

THE BUSINESS *of* F1

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A diminutive figure, he is the giant of F1 who shows no sign of slowing down at the grand age of 84



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Such is the popularity of F1, national governments pay to stage a prestigious race



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F1’s financial engine has high-octane profits

Formula 1 team boss Sir Frank Williams once said: “For six-and-a-half days a week, F1 is a business, then on Sunday afternoons it becomes a sport.” It’s no exaggeration

◆ OVERVIEW
● CHRISTIAN SYLT

F1 actually refers to technical regulations issued by motor racing’s governing body the Fédération Internationale de l’Automobile (FIA). Cars complying with the regulations are eligible to compete in the F1 world championship and the commercial rights to the series are owned by one company, Jersey-based Delta Topco. It is also known as the F1 Group and it runs the sport which is seen on television by hundreds of millions of viewers every year.

Topco’s contract expires at the end of 2110 and it allows the company to commercially exploit any aspect of F1 from selling the rights to host and broadcast races, to signing up track-side advertisers.

The company’s biggest shareholder is the private equity firm CVC which has a 34.6 per cent stake in it. The second-largest shareholder is American asset management firm Waddell & Reed, which has 20.7 per cent, followed by the estate of bankrupt investment bank Lehman Brothers with 12.2 per cent. Bambino Holdings, the

family trust of F1’s chief executive Bernie Ecclestone, owns 8.4 per cent with 5.2 per cent in his hands and the remainder held by other banks, funds and management. There is a mighty financial engine beating at the heart of the business.

Topco’s revenue comes from six sources. Starting at the bottom, sales of vending and concession stands at tracks brought in \$33.9 million in 2013, the latest year for which accounts are available. Junior series GP2 made a total of \$34.1 million from selling cars and parts to its teams, while F1’s corporate hospitality outfit had revenue of \$87.8 million.

Next up is \$259 million from selling trackside advertising at each race and sponsorship of the series. This comes from companies, such as parcel delivery service DHL and luxury watch maker Rolex, which are both official F1 partners. The two remaining sources of F1’s revenue are the biggest – fees from hosting and broadcasting races. They each bring in roughly the same amount and in 2013 it came to a combined \$1.3 billion.

This gives Topco total revenue of \$1.7 billion and in 2013 it had underlying profits of \$530.7 million. F1 doesn’t own

The two biggest sources of F1’s revenue are fees from hosting and broadcasting races, which in 2013 brought in a combined \$1.3 billion

any tracks or teams so its costs are kept under tight control. The company only has around 340 staff and its biggest single cost is a payment of 63 per cent of its gross profits to the teams as prize money. Over the five years to 2013 the prize money payment accelerated by 46.6 per cent to \$797.5 million due to the boom in interest in F1. It is a staggering sum, but as it is a profit share, it mitigates risk for Topco. It isn’t the only trick under its bonnet.

Only 10 to 20 per cent of its contracts need to be renewed annually as they have an average length of around five years. To insulate against inflation, the key contracts also contain an escalator

clause which increases the amount paid by 10 per cent annually. This makes F1 very different to other sports companies and teams as its performance is not related to the events on track. It gives it a stable outlook and has driven Topco’s valuation up to \$12 billion, according to sources close the company. CVC is the biggest winner.

It acquired F1 in 2006 in a leveraged buyout funded with two loans – \$965.6 million from its investment Fund IV and \$1.1 billion from the Royal Bank of Scotland. Soon afterwards it got back its loan from a \$2.9-billion debt refinancing, but the biggest gains have come over the past three years.

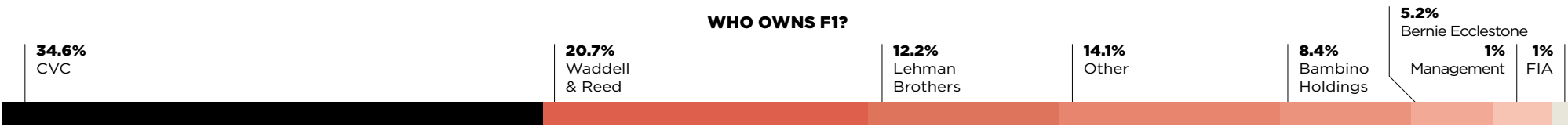
CVC got 2012 off to a bang when Waddell & Reed paid \$1.1 billion in January for a 13.9 per cent stake in Topco. There was more good news in May when Topco paid out an \$850-million dividend with \$420.8 million going to CVC in line with its shareholding which was 49.5 per cent at the time. More acquisitions came later in the month when US money manager BlackRock paid \$196 million for a 2.9 per cent stake, followed by the sale of 4.5 per cent

for \$300 million to Norges, the investment division of Norway’s central bank.

In June 2012, CVC announced that Waddell & Reed had invested a further \$500 million which took its stake to 20.9 per cent. Capping off a bumper year, in December 2012, Topco paid out another dividend which this time came to \$1.2 billion and was fuelled with income from another debt refinancing. CVC took home \$421.1 million in line with its shareholding which had fallen to 35.1 per cent following the stake sales.

Since then CVC has struck gold again as a \$332-million dividend was paid out in 2013 with CVC taking \$116.2 million as by then it had a 35 per cent stake in Topco. Last year the company’s debt was boosted by \$1 billion to \$3.5 billion with the proceeds fuelling a pay-out to shareholders. It gave CVC \$350 million, bringing its total cash haul from F1 to \$4.4 billion.

CVC’s current stake is worth around \$4.2 billion, giving it a total of \$8.6 billion of cash out and remaining value. For a business which makes its money from cars racing round tracks for two hours 20 times a year, it is an impressive result.



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Bernie Ecclestone tells why he's not giving up the wheel

He is synonymous with Formula 1 – millions of TV viewers around the world know him as the man on the grid, surrounded by celebrities, before the racing starts

◆ INTERVIEW

● CHRISTIAN SYLT

With his round glasses and Andy Warhol haircut, the diminutive figure of Bernie Ecclestone is easy to spot. He has been running Formula 1 since 1978 and almost four decades down the track remains in the thick of the action.

"Every day is a new challenge," he says in his usual softly spoken tone. "Something happens so you have to keep your eyes open. It's normal. Running a business is a challenge so that's how it is." Ecclestone has had plenty of experience.

The son of a trawlerman, he epitomises the tale of rags to riches. Despite turning 84 last year, he works nine to six, five days a week and says he has been this driven since his youth when he was a trader on London's famous Petticoat Lane market.

"I've always been a bit of a dealer," he says. "When I was a kid, I used to buy and sell fountain pens. I used to work on Petticoat Lane buying and selling." When Ecclestone was at school, during the war years, he saw an opportunity to make money from the rations of cakes on sale at the bakery. He bought as many as he could and took them to school in a case so that they could be sold for a profit at lunch time. He soon moved on to bigger things.

Leaving formal education at 16, he established one of the UK's biggest car dealerships while dabbling in driving. "I made my first million in the used-car business. The precise moment doesn't stick in my mind as it was just a few more zeroes in the bank account," he says without a flinch of his famous poker face.

In 1958 Ecclestone entered two F1 races, but gave up when he failed to qualify on both occasions. He had his eye on a grander prize. In 1972 he bought the Brabham team and, although his driver Nelson Piquet won the world championship twice, it wasn't sporting success that Ecclestone was after.

Owning Brabham gave him a voice at the table when the teams were negotiating a share of F1's spoils, but he soon found that it was not enough. At the time, F1 races ran as ad hoc, almost amateur, events. Each team made separate deals with each event promoter and television coverage was sporadic since races could be cancelled at the last moment if there were not enough cars to fill the grid.

Ecclestone seized the opportunity to change this. To benefit Brabham and F1 overall, in 1981 he convinced the teams to sign a contract, called the Concorde



Bernie Ecclestone (right) and International Automobile Association president Jean Todt (left) meet Zayed Rashed Al Zayani, director of the Bahrain International Circuit, on the grid before the Bahrain Grand Prix

Agreement, committing them to race at every grand prix. He took this contract to TV companies who could then guarantee coverage. Although the teams controlled F1's rights, Ecclestone's company Formula One Promotions and Administration (FOPA) negotiated the deals for

from the FIA. It handed him the keys to the billionaire's club.

Bambino Holdings, the Ecclestone family trust, has made an estimated \$4.1 billion from F1 and now owns 8.4 per cent with 5.2 per cent in Ecclestone's hands. The F1 board is controlled by the private

All the key commercial decisions in the sport are still under Ecclestone's control and this has enabled F1 to act like a speedster rather than a juggernaut run by committee. If he wants to develop a new market, he has the power to sign up a new race. To boost the bottom line

People talk about social media, and what it is going to do and what it isn't going to do. I haven't seen that it has done anything for Formula 1 at the moment

them and took a share of the proceeds. The remainder went to the teams and F1's governing body, the Fédération Internationale de l'Automobile (FIA).

By 1995 Ecclestone's salary of £58 million made him the world's highest-paid executive and at the end of the year his company bought the rights to F1

equity firm CVC, but Ecclestone still holds all the best cards.

Unlike many other sports, F1 doesn't have armies of decision-makers. There is no chief marketing officer, no chief operating officer and no deputy chief executive. "I'm not stepping down or getting a deputy," he says.

he signs up new sponsors.

He is skilled in steering discussions to subjects which suit him. Disarmingly, many of his responses begin with "I don't know", often resulting in the questioner offering their opinion instead. When meetings aren't going in his favour, he has been known to call one person outside for

a private discussion, making the person who is being called outside feel special, while tongues wag inside the meeting as to what is going on.

It seems to come naturally to Ecclestone, known as "Mr E" to his staff, but some is by design. F1 is one of the world's most secretive sports. Its key companies are located offshore, it doesn't have a PR department and, until recently, the telephone number of its London headquarters was ex-directory.

Two of his favourite characters are long gone: superstar drivers Ayrton Senna and James Hunt. "If you took everything into account, you would have to say that Senna was the most complete driver because he managed to keep with a winning team for longer than anybody. James, I suppose, was my favourite character."

Ecclestone comes from the classic entrepreneur mould so post-it notes are used instead of technology and he still swears by fax. E-mails come in the form of scanned fax page attachments. He doesn't have a bodyguard and doesn't live in a palatial home, but instead has a modestly sized penthouse flat on the top floor of F1's ten-storey headquarters opposite London's Hyde Park.

To an octogenarian the internet may seem like a fad, so F1 has adopted a prudent online strategy, avoiding diluting its exclusivity to broadcasters. In turn the business has benefited from buoyant TV rights fees and Ecclestone is reluctant to risk that by making a significant commitment to digital expansion.

"People talk about social media, and what it is going to do and what it isn't going to do. I haven't seen that it has done anything for Formula 1 at the moment," he says. "You will never be able to monitor it. Things come and go – fads."

Ecclestone's age gives him visibility shared by few others in business or sport. But the real reason he is still in the driving seat is he has steered \$8.6 billion in cash and remaining value to CVC from F1. It's little wonder that they want to stick around.

"The trouble is that they don't want to sell. That's the important thing," says Ecclestone. "The business of these people is buying and selling companies, and I suppose, if somebody comes wandering in with a big enough cheque book, they will sell. Who knows if I will be one of the buyers?" As ever with Ecclestone, it has an air of mystery because only he really knows the answer to the question.

ECCLESTONE
FACTFILE



\$3.9bn
estimated
fortune

Source: Forbes



13.6%
combined F1 holding by
the Ecclestone family

Source: Formula Money



\$360m
paid by Ecclestone in 2000
for the commercial rights to F1
until 2110

Source: BBC



Racing green

Formula 1 and the natural environment may not seem like obvious partners, but the gas-guzzling motorsport has been making ground towards a greener image

◆ GREEN TECHNOLOGY
● CAROLINE REID

At the start of the 2014 Formula 1 season, existing 2.4-litre 18,000rpm V8 engines were replaced with 1.6-litre 15,000rpm turbocharged V6s, featuring greatly enhanced recovery systems. They are the most efficient engines the sport has ever seen and mark the beginning of a new era for F1.

The switch is a gamble. The sport's governing body, the Fédération Internationale de l'Automobile (FIA), is betting on F1's future and its concerns for the environment must be balanced against the risks of transforming a 65-year-old winning formula.

A huge amount of money is also at stake. In 2013 Mercedes spent £133.9 million on its F1 engine division alone. The engine's material costs are believed to make up at most 10 per cent of this, with the remainder spent on development. With another three manufacturers – Ferrari, Renault and Honda – competing against Mercedes in 2015, it's a big-money business.

The changes align F1 more closely with the direction the motor industry is taking and reflect the increasing popularity of hybrid vehicles. The energy recovery devices are driven by heat from the exhaust, giving a 120kW boost for 33.3 seconds per lap. Fuel economy has also been improved. A 30 per cent increase in efficiency means the cars are limited to using 100kg (around 140 litres) of fuel per race. So, just as road-car makers constantly strive to produce

models that do more miles per gallon, F1 engineers are now chasing as much power as possible from a given amount of fuel.

The introduction of the new engines has not been without controversy and there have been three key areas of contention. Firstly, limits on engine development, intended to cut costs, have led to the dominance of Mercedes which won the 2014 F1 team and driver's titles.

At a time when sport on TV is facing increasing pressure from new media as a source of entertainment, F1 cannot afford viewers to switch off.

Another problem is the new units lack the distinctive high-pitched scream of their predecessors. F1's distinctive sound is one of its unique selling points and circuits have expressed concern that fans maybe turning away from a sport which is breaking with one of its defining traditions.

The third problem is cost. Although the V6 engines are smaller and more environmentally friendly, they cost around twice as much at an estimated £20 million annually. This extra cost fuelled the collapse of the Caterham and Marussia teams last year.

F1's chief executive Bernie Ecclestone has been one of the most vocal critics of the new engines and recently proposed a return to V8s which was rejected by the teams. His verdict on the new engines is clear. "Good power unit and a wonderful bit of engineering, but not designed for Formula 1," he says. It is an issue which will continue to divide the sport over the coming season.

Changes align F1 more closely with the direction the motor industry is taking and reflect the increasing popularity of hybrid vehicles



CHAMPAGNE MOMENTS TO SAVOUR

It's synonymous with victory and tastes great too



A joyous memory for Formula 1 fans. Lewis Hamilton's first grand prix win, in Canada 2007. It was only his sixth race. He qualified in pole position. Blitzed the start, squeezing Fernando Alonso wide into the grass at the first corner. And then shimmered away. Even a safety car restart mid-race couldn't hold him back. At 22, he was the youngest Formula 1 winner.

On the victory podium Hamilton could barely stay still. He did his best to stand to attention during God Save The Queen, but kept shaking his head in disbelief. A quick photograph with his trophy and then he explodes.

He leaps off the podium, whisking up the Jeroboam of Mumm champagne and blasts his team boss Martin Whitmarsh. He then pumps champagne into his own face, turns to soak second-place Nick Heidfeld, who returns the favour. Glugs hard from the bottle. And then walks up to the rail. Holds the Mumm aloft. Taps it a few times and then points at the massed ranks of the McLaren team and his father Anthony.

"This is for you" – a payback for all the support. The faith. The ten-year old boy who met Ron Dennis and told him – "I want to race for you one day... I want to race for McLaren" – had delivered. This was the victory he'd spent his life working for.

Fans love the podium scene. It was, of course, created and refined by the racers themselves. In 1950 in the heart of champagne country, Reims hosted its first French Grand Prix. The winner received a bottle. The tradition stuck.

At the 1966 Le Mans 24-hour race, Jo Siffert climbed on to the podium and received the winner's bottle. The cork unexpectedly popped out, blowing a fine spray over spectators. They loved it. The following year at Le Mans, Dan Guernsey

gave Siffert's gesture a deliberate re-run. The champagne moment has been an essential part of the victory ever since.

Since 2000, Formula 1 has exclusively relied on Mumm for the moment. This year more than two billion people will see the famous Mumm red sash on the podium. The connection between the sport and the champagne house is intuitive to people with an understanding of both.

The connection between the sport and the champagne house is intuitive to people with an understanding of both

Chief executive Philippe Guettat explains: "Mumm's long-standing partnership with F1 was founded on shared values of performance, passion and a pioneering spirit, and continues to be driven by a mutual dedication to innovation and a quest for excellence."

"This partnership enables Mumm to widen its global reach and visibility, talk-

ing directly to consumers and Formula 1 fans worldwide. As the official champagne sponsor, we are extremely proud to have witnessed the growth of F1 and Mumm in tandem, and to continue to play a central role in the iconic moment of victory on the podium around the world."

The link is proving its value to both Formula 1 and to Mumm. "It helps us position Mumm as a global icon of victory in a stylish and glamorous way," says Louis De Fautereau, Mumm's brand director. "Formula 1 has been an amazing driver of awareness for the brand over 15 years."

The proof? Sales are up 14 per cent in the last six months. Australia, where Formula 1 is a growing force, is booming. A tie-in with musician David Guetta has been a huge hit. Guetta's *Dangerous*, depicting a grand prix with him as a driver, has been viewed online more than 100 million times. The video ends with a podium scene, with Guetta spraying lashings of Mumm. Naturally. How else do you celebrate victory?



SILICON VALLEY MEETS SILVERSTONE: ENSURING THE SECURITY OF YOUR WINNING FORMULA

Ensuring the security of sensitive data can be the split-second difference between winning and losing on the Formula 1 track



Formula 1 has long boasted the fastest road-course automobiles in the world and, with that distinction, comes a highly competitive atmosphere between rival manufacturers. Race day is an intense mixture of anxiety, hard work, planning and precision that can all go awry with the smallest degree of error.

But as new technology and designs arise, the only kind of speed that intimidates F1 manufacturers comes from the innovation cycle. Designs for the next generation of cutting-edge F1 racers are locked down more than the Crown Jewels, a difficult task considering the collaborative work environments and 24/7 global design cycle that has been adopted today. Security is pivotal, as even the best teams and drivers can face defeat if their winning formula is compromised.

In order to have a sense of security, teams need full visibility into what end-points and information employees are using and accessing in their workflow. Speed is key in all aspects of the F1 industry, but protection of intellectual property is now also taking centre stage.

The 2007 F1 alleged espionage controversy, known as Spygate, was a sore spot for the sport and, to avoid reliving such incidents, F1 teams across the board have taken steps to protect their invaluable data on and off the track.

Teams have set up shops that concentrate on secrecy. Projects are isolated and engineers cordoned off to work in total privacy. External hackers naturally pose a danger but, if history is any indicator, teams must also rule out a more subtle liability: insider threats. It's much easier for a well-connected member of staff to pass on sensitive information than many organisations realise.

In light of this, like all F1 teams, Williams is now protecting against security threats by turning to security companies such as Dtex Systems, a company that provides a comprehensive view across their entire network. F1 races can be won or lost on details, including materials used, fuelling times and chassis build, and not having control over these details could mean the end to a potentially successful season.

“Our software provides a simple way for companies to monitor and react to potential security breaches by employees the moment the threat emerges

HOW TO DEFEND

The idea of staff posing a threat isn't a pleasant one, but businesses need to take it seriously. A recent study by Vormetric revealed 89 per cent of companies believe they are at risk from an insider threat and 55 per cent say their biggest threat is privileged users. One in three felt extremely vulnerable.

Counteracting the danger is not easy. Staff can be locked out of sensitive zones, but this is no guarantee. When Edward Snowden breached security at the US National Security Agency, he used two dozen borrowed passwords to gain access to files beyond his official authorisation. Besides, staff may be legitimately working on the data.

The Dtex solution allows employees to work unimpeded, but sound the alarm when anything suspicious is noted within the network. It works by observing user activity through micro-agents installed at the end-points, while refraining from gathering personal data from end-users. Through Dtex, Williams can keep an eye on the programs being used and the data being accessed and transferred across the company, and do so in a way that adheres to the strictest privacy laws. Algorithms then analyse actions for potentially threatening or risky behaviour.

For example, if an employee does something out of the ordinary, such as transferring design data to a removable USB drive, copying folders or straying into areas of the IT system where they do not usually venture, Dtex will flag the incident for review. The algorithms are highly sophisticated; they create a baseline of user behaviour and can report on sudden changes in behaviour as well as more subtle behaviour changes over time, such as a user deciding to leave the organisation.

The Dtex package comes pre-loaded with more than 330 behavioural events that can trigger an alert. Dtex managing director for Europe, the Middle East and Africa, Michael Cloete, says: “Our software provides a simple way for companies to monitor and react to potential breaches by employees the moment the threat emerges. Unlike traditional methods, our algorithms provide a way to detect irregular events, such as staff accessing rare data or frequently returning to highly sensitive materials.” Tracking user behaviour has a string of additional benefits.

Since Dtex compiles statistics on program usage, the solution can be used to determine whether software licences are being used to the full. One customer saved hundreds of thousands of pounds by using Dtex to audit software usage, resulting in a large number of redundant licences being terminated.

The ability to monitor and understand employee behaviour better has an obvi-

ous application for the financial services industry, where firms are feeling increasing pressure to spot unethical behaviour before it becomes a serious concern. Dtex gives compliance officers a powerful way to monitor the behaviour of thousands of employees at once, using an intuitive interface.

AGE OF ALGORITHMS

The technology at work is surprisingly mature. Dtex Systems was founded in 2000 to develop security for the Australian government. Now headquartered in San Jose, California, the firm raised \$15 million to cope with rising demand for its services. Mr Cloete explains: “We are helping global firms understand the need to take action against insider threats and recognise that algorithm-based systems are much more accurate in defending against behaviours which are extremely hard to detect.”

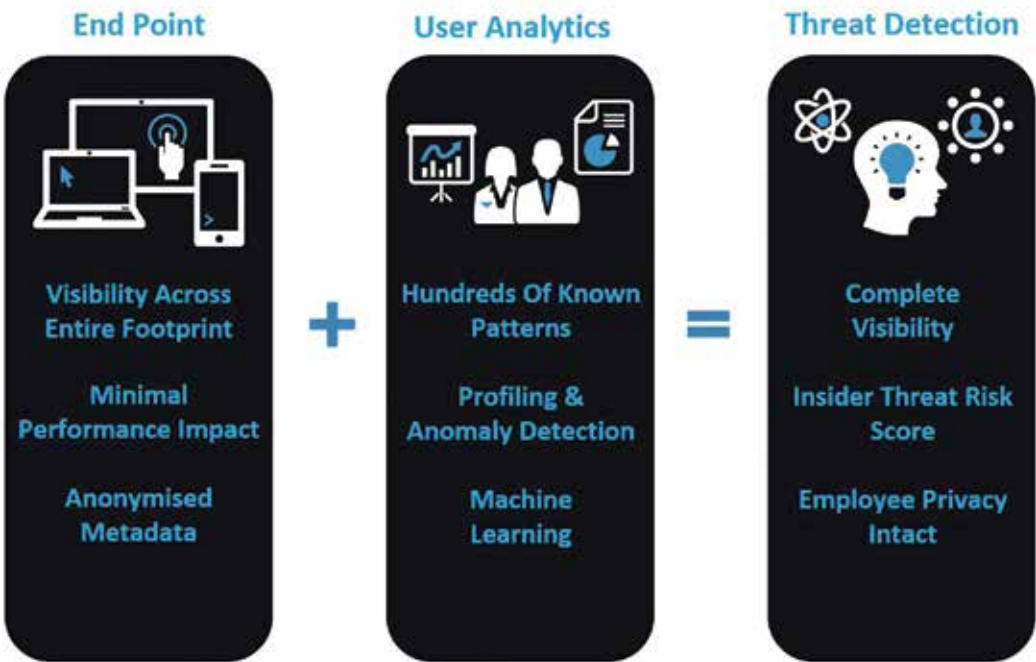
In Europe, Dtex has adapted to the rigorous EU privacy compliance laws. Since Dtex anonymises user data, IT security will see suspicious behaviour tied to “User 17” rather than John Smith. Only when a breach is believed to have occurred can a request for identification be processed. The solution only collects metadata – no keystroke logging or screenshots – to add an additional layer of user privacy.

Ease of implementation has been key to adoption. Dtex is quick to deploy and is so lightweight that there is no noticeable impact on the user end-point and network. Threats can be assessed using a chart-based graphical user interface, which IT administrators can learn quickly without any prior technical knowledge.

“Companies need to take insider threats seriously,” says Mr Cloete. “With the right tools they can be sure they are protected against the most sophisticated dangers.”

For Williams, the adoption of Dtex means it can work with partners knowing it is doing all it can to safeguard data.

Want to learn more about understanding employee behaviour and mitigate the insider threat?
Visit dtexsystems.com



Revving up against Formula 1 legends

The fortunes of F1 on the track may be best illustrated by the story of established racers Williams and newcomers Haas who are taking on the legends of motorsport

◆ WILLIAMS
● CHRISTIAN SYLT AND KATE HEWITT

Twenty years ago, British racers Williams were the Formula 1 team to beat, having lifted titles with superstar drivers such as Nigel Mansell and Damon Hill. Since then the team's performance has sharply reversed, but a series of smart decisions has boosted Williams' chances. So much so that F1 chief executive Bernie Ecclestone says they are now the "biggest challenger" to last year's champions Mercedes. It is no exaggeration.

Williams was founded in 1977 by team principal Sir Frank Williams and former engineering director Patrick Head. The team went on to win nine championships, making them the second most successful outfit in F1, but Williams' title-winning days are little more than a distant memory now.

Williams last won the championship in 1997 and just a decade later had slipped to fourth in the standings. The worst was yet to come. The team's results hit a record low in 2011 when they finished in ninth place with just five points. Two years later Williams did no better, but took four decisive steps to turn its performance around.

The first came in March when Sir Frank's daughter Claire was promoted from marketing director into the role of deputy team principal. She knows the team from the ground up and soon put this knowledge to good use. Three months later she was joined on the board by Williams' new chief execu-

Bernie Ecclestone says Williams are now the biggest challenger to last year's champions Mercedes

tive Mike O'Driscoll, the skilled former managing director of luxury car manufacturer Jaguar.

To boost Williams' chances on track, their existing young driver Valtteri Bottas was paired with the more experienced Felipe Massa, who came from Ferrari where he missed out on the championship by just one point in 2008. The Brazilian remained with Ferrari for a further five years, making the podium 36 times and winning 11 races.

O'Driscoll also made a significant appointment to Williams' engineering department in July 2013 when Pat Symonds, who has worked on four championship-winning F1 cars, became the team's chief technical officer.

It was too late for Symonds to have an impact on the 2013 car, so he instead focused his attention on the following year. This offered a greater opportunity for improvement due to the introduction of new regulations which replaced F1's 2.4-litre V8 engines with 1.6-litre V6 turbos. It levelled the playing field as none of the teams had experience of the new engines. Williams chose to get theirs from Mercedes and it turned out to be a shrewd move.

Williams finished 2014 in third place with Bottas and Massa scoring 320 points. At the Austrian Grand Prix, they gave Williams its first front-row lock-out in qualifying since 2003 and improved on this at the season-ender in Abu Dhabi when the duo delivered the team's first double podium since 2005. Massa was on the podium three times last year, while Bottas scored six and finished in fourth place in the drivers' champi-



onship. All that eluded the team was a victory, but that may not be far off.

"The improvement is a combination of four main things," says Claire Williams. "Obviously the technical personnel we recruited have been a key driver in that transition, all led by Pat. There was some great talent in the business, but I think we were missing that kind of senior management team across the engineering group as a whole."

"So bringing in those people and obviously making the change to the Mercedes power unit has been a contributing factor as has bringing in Felipe

Massa. He is a guy with huge experience in F1 that has helped drive development of the car and also galvanised the team. It sent a very clear message out to the team that we meant business by signing a driver of his calibre."

At Ferrari, Massa worked alongside some of F1's most famous names including Michael Schumacher, Fernando Alonso and Kimi Räikkönen. It complements Bottas who burst on to the racing scene in 2008 when he won 12 out of the 14 races he competed in junior series Formula Renault 2.0 NEC. He later moved up to GP3 where he won

four races before coming to the attention of Williams.

Their success has had a noticeable effect on Williams' finances as the team has secured more new sponsorship than any other F1 team over the past year. Its tally of new partners comes to an estimated \$54.5 million and includes Brazilian oil company Petrobras, Unilever's deodorant brand Rexona and now British Telecom. The new signings are crowned by drinks brand Martini which became the team's title sponsor in 2014. Williams says it was the final factor in the team's resurgence.



◆ HAAS
● CHRISTIAN SYLT

There is a saying in Formula 1 that the quickest way to become a millionaire is to start in the sport as a billionaire. Future F1 team owner Gene Haas is doing all he can to stop that from happening.

Haas is the founder of machine tools business Haas Automation and will next year launch an F1 team which he hopes will drive marketing and double his sales to \$2 billion annually. His strategy so far has been highly prudent.

F1's governing body the Fédération Internationale de l'Automobile accepted Haas' bid in April 2014, but he resisted the temptation to accelerate plans and debut this year. It was a wise move as the teams are still getting used to new engine regulations which were introduced last year and shook up the running order.

Likewise, Haas didn't put in offers to buy either Caterham or Marussia, the two teams that went into administration last year. His reasoning was their businesses cannot be flawless if they have hit the wall, so it is better to start afresh. Instead, he saved money by snapping up the teams' assets, including Marussia's factory, when they went up for auction.

Haas is even on track to make savings from a new regulation which comes into force this year and allows teams to buy more parts than before from established F1 marques. This reduces start-up costs and it has already proven to be a successful template for the F1 newcomers. Haas co-owns the Stewart-Haas Racing team in F1's American rival NASCAR, and buys the engine and chassis from other manufacturers.

"Our perspective on it is that we have only just got on this train and are trying to figure out what everybody is doing. We certainly don't want to spend a huge

amount of money, but at the same time it is kind of out of our control," he says.

One of his biggest single expenses so far has been the payment of an estimated €25 million to Ferrari for his team's engines next year. It will be known as Haas Formula and will be run by Guenther Steiner, a former technical director of four-time F1 champions Red Bull Racing. The billion-dollar question is whether the F1 venture will be able to boost the sales of Haas Automation – and timing could be crucial.

F1 is in the middle of global expansion which saw a race in Russia added to the calendar last year followed by one in Mexico this November with Azerbaijan joining in 2016. "It highlights the point of view that this is really an international sport," says Haas. "You have all these countries that want Formula 1 to show up and think highly enough of it that they would like to have a Formula 1 race in their city. I like that."

How much does it cost to ge

Financing Formula 1 involves eye-watering cash sums spent on high-tech cars designed to take pole position and a position on the

◆ COST OF F1

● CAROLINE REID

Formula 1 teams are driven by annual budgets of hundreds of millions of pounds, but despite the blockbuster figures they are far from typical businesses. For the competing F1 teams, profit is an afterthought and often every available penny is spent in pursuit of victory.

The underlying philosophy is that it is better to win on the track and make no profit rather than make money and finish lower down the standings. This is not solely a sporting concern. Win the championship, and sponsorship and prize money will accelerate.

In 2013, the teams which filed publicly available financial statements recorded average revenues of £124.4 million, with Red Bull the highest at £258.2 million.

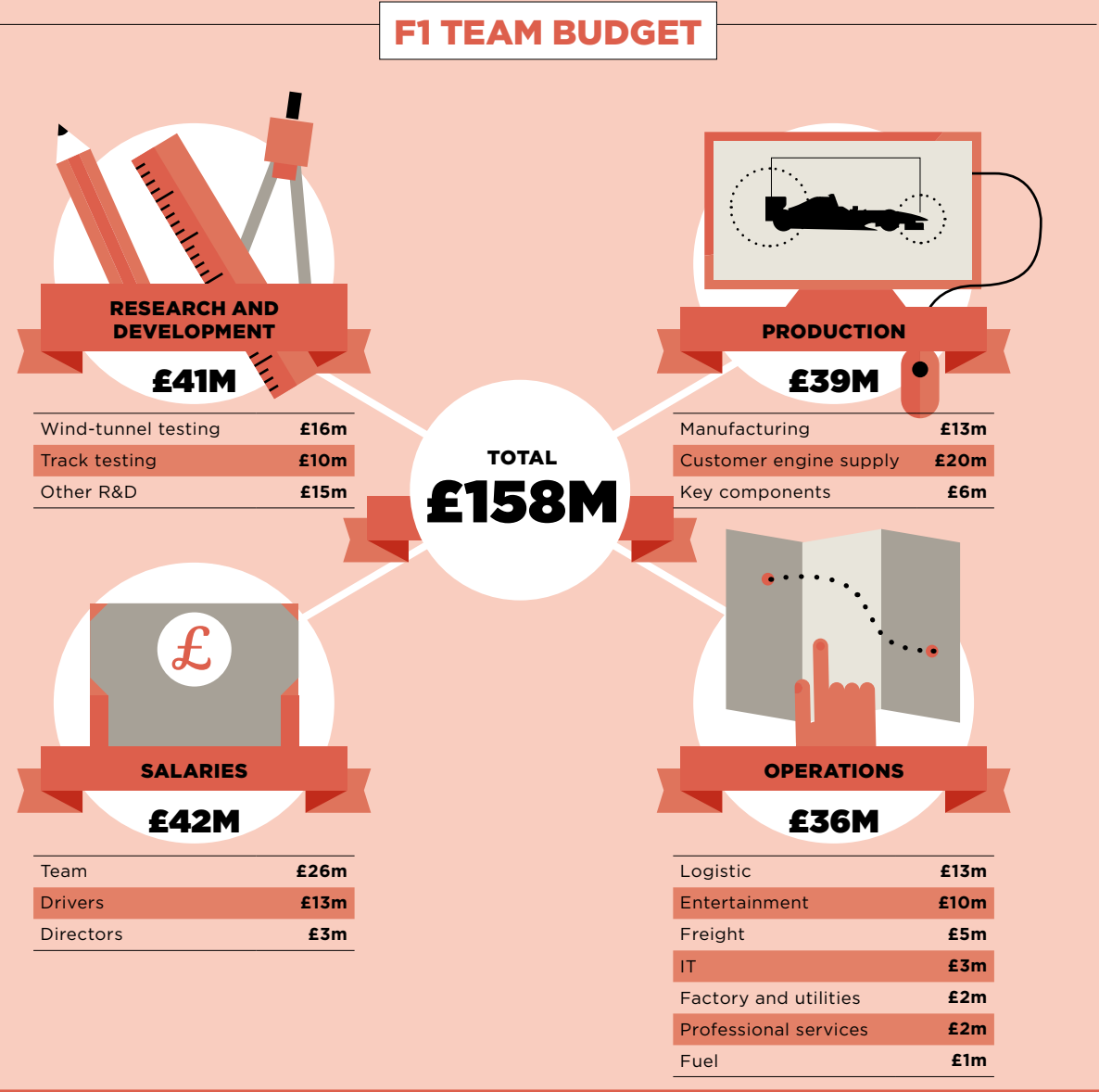
This revenue generally comes from three sources which are fuelled by F1's huge television audience of just over 425 million viewers. The first key revenue source is sponsorship. Generally speaking, the rear wing, sides of the air intake box and the sides of the car itself are prime logo positions, and a sponsorship deal with a top team involving any one of these locations is likely to cost around £15 million. At the lower end of the spectrum, small logos are often found along the lowest edge of the chassis, but even these are sold for around £1 million with a high-ranking team.

The teams' marketing department typically secures sponsorship, but in some cases it is handed to them on a plate by a driver. Lower and even mid-ranking teams often take drivers purely on the understanding that companies they have connections with will provide sponsorship. These are known as pay drivers and, when they lack driving talent, the money they bring to the team can make up for it since cash can be used to improve the car itself.

Data from F1 trade guide *Formula Money* shows that around 39 per cent of team revenue comes from sponsorship. Another major source of revenue is the teams' profit-share with F1. The series paid them £483.6 million in prize money in 2013, according to F1's latest financial statements, and this source comprises around 34 per cent of team revenue. The third major source is payments from team owners at 20 per cent.

In this climate it may be difficult to see why anyone would want to own an F1 team. However, owners can get a financial return in the long run by selling a successful team for more than they paid for it. Additionally, if the owner of a team is a company which sells products, such as Mercedes, Ferrari or Red Bull, they benefit from television exposure of their logos on the cars.

According to *Formula Money*, in each of the four consecutive years between 2010 and 2013 that Red Bull Racing won the championship, parent brand Red Bull was the best exposed brand in F1. Its advertising value equivalent – the price it would have to pay to buy a similar



amount of on-screen exposure – totalled £836.5 million, averaging £209.1 million a year. It goes some of the way to justify the high-speed spending in the sport.

A typical mid-ranking team can expect to spend around £158 million a season in four key areas. This covers £36 million in operational spending, £42 million on salaries, including the drivers, £41 million on research and development, and £39 million on production and manufacturing costs.

Figures from the Caterham team show that even a car at the back of the grid is worth approximately £1.8 million in material costs and that's without an engine. The cost of the chassis alone is £1 million, followed by the floor at around £300,000. A single suspension strut can cost upwards of £10,000.

The cost is not just driven by the parts being made from high-tech carbon fibre, but also because of the tight window for manufacturing them. F1 teams rely on what are known as rapid prototype machines which cut carbon-fibre parts with a laser from computer designs. This allows new parts to be designed and manufactured over the few days between races in a bid to boost performance.

Even the driver's seat is specially designed and each is anatomically crafted to suit the contours of the driver's body. Several seat fittings can be required just to construct it.

Incorporating on-board computing power presents its own challenges and increases costs. To make sure that the bodywork is as slender and aerodynamic as possible, all the wiring, electronics and cooling systems must be packed in a tight space around the engine. This is perhaps more difficult than it sounds when there's 1.25km of wiring and up to 150 on-board sensors to be installed. Tight fit isn't the only hurdle to overcome.

Having an electronic control box just millimetres away from a white-hot exhaust requires military-standard connectors in the car's wiring system. Preserving the cables is particularly important since they are transmitting so much information.

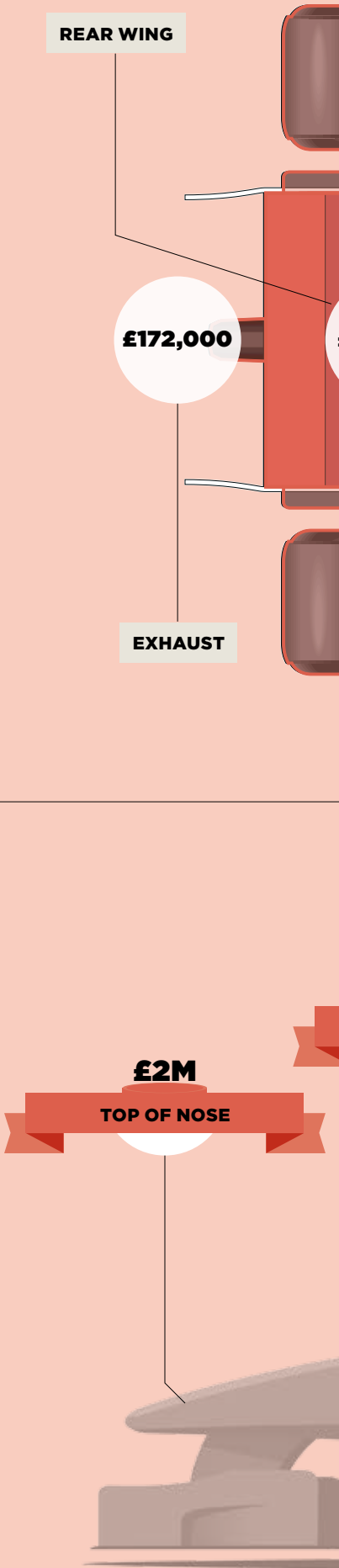
Some of the sensors give readings up to 1,000 times a second and data is sent wirelessly from the car to the garage. This gives around 1.5 billion samples

of data from each race and this is monitored in the garage while the car is on the track, then analysed afterwards by state-of-the-art supercomputers back at the teams' factories.

The car's technology nerve-centre is the steering wheel and it is one of the few reusable components. It wouldn't look out of place inside a fighter plane since, except for the throttle and brake pedals, few F1 cars have any controls other than those on the face of the wheel.

In its centre is a multi-function LCD screen, which is surrounded by brightly coloured buttons controlling more than 40 functions from clutch, radio and rev limiter to changing the car's front-to-rear brake bias, and even its fuel mixture. There is also a "boost button" on the wheel to activate energy recovery and another for the drag reduction system which enables the rear wing to be remotely moved to improve overtaking. It all adds up and the steering wheel alone costs a cool £50,000.

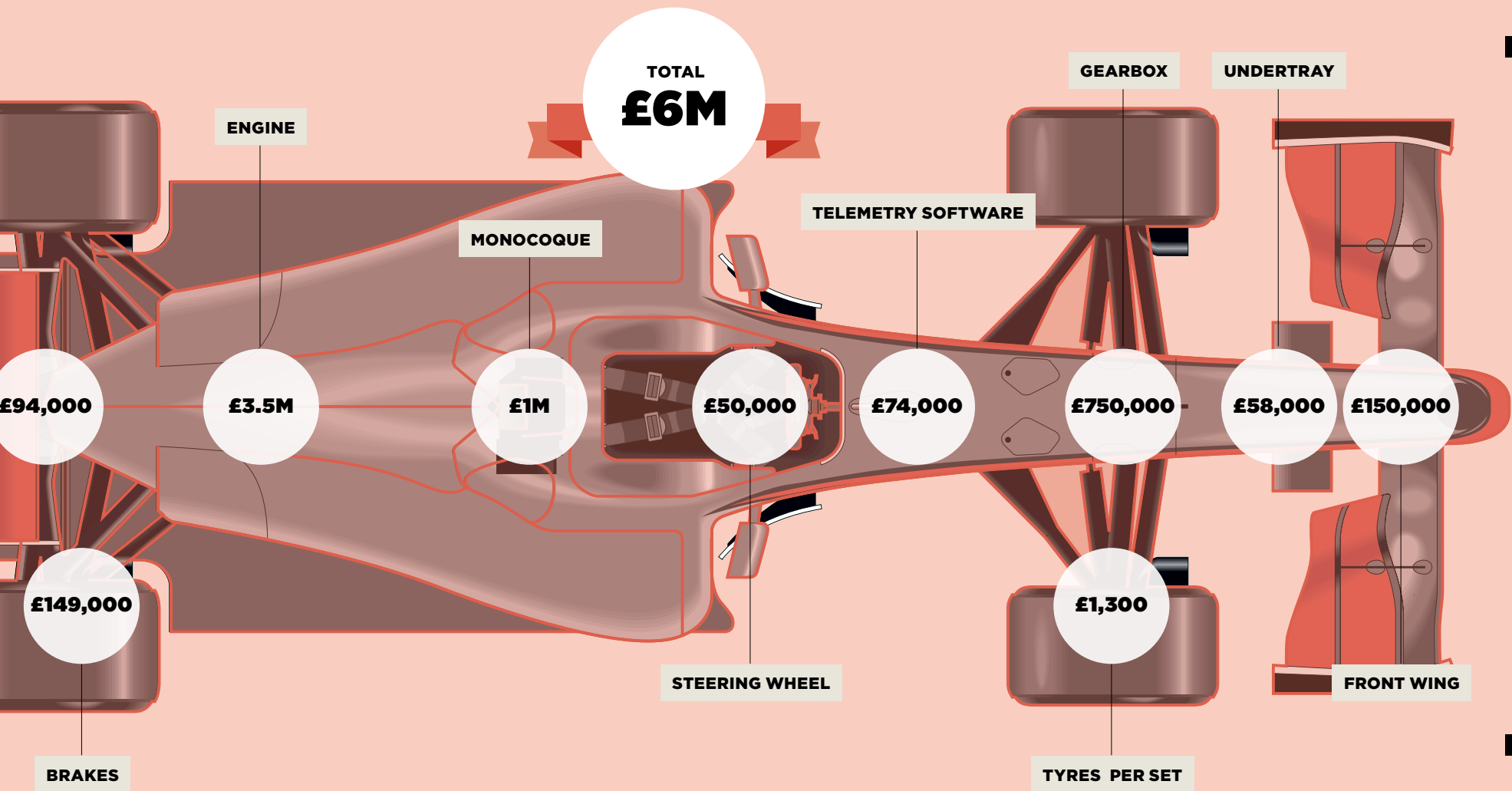
It's perhaps no surprise that the drivers in charge of these money machines are so well paid and no expense is spared when it comes to the tools of their trade. A fireproof suit costs around £500 while a driver's helmet starts at around £5,000. The irony is that, compared with spending on the car, this seems like petty cash.



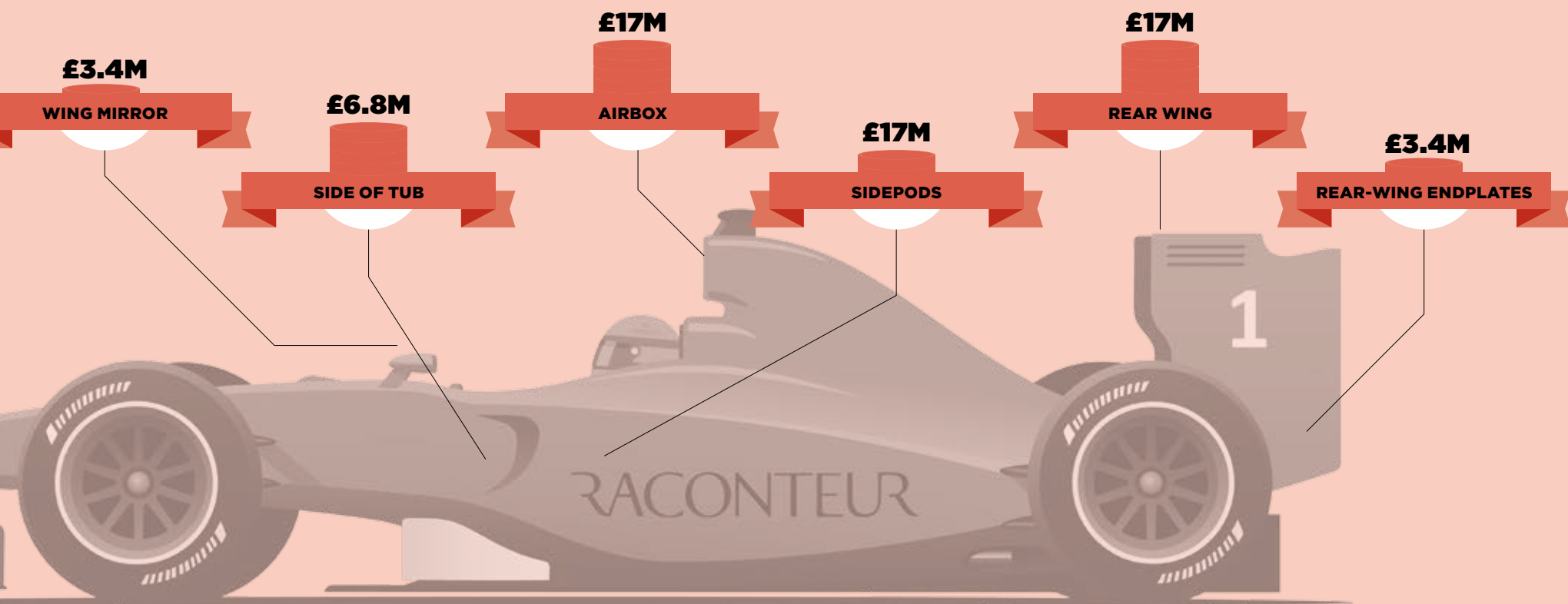
Get an F1 car on track?

the winner's podium

COMPONENT COST OF FORMULA ONE CARS IN 2015 SEASON



TEAM SPONSORSHIP COSTS PER AREA OF CAR





Changing of the guard as women step up?

It may be just the beginning, but gender roles are changing as more women are taking part in motorsport

◆ **WOMEN IN MOTORSPORT**
● **LUKE SMITH**

It would be hard to argue that Formula 1 is not a male-dominated sport. In its 65-year history, 854 drivers have taken part in a grand-prix weekend and just six have been women. Only two of them have qualified and raced in a grand prix. The majority of team owners and personnel are male and the sport's core fan-base comprises more men than women. F1 has traditionally been "a boy thing".

Nevertheless, this is an attitude that is being frequently challenged in the modern era. In the past decade, there has been an influx of women into the paddock: journalists, engineers, general staff and even team principals. Maybe it's no longer a man's world.

One of the highest-profile women in F1 is Susie Wolff (picture), test driver for the Williams team. At last year's British Grand Prix she became the first woman in 22 years to take part in an F1 weekend when she drove in a practice session.

It was an important step, but Wolff sees herself as just one part of the female influx into F1. "We're getting more and more opportunities," she says. "There are more and more women working in the paddock which is giving others inspiration. I think the barriers are down now. People and women especially don't see F1 as being such a male-dominated world."

Wolff is not alone. Williams' deputy team principal is Claire Williams. At Sauber, Monisha Kaltenborn is the team principal, while Lotus has recently appointed Spain's Carmen Jorda as its development driver.

As Wolff explains, the barriers to entry haven't come down as a result of F1 saying there must be more women in the sport. "It's changing in an organic way and that's what pleases me, because no one is standing behind saying 'you need more women'." She adds: "These women are not here because someone decided we need more women in Formula 1. They're here because they're the best people for the job."

In Wolff's eyes, the rise in women working in F1 is also a reflection of changes in social attitudes. "I think the world we're living in is changing," she says. "Women are getting more and more opportunities, and that's why more and more women are in the paddock. For the next generation, it's completely normal to think that women should go out on the racetrack and do a good job."

She upheld this ideal for Williams in 2014. Her practice run at the British Grand Prix was cut short due to an engine failure, but her second outing in Germany two weeks later was very impressive. Her fastest lap was just 0.2 seconds slower than that of regular Williams driver, Felipe Massa, and

seven others finished behind her in the final timesheets.

"Gender in that situation doesn't mean anything," says Wolff. "It's what you bring to the table that is more important." This performance was a bold statement to those who believe women cannot compete in F1.

There are more and more women working in the paddock which is giving others inspiration

Thanks to the likes of Wolff, young girls are now growing up with aspirations to race in F1. The sport is even becoming technically more suited to female drivers. "The way the sport is developing, it's in our favour as women," says Wolff. "The drivers can't be big and have bulk because the cockpit is too tight. Weight is a key issue."

This is just the start for women in F1, though. "If there are 500 boys trying to get to F1 and only five girls, the chances are you're going to have more boys and fewer girls," she says. If the percentage of girls aiming towards a career in the sport increases, so will the number of women who actually make it.

Without role models such as Wolff succeeding in the traditional male environment, real change would be impossible. "I think for us it's just about having this positive voice that says this isn't just a man's world," she says. "We're here, and it's about building that network where actually women see that it's possible and do-able. I already get really positive messages from little girls dressed in race suits saying they're going to school as Susie Wolff."

Clearly, her achievements are inspiring future generations and ensuring F1 will continue to welcome even greater numbers of women into the paddock for years to come.

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Brands that defined F1

Since 1968, when commercial sponsorship was given the green light in Formula 1, brands have paid seemingly huge sums to emblazon their product logos on cars

◆ F1 BRANDS
● CAROLINE REID

The Formula 1 world championship has come a long way since its first grand prix at Silverstone on May 13, 1950. The early years saw the likes of Juan Manuel Fangio and Stirling Moss lined up alongside Prince Bira of Siam, Count Carel Godin de Beaufort and Alfonso, Marquis de Portago.

Cars competed in their national racing colours, and the closest thing to sponsorship came from tyre and oil companies who supplied their products in exchange for a small logo on the drivers' overalls.

Initially, overt sponsorship was banned. However, in 1968, BP and

Shell withdrew from F1 and Firestone decided to charge for tyres. To boost teams' income, sponsorship was permitted for the first time. It was the most significant move in the commercial history of the sport.

Colin Chapman, the shrewd owner of Team Lotus, swiftly signed a £85,000-a-year deal with Imperial Tobacco. To the shock of many, when Chapman's cars took to the track for the Monaco Grand Prix their traditional British racing green livery had been replaced by paintwork resembling Gold Leaf cigarette packets.

There was no turning back the tide. Today, more than 300 brands sponsor F1, spending close to £1 billion annually.

1985: Nacional

Most driver sponsors get little visibility, but Brazilian bank Nacional was different. For nine seasons the brand was synonymous with the three-times world champion Ayrton Senna, appearing on his distinctive yellow helmet and blue cap.



2014: The Windmill Inn

Late-2014 saw two teams, Caterham and Marussia, slip into administration. Caterham crowdfunded to get to the season finale which meant that small enterprises, such as The Windmill Inn in West Sussex, occupied spots previously reserved for the likes of GE and Dell.



2013: Rolex

Rolex became a sponsor of F1 in 2013. The sport's boss Bernie Ecclestone used the sponsorship to justify F1's lack of focus on youth and social media: "Young kids will see the Rolex brand, but are they going to go and buy one? I'd rather get to the 70-year-old guy who's got plenty of cash."

1986: Benetton

The idea of a clothing manufacturer owning an F1 team seemed surreal in 1986, but Benetton showed it was serious, going on to win two driver's and one constructors' title. Its success paved the way for the likes of Red Bull.



1980: TAG

The TAG Group sponsored championship-winning Williams in 1980, before buying a stake in McLaren in 1983. It purchased Heuer watches two years later. The resulting sponsorship of McLaren by TAG Heuer is one of the longest in the sport at 30 seasons.



1950

1950: Shell

In the early days of the sport, the only backers were those directly involved in the competition, such as tyre and oil suppliers. Shell partnered with Ferrari and oil companies remain one of F1's biggest sources of funding.

1960

1968: Gold Leaf

Commercial sponsorship was banned in F1 until early-1968. Lotus's Colin Chapman immediately dropped his British racing green livery in favour of Gold Leaf cigarette branding. F1 would never be the same again.

1970

1973: Marlboro

Marlboro joined the influx of tobacco brands into F1 in 1973, beginning its famous deal with McLaren the following year. It became the main partner of Ferrari in 1996 and is the only tobacco brand still associated with the sport. Controversially, Marlboro displayed its "barcodes" on cars.

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1991: 7UP

It may have only existed for a single season, but the 7UP Jordan is consistently voted one of the best F1 liveries of all time. It was also the car that carried Michael Schumacher on his brief but brilliant F1 debut.

2000

1997: Bitten & Hisses

As tobacco advertising rules tightened, F1 teams were forced to come up with innovative replacement liveries. The most famous of these was Jordan's snake-design Bitten & Hisses swap for Benson & Hedges. By 2005, a European Union ban put paid to most tobacco advertising in F1.

2007: ING

ING was one of several big-spending financial brands that entered F1 in the mid-2000s. It looked like they would become a major force in the sport, but it all ended with the credit crunch and the Dutch multinational was gone in under three years.

2010

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Images: Getty Images

Power behind F1’s winning global drive

Such is the popularity of Formula 1 around the world, national governments pay to stage a prestigious grand prix

◆ GLOBAL SPORT
● CHRISTIAN SYLT

Formula 1’s business model is unlike that of any other sports series. Race tracks generally do not get any revenue from the television broadcasts of a grand prix or from F1’s corporate hospitality and trackside advertising. Money from these revenue streams goes to the sport’s rights-holder the F1 Group and the tracks are left to survive on ticket sales alone. It isn’t enough.

The income from ticket sales barely covers the annual race-hosting fee which comes to an average of around \$33 million. Adding to the pressure on race promoters, the hosting fees accelerate by up to 10 per cent annually thanks to escalator clauses in the contracts.

Footing the bill for the running costs of a grand prix would drive the race promoters into loss, so it is usually covered by governments who invest more than \$400 million in F1 races every year. They need to be wealthy nations in order to afford this which explains why Formula 1 races take place in eight of the ten nations with the highest gross domestic product, according to data from the World Bank. It particularly appeals to a certain type of country.

F1 is the world’s most-watched annual sports series and last year had 425 million television viewers

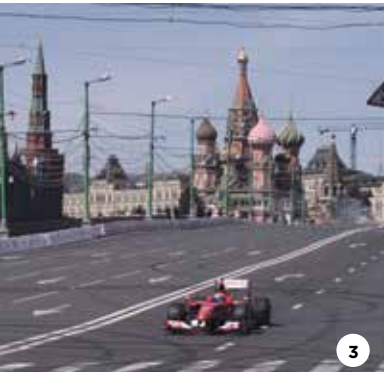
F1 is the world’s most-watched annual sports series and last year had 425 million television viewers. Over the past decade this has brought the sport to the attention of emerging markets looking to increase their global profile. Hosting an F1 race puts them on the sporting map alongside developed countries. The tremendous visibility on TV also promotes tourism, so governments of emerging markets are prepared to fund the hosting fees for their races.

This has fuelled an arms race between them which has boosted the average

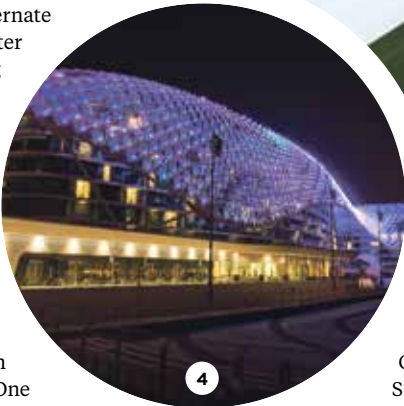
hosting fee by 18.9 per cent over the past five years. The effect has been magnified by the fact that the teams have historically refused to attend more than 20 races annually, due to the time spent away from home. It puts even more of a premium on F1’s calendar slots which contributes to driving the price up.

In turn, many races in F1’s European heartland have been priced out of the market. European countries don’t need to use F1 to promote tourism, so their governments tend not to fund the hosting fees. Accordingly, in the past decade F1 has lost races in France and Turkey, while Germany and Spain began to alternate venues annually after previously holding two grands prix every year.

Developed nations which host F1 gain through economic benefit from hundreds of thousands of spectators spending in the local area when they visit the race. One of the biggest beneficiaries has been the United States which returned to F1’s calendar in 2012 after a five-year hiatus. The inaugural race at the Circuit of the Americas (COTA) in Austin, Texas, attracted 117,429 spectators giving



1. Buddh International Circuit, India
2. Baku race track concept, Azerbaijan
3. Moscow city racing
4. The Yas Marina Grand Prix Circuit, Abu Dhabi
5. Fernando Alonso Circuit of The Americas, Austin, Texas



it the second-highest race-day attendance after the British Grand Prix.

Smith Travel Research reported that over the five-day period ending on Sunday November 18, when the race took place, hotels in the Austin area took in \$32 million, which is triple the amount made during the same period the previous year. Hotel occupancy in downtown Austin the night before the race averaged at 97.8 per cent with guests paying an average rate of \$300.44. In comparison, on the closest Saturday the previous year, the average rate came to \$111.40. Although the average rate dropped to \$266.16 on race day, this was still far higher than the \$86.52 achieved the previous year.

Even beverage takings got a boost as Austin alcohol sales for November 2012 were 23 per cent higher than the same month the previous year. COTA sold more beer, wine and mixed drinks in November

FALSE START

Not all expansion of F1 into emerging markets has been a success. After disappointing attendance numbers, the Turkish Grand Prix was cancelled in 2012 after six seasons and recent revival attempts have fallen through.

2012 than any other venue in Texas and made \$2.8 million from this alone.

This year F1 will return to Mexico City after a 23-year absence, giving a record 20 races on the calendar. In 2016, it will be joined by a grand prix in Baku, capital of oil-rich Azerbaijan, which will push the calendar beyond the previous limit. Time will tell whether the teams give the green light to 21 races or whether the brakes will be put on one of the races.

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Refuelling F1 in America

Formula 1 figurehead in the United States, Bobby Epstein, assesses the chances of F1 overtaking expectations to win over a once sceptical America

◆ UNITED STATES
● LUKE SMITH

Formula 1 is often dubbed “the pinnacle of motorsport”, but in the United States that moniker is a point of contention.

It is perhaps unsurprising that F1 has struggled to make a splash across the pond as the US market is dominated by the two leading local championships, NASCAR and IndyCar.

Over the past 50 years, F1 has made frequent attempts to break into America with races in Indianapolis, Dallas, Detroit and even the car park of Caesars Palace in Las Vegas. However, following the cancellation of the United States Grand Prix in 2007, America’s F1 dream looked dead and buried.

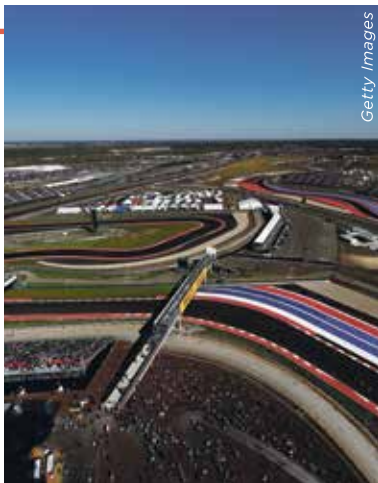
Eight years later, the landscape is very different. Returning at the purpose-built Circuit of the Americas (COTA) in Austin, the capital of Texas, the US Grand Prix is enjoying a new lease of life. Its comeback was rarely taken seriously when plans were first formulated in 2010, two years before its maiden race.

“It was great because it set everyone’s expectations really low,” says COTA’s chairman Bobby Epstein. “It was an easy hurdle to overcome. We never doubted that we would be able to deliver on a better experience than I think people expected.”

A new grand prix is always an expensive project, with funding being difficult to secure. Financial success and security is anything but a given – eight venues have lost races since 2005. However, COTA’s focus on a sustainable, long-term future has already paid dividends.

“If they’re not trying to make a financial return, then they’ll be very happy,” Epstein says wryly of new races. “It’s a tough business. You can make it work and we’re finding ways to make it work by doing year-round programming, but you’re not going to make it on a Formula 1 race.”

This is where COTA has flourished. The track hosts other leading racing events, such as motorcycle series MotoGP and the World Endurance Championship. It even boasts an amphitheatre with a capacity of 14,000 people. COTA’s multi-purpose nature has made it successful in its relatively short life, and it was always part of the plan for making a profitable business and facility.



Getty Images



Getty Images

Four-times world champion Sebastian Vettel tries the cowboy hat of a grid girl

“The amphitheatre, for example, wasn’t an afterthought,” Epstein explains. “It wasn’t ‘what else are we going to do here?’ It really was ‘how do we make it world class?’”

The undulating track itself has won widespread praise from drivers and fans alike. Last year alone, a total of 237,406 spectators visited the US Grand Prix and this has a huge impact on the local economy. “It’s not the guys who operate the circuit that benefit, it’s the people who live there,” says Epstein. “If you ask if this race is a great success for the waiter, or the guy that drives a taxi, or the caterer – you look right down to those people, they’ll tell you it’s a great, successful event.”

Testimony to this, the US Grand Prix has generated more than \$1 billion in economic impact for Austin, according to data from COTA. There are seven races remaining on its contract and F1 has a lot riding on it. “If this one doesn’t work,” Epstein says, “I don’t think the sport ever will in the US.”

With its diversified business model, COTA appears to be the breakthrough that F1 has craved in its perennially problem market. At long last it may be on track for sustained success.

We never doubted that we would be able to deliver on a better experience than I think people expected

COMMERCIAL FEATURE

SPEED TO LEAD™

TATA COMMUNICATIONS OFFICIAL CONNECTIVITY PROVIDER



LEADING F1’S INNOVATION RACE

In a world where every millisecond counts, Tata Communications is a company at the heart of Formula 1 – delivering the speed to lead trackside through technology and innovation



Mehul Kapadia
Managing director
F1 Business
Tata Communications

TATA COMMUNICATIONS

When Tata Communications became F1’s technology supplier in 2012, it initially looked like just another blue-chip brand joining the sport’s portfolio of world-class corporations. However, it soon came to light that Tata Communications is in it for much more than exposure. In fact, its involvement gets right to F1’s heart.

The Tata Communications and F1 relationship has been described as the “the most significant moment for F1 since the advent of satellites”. According to Mehul Kapadia, managing director of F1 business at Tata Communications: “Our relationship is a real-life case study that showcases our capabilities to deliver fail-proof communications infrastructure across all race locations, different geographies and terrains. This makes our relationship with F1 quite unique.”

Tata Communications’ speciality is sending signals reliably and, above all, quickly. It is a perfect match for F1 given the huge amount of data transmitted in the sport. One of Tata Communications’ biggest strengths is that it has the largest network of undersea fibre cables in the world. This allows it to transmit data at a far higher speed than using satellites, as previously, and it also significantly increases capacity.

From an outsider’s perspective, the one thing that everyone associates with F1 is speed. From the way the cars move, to the speed the mechanics work during pit stops, to data transmissions and the fast pace of innovation that maintains F1 at the pinnacle of motorsport.

“Our relationship is a real-life case study that showcases our capabilities to deliver fail-proof communications infrastructure across all race locations, different geographies and terrains

Since the F1 championship was launched in 1950, it has adapted and evolved at a rapid speed. Its hybrid cars travel at speeds of over 300km/h making safety just as big a challenge now as it was in the early days. After his near-fatal crash in 1966, three-times champion Sir Jackie Stewart pushed for full face helmets and seat belts – things that we now take for granted. Thanks to carbon fibre and polyethylene advancements, helmets now weigh about 1,250 grams which reduces weight and enhances driver safety, allowing for faster races.

Tata Communications operates at the same cutting edge as F1 and plugged the sport into its network soon after the deal began. It now has fixed-line connectivity at all grands prix and, importantly, it is always connected, unlike a satellite which is only on for several hours at a time.

This network delivers ten times faster connectivity than F1 previously enjoyed. Tata Communications is also the backbone for F1’s official website Formula1.com and supplies video feed to the sport’s remote operations centre in Kent so fast that

it is no different to the producers there sitting at trackside. It gives them two multi-view video feeds for raw footage and a reverse data path, allowing them, among other things, to operate a robotic trackside camera for the best possible race coverage.

No matter where in the world the races are taking place, the hub for all of this is in Kent. It means producers don’t need to transport production equipment to races, which saves money and reduces F1’s carbon footprint.

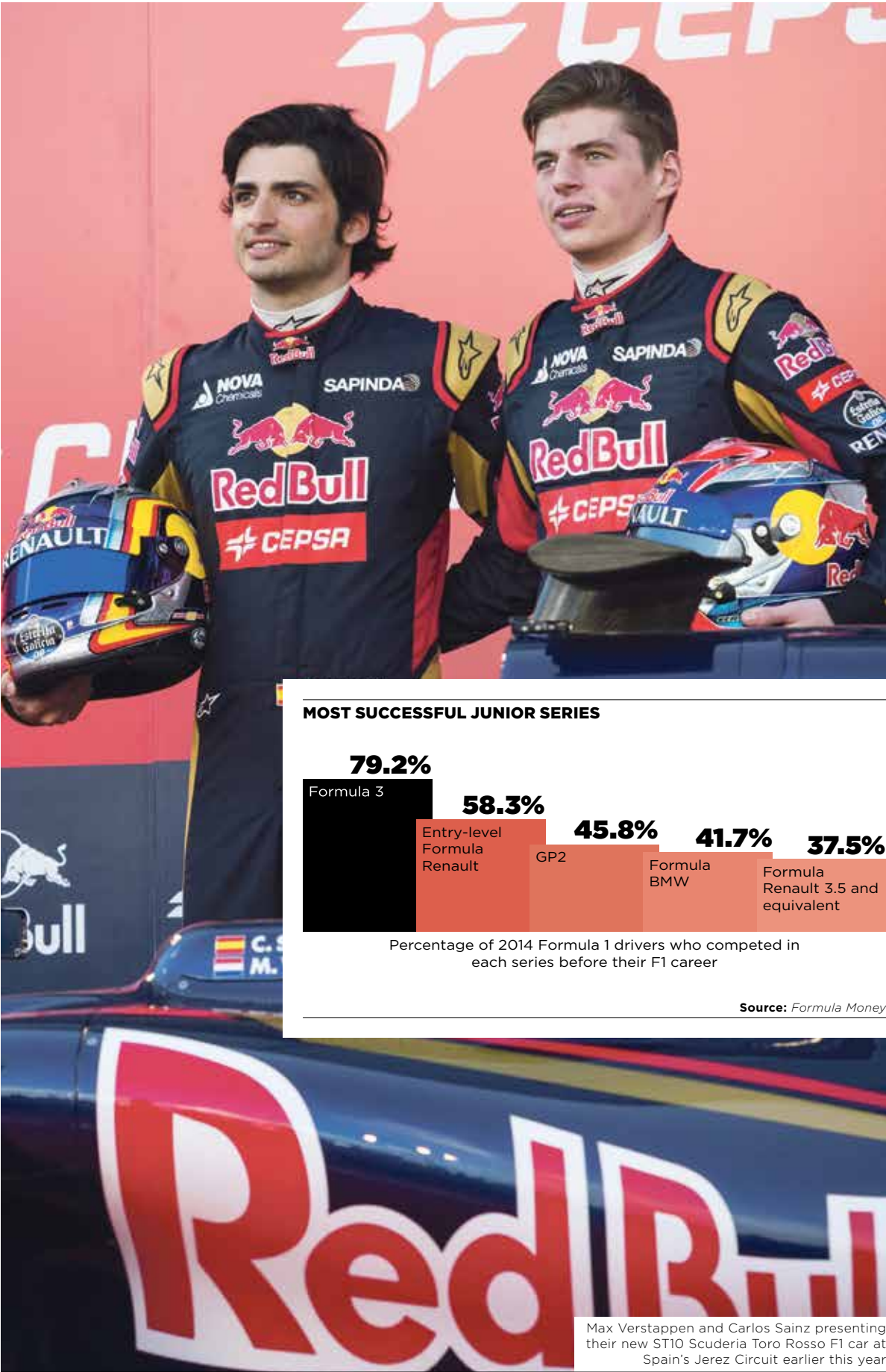
F1 isn’t the only beneficiary. In 2013 it signed a partnership with reigning champions Mercedes. It has boosted the speed of the team’s trackside connectivity by three times and enables the transfer of live race data around the world in less than a quarter of a second. This connectivity links the Silver Arrow cars at any grand prix location to Mercedes’ headquarters in the UK, enabling Mercedes engineers to make data-led decisions, ultimately helping the team to cross the finishing line first – where every millisecond counts.

Mr Kapadia says there is more to come: “While we take full advantage of key technology trends in F1 racing today, Tata Communications is constantly looking at the road ahead, scanning the horizon for new opportunities, and looking around the corner at potential twists and turns.”

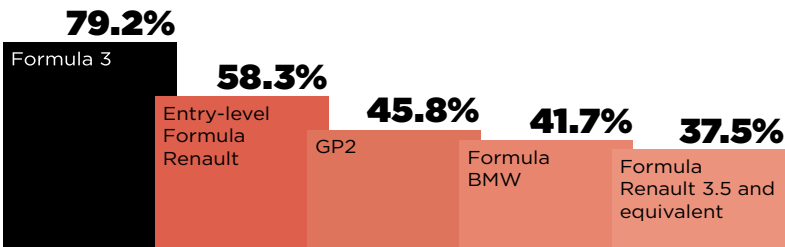
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Racing through the ranks on the road to F1 laurels

The varied routes for young drivers to a Formula 1 team place are a hot talking point within the sport as some ‘buy’ their place in the cockpit



MOST SUCCESSFUL JUNIOR SERIES



Percentage of 2014 Formula 1 drivers who competed in each series before their F1 career

Source: Formula Money

Max Verstappen and Carlos Sainz presenting their new ST10 Scuderia Toro Rosso F1 car at Spain's Jerez Circuit earlier this year

◆ DRIVER RECRUITMENT

● KATIE GRIMMETT AND CHRISTIAN SYLT

Junior drivers may not dominate the headlines, but these relative unknowns will soon define the future of Formula 1.

For the fastest up-and-coming racers, getting a drive in a respected junior series is competitive enough, but some championships have more of an impact than others. At the top of the list is the Formula 3 category which is responsible for 79.2 per cent of last year's F1 line up. It is followed by 58.3 per cent who raced in entry-level Formula Renault and 48.5 per cent in F1's official feeder series GP2.

The remaining two series are tied to auto manufacturers and make use of similar car designs to highlight the championship's most talented drivers. They are Formula BMW, which was a training ground for 41.7 per cent of last year's F1 incumbents, and Formula Renault 3.5 at 37.5 per cent.

To understand the significance of these rising stars and their championships, it is important to note the long and storied history of rookies in F1. Famous names such as Michael Schumacher, Lewis Hamilton and Jacques Villeneuve impressed even the sternest of team bosses on their way to championship success. This year, five young drivers will begin their first full season in F1 as they graduate to motor racing's top rung, bringing their own tales of success and uncertainty from junior competition.

The impact of a fresh driver line-up is perhaps best seen at Swiss team Sauber. It starts 2015 with an awful lot to prove after finishing tenth and with no points to its name last year. This three place reversal from 2013 has led to an estimated 17 per cent decline in its prize money to around \$48.7 million.

To transform its fortunes, Sauber has hired Brazilian Felipe Nasr who is somewhat of a poster-boy for F1's financial culture. The 22 year old has lured local bank Banco do Brasil to the team, giving it an estimated \$20-million boost in sponsorship.

Although Nasr has a respectable junior career, finishing third in GP2 last year, he epitomises a decidedly unpopular trend: paying to drive. It may seem like a modern concept, but is nearly as old as racing itself. Even famed 1950s champion Juan Manuel Fangio received funding from the government of Argentina on his way to winning five titles, so it is little surprise that Nasr is following a similar road to success.

Britain's Will Stevens is also partially funding the resurrected Manor team after its collapse into administration last year under the name Marussia. The team failed to race at the Australian Grand Prix, but is expected to make a second attempt at next weekend's race in Malaysia. Stevens is joined by Spaniard Roberto Merhi who finished third in Formula Renault 3.5 last year while testing for Caterham at three F1 rounds. Stevens too comes from Caterham and raced for the team at the season-ender in Abu Dhabi in 2014.

Driver development schemes offer young drivers the opportunity to learn under the guidance of a top racing team, but obtaining a place is fiercely competitive

Racing into the breach is the relatively new formula of driver development schemes. These programmes offer young drivers the opportunity to learn under the guidance of a top racing team, but obtaining a place is fiercely competitive. It is a route which has proven successful for some of F1's most recognisable names, including Sebastian Vettel, Daniel Ricciardo and last year's champion Hamilton.

This year the attention falls on 17-year-old Max Verstappen who becomes the youngest driver in F1 history with a seat at Toro Rosso. Verstappen joined Red Bull's driver development scheme just two weeks before the announcement of his sudden signing and only one year after graduating from karting. It is a move which is far from the norm.

\$20m sponsorship thought to have been brought by new F1 driver Felipe Nasr to Sauber F1

17 is the age of Toro Rosso's Max Verstappen, the youngest driver in F1 history

Source: Formula Money

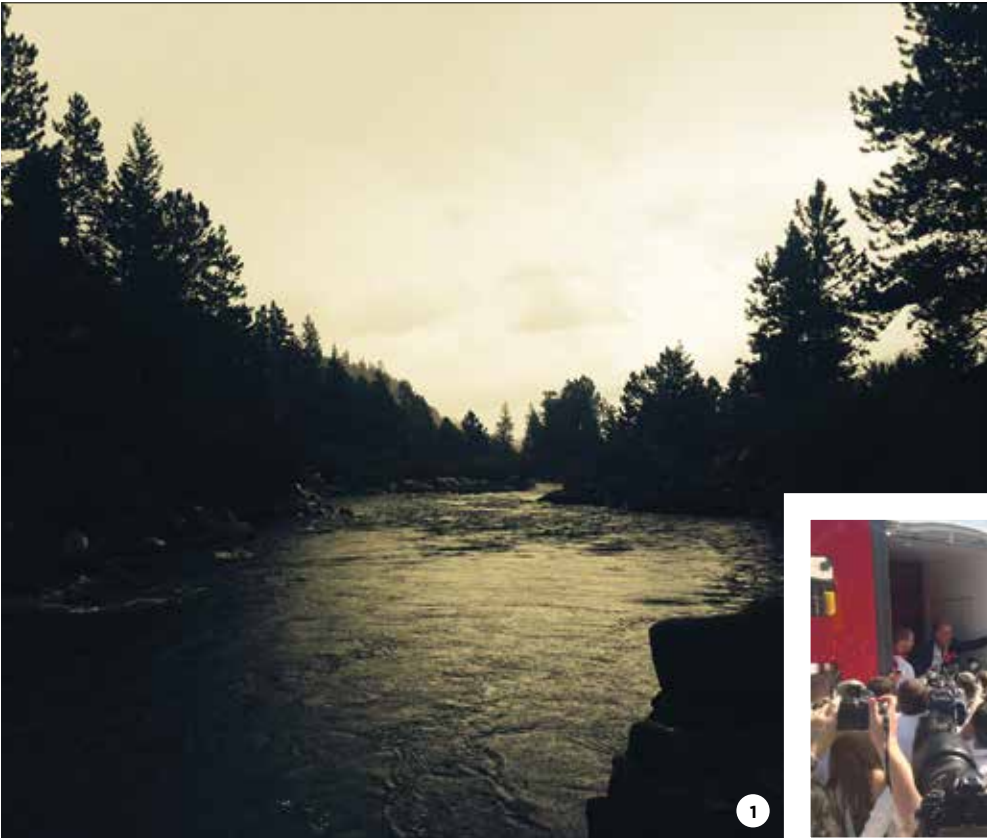
In contrast, Verstappen's team-mate Carlos Sainz Jr, who also marks the beginning of an F1 career this year, joins the sport as the reigning Formula Renault 3.5 champion and comes with four years' experience under Red Bull's supervision. He is among an impressive list of graduates from Renault's flagship series and joins Vettel, Ricciardo and Kevin Magnussen in the 3.5-litre history books.

Toro Rosso has taken a modern and nurturing approach to talent development with Sainz and Verstappen. However, development schemes do not come cheap and retaining the limited places still requires luck as well as talent on the part of the driver. Fail to meet targets and your F1 career

could be over before it has really begun.

The only other fairy godmother in F1 is the rights-holder to the sport. A select few of the drivers for GP2 and its feeder series GP3 are hand-picked in order to promote the sport in certain countries. This process was revealed in the prospectus for the stalled flotation of F1 which was due to take place on the Singapore stock exchange in 2012.

It states: "From time to time, we sponsor GP2 and GP3 drivers to encourage the development of the sport in key markets." It is not known how many drivers have enjoyed such fortune, but there is no doubt that the assistance is invaluable.



Zoom: where F1 and charity clicks

Ever wanted to see the world through the eyes of an F1 driver? The annual Zoom charity auction gives fans the opportunity to do just that

◆ CHARITY
● CAROLINE REID

Zoom has entered its third year in 2015 and the success of this charity fundraising initiative is down to a very simple idea. Although there are many charity auctions in sport, they all tend to follow a similar pattern. The items on offer are usually signed photos of the athletes or signed kit that they use, which tell the buyer very little about the personality of the sports star.

So Zoom was created to rectify that by turning the tables and asking all the drivers and team principals in F1 to take photographs, which would then be signed and put up for auction. Off the grand prix track, it is one of very few events which involves all the teams and

all the drivers. They join forces in order to benefit a worthwhile cause – the world-renowned Great Ormond Street Hospital Children’s Charity.

The photos take fans on a journey through the lives of F1’s superstars. They give a window on to the serene jogging trails around Lewis Hamilton’s favourite holiday resort in Aspen, Colorado, and allow fans to look out of the cockpit of Kimi Räikkönen’s car. The images even show F1 history in the making through a photo snapped by former champion Damon Hill in Italy.

This year’s photos, signed by some of the sport’s legends, along with a set of Nikon S9700 cameras, were auctioned by Coys at a star-studded gala event in London earlier this year. More than £50,000 was raised, signalling that money in F1 isn’t a one-way street.



- 1. Lewis Hamilton, 2008 and 2014 world champion: Follow your path**
“Let life flow like a river, follow the path it takes you down. Take it as it comes and while you learn along the way, may you help guide the flow in the direction of your dreams.”
- 2. Damon Hill, 1996 world champion: Say hello, wave goodbye?**
“I was presenting with Sky in the Monza paddock when this mob of photographers appeared and surrounded Luca di Montezemolo. It was a big show, as they say. He was addressing the masses. Curiously he spotted me in the crowd and waved. I wish I had that photo. Luca must have known this would be his last appearance as head of Ferrari... or he was hoping it wouldn’t be. Either way, it was classic Italian political display. Like an emperor in the Coliseum or the Forum, like Julius Caesar. Et tu Brutus?”
- 3. Eric Boullier, racing director of McLaren Formula 1: Precision timing**
“A view from the pit wall.”
- 4. Kimi Räikkönen, 2007 world champion: Ready for action**
“These are my gloves ready for my return to Ferrari earlier this year. I would rather be in Ferrari than any other team.”



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