

Tomorrow's Digitally Enabled Workforce

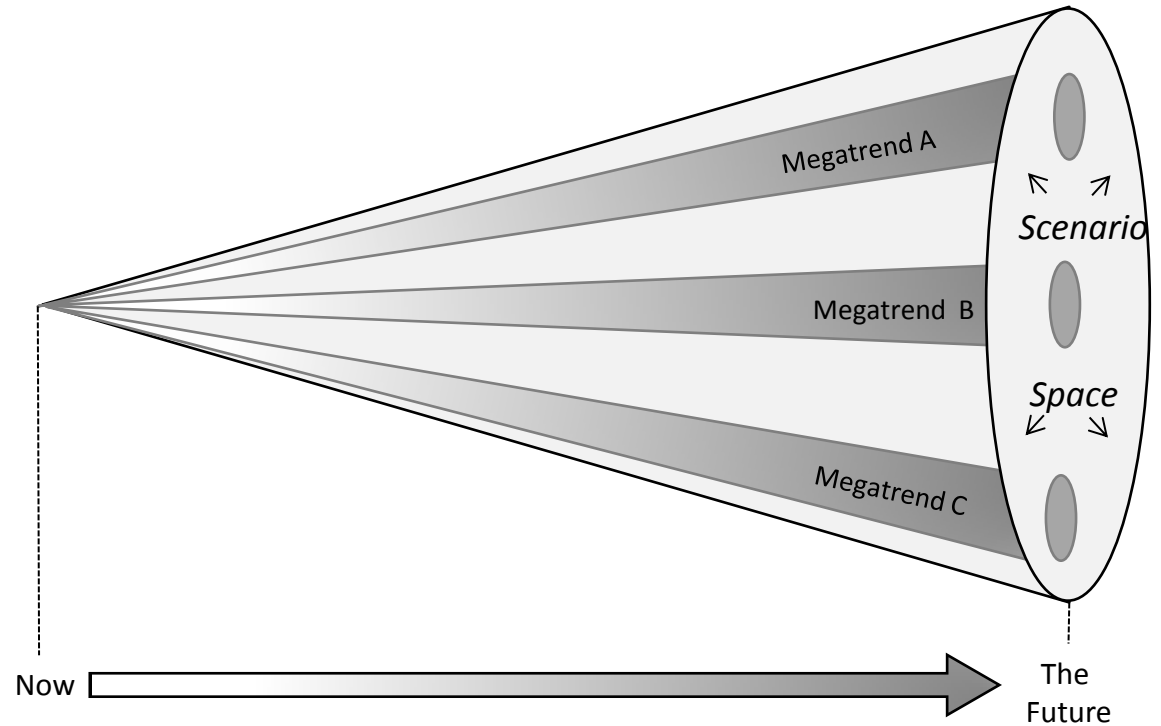
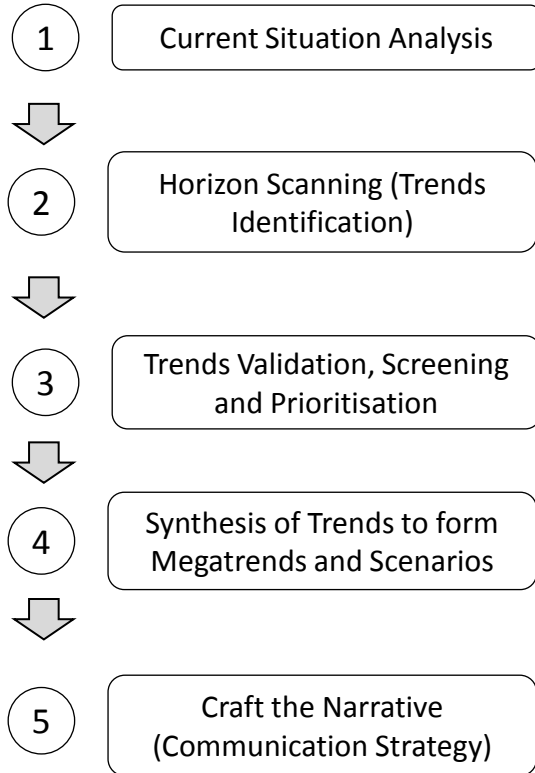
Highlights and Key Themes in Our Research Over Recent Years

Stefan Hajkowicz, PhD

www.csiro.au

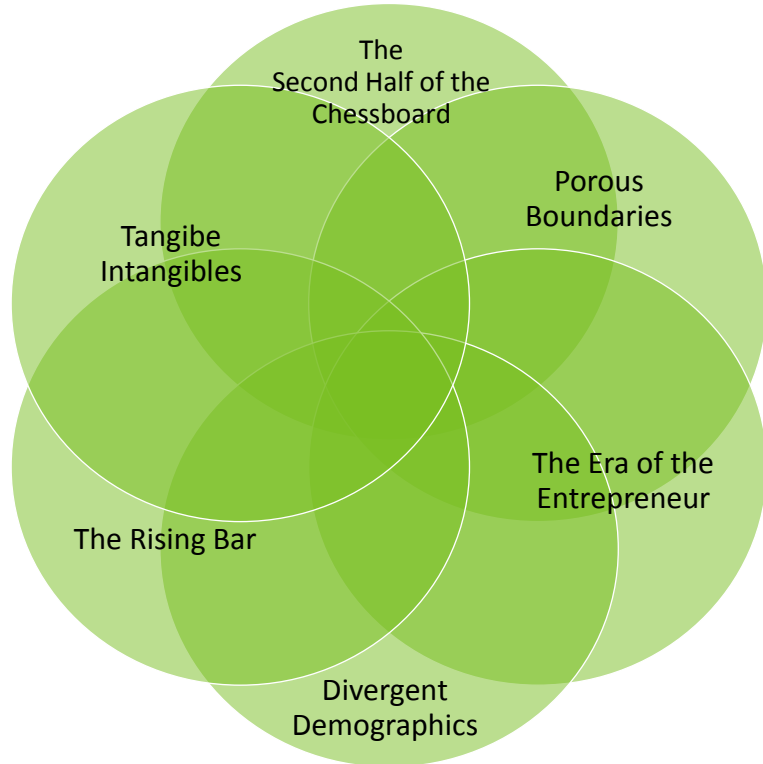


Our methods (strategic foresight)

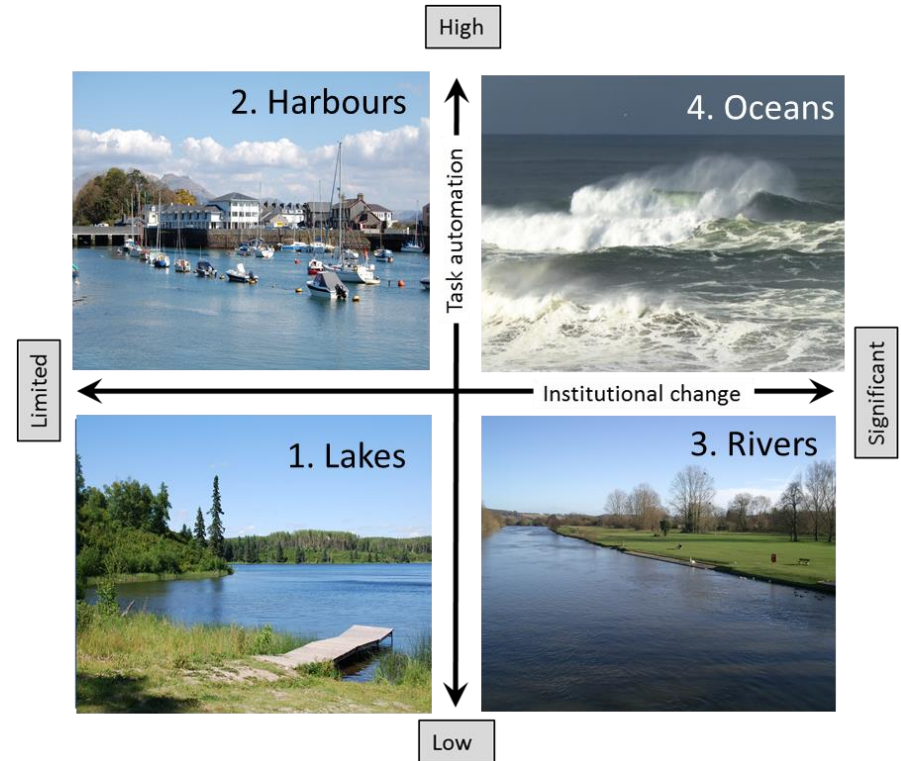


Our results ...

MEGATRENDS



SCENARIOS



Are We (All) Jumping at Shadows? Why So Much Interest?



January 2016 Report
“The Future of Jobs”



Australia’s Future
Workforce



International
Labour
Organization

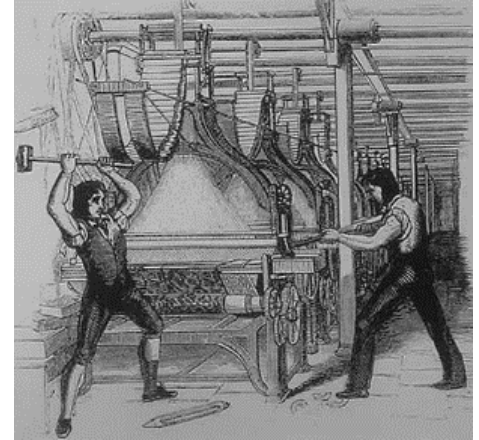
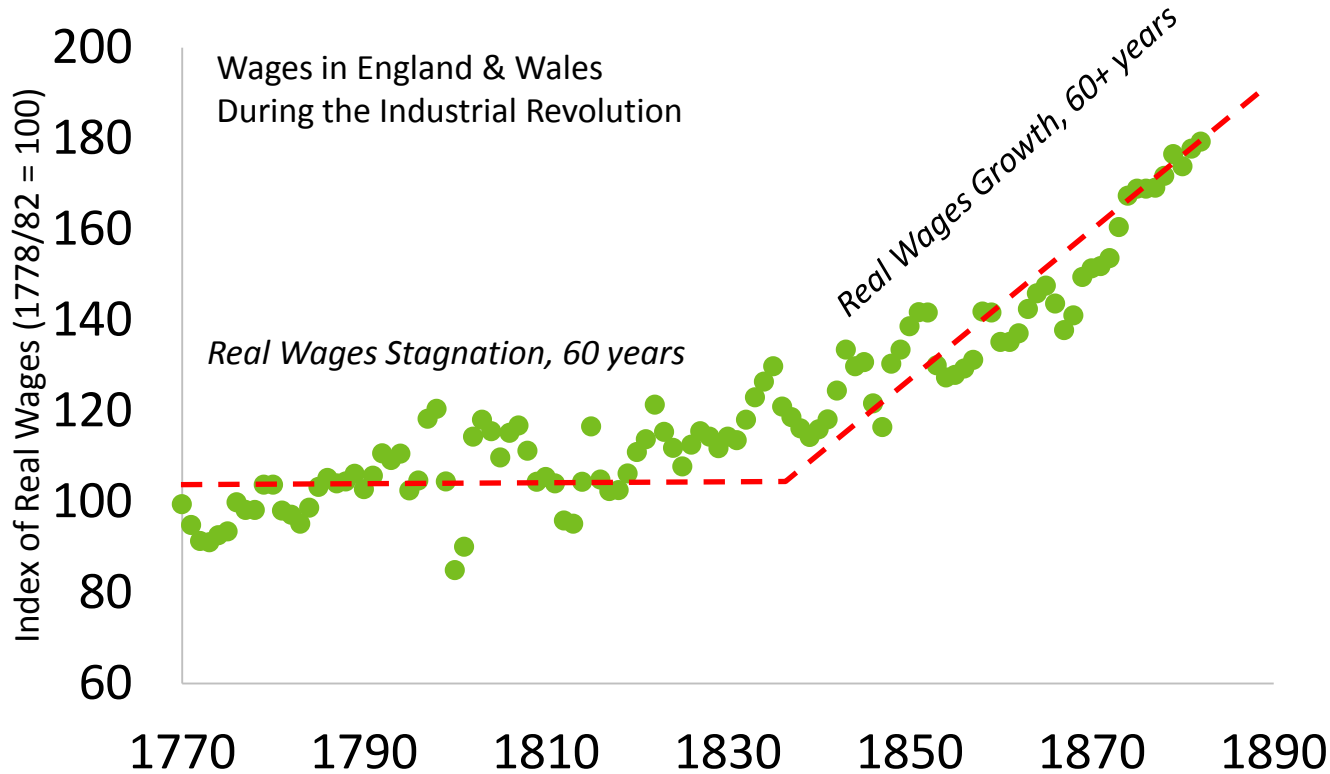
The future of work
centenary initiative



HM Government

The future of work: jobs and skills
in 2030

Was the Industrial Revolution a Warm Up Act?



The Misunderstood Luddites,
Wikipedia

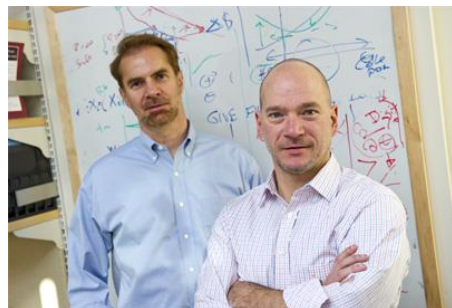
Robots are Improve Quickly

The Journey of IBM's Watson



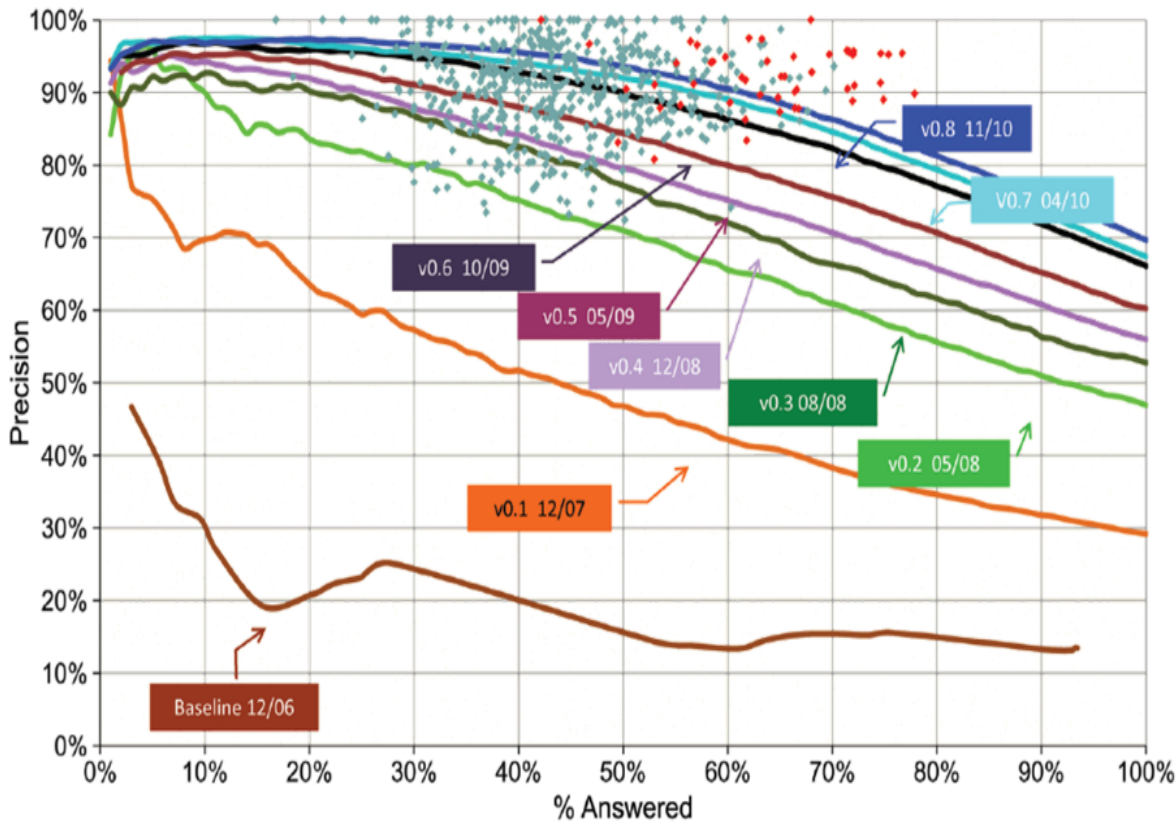
47% of Jobs in America at High Risk of Automation

Michael Osbourne
Oxford University



Learn to race with the Machine, not against it

Erik Brynjolfsson and Andrew McAfee
Massachusetts Institute of Technology (MIT)



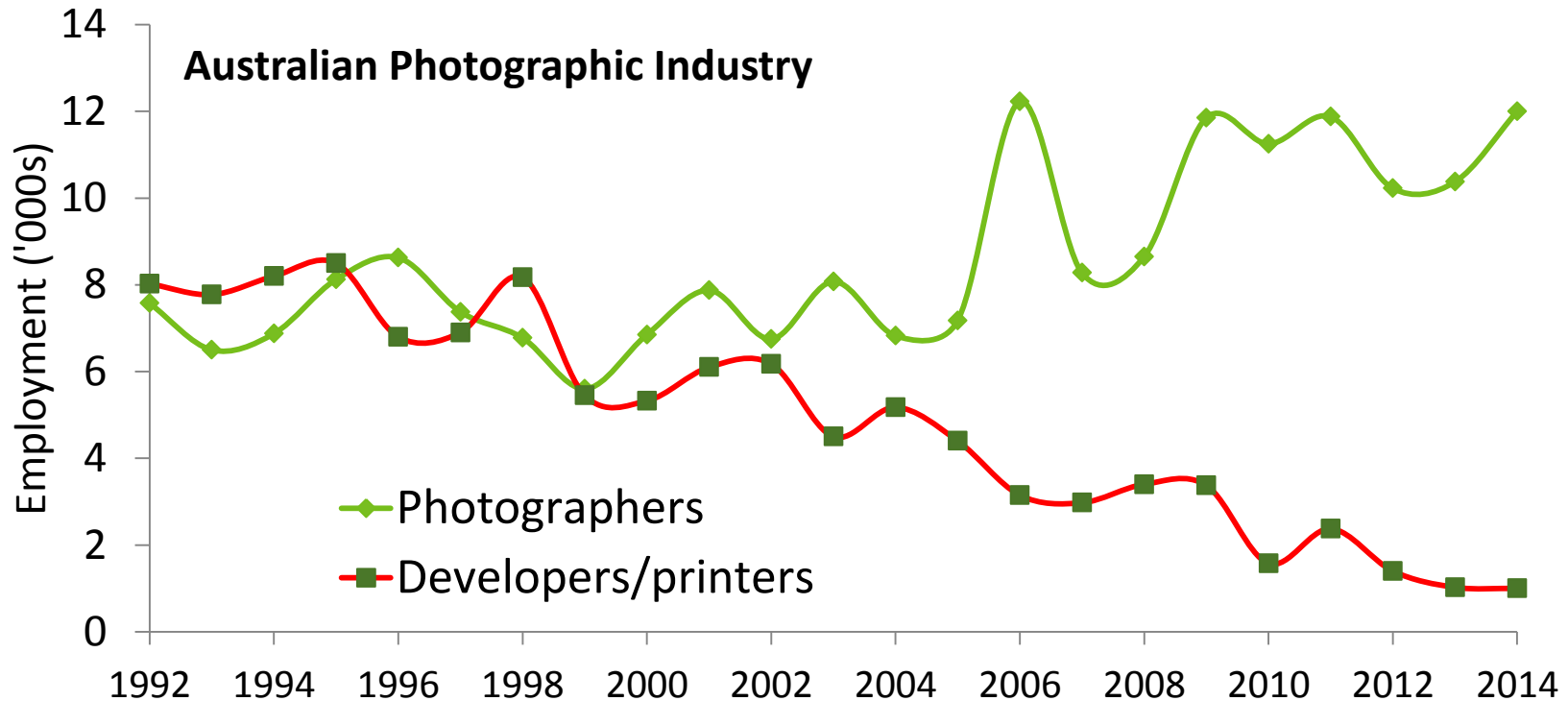
What Jobs do People Get?

After seven years of effort by scientists from UC Berkeley a robot can fold a towel in ...

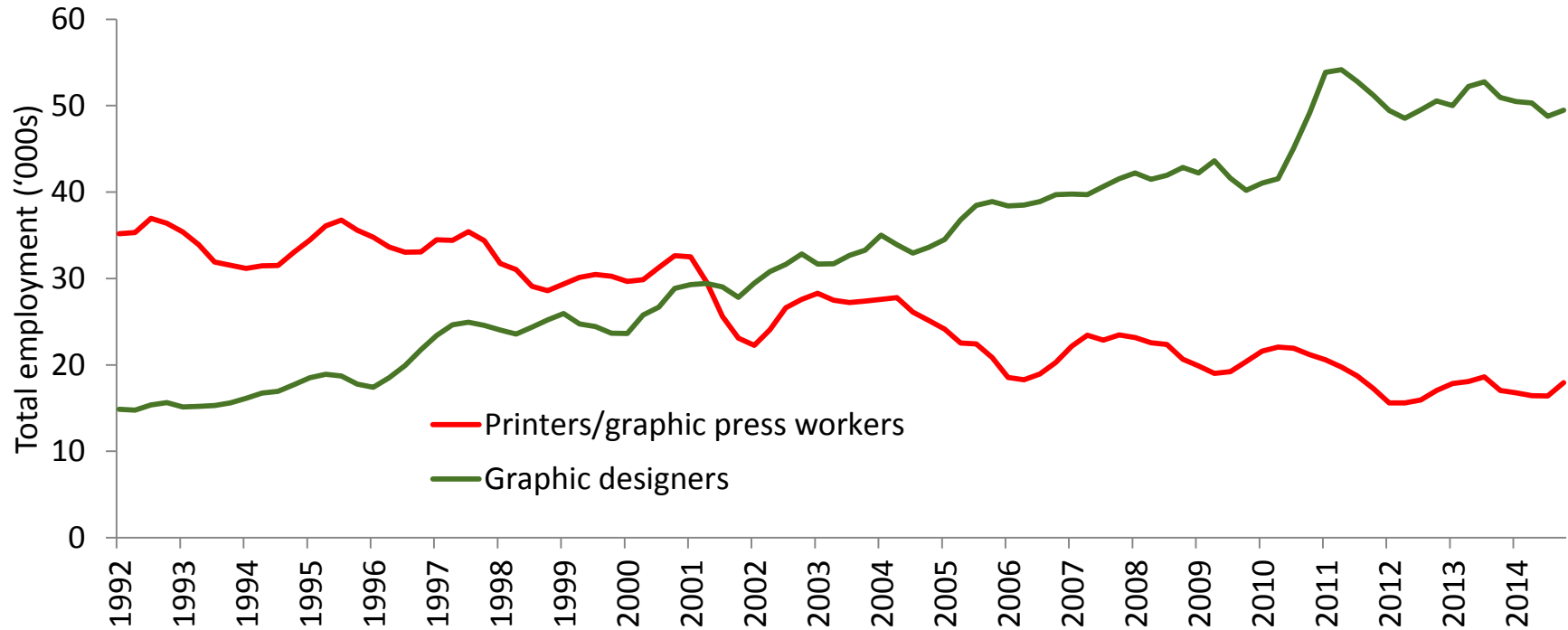
20 mins.



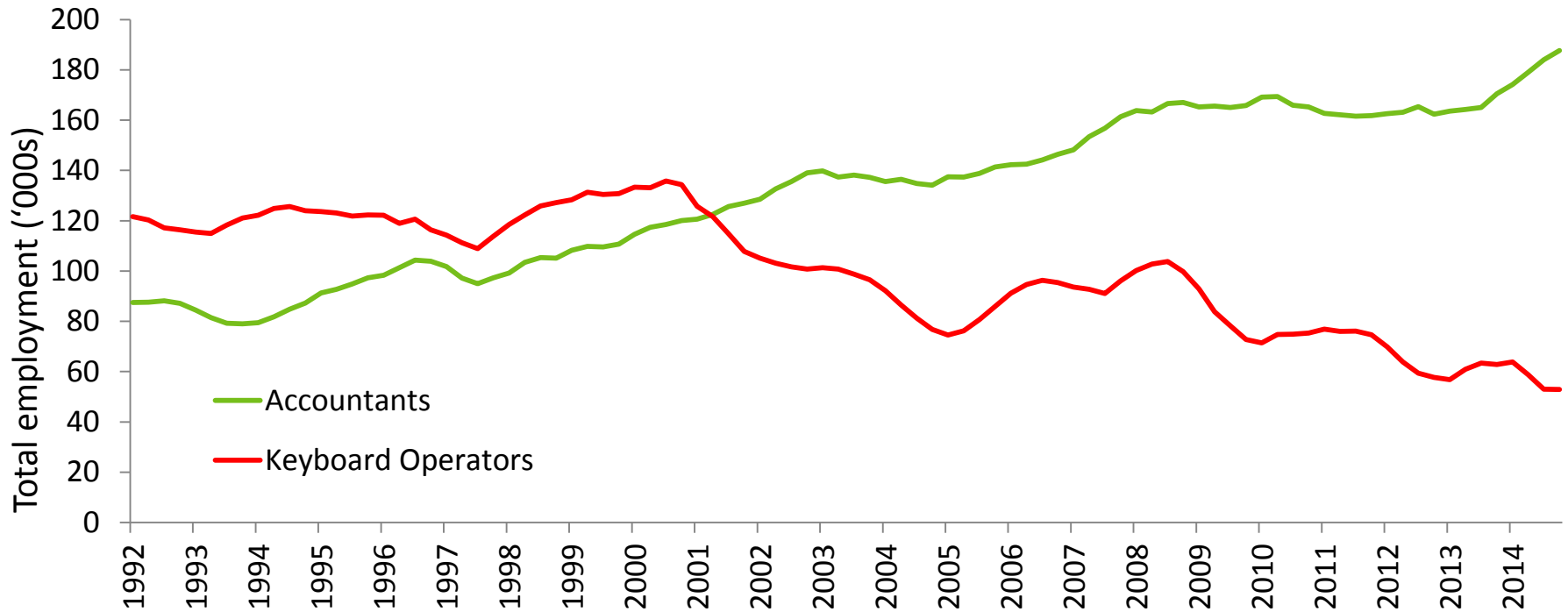
Photographers Versus Lab Staff



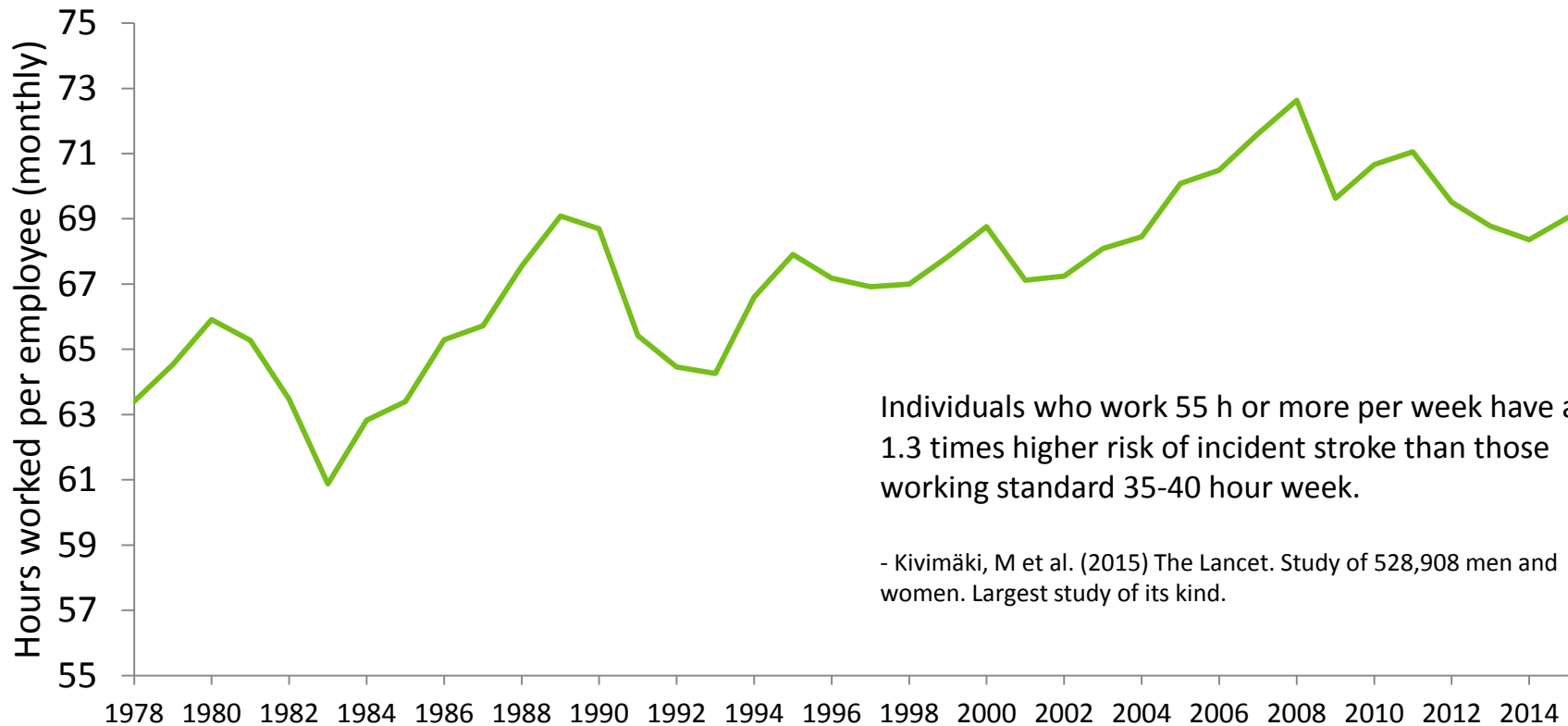
Printery Workers Versus Graphic Designers



Accountants Versus Keyboard Operators



Working Ever Longer

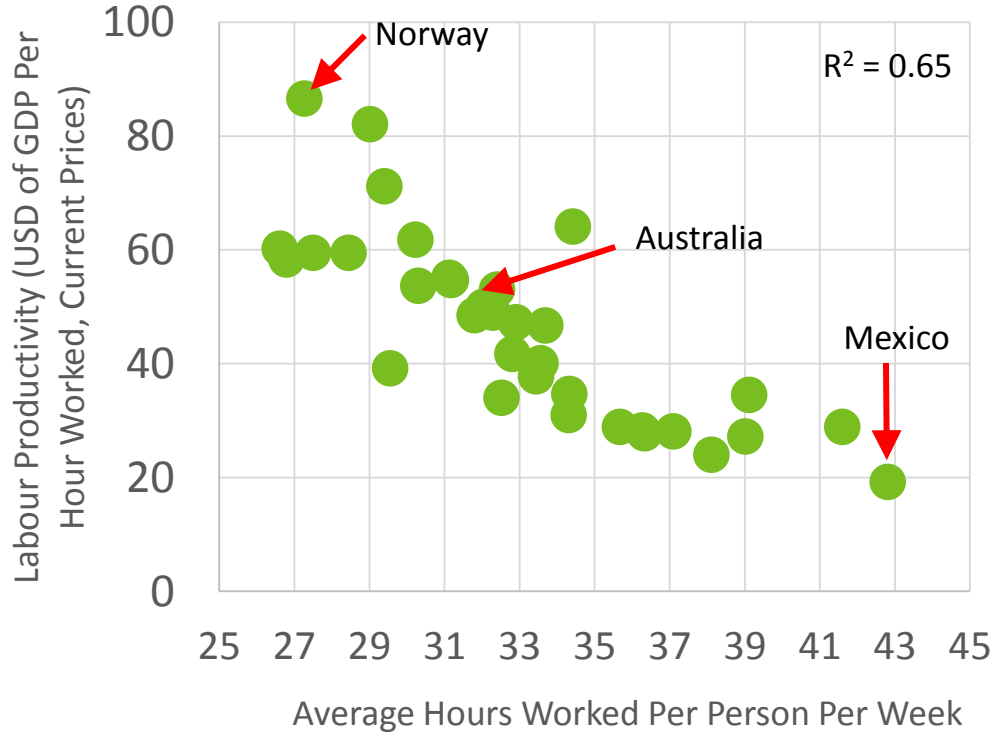


Individuals who work 55 h or more per week have a 1.3 times higher risk of incident stroke than those working standard 35-40 hour week.

- Kivimäki, M et al. (2015) The Lancet. Study of 528,908 men and women. Largest study of its kind.

Working Smarter (Not Just Harder)

A high tech digitally enabled economy rewards intelligence more than brute force

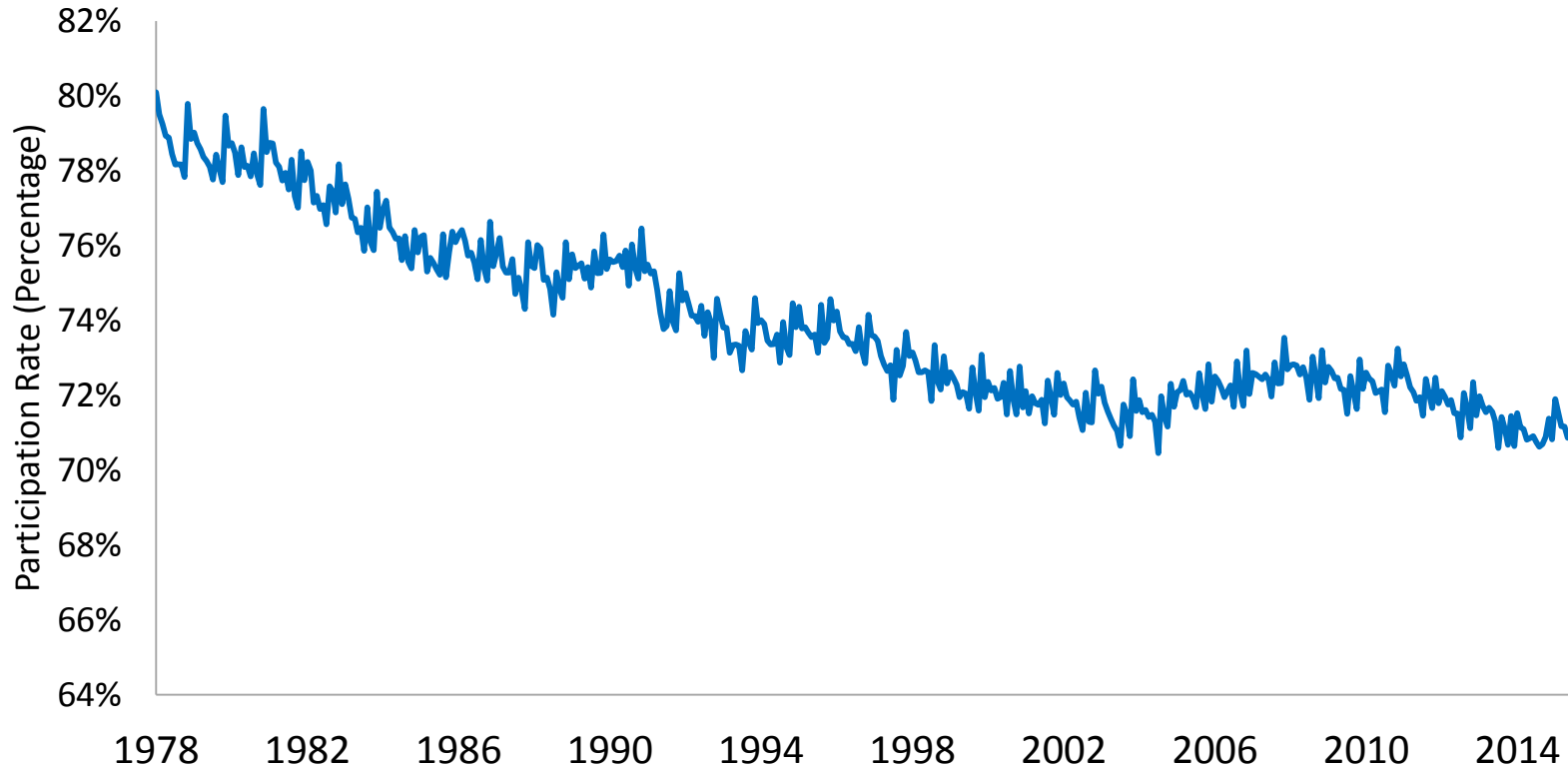


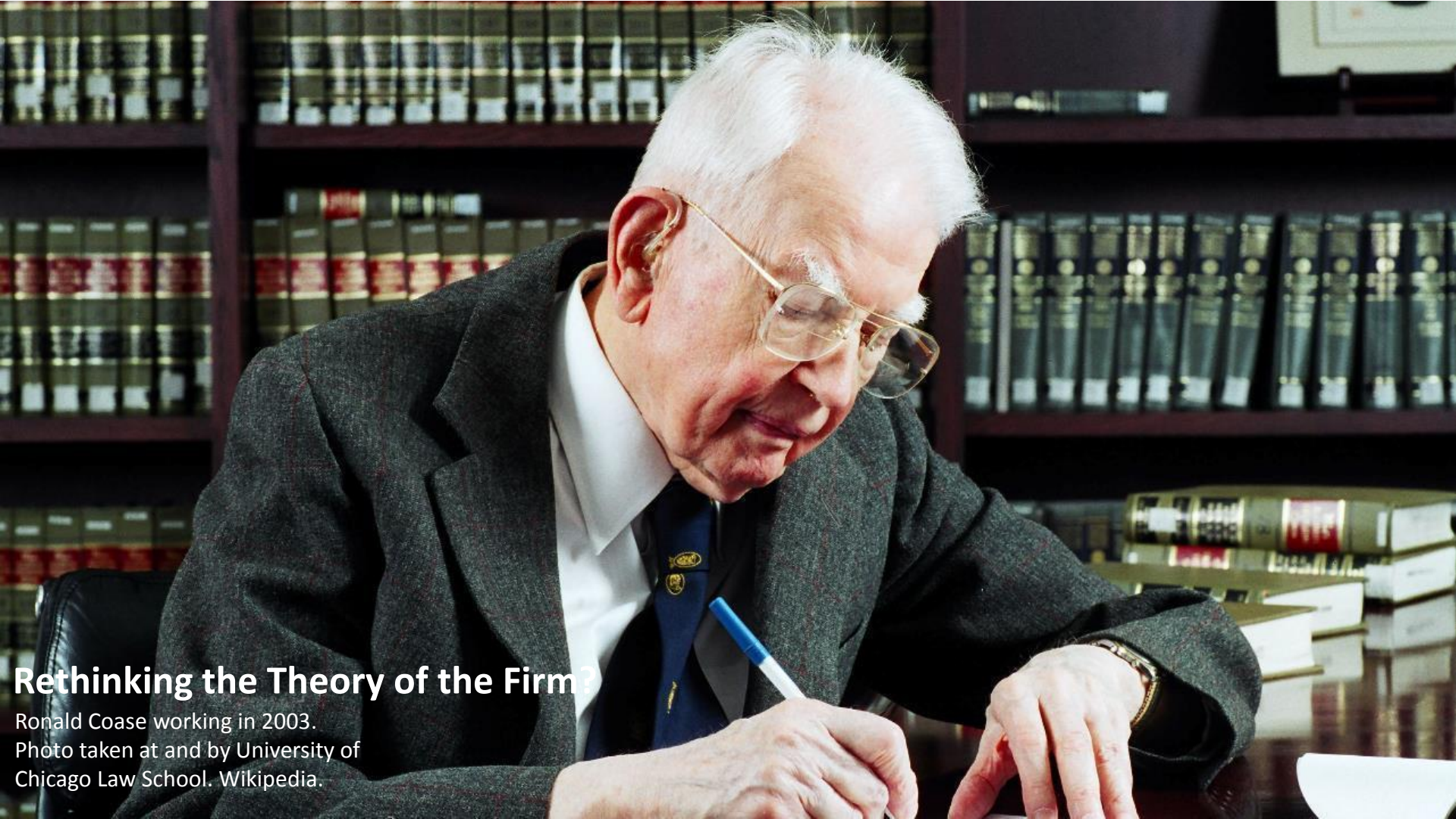
Experiments in Sweden, reducing the work week from 8 to 6 hours tested by:

- Svartedalens elderly care home
- Internet startup, Brath
- Filimundus App Developer
- Stockholm city council
- Toyota service centre in Gothenburg

Not Everyone is Making the Transition

Working Age Males in Australia, Labour Force Participation Rate





Rethinking the Theory of the Firm?

Ronald Coase working in 2003.
Photo taken at and by University of
Chicago Law School. Wikipedia.

1. Information asymmetry

is where one party has more or better information than the other. But ...



... can customer generated content create symmetric information?

2. Transaction Costs



Are incurred in making an economic exchange (i.e. the cost of participating in a market). But ...



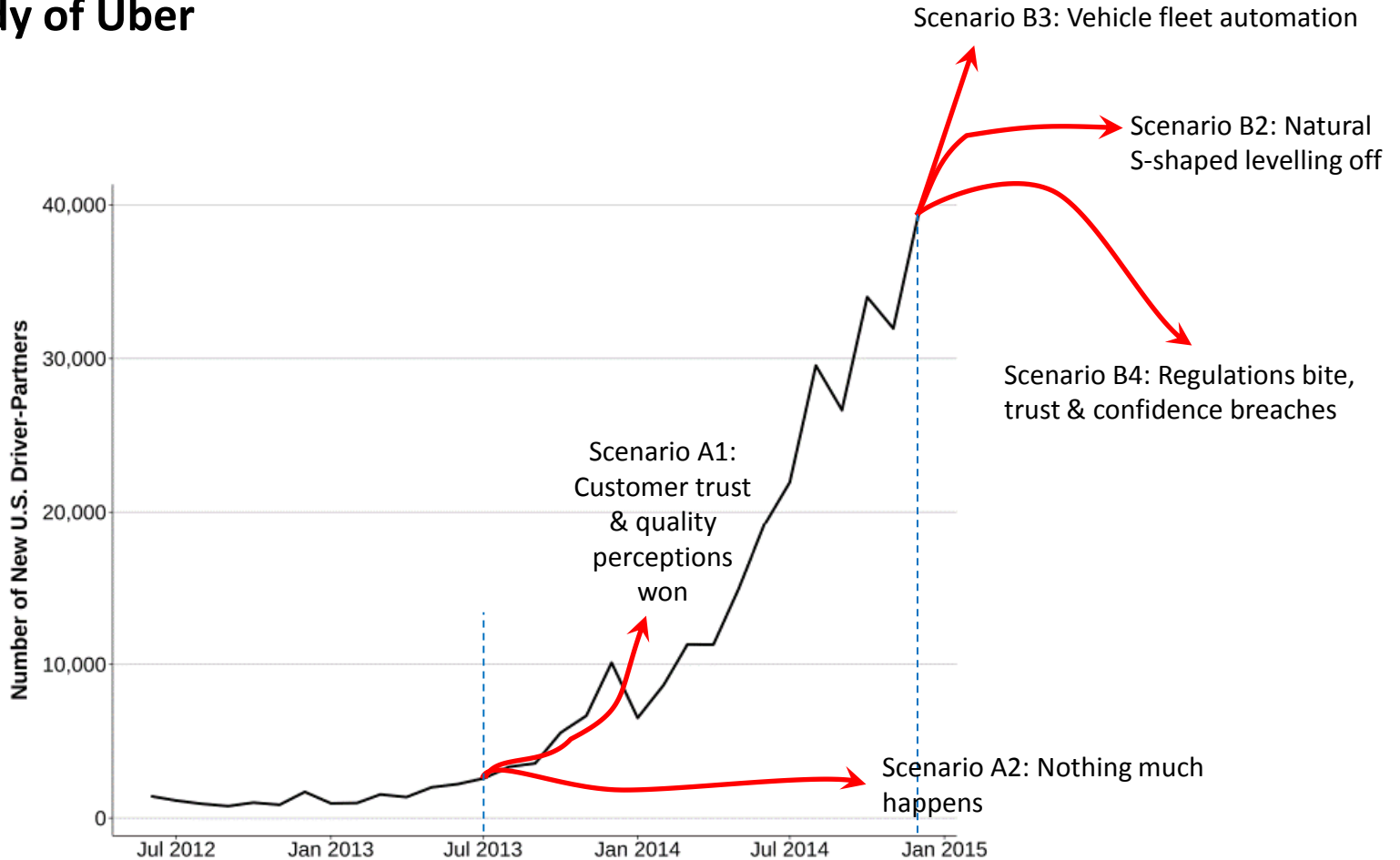
consider two ways of buying an e-Scooter from China.



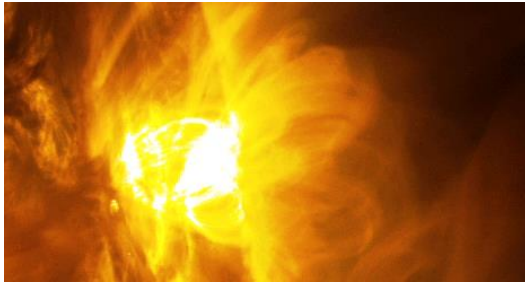
Scenario Planning of the P2P Economy: A Case Study of Uber

New Data in
a study by
Uber
Technologies
and
Princeton
University,
published
2016

Proxy measure
for Market
Share



Democratisation of Innovation



Solar Flare Jan 2015, NASA

Bruce Cragin

Verified account

MASTER		?
Highest	10th	Current
	189th	284,698
81,479.4 points		
Joined 4 years ago		



Predicted 8 hours in advance with 85 percent accuracy and 24 hours with 75 percent accuracy



InnoCentive@Work

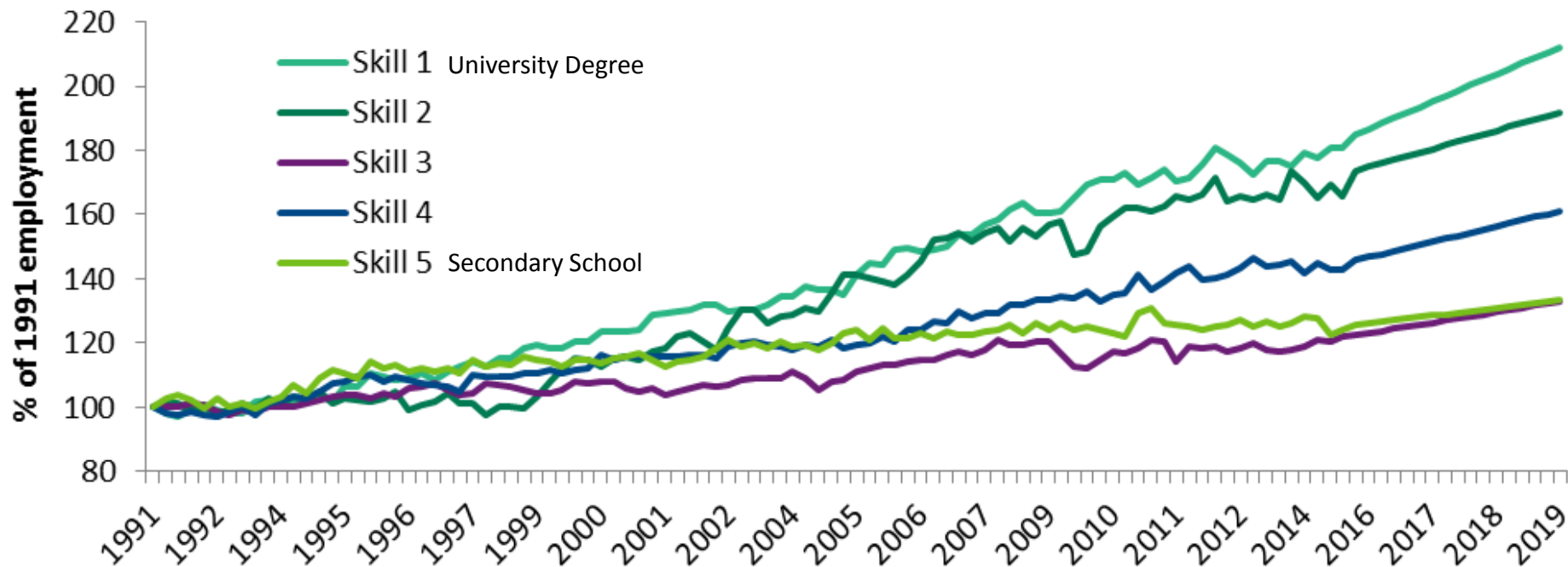
- Build a Culture of Innovation
- Collaborate Internally
- Share Knowledge & Solve Challenges
- SaaS Innovation Management Software

[Learn more »](#)

Lars Bo Jeppesen¹ & Karim R. Lakhani – 166 competitions and 12,000 scientists.

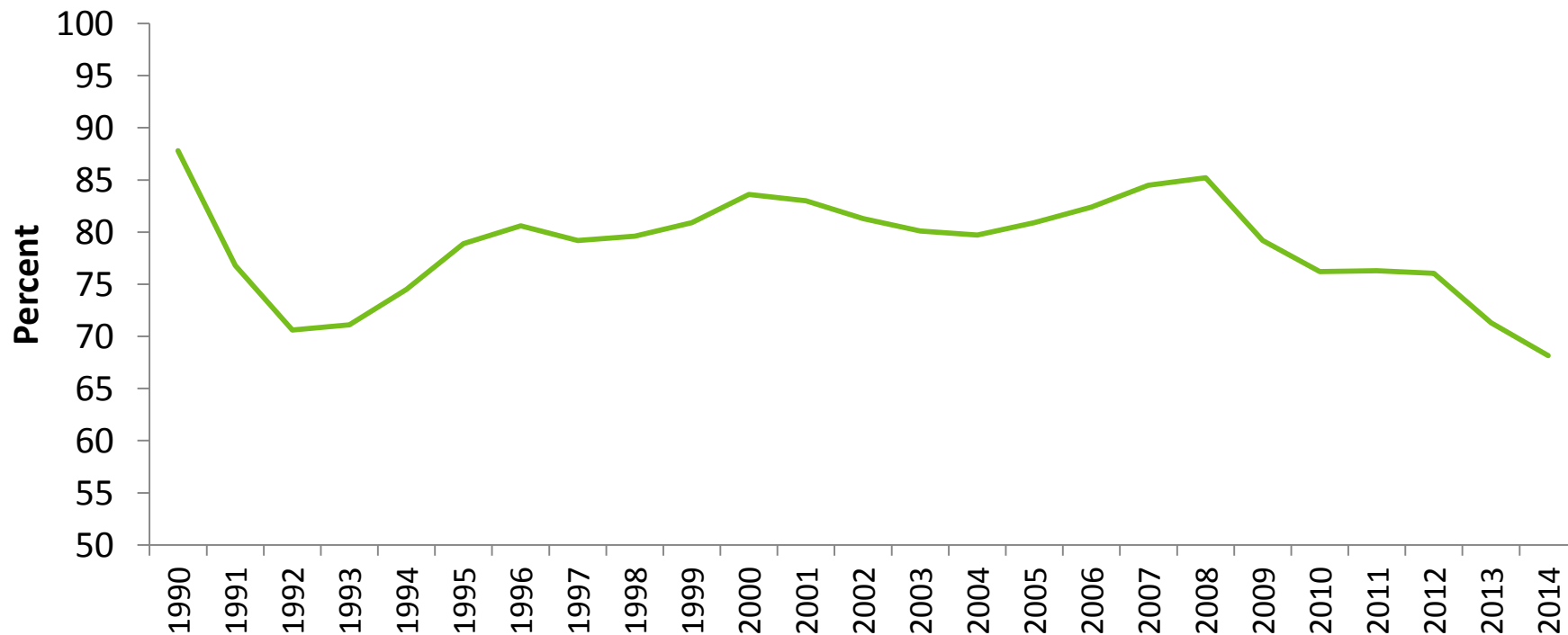
Having expertise unrelated to the problem improves chances of success.

The Rising Bar



Pressures on Recent Graduates

Percent of Australian bachelor degree holders working fulltime shortly after graduation



Neglecting STEM at Our Own Cost



STEM skills are need for 75% of the fastest growing occupations and wage premiums. But Australian youth aren't all that interested.

Today 11% less year 12 students study math since 1992. There has been a 35% drop in enrolment in information technology subjects at universities since 2001.



In my company we hire software developers by the tonne, but we are lucky to get two job applications a day.

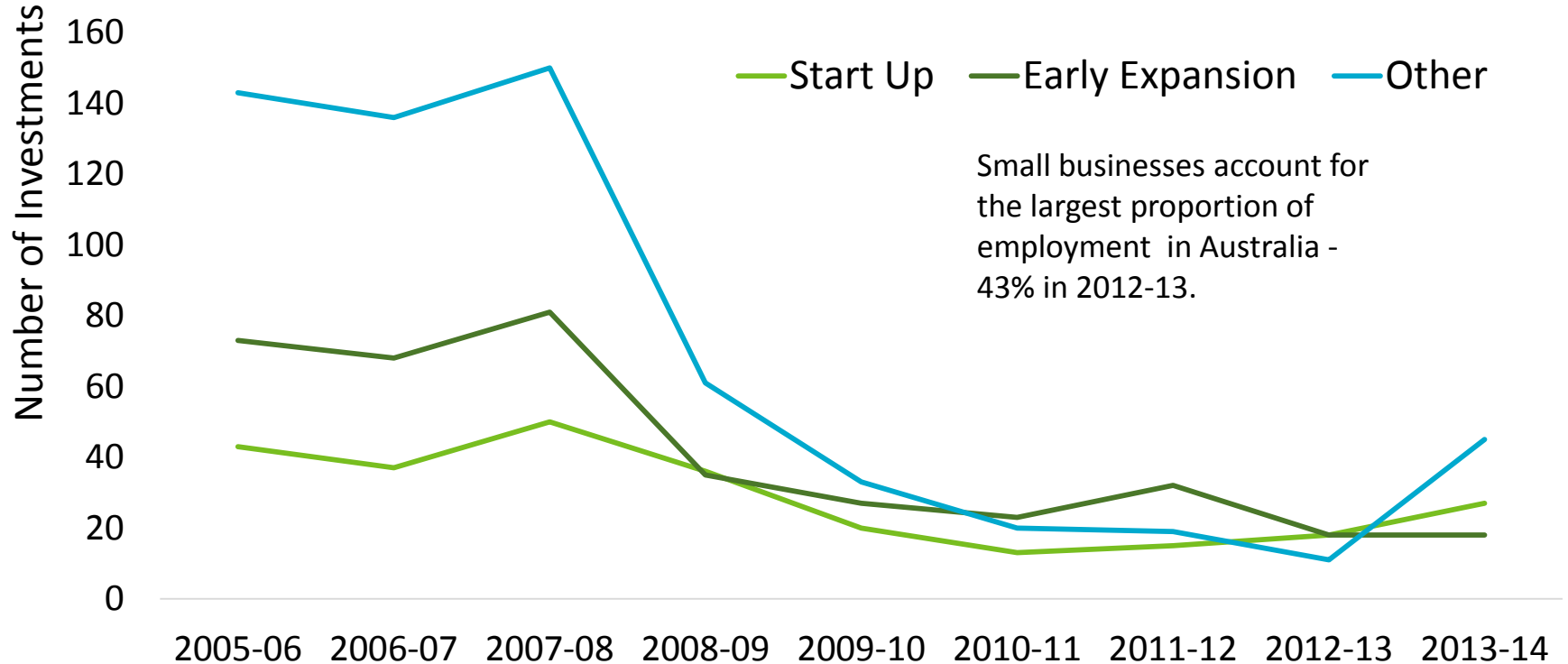
We put up an ad for an office manager and we got 350 applications in two days.

Matt Barrie in the Sydney Morning Herald, 14 April 2014, Speaking at ATP Sydney.

Australian Venture Capital Funding



Still Needs to be Restarted Post GFC



The number of co-working spaces operating worldwide has nearly doubled each year since 2006

DeskMag Survey



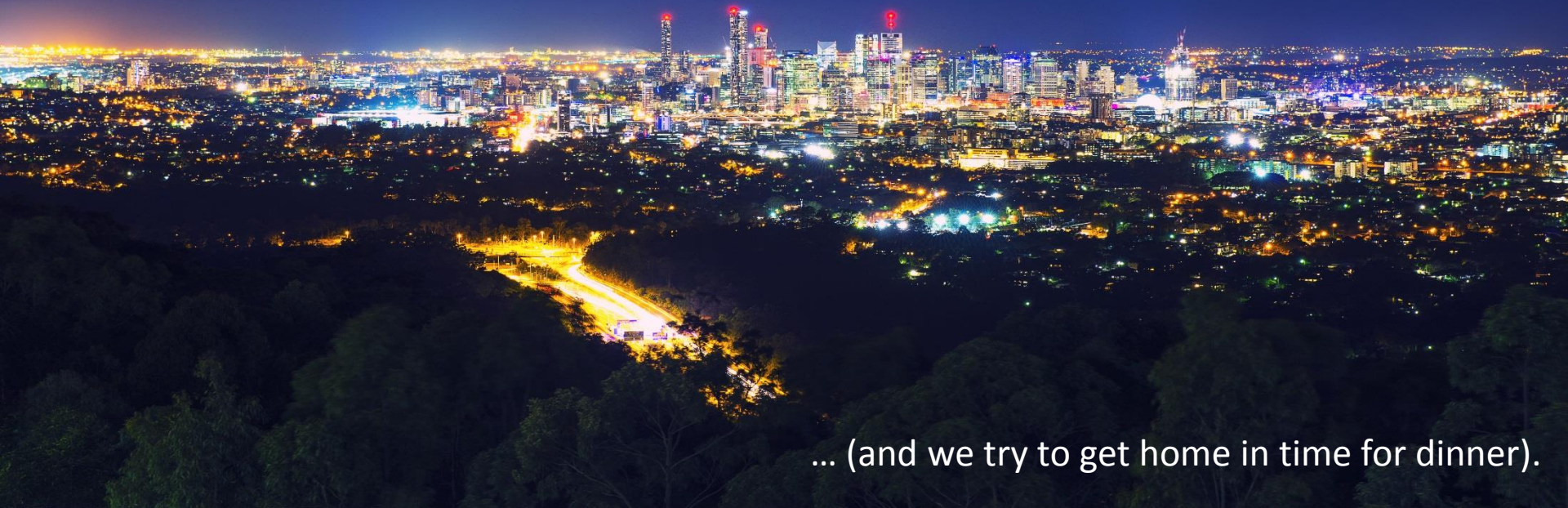
By the year 2020 over 40% of the world's
university degree-holders will be living in
China and India

OECD Statistics



Strategic Foresight @ Data61 | CSIRO

We combine research excellence with business relevance. We analyse trends, risks and scenarios with a focus on the digital economy. We do decision analysis. We help organisations make wise strategic choices and achieve their objectives. We live in Brisbane but we travel the world ...



... (and we try to get home in time for dinner).



Thank you

Data 61

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