander Osterwalder in 2004, is a tool for strategic management and entrepreneurship.

Managers utilize the business model canvas as a strategic planning tool to build and depict their company model. The business model canvas allows to clearly identify the essential components of a firm. Furthermore, it streamlines a company plan into a more concise version and, hence, it functions as an executive summary of the business plan.

The business model canvas is made of nine main blocks:

- key partners;
- key activities;
- key resources;
- value propositions;
- customer relationships;
- channels;
- customer segments;
- cost structure;
- revenue streams.

Some of these blocks are pretty straightforward even when applying the business model canvas to a business as unconventional as a racing team, while others need to be adapted. In the following paragraphs we'll look into each block separately and suggest some ways to adapt the non-straightforward ones.

### ***3.3.1 Key Partners***

The first block, that of key partners is pretty straightforward and needs no adaptation in order to work when analyzing a racing team. Key partners are the businesses or individuals that the company works with to establish strategic alliances (e.g., suppliers and distribution partners). To find each and every key partner of a business it is important to ask the three following questions:

- What are the key resources provided by these partners?
- Which important tasks do these partners carry out?
- Why does the firm collaborate with these partners?

### **3.3.2 Key Activities**

For the block regarding key activities the situation is already a bit different, as we'll see there are some questions that can easily be applied to a racing team, others which do not work at all when analyzing such a business and other still which work only partially.

Key activities are specific tasks or activities that are essential to the running of the company, that is, without such activities the business would not be able to function properly. To pinpoint a business's key activities there are some questions that need to be answered. The following ones are the ones that can be asked about a racing team with no problem:

- What are the key activities required to fulfill the firm's value proposition?
- What distinguishes the business from the competition?
- Does the business need to acquire particular niche resources?

However, as we've already stated, there are some questions which are normally asked when analyzing a business's key activities but are superfluous if asked while analyzing a racing team, like the following:

- What distinguishes the business's customer relationships, distribution channels, and revenue streams from those of its rivals? How do these relate to the business's main activities? (in the case of a racing team, this point might be overlooked since there are no customers to keep relationships with, there are no actual distribution channels and revenue streams are more or less the same for each team, i.e., they mainly depend on sponsorships).

Lastly, we said there were some which only worked in part, an example is the following:

- Does maintaining low costs and prices require streamlining? (obviously, when reflecting from a racing team's point of view there's no need to keep in mind the part about prices since there are no prices to keep low given that teams do not sell their product).

### **3.3.3 Key Resources**

In this paragraph we're going to look at how to find a business's key resources. As with key activities some questions which are asked when looking for key resources can be applied with

no problems to the analysis of a racing team, some other make sense only partly and some are of no use.

Before taking a look at such questions, we must define key resources. Key resources are those assets which are necessary in order for the business to be able to deliver its value proposition. To find a business's key resources the normally asked questions which can also be applied to a racing team are:

- Which are the assets the business needs to deliver its value proposition?
- Does the business require significant capital or human resources?

Furthermore, the following question should be asked, which is however not completely relevant from a racing team's point of view:

- Which resources are needed for the business's distribution channels and revenue streams to function? (as already said in the previous paragraph, there are no actual distribution channels in racing hence, when asking this question from a racing team's perspective, we just ask about revenue streams).

Lastly, there is one question which would be normally very important to ask but, nevertheless, becomes of no use when analyzing a racing team:

- Which are the resources that allow the business to maintain customer relationships and satisfaction? (this question is irrelevant from a racing team's perspective since teams have no customers).

### ***3.3.4 Value Propositions***

In the previous paragraph we said that key resources are the resources necessary for the business to deliver its value proposition. The value proposition is what the business is ultimately offering and is also considered to be the most important aspect of the business model canvas. When searching for the value proposition of a business there are three main questions that need to be asked:

- What is the business offering to consumers?
- Which problems is the business solving and which needs is it satisfying?
- What's the uniqueness of the business's offer in satisfying customers?

To better assess the value proposition of a racing team it is important to keep in mind that, given the absence of real customers, teams' value propositions usually revolve around fans, sponsors



and partners. Hence, we should tailor each of the three questions we've seen in this paragraph to each one of these three different groups with which the business interacts. Keeping this in mind it is easily possible for teams to have a value proposition without real customers and for us to find it.

### ***3.3.5 Customer Relationships***

In the previous paragraph we reminded once again how there are no real customers in the motorsport industry: teams do not sell anything, nor is their main aim to provide a service. However, entertainment and sponsoring are of great importance in motorsports. Hence, in an effort to find customers in the racing industry, we can look at fans, sponsors and partners as "customers" and thus consider the relationship between them and the team the same as the relationship between a company and its customers.

The customer relationships block focuses on the ways in which the business interacts with its customers. And, now that we've defined who we should refer to as customers, we can finally ask the following important questions which will help us understand the relationship between our team and its "customers":

- What are relationships between the business and its customer like??
- In which way does the business interact with its customers and does it change depending on the customer segment?
- Is the communication between the business and its consumers frequent?
- Is the support provided by the business high or low?

Adapting these questions to our definition of customers we will be able to find define how our team interacts with its sponsors, partners and fans.

### ***3.3.6 Channels***

Until now we've argued that team have no actual channels of distribution. We've based this claim of ours on the lack of an actual product and actual customers. However, given the concession we've made on the definition of customers in the motorsport industry in the previous paragraph, and given the definition of channels as the ways through which the business delivers

its product or service to its customers, channels could be seen as the ways through which racing teams reach their fans, sponsors and partners and would hence coincide with those channels that allow everyone to follow the team during the season and in between seasons: live-streaming services, social medias and the like.

### ***3.3.7 Customer Segments***

Having already given our definition of customers in the previous paragraphs as the totality of fans, sponsors and partners, the definition of customer segment, which is “the various kind of customers a business has”, is enough to suggest a precise distinction between a team’s three main segments, which are:

- fans;
- sponsors;
- partners.

A further distinction can be made between title sponsors and non-title sponsors, which would entail considering the former some kind of “premium” customer. But, for the purpose of our case study, which will come later on in chapter 4, we’ll stick to the distinction which highlights only the three customer segments of fans, sponsors and partners.

### ***3.3.8 Cost Structure***

Next in our analysis of the business model is the cost structure, i.e., the way a business allocates funds for operations. The cost structure is made up of the company's primary costs as well as its degree of cost-focused attention. Cost-driven businesses prioritize lowering expenses and, consequently, client prices, while value-driven businesses place more of an emphasis on adding value for their clients and pay less attention to expenses. To better understand the cost structure of a business it is important to ask the following questions:

- What are the key costs of the business?
- Which are the major drivers of cost?
- What’s the contribution of the business’s key activities and resources to the cost structure?

- What's the relation between the business's costs and revenue streams?
- Is the firm making use of economies of scale?
- What's the volume of fixed and variable costs?
- Is the business cost-driven or value-driven?

When analyzing a racing team, it is important to keep in mind that big established top-teams tend to be value-driven, constantly investing in new technologies to achieve better performance, and, by comparison, smaller teams racing at the back of the grid tend to look more like cost-driven businesses, trying to manage the smaller budget the best way they can.

### ***3.3.9 Revenue Streams***

After analyzing costs, our last step in this analysis of the business model is revenue streams. Revenue streams are a business's sources of cash flows. Usually, to best pinpoint such sources we would have to ask questions such as the following:

- Is the business generating revenue from multiple sources?
- Which product-pricing strategy does the firm implement?
- Which are the channels through which the business receives its payment?
- Does the business offer different payment forms or just a unique solution?

However, such questions do not align well with what most racing teams usually experience.

Furthermore, racing teams revenues have more or less always the same sources:

- sponsorship agreements;
- merchandise sale;
- prize money.

Hence, unless we find ourselves analyzing a team with a very particular revenue situation, these questions can be skipped and we can directly go check if the team earns come from all of the three sources listed earlier or just some of them.

With this focus on revenue streams, we close the chapter on the different analysis frameworks that need some adaptations to be used when analyzing a racing team. In the next chapter we'll see each and every one of these frameworks, along with others we haven't scrutinized, applied to a case study.

***Chapter 4***  
***Ducati Corse***  
***(a case study)***

In this chapter we're going to analyze Ducati Corse, the official racing division of Ducati Motor Holding S.p.A., focusing on its racing venture in MotoGP World Championship (which in the last seasons has raced under the name Ducati Lenovo Team) from a managerial point of view, using, among others, the three analysis frameworks we looked at in the previous chapter.

Ducati entered MotoGP for the first time in 2003, one year after this category was born of the previous major class, the 500. While Ducati was late to the party, entering a year after the series started, it was able to leave its mark straight away. Despite unconventional engineering and a fraction of the resources of the dominating Japanese competitors, Ducati was instantly competitive thanks to one of the most innovative and popular bikes ever to have raced in any championship: the Ducati Desmosedici GP3. The riders, Loris Capirossi and Troy Bayliss, were able to get important results right away: at the opening race in Suzuka, Capirossi took third place and hence the first ever MotoGP podium for the Borgo Panigale based team. Capirossi, with the Desmosedici GP3, was also able to enter history by reaching the speed of 332.409km/h, scoring a new world record while racing at Ducati's home grand prix at the Autodromo Internazionale del Mugello. In the same occasion Capirossi also took second place. A few weeks later, during the Grand Prix of Catalunya, Capirossi gave Ducati its first MotoGP victory. This was the first of seven successes achieved by him with Ducati between the years 2003 and 2007. In 2007, when a change in the technical regulations lowered the maximum engine displacement from 1000cc to 800cc, Ducati was able to reach the top: that year, with ten wins and fourteen podiums, Casey Stoner became world champion bringing Ducati both the manufacturers' and teams' titles. Stoner went on to win a total of 23 races with Ducati. After his last success at Phillip Island in 2010 Ducati entered a victory drought that lasted for five years, until Andrea Iannone's victory in Austria in 2016. Shortly after, Andrea Dovizioso won in Malaysia, this was the sign of Ducati getting back to its brilliant results by steadily improving its bikes. This consistent improvement gave its results, in terms of titles, starting from 2020 when Ducati became once again constructors' champion. From this point on Ducati only improved, claiming both the teams' and constructors' titles in 2021 and claiming, led by

Francesco “Pecco” Bagnaia, all three titles (riders’, constructors’ and teams’) in 2022 and both the constructors’ and riders’ title in 2023.

#### ***4.1 Mission, Vision and Value Proposition***

Ducati’s mission is to develop high-performance race bikes to compete in the most prestigious motorcycle racing competitions. Among the division’s responsibilities there are those of design, development, and production of racing bikes, as well as the management of the factory racing team competing in MotoGP.

Ducati’s mission is best articulated in four focal points:

- racing success: Ducati’s primary mission is the achievement of racing success through the design and development of high-performance motorcycles. The aim of the division is to win races and championships in order to showcase the quality and performance of its motorcycles;
- innovation: Ducati’s commitment to pushing the boundaries of motorcycle technology and innovation is aimed at developing the most advanced racing bikes possible. Heavy investments in research and development are made to create cutting-edge motorcycles seeking to be faster, lighter and overall, better performing than the competition;
- brand promotion: participation to racing events is a way for Ducati to promote its brand by showcasing the quality and performance of its motorcycles. Each success in racing helps with building brand recognition and attracting new fans and sponsors;
- “customer” engagement: Ducati’s objective is to provide a thrilling experience to fans in order to create a connection between them and the brand through its involvement in racing and the hosting of events and activities allowing fans to interact with the racing teams and get a behind-the-scenes look at the design and development of Ducati’s racing motorcycles. Furthermore, such a close relationship with fans is a plus for Ducati’s sponsor who can take advantage of such brand loyalty.

Ducati's vision is to be a leading force in international motorcycle racing, by designing and developing high-performance motorcycles that excel in the most demanding racing conditions.

The vision of the company can be articulated in three focal points:

- Racing dominance: Ducati's vision is to achieve racing dominance by designing and developing motorcycles that are optimized for performance and speed so as to win

races and championships and be recognized as a leader in the world of motorcycle racing;

- Innovation leadership: Ducati aims to be a leader in motorcycle innovation, by developing cutting-edge technology that pushes the boundaries of what is possible in racing, with the objective of being at the forefront of motorcycle design and development, using advanced materials, software, and hardware to create the most advanced racing bikes possible;
- Engaging fans: Ducati envisions a community of passionate fans who are engaged with the brand and share its commitment to racing success.

Ducati's value proposition is centered around its expertise in motorcycle racing, cutting-edge technology, and high-performance motorcycles. The division's involvement in racing helps building brand recognition and engaging with customers, providing them with an exciting and thrilling experience that reinforces the reputation of the Ducati brand. The value proposition is best articulated in three focal points:

- Racing expertise: having competed at the highest level of international racing for many years, Ducati has a wealth of expertise and experience in motorcycle racing which is reflected in the design and development of their racing bikes, which are optimized for performance and speed. Fans enjoy the reputation of race expert that their team has and the same happens for sponsors and partners (technical ones in particular) who can benefit from having their brand associated with such a reputation in a highly competitive industry like the one of MotoGP;
- High-performance motorcycles: Ducati's commitment to pushing the boundaries of motorcycle technology and innovation to create the most advanced racing bikes possible is reflected in the fact that many professional riders choose Ducati's motorcycle as their preferred track vehicle (a clear example is the choice of 8 times World Champion Marc Marquez to leave the Honda factory team for a seat on satellite team Gresini Racing's one year old Ducati, this is a very strong statement in favor of the quality of Ducati's motorcycles);
- Brand association: Ducati's involvement in international racing helps to build brand recognition and promote the Ducati brand, in fact, the success in racing reinforces the brand's reputation as a top racing brand, bringing again more fans and sponsorship opportunities to the team.

## ***4.2 Porter's Five Forces Framework***

As already stated in chapter 3, Porter's five forces framework is a tool for business analysis helpful in analyzing competition in the operating environment of a business. It is used to assess the competitive dynamics within an industry, gauge the level of competition and pinpoint possible opportunities for strategic advantage. In the following paragraphs we're going to analyze the five forces from the perspective of Ducati.

### ***4.2.1 Rivalry Among Existing Firms***

The Ducati Lenovo Team was one of 11 teams to take part in the 2023 MotoGP championship. Furthermore, Ducati was one of five constructors to take part in the championship that year. As a racing team, Ducati scored 561 points out of the total 3,679 awarded points, reaching a market share of approximately 15.25%. The remaining teams' market shares were as follows:

- Prima Pramac Racing 17.75%;
- Mooney VR46 Racing Team 14.41%;
- Red Bull KTM Racing 12.39%;
- Aprilia Racing 11.14%;
- Gresini Racing MotoGP 8.92%;
- Monster Energy Yamaha MotoGP 7.45%;
- Cryptodata RNF MotoGP Team 3.64%;
- Repsol Honda Team 3.32%;
- LCR Honda 3.15%;
- GasGas Factory Racing Tech3 2.58%.

The Herfindahl-Hirschman Index for the industry will then be:  $H = \sum_{i=1}^N s_i^2 = 1208.80$ . We can thus conclude that MotoGP is a competitive environment for the teams and hence, for Ducati.

As a constructor, Ducati scored 700 points out of the total 1,780 awarded points, reaching a market share of approximately 39.33%. The remaining constructors' market shares were as follows:

- KTM 20.96%;

- Aprilia 18.31%;
- Yamaha 11.01%;
- Honda 10.39%.

The Herfindahl-Hirschman Index for the industry will then be:  $H = \sum_{i=1}^N s_i^2 = 2550.60$ . Hence, we can conclude that MotoGP is a highly concentrated environment for the constructors.

Furthermore, Ducati competes in an industry (MotoGP) which we can say has a life cycle of five years. Every five years, the technical rules are renegotiated and teams and constructors might have to work on highly different bikes when the regulations change, creating a new cycle in the life of the industry: teams which were winning every race the year before might begin to struggle and vice-versa.

Finally, MotoGP teams face various exit barriers mainly given by:

- strategic interdependences;
- sunk costs;
- fixed costs;
- plants' idiosyncrasy.

Strategic interdependencies in MotoGP teams are given by the relationships between factory and client teams. For example, Ducati has long been in a close relationship with Pramac Racing. This allowed Ducati to make some of their most talented young riders get up to speed with the category on Pramac's motorbikes and, once they were championship-winning level, bring them to the factory team. This has been the path of great riders such as two-time MotoGP World Champion Pecco Bagnaia and Jack Miller. At the same time, Pramac can enjoy top talents, who give them a chance at winning races, on their motorcycles. Furthermore, Ducati supplies Pramac with current-year bikes, unlike what they do with other client teams such as VR46 Racing Team and Gresini Racing MotoGP, which are supplied previous-year bikes. This allows Ducati to have double the data each race, making it easier to work on improving their machine. At the same time, this gives Pramac the possibility to compete on the same level on which factory teams compete. Hence, these kinds of relationships are a double-edged sword, they bring numerous advantages to Ducati but, at the same time, put in place a big exit barrier on rivals such as Pramac. The high risk in such relationships is better seen with an example, in the 2023 season the main competitor for Ducati Lenovo Team was none other than Prima Pramac Racing who, eventually, was crowned teams' champion. With a bike on par with that of the factory team and a rising star such as Jorge Martin riding it, Pramac managed to be the only real threat to Ducati's race for the teams' champion title, managing to win such title one race



before the end of the season. Furthermore, Pramac's Jorge Martin was able to fight Ducati's Pecco Bagnaia until the very end, with the riders' title being awarded only at the last race in Valencia. While losing the teams' championship and winning the riders' championship only at the last race wasn't the best in terms of brand image and reputation, there's a much more important interpretation to this story. What the 2023 championship showed to the world was that the only motorbike that can beat a Ducati is, in fact, a Ducati, i.e., there's no actual competition for the Italian constructor, which is why the 2023 championship, rather than damaging Ducati's brand, elevated it to be the best of the best: an unrivaled machine. Hence, it is easy to see how, though they may represent a risk and a big barrier to exit, such relationships are in fact beneficial not only for the client team but also for the brand.

Costs constitute another great barrier to exit in the MotoGP world, with fixed costs that amount to millions (as we've seen, teams spend up to €3M on their bikes only, spare parts and repair costs excluded) as well as numerous sunk costs (as already seen, R&D, the main spending of teams, is a sunk cost).

The last barrier to exit is the idiosyncrasy of the plants where the motorcycles are developed and produced. While the plants might be successfully used to manufacture road-legal motorcycles, most technologies present in the plants would be overkill and useless when working on the production of a road-legal vehicle.

Given the low HHI and extensive presence of barriers to exit such as strategic interdependencies, costs and plants' idiosyncrasy, we can conclude that MotoGP is a highly competitive environment for teams and Ducati has to keep improving in order to remain at the top in the industry, otherwise, rival teams would soon get on par with the Italian team.

#### ***4.2.2 Threat of New Entrants***

We've seen how MotoGP is highly competitive thanks to the various barriers to exit. However, teams can be more relaxed when it comes to outside threats, such as new entrants, since MotoGP is an environment with numerous barriers to entry. The number of teams on the grid is institutionally regulated in order to guarantee balance to the championship. However, before even trying to obtain a license to be in the championship, aspiring teams have to face many other barriers, both structural and strategic.

The main structural barriers are:

- capital requirements: entering the MotoGP industry requires significant financial investment to develop (or lease in the case of client teams) a competitive bike, hire skilled riders, and participate in races. This means that smaller teams and new entrants may struggle to access the funding necessary to compete at the highest levels;
- technical expertise: given the amount of technical expertise and R&D capabilities needed for the production and development of high-performance motorcycles, established manufacturers and teams often have a competitive advantage in terms of technical knowledge and resources, making it harder for new entrants to develop a bike that can compete for wins;
- licensing and regulatory barriers: MotoGP is subject to various regulations and licensing requirements that can be difficult to navigate for new entrants (e.g., teams and riders need to meet specific safety standards to participate in races);
- sponsorship and marketing challenges: sponsorship and marketing are two key components of the MotoGP industry and established teams and riders often have existing relationships with sponsors and a strong fan base while new entrants may struggle to attract sponsorships or build a fan base, making it harder to fund their operations and compete at high levels.

The main strategic barriers are:

- brand recognition and customer loyalty: the “big names” of motorcycle racing, like Ducati with its iconic red livery, will always be the ones getting more attention by fans and the ones having bigger fanbases. Such brand and loyalty can only be built with years of success in competitions, something new entrants obviously can’t do before their entrance;
- relationships with manufacturers: many of the top teams in the MotoGP industry, like Ducati, are racing departments of motorcycle manufacturers, which can provide them with access to the latest technology, resources, and expertise. New entrants may struggle to develop similar relationships with manufacturers, which can limit their ability to compete effectively;
- talent acquisition: the MotoGP industry is highly competitive, and many of the top riders and team members are already under contract with established teams. New entrants may struggle to attract top talents to their team (both from an economical point of view and one of validity of the team’s technical project), making it harder to compete without the best riders in the industry;

- track record: established teams and riders often have a proven track record of success in the MotoGP industry, which can make it easier for them to attract sponsors, fans, and top talents. On the other hand, new entrants may struggle to swiftly demonstrate their ability to compete at a high level, which can make it harder to gain traction in the market.

Overall, the strategic barriers to entry in the MotoGP industry can be significant, and new entrants may need to develop innovative strategies and build strong relationships with sponsors, manufacturers, and riders to compete effectively. Ducati has a unique advantage in terms of brand recognition and customer loyalty, which can make it difficult for new entrants to establish themselves. Furthermore, Ducati has a long history of producing high-performance motorcycles, and the brand is associated with masterful Italian engineering and design. But still Ducati Corse needs to continually innovate and differentiate itself from its competitors to maintain its market position. It needs to invest in research and development to create unique high-performance products, if it fails to do so, new entrants could capture a significant market share and erode Ducati's competitive advantage.

### ***4.2.3 Threat of Substitutes***

MotoGP has few substitutes to be afraid of since few things can give motorcycle racing fans a rush like MotoGP does. The main championships which might provide substitutes are the World Superbike Championship and the MotoE World Cup. Nevertheless, Ducati Corse shielded itself from possible substitutes by creating teams to participate in other championships as well. Ducati, in fact, competes in WSBK, WSSP and has recently struck an agreement to be the only manufacturer to race in the FIM Enel MotoE World Cup, thus expanding the brand in the previously unknown territory of electric motorcycles. This will be a tough challenge for Ducati who will, for the first time in their history, have to create a high-performance electric motorcycle: a great leap towards the future and the unknown for a manufacturer renowned for the excellence of its internal combustion engines. By doing so, Ducati aims to diversify its product portfolio and respond to customer preferences. For this to be possible Ducati Corse needs to monitor emerging technologies and trends that could impact its position.

Furthermore, this differentiation ensures that, regardless of which championship motorcycle racing fans might prefer, the Ducati brand will be present (and hopefully winning): their

successes in a championship improve the brand image of the name Ducati, improving that of their teams in other championships by reflection.

#### ***4.2.4 Bargaining Power of Suppliers***

One of the most significant challenges faced by MotoGP manufacturers is the bargaining power of suppliers: while there are numerous suppliers of raw materials, components, and parts in the industry, some suppliers with specialized products or components may have more bargaining power than others. Therefore, understanding the suppliers' bargaining power is paramount to a manufacturer's success. The suppliers of raw materials in the industry are generally large companies that have significant bargaining power. These companies leverage their size and economies of scale to dictate the prices of raw materials, and the prices can fluctuate based on market conditions and supply chain disruptions. The prices of raw materials can have a significant impact on the production costs of motorcycle manufacturers (e.g., if the prices of aluminum increases, it may raise the production costs of a motorcycle frame that relies on aluminum). The suppliers of components and parts in the motorcycle industry are typically highly specialized small and medium-sized businesses. These suppliers may have more bargaining power if they offer unique or patented products that are not available from other suppliers. Furthermore, they may have a limited production capacity, which can impact delivery times and pricing. For example, a supplier of high-performance braking systems may only be able to produce a limited number of brakes per month, which means that they have a limited supply capacity. This limited supply capacity may result in higher prices for their products, as they can demand a premium for their specialized brakes. Luckily for the competitors, the MotoGP regulations set limits for the price a supplier can charge for certain products. For example, as stated in the regulations “the brake suppliers commit to sell to their customer teams a front brake “MotoGP Season Package” for a price of no more than 80,000 Euros per rider (excluding VAT, excluding freight)”. Ducati, being a renowned manufacturer, has a significant advantage in terms of bargaining power over its suppliers. The company's brand recognition and consistent results allow it to negotiate favorable prices and terms from its suppliers, which helps to keep its production costs low. Moreover, the company has established long-term relationships with its suppliers, ensuring a reliable supply of high-quality components and parts. This reliability is critical in ensuring that production schedules are met, and production costs

remain predictable. Moreover, motorcycle manufacturers must be aware of the trends and challenges affecting their suppliers. For instance, suppliers may need to adapt to new environmental regulations, which may increase the costs of producing raw materials or components. They may also face challenges in sourcing raw materials or components due to geopolitical or economic factors. By understanding these challenges, motorcycle manufacturers can work collaboratively with their suppliers to mitigate the impact of these challenges. In conclusion, the bargaining power of suppliers in the MotoGP industry is a critical factor that manufacturers must consider. While the bargaining power of suppliers varies depending on their size, economies of scale, and specialization, manufacturers must maintain good relationships with their suppliers and diversify their supplier base. By doing so they can mitigate the risks associated with relying on suppliers.

#### ***4.2.5 Bargaining Power of Buyers***

As already stated in chapter three, there are no actual buyers in MotoGP, nor there is an actual market. While client teams can be said to play a role similar to that of buyers, there is no actual “market” since the constructors’ products are usually offered at a fixed price mandated by the rules.

The bargaining power of buyers in MotoGP is extremely high since there are only a few satellite teams (a total of six for the five constructors) and, these satellite teams:

- are very well informed;
- are as concentrated as the constructors;
- have very low switching costs.

Satellite teams are usually perfectly informed regarding the motorcycle they’re about to lease since they usually lease previous year motorcycles (e.g., Mooney VR46 Racing Team raced in the 2023 season with a Desmosedici GP22, the factory team’s bike for the 2022 season) this allows them to look at data and results before choosing their bike for the year, although there are exceptions (as we’ve seen when talking about rivalry among existing firms, Prima Pramac Racing competed in the 2023 championship with a Desmosedici GP23). Switching costs are actually nonexistent for satellite teams since Dorna Sports sets the same price for each bike, only differentiating between previous year and current year specifications. There are two main

aspects on which constructors can work to make sure that their current satellite teams won't leave them and new satellite teams will join them:

- creating a strong relationship: when a satellite team has been working for years in synergy with a constructor it becomes difficult to leave since they won't be sure to find such a collaborative spirit in other constructors;
- bringing constant results: no satellite team has incentive to change manufacturer if it clearly sees that the other constructors are behind in terms of results and achievements, on the other hand satellite teams racing with weaker manufacturers might be tempted to leave them for a higher performing bike one. Ducati has been a master in this field in the last years and thanks to this it has been able to make the number of its satellite teams grow to three. On the other hand, Yamaha, given the recent poor development of their project, has seen the number of their satellite teams fall to zero after the end of the 2022 season.

However, it is difficult for satellite teams to integrate backwards since manufacturing a MotoGP bike is completely different from working on an already manufactured bike like satellite teams are used to. This means that it would require heavy investments in employees and structure, it would require for the team to build relationships with high-performance component manufacturers, and so on. This drives down satellite teams' bargaining power, especially from the point of view of a manufacturer such as Ducati who is, at the moment, leader in the industry. In conclusion, understanding the factors that affect the bargaining power of buyers can help manufacturers develop strategies to remain responsive to their clients' needs. Therefore, it is critical for manufacturers to continuously innovate and improve their products to meet such needs.

#### ***4.2.6 Takeaways***

The framework provided by Porter's five forces has led us to conclude that Ducati operates in a dynamic and highly competitive industry, and while it has several advantages that give it a competitive edge over its rivals, it must continually innovate. If Ducati fails to do so, its market position and competitiveness could erode, and it may struggle to maintain its presence in the industry. Finally, the company needs to balance technological advancements with cost efficiency. While investing in the latest technology and design is essential, it is equally

important to keep costs under control. This requires careful management of resources and a focus on optimizing processes to ensure maximum efficiency.

### ***4.3 PESTEL Analysis***

As seen in chapter 3, the PESTEL analysis is a method for determining the external macro factors affecting a business. In this paragraph we're going to analyze how the six elements of the PESTEL analysis (political, economic, social, technological, environmental and legal) apply to Ducati.

The MotoGP calendar for the 2024 season expects the teams to race in the following countries:

- Qatar;
- Portugal;
- USA;
- Spain (four times);
- France;
- Italy;
- Kazakhstan;
- Netherlands;
- Germany;
- England;
- Austria;
- San Marino (held, however, on Italian soil);
- India;
- Indonesia;
- Japan;
- Australia;
- Thailand;
- Malaysia.

Most of these countries are politically stable, with the main concerns on political stability being some of the middle-eastern and Asian countries. Teams can be relatively sure that the political situations of the countries on the calendar won't change.

However, some of the countries on the calendar, like Kazakhstan, might be easily subject to sudden changes in economic stability which might affect event organization and attendance. Apart from such risk, teams can be relatively confident that no economic problems will arise: for instance, since most teams are based in Europe (Ducati being one of them), fluctuations in currency are a lesser problem for them, thanks to the stability of the Euro.

From a social standpoint, aligning with social trends is of vital importance in order to more easily secure sponsorships and fans. With global warming and the environmental crisis being one of the main topics today, Ducati made an incredibly sound investment by signing an agreement to be the only manufacturer for MotoE. This not only reflects on the brand image of Ducati Motor Holding S.p.A. but on the brand image of the racing teams as well, which will be perceived as interested in the matter. Hence, this gives Ducati Lenovo Team an edge on its rivals.

As already anticipated in chapter 3, the technological aspect is of major importance in the motorsport world. Technological changes impact MotoGP profoundly and have changed the sport many times. Ducati showed its ability in bringing winning technology to the sport in more than one occasion. The main technological improvements brought by Ducati in the last years and which gave the Italian team an advantage on its competitors were aerodynamic wings and ride height devices.

MotoGP's environmental impact has been questioned many times, reason for which rules have been put in place to limit such impact. For example, starting with the 2024 season, 40% of MotoGP fuels will have to be from sustainable sources. Furthermore, teams can count on being backed by the institutions organizing the championship in their discussions with governments regarding laws on environmental impact. Other than the environmental impact of their sport, MotoGP teams have to keep in mind the impact weather can have on events. For example, Asian grand prix have a history of being delayed, cancelled or interrupted due to rain and the Australian track of Philip Island is known to be particularly subject to gusts of wind: in 2023, wind gusts reached the speed of 70km/h on the main straight, which was one of the factors that brought to the cancellation of the sprint race. Furthermore, rain requires teams to work on a completely different motorcycle setup to make sure that the bike will be as effective on wet surfaces as it is on dry ones. However, it's not only cold, wet weather that can create problems for MotoGP teams: extremely hot weather can bring problems such as tires and engines overheating. This requires teams to work on state-of-the-art cooling systems.

As already stated in chapter three, despite being subject to the actual laws of hosting countries as well as the country where the team is based, the main "legal" concern of a MotoGP team is



the ruleset of the competition: the FIM Grand Prix World Championship Regulations. These rules are written directly by the FIM, with the participation of Dorna Sports S.L., IRTA and MSMA. The rulebook, not counting the “General Undertakings and Conditions”, is divided in 8 sections:

1. Sporting Regulations;
2. Technical Regulations;
3. Disciplinary and Arbitration Code;
4. Circuit Standards;
5. Medical Code;
6. Anti-Doping Code;
7. Environmental Code;
8. Code of Ethics.

The Technical Regulations thoroughly describe the required characteristics of each single piece of equipment, from the bikes to the protective gear. The strictness of these regulations makes maintaining low costs very difficult. The constructors will in fact have to invest significant sums in R&D in order to build an advantage on competitors without breaking the rules and risking sanctions. This makes the MotoGP industry highly shaped by institutional regulations.

#### ***4.4 VRIO Analysis***

The VRIO framework is a useful tool that helps businesses evaluate the potential of their resources and capabilities. The acronym stands for Valuable, Rare, Inimitable, and Organized. In this paragraph we’re going to apply this framework to Ducati. The Ducati Lenovo Team is:

- Valuable: the Ducati Lenovo Team is an essential aspect of Ducati Corse as it serves multiple purposes. Firstly, it helps in promoting and showcasing the brand's performance capabilities through the pinnacle of motorcycle racing: the MotoGP World Championship. This not only increases brand awareness but also highlights the quality of Ducati motorcycles. Furthermore, the team generates a significant amount of revenue through sponsorships from various brands that are keen to associate themselves with such a high-performance motorcycle manufacturer. Additionally, it creates yet another source of income in terms of merchandise sales. In conclusion, while being highly valuable for promoting and showcasing their motorcycles' abilities on track, the team

also plays a crucial role in generating substantial amounts of revenue through different channels such as sponsorships, merchandise sales and prize money.

- Rare: the team has unique resources and capabilities in the motorcycle racing industry. Their strong reputation for engineering high-performance motorcycles has made them stand out from their competitors. The team, which is known for its excellence in the field, has access to state-of-the-art technology and expertise that are second to none. The team's rarity can be attributed to several factors, including their years of experience in the industry, their investment in R&D, and their commitment to innovation. They have consistently pushed the boundaries when it comes to producing high-performance motorcycles that meet the needs of professional racers in the MotoGP championship. The team's access to cutting-edge technology puts them at an advantage over other players in the market. Furthermore, the team has invested heavily in modern equipment such as wind tunnels, dynos, and simulation software that enable them to design and test prototypes with precision and accuracy before they are manufactured. In conclusion, the team's rarity lies not only in its being different from others but also in its striving for excellence through innovation. The combination of cutting-edge technology and expertise makes them one of the best teams when it comes to engineering high-performance motorcycles.
- Inimitable: the team's success in racing has set it apart from other teams. While competitors may attempt to replicate this achievement, it would prove challenging for them to match such level of experience and expertise in this area. Over the years, they have gained valuable knowledge and skills that are difficult to acquire overnight. Their investments have enabled them to create some of the most advanced motorcycles ever made. Furthermore, Ducati's success on the racetrack cannot be attributed solely to their technological advancements; rather, it is also due to the team's skillset and strategic approach towards racing. The team employs some of the best riders and engineers who work tirelessly towards achieving victory every season. In conclusion, while imitating Ducati's success may seem like an attractive proposition for other teams, replicating such achievements will prove challenging due to Ducati's extensive experience and expertise in racing.
- Organized: the team is highly efficient and has a well-organized structure that prides itself on its dedicated team of engineers, designers, and riders. The team's racing strategy is carefully planned and executed with precision to ensure maximum success. Ducati has an unwavering commitment to excellence in all aspects of their work, which

is reflected in the passion and motivation displayed by each member of the team. The engineers at Ducati are some of the bests in the industry, constantly pushing boundaries with new innovations to improve performance. The designers are equally passionate about creating visually stunning machines that not only perform exceptionally but also look beautiful. Finally, the riders who make up the team have been hand-picked for their exceptional skills as well as their unwavering dedication to winning races. Their passion for riding is contagious, and inspires everyone around them to strive for greatness both on and off the track.

After analyzing the resources and capabilities of Ducati, we can conclude that they possess a sustainable competitive advantage in the MotoGP championship. The team's valuable resources are not easily replicated by competitors, which gives them an edge over rivals. Additionally, the team's rare and unique capabilities further contribute to its success in this highly competitive environment. Moreover, Ducati has developed a well-structured organization that enables efficient utilization of its resources and capabilities. As a result, Ducati is always at the forefront of technological improvements in MotoGP which allows the team to stay ahead of its competition. In conclusion, it is evident that Ducati holds significant advantages over other players in MotoGP. These factors have enabled Ducati to maintain its position as one of the top performers in this field despite ruthless competition from rivals.

## ***4.5 SWOT Analysis***

SWOT is the acronym of strengths, weaknesses, opportunities and threats and the SWOT analysis is hence used for studying these four aspects in a business. In this paragraph we're going to apply the SWOT analysis to the Ducati Lenovo Team. The team has:

- Strengths: Ducati currently makes the most performing bikes on the MotoGP grid, they managed to win 39.33% of the total points awarded to constructors. Furthermore, the team was able to score second position in the teams' championship, winning 15.25% of the total points awarded during the season even though one of the two riders, Enea Bastianini, was out due to an injury in several races and was not substituted. This highlights another strength of the team: their rider, two-times MotoGP World Champion Francesco Bagnaia, who in 2023 was able to win his second title.

- Weaknesses: Ducati uses a V4 cylinder configuration for its engine. Such a configuration makes the bike less agile and more difficult to turn into corners, driving down corner speed with respect to bikes with an in-line 4-cylinder configuration which are easier to ride into corners. This requires for the team to heavily work on all the other aspects of the bike to try and make up for the loss of agility.
- Opportunities: given the superiority demonstrated by Ducati bikes in the last seasons, many top talents dream of a move to the factory team, this gives the team the opportunity to sign many of those top talents and keep its edge over rival teams.
- Threats: satellite teams are starting to be a threat for the factory team, as demonstrated by Pramac's victory in 2023. This requires the team to work on improving the setup of the motorcycle in order to have an edge on rival teams using similar bikes.

In conclusion, the team has to keep taking advantage of the state-of-the-art motorcycle it uses to continue staying at the top in the teams' championship. At the same time, it has to work on making their bikes perform even better to make sure that satellite teams don't get an edge and start winning.

## ***4.6 Business Strategy Analysis***

Ducati has been successful in MotoGP for several years. The team's business strategy is based on several key factors, including innovation, quality, and performance. One of the key elements of Ducati's business strategy is its focus on innovation. The company invests heavily in research and development, constantly seeking to improve the performance of its racing bikes. This commitment to innovation has helped the company stay ahead of its competitors in a highly competitive environment. Another key element of Ducati's business strategy is its focus on quality. The company is committed to building high-quality racing bikes that are designed to perform at the highest levels. This focus on quality has helped the company in building a strong reputation in the industry and attracting top talents to its team. Performance is another critical element of Ducati's business strategy: the company is focused on winning races and championships, and it is willing to invest the resources necessary to achieve this goal. This commitment to performance has helped the team in building a strong track record of success and establishing itself as a leader in the industry. In addition to these key elements, Ducati's business strategy is also based on a strong partnership with its parent company, Ducati Motor

Holding: the two companies work closely together to share resources, knowledge, and expertise. This partnership has helped both companies achieve success in their respective markets.

Ducati applies a differentiation strategy in Moto GP. Differentiation is a key competitive advantage in the motorcycle industry. Ducati differentiates itself thanks to the high level of innovation it brings to the competition. Ducati has oftentimes been the one to introduce new technologies in MotoGP making it difficult for rivals to keep up the pace. A key example of Ducati's differentiation strategy is its use of the desmodromic system which is the result of years of research and development and uses advanced technology to deliver high performance while also being highly reliable. Other examples of Ducati's differentiation strategy were its introduction of aerodynamics and ride height devices. These systems helped the team in winning multiple MotoGP championships and establishing it as a leader in MotoGP.

## ***4.7 Business Model Canvas***

As already stated in chapter 3 the business model canvas is a tool for strategic management and entrepreneurship made of nine main blocks. In the following paragraphs we will now analyze each of these blocks separately from the point of view of Ducati Lenovo Team.

### ***4.7.1 Key Partners***

The team relies on several partners to succeed:

- Lenovo: the technology company is Ducati's title sponsor and it provides technology and data management solutions to help the team manage and analyze data related to bike performance, rider performance, and race results. This partnership is key to ensuring that the team is able to make data-driven decisions to improve their performance.
- Shell: the oil company provides a key resource for Ducati in the form of high-performance fuel and lubricants, this partnership ensures that the bikes are optimized for maximum performance on the track.

- Akrapovič: the Slovenian company provides a key resource in the form of high-performance exhaust systems that help increase power and improve overall performance. This partnership helps Ducati maintain a competitive edge by using top-of-the-line technology.
- Diadora: the Italian brand provides sportswear for all the employees in the box, ensuring that the teams official garments are of the highest quality.
- Brembo: the Italian brake manufacturer provides a key resource in the form of high-performance brake systems that help riders brake harder and later, improving lap times.
- Beta: the Italian tool manufacturer provides the team with the highest quality tools, ensuring that mechanics can work on the bikes with maximum precision and ease.

Overall, Ducati's key partners provide a variety of resources including technology and specialized equipment, which are critical to the success of the team. By partnering with these companies, Ducati is able to maintain an edge in the highly competitive world of MotoGP.

#### ***4.7.2 Key Activities***

Ducati's key activities include:

- designing, testing, and manufacturing the racing bikes;
- recruiting and training riders and support staff;
- managing logistics and operations during the racing season;
- race preparation.

Designing, testing, and manufacturing high-performance racing bikes is a complex and ongoing process that requires the use of advanced technology and engineering expertise. Recruiting and training riders and support staff is critical to the success of the racing team. Managing logistics and operations during the racing season involves coordinating travel, accommodations, and equipment, as well as ensuring that the racing bikes are properly maintained and prepared for each race. Race Preparation has to be done extensively for each race, it includes selecting the right combination of tires, fuel, and lubricants for the specific track conditions and, most importantly, developing race strategies and working closely with the riders to decide the bike's setup for the race.

### ***4.7.3 Key Resources***

Ducati has a number of key resources that contribute to its success. These resources include engineering and design expertise, advanced manufacturing facilities, state-of-the-art testing equipment, and a highly skilled and experienced team of riders and support staff. Engineering and design expertise is critical to the development of high-performance racing bikes. Advanced manufacturing facilities and state-of-the-art testing equipment help ensure that the racing bikes are built to the highest standards of quality and performance. A highly skilled and experienced team of riders and support staff is essential to the success of the racing team. Finally, Ducati has also a strong brand that is recognized around the world. This brand is built on a long history of racing success, as well as high-quality products and innovative design and helps the team be attractive towards sponsors, making the team find higher paying sponsors.

### ***4.7.4 Value Propositions***

As previously stated, Ducati Corse's value proposition is centered around its expertise in motorcycle racing, cutting-edge technology, and high-performance motorcycles. The division's involvement in racing helps building brand recognition and engaging with fans and providing them with an exciting and thrilling experience that reinforces the reputation of the Ducati brand. Innovation can be considered part of Ducati Corse's value proposition as well since the racing division is known for its innovative approach to racing. This includes innovations such as the desmodromic valve system, which is unique to Ducati and is widely recognized as one of the most innovative and effective engine designs in MotoGP.

### ***4.7.5 Customer Relationships***

While there is no direct customer relationship in racing, the success of the racing team generates excitement and enthusiasm among fans and, in doing so, enhances the relationship between Ducati and its fans. By winning races and championships, Ducati is able to demonstrate its commitment to quality and performance, this helps its technical partners in showcasing the

same commitment and market themselves as top-level firms. Wins also help sponsors attract more and more customers by having their logos on a world championship winning bike.

#### ***4.7.6 Channels***

Ducati's channels include media coverage of the races and social media. Media coverage of the races is the most important channel for the team. The live streaming of the racing events allows fans to feel all the emotions they would feel attending the events in person. Social media is also important for reaching fans and keeping them engaged in the team's work all throughout the season. Not only, social medias allow the fans to keep in touch with the team and its riders during both the summer break and the months between the end of a season and the start of the next.

#### ***4.7.7 Customer Segments***

The customer segments for Ducati Corse include racing fans and potential and current sponsors and partners. Racing fans are a critical customer segment for the team as they are the primary audience for the races and often have a strong affinity for the brand and will purchase merchandise and sponsors' products or services. Sponsors provide critical financial support and often have specific marketing and brand awareness goals that they want to achieve through their partnership with the racing team. Partners want to reach the same marketing and brand awareness goals as sponsors but, more than financial backing they provide components and other products or services which are critical to the success of the team.

#### ***4.7.8 Cost Structure***

The cost structure for Ducati Corse includes investments in research and development, manufacturing and testing costs, salaries and wages for riders and support staff, travel and logistics expenses and marketing and promotion costs.



Research and development costs are necessary to ensure that the racing bikes are designed to the highest standards of quality and performance. Manufacturing and testing costs ensure that the bikes are built perfect and extensively tested to ensure the performance. Salaries and wages for riders and support staff are necessary to attract and retain top talent in such a competitive industry. Travel and logistics expenses are critical to ensuring that the racing team is able to travel to and participate in all the stages of the championship. Ducati invests in marketing and promotion to build its brand and promote itself. This includes sponsorships, media coverage, and fan engagement.

**4.7.9 Revenue Streams**

The revenue streams for Ducati include sponsorship revenues, merchandise sale and prize money. Sponsorship revenues are a key source of revenue as sponsors often provide significant financial support in exchange for brand exposure and other benefits.

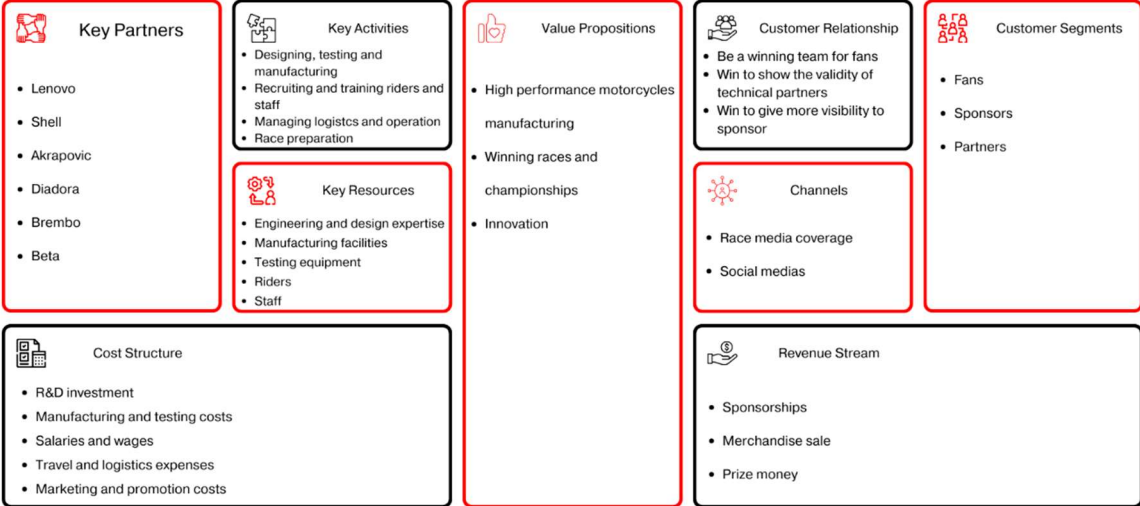


Figure 2

## ***4.8 Corporate Strategy***

Ducati Lenovo Team's corporate strategy shows elements of three of the most common types of corporate strategy: differentiation strategy, cooperative strategy and innovation and technology strategy.

Elements of differentiation strategy can be identified in Ducati's focus on the quality of its designs and its efforts to improve the performance of the team and its motorcycles by trying different things than those used by rivals. Furthermore, elements of cooperative strategy can be seen in how Ducati relies on partners for the production of some high-performance components such as brakes. Finally, elements of an innovation and technology strategy can be found in the emphasis Ducati places on R&D investments and its goal of staying ahead of the competition through constant innovation and technological advancements

## *Conclusions*

The evolution of motorsports has brought about the birth of an out-and-out industry full of businesses (racing teams) which, like all other businesses, need to be managed.

The economics of motorsport involve numerous players, and contribute in a non-negligible way to the world economy. Furthermore, teams and institutions spend and earn, creating numerous jobs. In order to properly manage such important businesses, managerial analysis frameworks are necessary. However, such frameworks are not completely appropriate for the analysis of racing teams, which in turn calls for their adaptation, as was highlighted in the third chapter when talking about the Porter's five forces framework, the PESTEL analysis and the business model canvas. When adapted such frameworks allow for the analysis of a racing team from a managerial point of view, giving the opportunity to evaluate the strategies that bring teams to success: the case study on Ducati Corse proves this point. The Porter's five forces framework highlighted how Ducati has to watch itself from threats coming from already established teams but can be more relaxed on threats coming from the outside. The PESTEL analysis showed how Ducati's main legal concern is the championship's ruleset and how the Italian business's effort in becoming more environmentally friendly gives it a social edge. Through the application of the VRIO analysis we were able to discern that the team is not only valuable and rare, but also inimitable and organized. Thanks to the SWOT analysis we were able to pinpoint the strengths and weaknesses of the team as well as suggest what moves the teams should make to improve and which to ensure its leading position is not attacked. The business model canvas allowed us to precisely outline how the team runs its business. Finally, the business strategy analysis and corporate strategy highlighted how the strength of the Italian team is in its focus on research and development which aims at maintaining a competitive edge over rivals by leading the technological advancement in the MotoGP industry.

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