



Cass Business School
CITY UNIVERSITY LONDON



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F1 technology innovation - fast but not too fast

New study shows excessive innovation in Formula 1 technology can be detrimental to team performance

Formula 1 racing teams that continually explore new innovations in an attempt to gain a competitive advantage may actually be damaging their chances of success.

In the rapidly changing world of Formula 1 racing, a focus on improving existing technology, rather than trying to invent the next best thing, is shown to yield greater success, according to new research.

Dr Paolo Aversa of Cass Business School, part of City University London, led a research team which statistically examined all the strategic factors influencing Formula 1 competitions between the seasons 1981 and 2010.

The team included Dr Alessandro Marino (University of Pennsylvania), Professor Luiz Mesquita (Arizona State University) and Professor Jay Anand (Ohio State University).

The results show that adapting car technology to regulation changes is more beneficial than pioneering new innovative solutions. This is particularly prevalent in years when the FIA forces teams to implement major changes to their cars' technology.

Exploring new technological solutions push the (already high) level of complexity beyond the teams' expertise, thus reducing the effectiveness and reliability of the technological innovation.

The researchers use the 2009 season to explain these dynamics. Two young and relatively inexperienced teams won first place (*Brawn GP*) and second place (*Red Bull*) in the Constructor Championship, together taking 14 of that season's 17 races.

This is because in 2009 both *Brawn GP* and *Red Bull* developed a basic, reliable, "no-frills" F1 car, complying with the new FIA technical updates. Both avoided 'the kers system', which was not a mandatory requirement, and which at that time was an underdeveloped and unreliable technology.

Dr Aversa explains: "Our study has important implications for practitioners in times of crisis and uncertainty. Managers often display a bias towards action, so they overwhelmingly tend to believe in an ever-increasing positive relationship between innovation and performance gains. Our theory and findings, however, point to a possible inflection in the increasing value of innovation due to shifts in the environment, after which firms may find it detrimental to their performance to improve beyond what the environment currently demands.

In other words, experimenting is not always the most profitable choice, when the continuous turbulence in the competitive environment makes it hard to foresee future scenarios. In such

cases firms should focus on the knowledge assets they already possess, and exploit their current technology to best of the possibilities, trying to make it fit to what the competitive environment requires.”

The study is part of an international research project aimed at understanding the drivers of performance in the Formula 1 industry. In 2012 Dr Aversa – who is an expert in automotive and motorsport strategies – was awarded the prestigious Marie Curie Fellowship by the European Union’s Research Executive Agency.

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ABOUT CASS BUSINESS SCHOOL

Cass Business School, which is part of City University London, delivers innovative, relevant and forward-looking education, consultancy and research. Located in the heart of one of the world’s leading financial centres, Cass is the business school for the City of London.

Our MBA, specialist Masters and undergraduate degrees have a global reputation for excellence, and the School supports nearly 100 PhD students.

Cass offers the widest portfolio of specialist Masters programmes in Europe. It also has the largest faculties of Finance and Actuarial Science and Insurance in the region. It is ranked in the top 10 UK business schools for business, management and finance research and 90% of the research output is internationally significant.

Cass is a place where students, academics, industry experts, business leaders and policy makers can enrich each other's thinking. For further information visit: www.cass.city.ac.uk.

A DECADE AS CASS BUSINESS SCHOOL

2012 marks 10 years since City University Business School became Cass Business School - new premises, name, and brand - the business school for the City of London.

This followed a generous donation from the Sir John Cass’s Foundation. Founded in 1748 by philanthropist Sir John Cass, the Foundation is one of London's oldest and largest education charities. Sir John Cass was born in the City of London in 1661 served as Alderman, Sheriff and MP for the City, receiving a knighthood in 1712.

Cass is marking this anniversary with a year of activities and events. The celebration will start in September 2012, which marks 10 years since Cass’s contemporary premises on Bunhill Row opened for business.

For more information see <http://www.cass.city.ac.uk/10th-anniversary>