

The Ultimate F1 Experience

GROUP 6

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Industry Analysis

The motorsports market is a global sports industry that involves the organization and promotion of competitive motorized sports events, such as car racing. The market encompasses various types of motorsports, including Formula One (F1), NASCAR, IndyCar, and others. The F1 market is considered one of the most prestigious and lucrative segments of the motorsports industry, attracting the world's best drivers, teams, and sponsors.

The compound annual growth rate (CAGR) of the motorsports market is 10.2%, and it is expected to reach \$12.9 billion by 2027. F1 is one of the most important games in the motorsports market, accounting for a significant portion of the market's revenue and fan base. The sport has a global audience and enjoys a massive following among motorsports enthusiasts worldwide.

Introduction of F1

F1 is a racing sport that has been held by the International Automobile Federation (FIA) since 1950. The sport features high-performance single-seat racing cars that are specially designed and built for the purpose of F1 racing.

F1 is considered the most expensive sport in the world, with teams spending hundreds of millions of dollars each year on research and development, engineering, and operations. The sport has a rich history and is renowned for its technical sophistication, speed, and glamor.

The F1 season consists of 20 races held in different countries around the world from March to October. Each race is a weekend-long event that includes practice sessions, qualifying rounds, and the main race. One race usually lasts between 1.5 to 2 hours, depending on the length of the circuit and other factors.

Revenue of F1

1. **Broadcasting rights:** Broadcasting rights account for the largest portion of F1's revenue, with broadcasters paying significant sums of money for the exclusive rights to televise the races.
2. **Sponsorship:** Sponsorship is another critical revenue stream, with major brands investing in F1 teams and drivers to promote their products and services.
3. **Ticket sales:** Ticket sales are another important revenue source, with fans paying to attend the races and watch the action live.
4. **Merchandise:** Merchandise, such as team apparel and souvenirs, also generates significant revenue for F1.

5. Licensing agreements: Licensing agreements, such as the sale of F1 video games and other products, contribute to the sport's overall revenue stream.

Major Stakeholders of F1

1. FIA: FIA is the governing body of the sport and is responsible for regulating the rules, safety standards, and other aspects of F1.
2. Teams: The teams are the organizations that compete in F1 races, and they are responsible for designing, building, and operating the F1 cars.
3. Drivers: The drivers are the individuals who pilot the F1 cars and compete in the races.
4. Sponsors: Sponsors are the companies that invest in F1 teams and drivers to promote their brands and products. They provide significant financial support to the sport and help to make it financially viable.
5. Broadcasters: Broadcasters are the companies that televise the F1 races, and they play a critical role in bringing the sport to a global audience.

Monza Race Track

The Monza Race Track is located near the city of Monza, in the Lombardy region of Italy. It is the oldest permanent race track in the world, having been built in 1922. The Monza Race Track is famous for hosting the Italian Grand Prix, which is one of the most prestigious races on the F1 calendar. The Monza track is a high-speed circuit that features long straights and challenging corners, making it one of the fastest and most demanding tracks on the F1 calendar.

The Monza track is also renowned for its history and tradition, having hosted numerous iconic F1 races over the years. The track has undergone several modifications and improvements since its construction, including the addition of chicanes and other safety features. Today, the Monza Race Track is considered a world-class facility and a popular destination for motorsports fans around the globe.

Issues Faced by Fans

Recent years have seen a concerning trend of deteriorating fan experiences at the Monza Racetrack. Fans have reported a range of issues, including long wait times, overcrowding, poor facilities, and limited access to amenities. In some cases, these problems have impacted the overall enjoyment of the racing event and left fans feeling dissatisfied with their experience.

After conducting a thorough analysis of customer feedback across various platforms such as Google, Facebook, Trip Advisor, and Reddit, a consistent pattern emerged. While the races themselves were undoubtedly entertaining, many attendees had a less than satisfactory experience due to the long wait times for basic amenities such as food, beverages, and restrooms. In fact, a significant per



centage of the reviews on Trip Advisor - over 60% - were negative, with many customers highlighting their frustrations over various issues, including long wait times to enter and exit the seating areas. Addressing the common complaints of customers regarding long wait times and improving the overall experience could go a long way in making the event more enjoyable for everyone.

Problems identified

After conducting a thorough analysis, two significant issues were found to be prevalent in relation to F1 tracks:

1. Difficulty in accessing food vendors and food trucks.

Long queues and wait times at food vendors caused discomfort and disrupted the audience experience, which often led people to avoid purchasing food from the vendors, resulting in a decrease in revenue for the event. Long wait times can have a significant impact on attendees, with many people preferring to bring their own food and drinks to avoid having to queue for long periods. This often leads to people avoiding purchasing food from the vendors, resulting in a decrease in revenue for the event. The impact of long wait times can be significant, with many people preferring to bring their own food and drinks to avoid having to queue for long periods.

2. Limited view of the F1 tracks

Due to the vast size of the track and the dispersion of seating locations, obtaining a clear view of the race can be challenging. Poor seating arrangements, obstructed views, and inadequate video screens are some of the reasons that cause limited viewing options. Since many people attend F1 races to witness high-speed action up close, organizers must ensure that clear viewing options are available for attendees from all angles.

Product Ideas to how it will bring smile to everyone

Formula One racing has always been an exciting sport for fans all around the world. However, in recent times, the need to enhance the spectator viewing experience has become crucial. To this end, several ideas have been proposed to improve the overall experience of fans at F1 tracks. This report highlights three such ideas.

Idea 1: Implementation of Bar Exchange Concept on F1 Track

The Bar Exchange concept is an innovative idea that can help enhance the spectator viewing experience on F1 tracks. The concept involves creating designated fan areas supporting one particular team. These areas will be equipped with a live polls section introduced in the dashboard, and the acti

vity level measured in the fan base. Prices of drinks and food items can be fluctuated by the management team through backend based on the activity level. In low activity areas, the prices can be dropped to bring in more energy and excitement to the people to buy the food and drinks, while in high activity areas, the prices can be increased optimally to extract maximum profit. The fans can buy these drinks through the dashboard, which will direct them online, making the whole process quick and efficient.

Idea 2: Live Tracking of the Players

Currently, there are many screens available that show the race details, but there is no personalized view. If someone wants to track just one player, his moves against other racers, whether DRS open for that racer, there is no option available for that. To solve this issue, live coverage of that player can be obtained in real-time through the dashboard. This feature can be a game-changer as it will enable fans to have a personalized view of the race and track their favorite racer in real-time.

Idea 3: Improvement of Basic Amenities at Monza Track

Improving basic amenities at F1 tracks can play a vital role in enhancing the spectator viewing experience. A component on the dashboard showing the waiting time of food trucks for different food categories can be introduced. A map on the dashboard showing the location of the food trucks and restroom can also be added. Additionally, a component showing the restroom occupancy status can be included, making it easy for fans to plan their visit to the restroom without wasting time. Moreover, strategy sections showing the strategy taken by various teams, such as tyre type, pitting, etc., can also be added to the dashboard.

Monza, the famous Italian racing track, has been facing financial struggles in recent times. The track pays 25 million USD as per the contract to hold the F1 race, and it has high operational costs leading to a loss in the year 2022. Additionally, 50% of the seating capacity goes unfilled, indicating a need to enhance the spectator viewing experience to attract more fans to the track. The new dashboard proposed above can give more avenues to rope in additional investors that will help them bring fresh cash into the game. Moreover, an increase in food and drinks sales increases the commission earned by the track, making the dashboard an excellent tool for additional revenue generation.

Introducing the Interactive Dashboard for F1 Racing

Our team has designed an interactive dashboard to enhance the F1 racing spectator experience by providing real-time information on food prices, live racer data, wait times, and washroom availability.

ity. The dashboard includes a unique audience engagement feature, allowing spectators to participate in live voting to adjust beverage prices.

The user-friendly dashboard features a white background and an easy-to-navigate layout, ensuring users can quickly find the information they need. It incorporates vital components such as food and bar exchange, live racer data, food truck wait times, and an interactive map.

Critical Components of the Dashboard:

Food and Bar Exchange: Displays real-time food and beverage prices, adjusted based on audience participation in live voting.

Live Racer Data: Showcases racing-related information, updated in real-time.

Food Truck Wait Times: Provides color-coded indicators for efficient planning of visits to food vendors.

Interactive Map: Marks real-time racers' positions, restroom availability, and food truck locations.

Data Visualization and Design:

The dashboard displays changing beverage prices and a heatmap of audience participation based on responses to questions presented every 5 minutes. This information helps spectators make informed decisions and enjoy a better event experience. The interactive dashboard aims to enhance the spectator experience, promote food and beverage sales, and increase customer loyalty by addressing challenges faced at F1 racing events. The audience engagement feature further elevates the event experience, creating a unique and memorable atmosphere.

Data Preparation and Analysis:

The Bar Exchange dataset captures the price fluctuations of various alcoholic beverages over 20 minutes, with prices updated every 5 minutes.

For the data preparation stage, we performed the following key steps:

Dataset Description: The dataset contains columns for the drink names and their respective prices at different time intervals (T, T+5 mins, T+10 mins, T+15 mins, and T+20 mins).

Data Inspection: We assessed the dataset for any missing values, irregularities, or outliers that might affect the quality of the analysis.

By completing these data preparation steps, we ensured that the dataset was ready for further analysis and visualization, facilitating a deeper understanding of the pricing trends of various drinks during the specified period.



We applied data wrangling techniques in R to clean and structure the Food.csv dataset. Key steps included loading data, renaming columns, handling missing values, splitting columns, data type conversion and cleaning, and exploratory data analysis. As a result, we transformed the raw dataset into a clean, structured format suitable for further research and visualization, ensuring high-quality data for deriving valuable insights.

Conclusion

In conclusion, the motorsports market, particularly Formula One racing, represents a significant and growing segment of the sports industry. With the increasing demand for enhanced spectator experiences, it is essential to develop innovative solutions that cater to the evolving needs of F1 fans.

The proposed idea, is a one of a kind and first of its kind with interactive dashboard with some innovative features including the Bar Exchange Concept, live tracking of player standing and location, live food vendor wait times and location can significantly enhance the fan experience, leading to increased attendance and revenue generation. These features also solve two major problems in our report which was the issue of attendees not being able to easily access food vendors and limited viewing of the F1 race tracks. These features will allow the audience to have a better and stressless time attending an F1 race. With its successful implementation at the Monza Race, we would be able to use it at all future races leading to no competition for our product.

Some milestones we would like to touch on is that during phase 2 we would integrate sponsor ads to help drive revenue. phase 3 we would like to improve our current design and integrate it with an app to allow easier access to the dashboard. Phase 4 is where we implement a drone delivery system so the customers can have more time enjoying the race instead of waiting in line for food.

By embracing these innovative solutions, the Monza Race Track and the F1 industry as a whole can ensure sustainable growth, maintain their prestigious status, and continue to captivate motorsport enthusiasts worldwide.

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