



Concept D

THE FAST AND THE FURIOUS

TECHNOLOGY SPEEDS UP
PARTS DEVELOPMENT FOR
MOTOR RACING TEAM

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A New Twist on Creation



Do Great Things

INTRODUCTION

With the help of technology from Acer, Australian Supercar team Brad Jones Racing has been able to achieve fast turnaround on parts development.

One might think that the aim of motor racing is to drive a car around a track faster than everyone else and win the race. Well of course this is true, but to achieve it takes a whole team to make smart decisions in rapid response to data.

Albury-based Brad Jones Racing is the only Supercar team to be based in a regional centre and is managed by Brad Jones. Over the years, the team has won championships in AUSCAR, NASCAR and production cars before moving into the world of Supercars.

“Back in the day, when I was racing, there was a lot more time,” said Brad Jones, Co-owner of BJR. “You could go and test any time you wanted, and the race meetings were three or four days long. Nowadays, our drivers are trying to maximise performance every single practise session. You get to the circuit on Friday, and you practise and race on Saturday and Sunday.

“As a result, data and technology have become critical in getting the job done properly. Here at BJR we have more than fifty people – from the design studio down to manufacturing and then to the race group, all focused on the one thing: speed.”

“With the computing technology we have now, we have been able to make things happen a lot faster,” he added. “And that’s why having the right technical partner through the process is so important.”

In 2017, BJR teamed up with Acer to provide the computing technology they need to achieve their motor racing goals. Since then, the relationship has continued to grow – not only with significant gains to workshop infrastructure, but also regular upgrades to keep the team up to date with the latest technology.

SPEED IS THE MAIN FACTOR, BOTH ON AND OFF THE TRACK

In the competitive sport of motor racing, it is important that a maximum amount of information is extracted and interpreted from the tools at hand, as quickly and efficiently as possible. Teams that use data more efficiently will have an edge over the competition.

“This is no longer a sport of seconds or tenths of seconds, but of hundredths of seconds, so we’re always looking for very small improvements,” said Paul Scalzo, Engineering Manager at BJR. “You therefore need to have the computing infrastructure to help support the speed of that process.”

One necessary computing application is the need to produce new or improved parts for the cars.

“After a race meeting we analyse what we’ve just seen and how we went, and as part of that we may gain an idea on how to upgrade an existing component or bring a new improved component into the car,” said Scalzo.



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BJR uses the ConceptD laptops from Acer to bring their ideas to life, from the design phase through to manufacturing.

“As part of the CAD process we come up with an initial design and then we use finite element analysis (FEA) to analyse the part to make sure that it is going to be suitable, or as light or as stiff as it can be,” said Paul. “We then use lap-time simulation to see how that part will fit with the current package, and what sort of improvement we might see. Once we have the physical part, we can test it on the car at a test day before an event, or during practice at an event.”

Designed specifically for any kind of design work, Acer’s ConceptD range gives BJR the ability to achieve the turnaround times they are looking for. Render times and image processing times are decreased with 11th Generation Intel Core i7 processors and the NVIDIA GeForce RTX 3080 laptop GPU. Multitasking is further made possible thanks to the 32GB DDR4 memory and up to 2TB of storage with two NVMe PCIe SSDs.

“When it comes to improvements to existing parts, we would like to do them between consecutive racing events – a turnaround time of between one and two weeks,” said Paul. “On larger projects like a new anti-roll bar system or an upgraded steering rack, the ConceptD hardware has helped us to have those ideas come to life within the space of a few months during the off-season.”



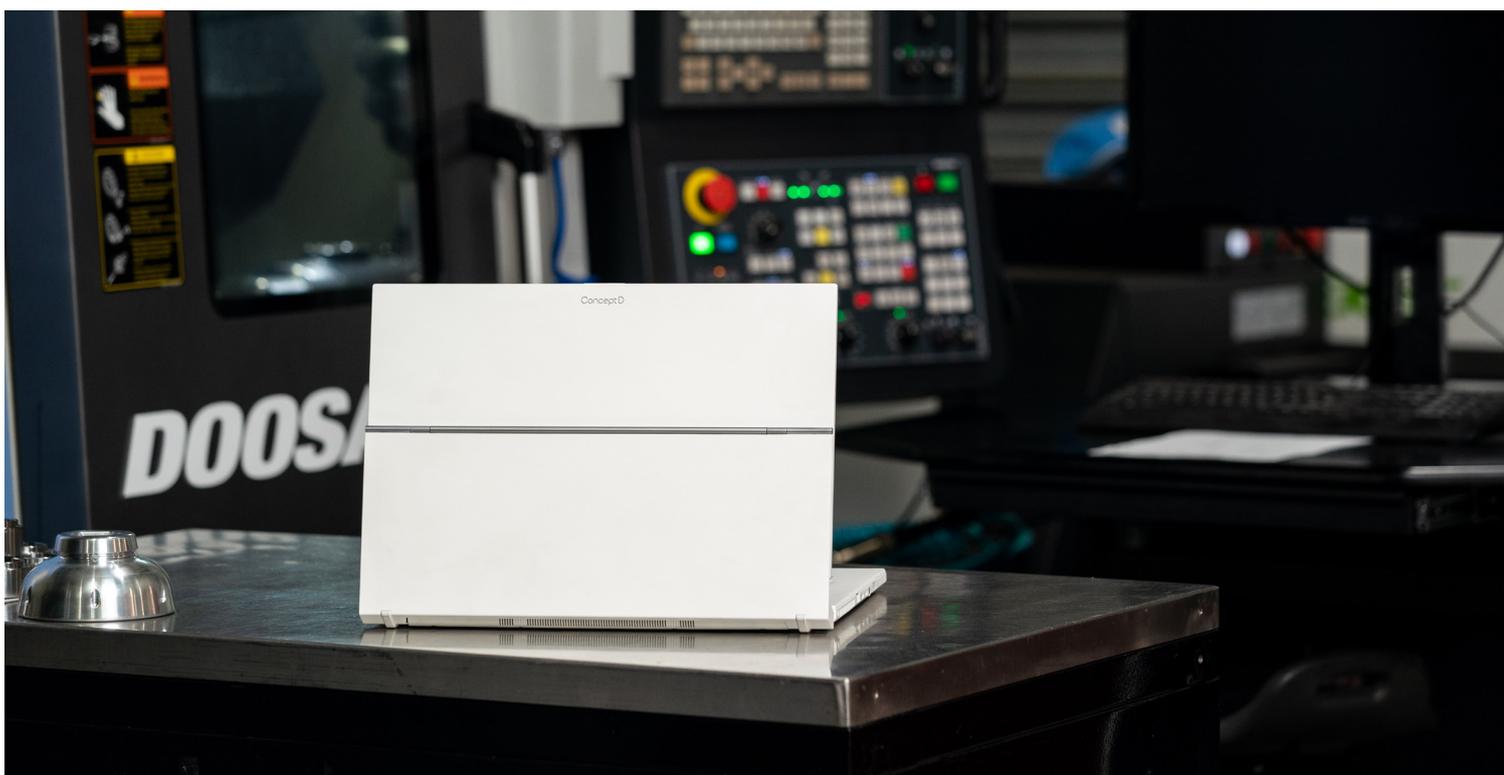
AN EVOLVING TECHNICAL CHALLENGE

The competitive nature of motor racing means that every improvement in a car's performance, however small, can have an impact during a race. This means collecting more data and acting on it quickly.

"The biggest change I have seen over the last few years is in the data we collect and how quickly we can access and analyse it," said Paul. "The amount of data has gone up exponentially, and so the physical file sizes and the complexity of the data has gone up as well."

Having access to the ConceptD technology means BJR can very quickly and easily analyse data from a previous race weekend, which in turn shortens the turnaround time in coming up with new ideas in hardware and setup to improve performance at the next race meeting.

"With the increasing data available, our computing power has to always keep up, so that is why it is important to be partnered with a company like Acer so that we know we are always at the front of the field," Paul concluded.



LOOKING FORWARD

Brad sees more success coming from BJR's partnership with Acer.

"As our sport continues to grow and develop, so do all our competitors. We're in an era of motorsport where we need to consistently stay on top of the latest computing technology to help our team to relentlessly push the boundaries of innovation and engineering," he said. "I was very excited the day we put together our Acer partnership. From ConceptD laptops to shape and design high performance parts, or the Predator and Triton laptops to study the aerodynamics of the car or to simulate laps, and the Altos servers that keep our data safe and secure, they've made a huge difference to BJR and our track performance.

"As the technology continues to improve, we're confident that our long running partnership with Acer will give us the edge to continue to excel at the highest level in Australian motorsport. We can't do this without great partners like Acer."



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