



Australian Government

THE PRIME MINISTER'S PRIZES FOR SCIENCE



MICHAEL AITKEN

PRIME MINISTER'S PRIZE FOR INNOVATION



Fairness underpins efficiency: the profitable innovations saving Australia billions

Global stock markets are fairer and more efficient thanks to the work of Professor Michael Aitken. Now he's applying his

information technology and markets know-how to improve health, mortgage, and other markets. He says there are billions of dollars of potential savings in health expenditure in Australia alone, that can go hand in glove with significant improvements in consumers' health.

Michael and his team created a service that captures two million trades per second, enabling rapid analysis of markets.

Then he created the SMARTS system to detect fraud. Bought by Nasdaq Inc., it now watches over most of the world's stock markets.

One of the companies he established to commercialise his innovations was sold for \$100 million and the proceeds are supporting a new generation of researchers in the Capital Markets Cooperative Research Centre.

Now his team of IT researchers are taking on health and other markets with a spin-off company and large-scale R&D program that are identifying large-scale inefficiencies and fraud in Australia's health markets.

A powerful advocate of scientific and technological innovation, Professor Michael Aitken from the Capital Markets Cooperative Research Centre has been awarded the 2016 Prime Minister's Prize for Innovation for creating and commercialising tools that are making markets fair and efficient.

Studying deregulation 20 years ago, Michael Aitken was shocked to discover that Australia and the world's governments were making changes to financial markets without any data on what was working and what wasn't. So he went to work to design a data set that could define and test fairness and efficiency of financial markets.

"Essentially we were making changes to financial markets with no evidence base whatsoever, either before or after we made them, so that made me feel extremely uncomfortable," Michael says.

"It's important to understand how financial markets work because they are the engine room of the economy, and if that is working well then innovation is going to get funded."

The first software developed by Michael and his team was purchased by Thomson Reuters, which now shares real-time data with traders and academics around the world. The Thomson Reuters Tick History Service ingests more than two million transactions a second and makes that available to commercial clients within 20 minutes.

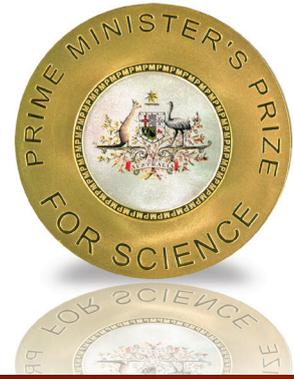
On founding Capital Markets CRC, Michael developed SMARTS, a real-time surveillance software that services regulators, exchanges and brokers of capital markets. In Europe, this surveillance solution has helped to reduce instances of insider trading by 26 per cent. SMARTS has been adopted by more than 40 national exchanges and regulators and 150 brokers across 50 countries.

SMARTS was then sold to NASDAQ with a significant proportion of the proceeds used to fund a venture firm now funding technology start-ups and research scholarships in Australia.

Another of the Capital Markets CRC's spin-off companies, Lorica Health, is now using software-based surveillance to detect fraud, abuse, waste and errors in Australia's mammoth and fragmented health sector. Early indications are that there are savings worth billions of dollars per year that could then be directed to areas of service that would deliver huge health dividends to the country.

"One of the more important opportunities here relates to the efficacy of health intervention itself; this requires an evidence-driven approach to identifying which treatments deliver improved quality of life to consumers and which don't," Michael says.

"So here we are looking at maybe 20 billion dollars per year that could be directed to improve healthcare in areas of genuine want."



The efforts of the Capital Markets CRC have created an ecosystem of companies that provide 200 permanent jobs and contribute six million dollars in tax revenues each year.

Michael has also established an expert witness service whereby doctoral candidates work on real-world legal cases involving allegations of insider trading and market manipulation.

“What really excites me about my work is the work I do with PhD students, 130 of them, they will be the new round of innovators, they’ll take innovation to the world,” Michael says.

The calibre of the research is such that academics associated with the CRC have published 122 articles in the top 12 journals

in the field over the past five years, a major achievement for finance researchers.

Few people, if any, have better demonstrated the successful commercial application of scientific research than Professor Michael Aitken.

Professor Michael Aitken is the Chief Executive Officer and Chief Scientist with Capital Markets Cooperative Research Centre. He is a Professor of ICT Strategy at Macquarie University.

Career profile, Professor Michael Aitken, AM

QUALIFICATIONS

1991	PhD, University of New South Wales
1980	Master of Business Studies, Massey University, New Zealand
1978	Bachelor of Business Studies (Honours), Massey University, New Zealand

CAREER HIGHLIGHTS

2015–ongoing	Director, DealMax Pty Ltd
2015	Knowledge Nation 100: Australia’s top 100 innovators
2014–ongoing	Professor of ICT Strategy, Macquarie University
2014	Member of the Order of Australia
2013 –ongoing	Chief Executive Officer, Capital Markets Cooperative Research Centre
2010	Prime Minister’s ICT Exporter of the Year
2010	NSW ICT and Overall Exporter of the Year (SMARTS)
2010	Ernst and Young National ICT Entrepreneur of the Year
2009	SIRCA Prolific Career Contribution to Financial Markets Research
2008–ongoing	Founder and Director, Lorica Health Pty Ltd
2006 –ongoing	Chief Scientist, Capital Markets Cooperative Research Centre

2001–2010	Nonexecutive Chairman, SMARTS Group, and directorships associated with subsidiaries of the SMARTS Group
2001–2006	Chief Executive Officer, Capital Markets Cooperative Research Centre
1999	Business Higher Education Roundtable (BHERT) Award for Outstanding Achievement in Collaboration in Education and Training in a program over three years in duration
1997–2001	Chief Executive Officer, Securities Industry Research Centre of Asia-Pacific
1995	Best manuscript in <i>Australian Journal of Management</i> (with co-authors)
1994–2001	Chief Executive Officer, SMARTS Group
1994–1997	Executive Director, Asia-Pacific Capital Markets Limited
1991	Outstanding manuscript award, Accounting Association of Australia and New Zealand

Further reading

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www.cmrc.com/team/profiles/mike-aitken-0