

# Decision-making software in the fast lane

Programs developed to select the right option in motor racing are being adopted by business. **Alan Cane** reports

In the heat of Formula One motor racing, success and failure are separated by hundredths of a second and a poor decision on the part of either driver or pit crew is punished immediately and irrevocably.

A good decision, on the other hand, can lead to victory. In the 2005 F1 Grand Prix at Monte Carlo, Kimi Raikkonen was leading the race when an accident brought the safety car into play. Conventional wisdom at Monte Carlo, where the narrow streets make overtaking almost impossible, dictates that cars should head for the pits for refuelling and new tyres whenever the safety car is deployed.

But the McLaren software said otherwise and Raikkonen continued to circulate, posting some super fast laps and eventually winning the race by a comfortable margin.

The McLaren strategists, based not at the trackside but in the company's technology centre just outside London, had just 10 seconds after the safety car was deployed to act on the various

scenarios presented by the software.

Business strategists have, hopefully, a little longer to make the right decision. But the repercussions of their decisions can be just as devastating.

Large pharmaceutical companies, for example, regularly spend almost a billion dollars developing a new drug and the success rate can be as low as one in 20. With such vast sums, finely judged and timely decisions can be worth small fortunes.

Here too, technology can help: "If the company can make the right decision a day earlier, it saves it \$1m," says Simon Williams, chief executive of Smith-Bayes, a UK company that has developed software to make business decision-making easier, faster and more accurate.

What distinguishes Smith-Bayes Playmaker software from other decision support systems is its heritage. It was conceived and nurtured in the high-speed world of Formula One racing.

It combines a number of mathematical techniques, including

Monte Carlo (the casino, not the Grand Prix) simulations, with advanced visualisation.

MacLaren's engineers have been developing the software for eight years and using it to help with race strategy for six.

The system is capable of analysing 8m scenarios for each race based on 3,000 variables. It recalibrates the race strategy every two seconds based on what is happening on the track and other information including, for example, informed guesses about competitors' intentions: "The whole platform embraces uncertainty rather than being based on hard data," Mr Williams says, which is why he believes it is well suited to analysing the business world. Monte Carlo methods, for example, are used when a solution depends on a large number of variables.

All the big F1 teams use systems of this kind. But McLaren has gone further than the others in seeking to open its technology to business use.

"McLaren is set up to take its assets, its technologies and its

innovations and do other things with them," Mr Williams says.

Like other SmithBayes founders, he is a former Reuters senior executive. A small group of them had been seeking new business possibilities when they serendipitously came across the MacLaren technology: "Our ambition was to be the equivalent of a Bloomberg or Reuters terminal for the corporate decision maker," Mr Williams says.

"We had worked in financial markets and we saw that, over time, the pace of change meant that people that made faster, more precise decisions, held an advantage. We felt that held true across many business sectors."

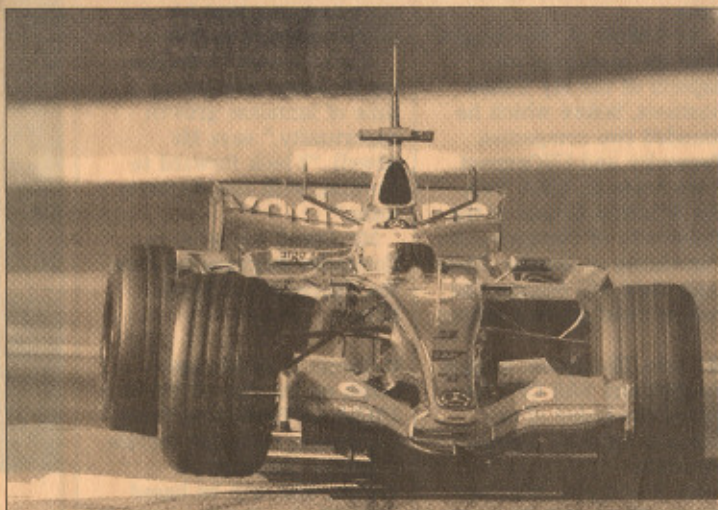
Furthermore, in terms of business analysis, Mr Williams explains: "We believed it was pointless focusing on decimal places on what were essentially guesses and better to focus on flexibility and agility. As in sport, the organisations that can respond to change with better insight, faster and with more precision have an advantage. We believe that agility will be a key

element of competitive advantage for the next 10 years."

MacLaren gave SmithBayes access to its technology in exchange for a 40 per cent equity stake in the newly formed company.

The motor racing group is no longer involved, however, following a management buy-out late last year, the financial details of which are not being disclosed. MacLaren will continue to use the core technology to support its racing programme but Smith-Bayes is entirely responsible for developing the business logic and marketing outside the motor-sport arena. The underlying architecture has been re-engineered and rebuilt on .net3 to run on the Microsoft's Vista operating system.

So who could make use of the software? Customers are unwilling to be named because of the competitive advantage they hope the system will yield but any big company facing difficult business decisions based on inadequate data could benefit, Mr Williams says, giving as an example an



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aerospace manufacturer planning a new engine with four technical options to choose between.

"This is a big decision. The company is betting on a technological horse today that will have an impact on its engine development cycle for 10 years; the engines themselves will be on aeroplanes for a further 30 years, so it's a 40-year business decision." Mr Williams says that, for a 5 per cent price premium, the SmithBayes software provides a way to keep a final decision on three of the four technologies open for three years.

SmithBayes says it has four large customers and two smaller ones after six months or so of

marketing. The system costs £50,000 a year for the core application plus £1,000 a month per seat.

Customers are typically opting for five to six seats to begin with, representing an expenditure of about £100,000-£120,000 a year – small beer if the software brings the claimed advantages.

McLaren, meanwhile, is fine-tuning the core technology to continue to support its race strategies. But computers don't win races on their own. After a poor 2006, it must be hoping that its drivers, current world champion Fernando Alonso and rookie Lewis Hamilton, will be equal to the challenge.