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Lights out and away we go

Introduction

Fast cars driving around in circles at breakneck speeds; wearing down tyre treads in less than an hour; drivers being traded like commodities amongst corporates at exorbitant costs. As unbelievable as it sounds, Formula 1 racing is no doubt entrancing - it is no wonder that it is one of the most popular sports in the world. 2023 saw record-breaking attendance with 5.7 million attendees across all races globally, and a year-on-year increase in revenue of 25%, reaching USD 3.222 billion. 2024 continues to see this growing trend in viewership.

Formula 1 is having a moment right now and this made me think - could there be some similarities with the insurance industry? At first glance, Formula 1 and the insurance industry appear to be worlds apart. However, upon closer inspection there are parallels between these two industries. This article will explore the overlaps and learnings between these two seemingly different, but surprising more closely aligned, industries.

How does insurance work in Formula 1?

If you watched the Monaco Grand Prix this year, you would remember the incident involving Perez, Magnussen and Hulkenberg which ended all three drivers' races. It was a dramatic crash as Perez lost all four corners of his car, the back end of Magnussen's car completely detached from the rest of the car and Hulkenberg was also unable to continue. There was debris strewn across the track, a red flag and an obliterated Red Bull racing car.

I wonder if Red Bull's insurance covered this crash.

Hang on, do Formula 1 teams even have car insurance? The answer is not that straightforward.

Formula 1 cars are never used on public roads so there is no legal requirement for these cars to be insured. However, as the sport pushes these vehicles to their absolute limits and damage to the chassis is common, one would assume that these vehicles are insured! Surprisingly, this is not the case in modern day Formula 1.

The probability of the car being damaged in a race is so high, it is not a question of will the insurer have to pay out, but rather when will the insurer pay out on the damage and at what cost. This is similar to drivers with a poor driving history struggling to find insurance cover. For this reason, most, if not all, insurance companies are reluctant to take on the risk and racing teams bear the responsibility for any damage that occurs to the car during a race.

Formula 1 racing teams are required to put together a budget for on-track incidents and mechanical failures using proceeds from corporate sponsors. Teams also set aside spare parts and machinery for future use should they be required. Racing teams are therefore, in a way, self-insuring.

The Monaco Grand Prix incident is estimated to have cost Red Bull up to USD 3 million to repair the car, denting its reserve for future races.

If these racing cars are not insured against damages, then what are they insured for, if anything?

Formula 1 teams do not have insurance on their cars for anything that happens on the racetrack; they are insured for events that are off track and outside of the team's control, including travel from one event to another, weather damage, theft and vandalism.

Racing teams also have liability cover to provide protection from legal action in the event that an incident occurs, and a spectator or crew member is injured or killed. The Formula 1 Group carries up to USD 100 million in liability insurance cover to protect drivers, crew members and spectators. This type of cover would have been necessary in the above scenario where pieces of the Red Bull car went flying around and hit against the barriers, potentially injuring spectators and/or crew members on the side of the track.

So, what do Formula 1 and the insurance industry have in common?

The weather affects us all in many ways and forms. It dictates how we dress, provides us with a green energy source, it cost Lando Norris a win in the 2021 Russian Grand Prix due to the spate of rain that hit the circuit in the last few laps, and it can destroy communities as experienced with the tornado in Tongaat, Kwa-Zulu Natal earlier this year. In a world of increasingly extreme, frequent and unusual weather, fast and accurate weather forecasts have never been more important.

Formula 1 teams are constantly informed about the weather, with minute-by-minute updates to optimise the car's performance. As do insurers, to inform underwriting decisions and prepare for adverse weather events that may result in additional claims.

If you watched the Canadian Grand Prix this year, you would have seen the vital role that the weather played in determining teams' strategies for the race. Race engineers provided drivers with precise and real-time information, such as how many minutes until the rain would start, which corner it will hit first, how intense it will be and how long it will last. Formula 1 cars are designed in such a way that the car's performance is influenced by air and track temperatures, and the impact of the wind and rain. Therefore, weather is one of the most challenging and key variable data sets that racing teams require. In order to optimise performance, racing teams must have reliable, accurate and constant weather data, as it can be the difference between victory or defeat.

On the insurance side, the weather can negatively impact profit margins for insurers. Adverse weather events such as floods, fires, hurricanes and tornados, cause extensive damage to property and the loss of lives, resulting in a large number of claims and financial loss for insurers and reinsurers alike.

As climate change accelerates the frequency, severity and unpredictability of adverse weather events, the ability to track, monitor and predict weather events is vital. The more insight insurers have on expected weather patterns, the more accurately one can prepare. As in Formula 1, insurers need fast and accurate weather data to make informed decisions. These decisions can be the difference in insurance companies and their policyholders suffering large losses, versus providing the best cover to sustain insurance operations and the livelihoods of policyholders.

Both Formula 1 racing teams and insurers would benefit from a crystal ball showing how the weather will materialise in the future, allowing adequate preparation for what is coming.

For insurers, early-warning systems are the closest mechanism of prediction to a Magic 8 ball. These early-warning systems make use of data, machine learning and advanced modelling techniques to identify potential adverse weather events. Insurers can use the data from these systems to inform their customers in advance to protect themselves and their property (as many insurers do by sending an SMS to clients, asking them to park their cars under cover to protect them from an incoming hailstorm).

By analysing real-time weather data, early-warning systems can forecast adverse weather conditions with a remarkable degree of accuracy. With the increasing impact of climate change on weather patterns, early warning systems have become an invaluable tool for insurance providers.

Formula 1 has a slightly different way of predicting future weather patterns. It has its own travelling weather service and instead of looking at the big picture (as insurers do), it focuses on the sky around the circuit, tracking storms and clouds on approach. This is known as micro-forecasting as used by an airport. However, Formula 1 has an added complication in that races are in new locations every week. Each week racing teams set up weather radars, which are assembled on-site, somewhere in the vicinity of the track. At Spa in Belgium the radar monitoring device is set up in a cow pasture, but in Brazil, it is placed on the 27th floor of a skyscraper.

What is clear from the above is the importance of understanding the timing and effects of weather – from how I plan my route, diary and destination arrival time if it rains, how it informs the strategy of a Formula 1 team's race, to the way in which it impacts the operations of an insurance company. We all make use of weather data and forecasts to make informed decisions in our everyday lives to achieve our desired outcomes, be it to keep warm, win a race or maximise revenue.

How has Formula 1 impacted the insurance industry?

Seven-time Formula 1 champion, Lewis Hamilton, is used to driving at over 320km/h on the circuit. He has, however, revealed that he is terrified of driving on normal roads. Imagine his trauma if he were to drive on our South African roads with the potholes, taxis and everything else they have to offer.

If a seven-time world champion is afraid of normal roads but experiences accidents from time-to-time on a circuit which he isn't afraid of, it begs the question of what it means to be a good driver. Especially on South African roads, which are amongst the most dangerous in the world, with almost 90% of accidents caused by bad driving[1].

This is a question that Discovery was also interested in, resulting in the introduction of the Vitality Drive programme. Discovery's driver behaviour programme rewards you for driving well, to encourage you to become a better driver and stay safe on the roads. This is in turn is opportunistic for Discovery in optimising its bottom line.

Discovery CEO, Adrian Gore, saw an opportunity to develop this programme. However, the primary question was: how do you monitor a person's driving behaviour? To bring Vitality Drive to life, Discovery enlisted the help of one of the most successful Formula 1 car designers of all time, Rory Byrne. Byrne is a South African engineer who designed Formula 1 race cars that have won 99 Grands Prix, seven Constructors' titles and seven Drivers' titles[2].

You might be thinking, did a Formula 1 car designer really help develop the Vitality Drive programme? Yes, Byrne used his experience and knowledge from Formula 1 racing to pioneer innovative initiatives in working towards the improvement of the South African insurance industry. He lent his knowledge and experience of vehicle telematics[3] from Formula 1 to refine the model that Discovery uses to make this programme possible.

Vitality Drive uses the latest vehicle telematics technology (the DQ-Track model) to collect information about your driving behaviour such as acceleration, braking, cornering, speeding, night-time driving, distance driven and cell phone usage whilst at the wheel. Discovery applies actuarial algorithms to the driving data to develop a scientific measure of driver behaviour. This provides an understanding of how well you drive and how you can improve. The programme incentivises Discovery's customers to drive better and make sure their vehicles are safe to drive. This improved driving behaviour benefits Discovery with fewer car accidents and claims to pay. Discovery can also use the data from this technology to inform premium pricing - the better someone's driving behaviour, the less likely they are to have an accident and thus a lower premium can be offered.

Similarly, in the modern era of Formula 1, race performance is all about telemetry. These cars contain various sensors which record as much data as possible, such as speed, suspension movements, directional forces, throttle, braking and more. This data is collected and analysed to understand even the most minute nuance of the race car. Engineers can use this information to understand why Lewis Hamilton is slower than George Russell based on how each driver handles their car.

Telematics revolutionised the sport and contributed to the exponential development of racing technology that we have seen throughout recent years. While Formula 1 teams use telematics to collect data to develop their racing strategy, telematics have enabled insurers such as Discovery to promote good driving on South African roads and lower the number of claims paid.

1 https://www.discovery.co.za/corporate/good-driving-discovery-drivers-improving-sa-roads.

2 The Constructors' Championship is one of two world championships contested in Formula 1. The Formula 1 team with the most championship points at the end of the season becomes the world champion.

3 Telematics is a system used to collect data along with a range of vehicle-specific information and store it in a database. It integrates both wireless telecommunications and information technology (informatics) to process, deliver actionable data and efficiently convey information over vast networks.

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What can the insurance industry learn from Formula 1?

McLaren's 2024 Formula 1 season has been a strong one, with the team currently in second place in the Constructor's Championship. After every race each team will debrief on its performance and propose changes to be made to improve the performance of the car, as well as the driver's strategy, for the next race. The next race is usually held in two weeks' time but can sometimes be as close as seven days' time. This requires rapid iteration and innovation. By the end of the season, cars are on average two seconds faster per lap.

In Formula 1, the innovative, adaptive and agile teams are the ones that go on to win races. Similarly, those insurers that have risen to the challenge of being more agile and innovative in the development of their strategies and the execution thereof, are the ones that will attract more customers, gain a competitive edge and respond to the evolving risk landscape more vigorously.

While insurers are not able to release new products to the market as fast as Formula 1 teams upgrade their cars, insurers can adopt the concept of enterprise-wide agility to respond at a faster pace to market forces, which will in return improve customer satisfaction, employee engagement and contribute to an effective risk management culture.

The shift in this direction for the industry has also been echoed by the Prudential Authority in the 2024 flavour of the year around 'Strategic business growth and resilience of the regulated financial institutions' business models in the current environment'.

Conclusion

Formula 1 and insurance are not as different as one would think. Both are highly regulated, built on innovation and play a vital role in people's lives. While there are also a number of divergent practices, there are interesting similarities and lessons learnt that can be applied to the insurance industry.

References

https://www.pitpass.com/73665/3-Things-You-Didnt-Know-About-Insurance-for-F1-Drivers

https://f1chronicle.com/auto-insurance-for-formula-1-drivers/

https://www.ccs.nl/en/blog/what-the-insurance-industry-can-learn-from-formula-1

https://www.discovery.co.za/corporate/good-driving-discovery-drivers-improving-sa-roads

https://flowracers.com/blog/do-f1-cars-have-insurance/

https://www.n2growth.com/f1-racing-and-the-insurance-and-finance-industry-a-comparison-of-trends-and-challenges/

https://www.insurancejournal.com/news/international/2000/09/25/10529.htm

https://cammsgroup.com/blog/formula-1-risk-management-q-and-a-with-mark-gallagher/

https://www.pitpass.com/72166/Formula-One-Car-Insurance

https://www.mckinsey.com/industries/healthcare/our-insights/how-discovery-keeps-innovating

https://www.redbull.com/int-en/how-weather-impacts-f1-racing

https://www.weathersa.co.za/home/insuranceindustry

https://www.insurancechat.co.za/2011-08/lessons-from-formula-1-to-benefit-car-insurance/

https://www.arrivealive.mobi/road-safety-and-the-science-of-good-driving

https://blog.weatherx.de/weather-data-and-insurance-the-power-of-early-warning-in-decision-making/

https://baronweather.com/weather-insights/weather-data-for-insurance-companies-everything-you-need-to-know

https://f1chronicle.com/what-impact-does-the-weather-have-on-f1/

https://www.cartrack.co.za/blog/what-is-vehicle-telematics-and-how-can-it-benefit-my-business