

EXPLAINED
A TECHNOLOGY REVOLUTION
LIKE NO OTHER



Everyone is talking about artificial intelligence (AI).

From boardrooms to factory floors, from call centres to logistics fleets, and from governments to venture capitalists, artificial intelligence is suddenly the hottest topic in town.

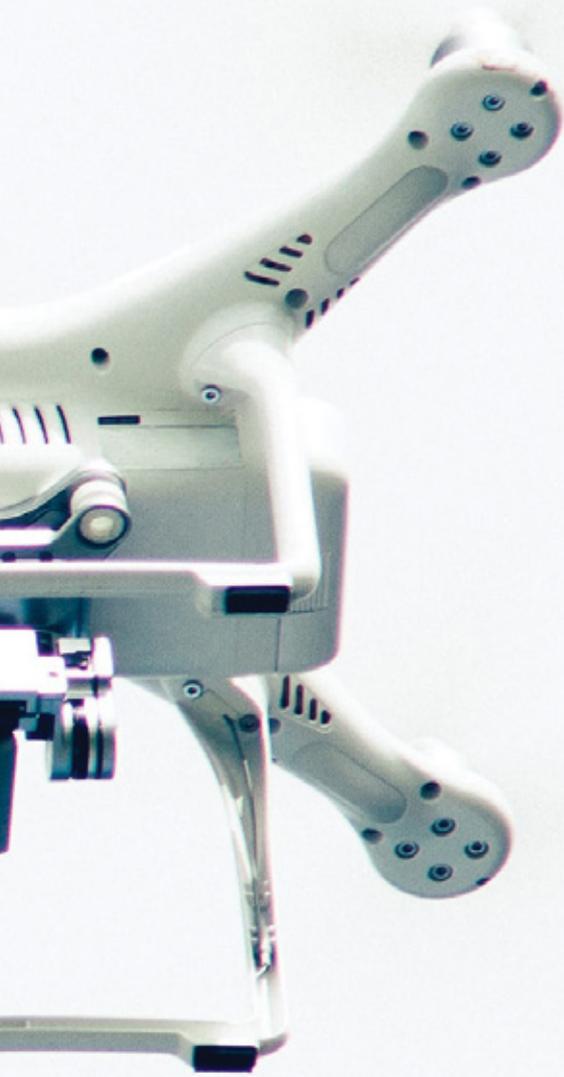
But is AI anything more than the latest technology buzzword? The answer is yes. In fact, AI might just be the single biggest technology revolution the world has ever seen.

This guide will explain why.

Over the past twenty years or so, business has faced its fair share of disruption. Indeed, digital disruption is thought to have put more than half of Fortune 500 companies out of business since 2000.¹ And now AI is set to compound that disruption by shifting it up to the next gear.

That's because AI is what economists call a general-purpose technology. And these general-purpose technologies are a big deal: think electricity and the internal combustion engine. Their significance lies in the fact that they cause disruption not only through direct contribution to society, but also through the way their spill-over effects enables a vast range of complementary innovations. Electricity made possible factory electrification, telegraphic communication, and all that followed. And the internal combustion engine gave rise to the automobile, the aeroplane, and modern transportation and logistics networks. AI will impact society on a similar scale.

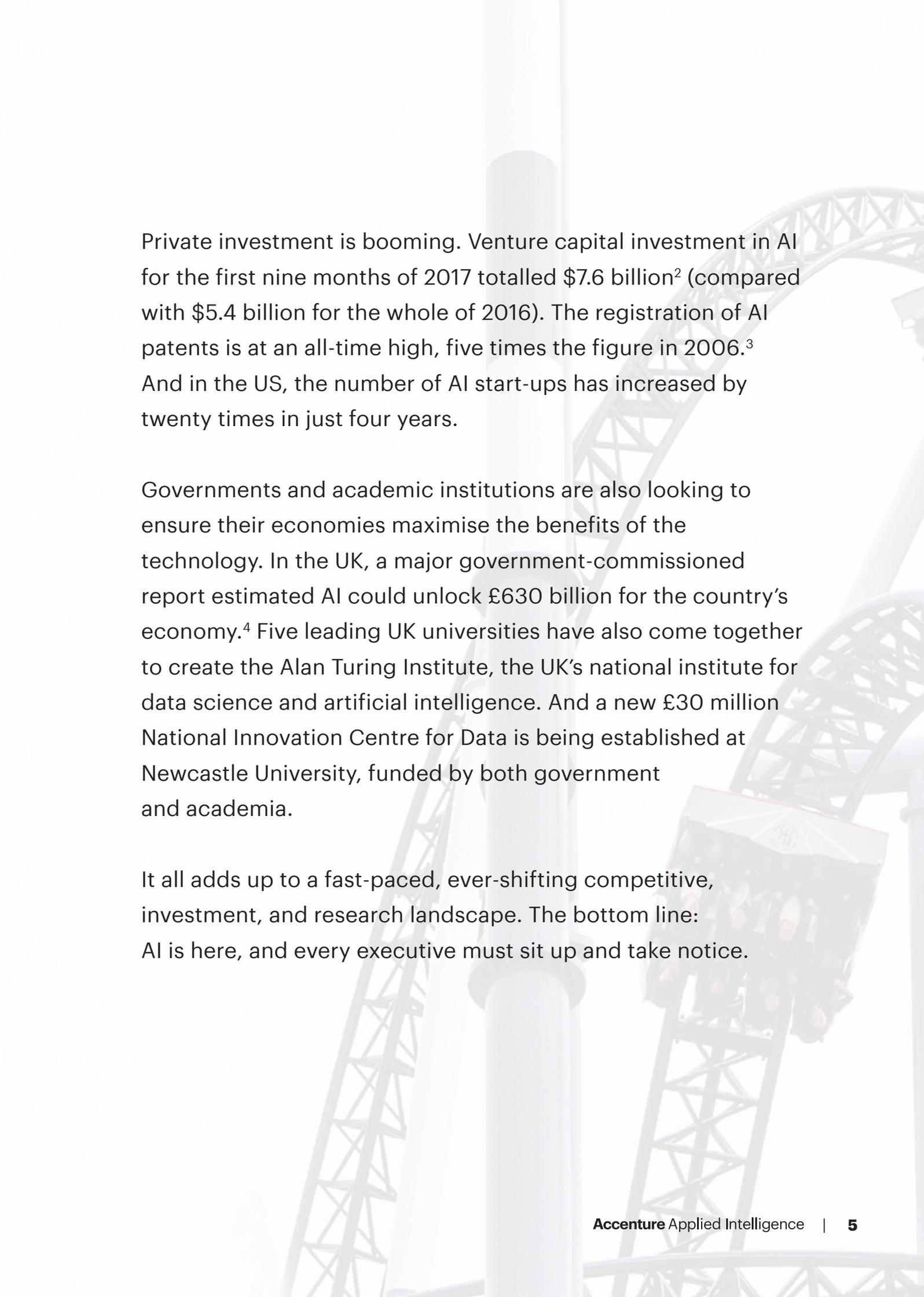




AI has become viable today thanks to the combinatorial effect of a series of fast-moving technology trends. Those trends are lowering barriers to entry across a wide range of industries. A new wave of AI-first businesses is flowing into the market, shifting the competitive landscape for incumbents. These new businesses are nimbler, unencumbered by legacy technology systems, distribution channels, or the need for workforce transformations.

“AI is the ultimate breakthrough technology.”

Satya Nadella, CEO, Microsoft



Private investment is booming. Venture capital investment in AI for the first nine months of 2017 totalled \$7.6 billion² (compared with \$5.4 billion for the whole of 2016). The registration of AI patents is at an all-time high, five times the figure in 2006.³ And in the US, the number of AI start-ups has increased by twenty times in just four years.

Governments and academic institutions are also looking to ensure their economies maximise the benefits of the technology. In the UK, a major government-commissioned report estimated AI could unlock £630 billion for the country's economy.⁴ Five leading UK universities have also come together to create the Alan Turing Institute, the UK's national institute for data science and artificial intelligence. And a new £30 million National Innovation Centre for Data is being established at Newcastle University, funded by both government and academia.

It all adds up to a fast-paced, ever-shifting competitive, investment, and research landscape. The bottom line: AI is here, and every executive must sit up and take notice.



**By 2020,
the AI market
will surpass
\$40 billion.⁵**

Constellation Research

Recommended Reading

The Second Machine Age by Erik Brynjolfsson and Andrew McAfee

Machine, Platform, Crowd by Erik Brynjolfsson and Andrew McAfee

Life 3.0 by Max Tegmark

Human + Machine: Reimagining Work in the Age of AI by Paul Daugherty & James Wilson

(forthcoming March 20th, 2018)

Homo Deus by Yuval Noah Harari

The Quest for Artificial Intelligence by Nils Nilsson

The Master Algorithm by Pedro Domingos

The Future of the Mind by Michio Kaku

I would like to thank Accenture colleagues too numerous to mention for their help formulating the concepts described in this publication; and Lucy Frost, Noor Sajid, Caryn Tan and Alexandra Vernon for their assistance with research and design.

Sources

¹ Nanterme, P. (2016, January 17). Digital Disruption Has Only Just Begun. World Economic Forum. <https://www.weforum.org/agenda/2016/01/digital-disruption-has-only-just-begun/>

² Faggella, D. (2017, August 24). Venture Investments in Artificial Intelligence – Trends in 2016 and Beyond. TechEmergence. <https://www.techemergence.com/venture-investments-in-artificial-intelligence-trends/>

³ Hoffman, M. (2016). Artificial Intelligence Patents Growing Exponentially. Hoffman Warnick. <http://hoffmanwarnick.com/artificial-intelligence-patents-growing-exponentially/>

⁴ Hall, W., & Pesenti, J. (2017, October 15). Growing the Artificial Intelligence Industry in the UK. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/652097/Growing_the_artificial_intelligence_industry_in_the_UK.pdf

⁵ Wang, R. (2016, September 18). Understanding the Spectrum of Seven Artificial Intelligence Outcomes. R“Ray” Wang. <http://blog.softwareinsider.org/2016/09/18/mondays-musings-understand-spectrum-sevenartificial-intelligence-outcomes/>

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