DIGITAL INDUSTRY

TECHNOLOGY ON THE TRACK

Big data and cloud technologies converge on the F1 circuit

| Text by **ALIFF YUSRI** |

Racing teams track the performance of every individual facet of a vehicle over countless circuits

The conceptual challenge of big data and cloud applications is that by their very scope and nature, it is often difficult to grasp the impact they can have on our lives. Sometimes, however, the effects of a deployment are such that they clearly illustrate the potential of these technologies in the field of enterprise technology.

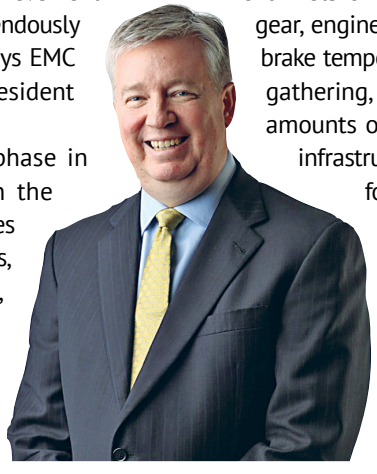
One such collaboration is the selection of the EMC Corp as the official development partner of the Lotus Formula 1 Team. Announced in 2013, the four-year partnership has seen the Lotus F1 Team adopt a number of EMC's private cloud technologies, leveraging its solutions to redesign the next generation of race cars, most recently its E23 2015 challenger.

A MATCH FOR THE AGES

"It has been a great experience learning with the Lotus F1 Team. Our partnership has helped to bring out the best in each other and continuously customise and fine-tune what we bring to the table to reach our shared goals. One significant achievement of the partnership is that together, we have tremendously improved Lotus F1's track side performance," says EMC Asia Pacific & Japan, Global Services vice-president David Wirt.

The affiliation comes at a transitional phase in the racing league's history which has seen the implementation of sweeping regulatory changes designed to foster faster and more dynamic events, such as the reintroduction of mid-race refuelling, the absence of which has drawn criticism by necessitating slower accelerations at the start and effectively turning each race into an endurance run.

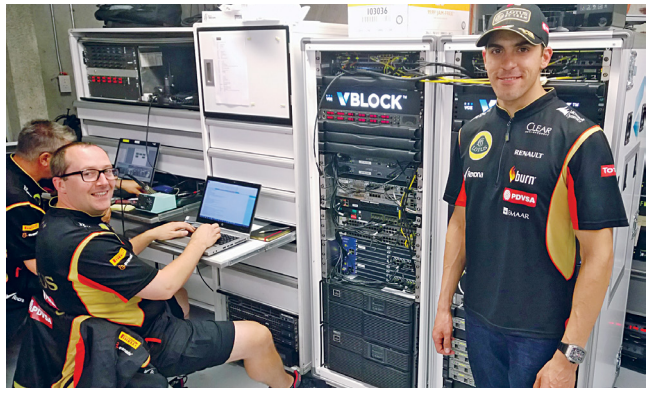
As racing evolves with the times, this has placed pressure on participating teams to redefine the design, engineering, engine power, aerodynamics and fuel consumption of their vehicles. In finding the optimum balance between these factors, the performance of every individual facet of the vehicle must be painstakingly measured through countless circuits on the track, generating over 50GB of data per race.


The evolution of F1 regulations requires a similar revolution in its IT infrastructure, says Wirt

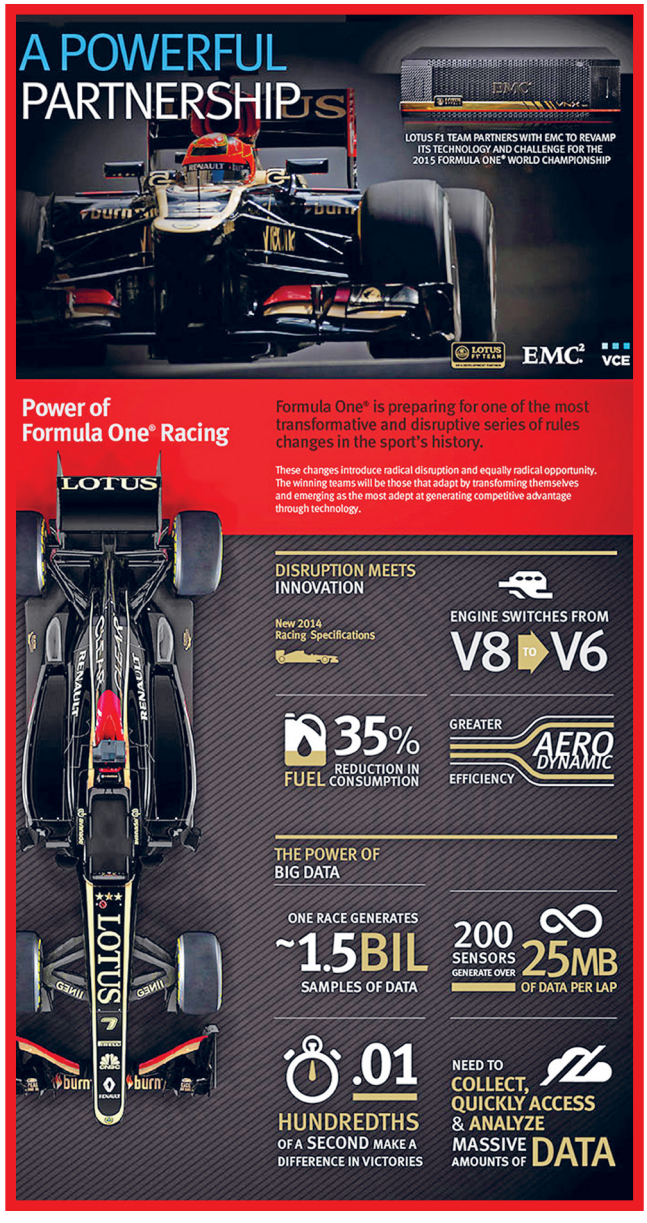
For the E23 2015 challenger, over 150 sensors output 1,000 channels of time-series information including current gear, engine RPM, lateral and longitudinal acceleration, brake temperatures, tire pressures and GPS location. The gathering, compilation and analysis of such extreme amounts of information requires a similarly robust IT infrastructure, with Lotus judging the time was ripe for a complete overhaul of its existing systems in order to meet the trials of the changing competitive landscape.

RACING TO THE FORE

Towards this end, EMC was appointed for its expertise in cloud-based technologies, enabling more agile and cost-efficient storage and information management while simultaneously providing support for real-time access to race data to improve subsequent



The EMC Vblock infrastructure incorporates elements from VMware and Cisco's stable of solutions



iterations of vehicle designs as well as race performance.

The particular pressures of the racing environment, with car build processes and racing seasons alternating throughout the year, reinforced the need for lightning-fast delivery. EMC's core VBlock platform, incorporating elements from VMware and Cisco's stable of solutions, went from design to implementation in just five months, with key applications being migrated to the new infrastructure in just eight days.

"In a sport where hundredths of a second mark the difference between a victor and the rest of the pack, the ability to collect, make readily available in a cloud-like manner and quickly analyse these massive amounts of big data has emerged as a key competitive differentiator. The inherent value and benefit of a VCE Vblock is that it is converged and compact, so it is simpler for users and equipment to be up and running in a short time and with a reduced footprint – meeting the crucial need for efficiency in an F1 racing environment," says Wirt.

For the future, EMC will continue facilitating organisations in redefining themselves in a software-centric world. Its consolidated revenues are projected to reach US$25.7 bil (RM98 bil) in 2015, buoyed on updates to its data protection portfolio and the introduction of its XtremIO 4.0 and Project Horizon solutions.