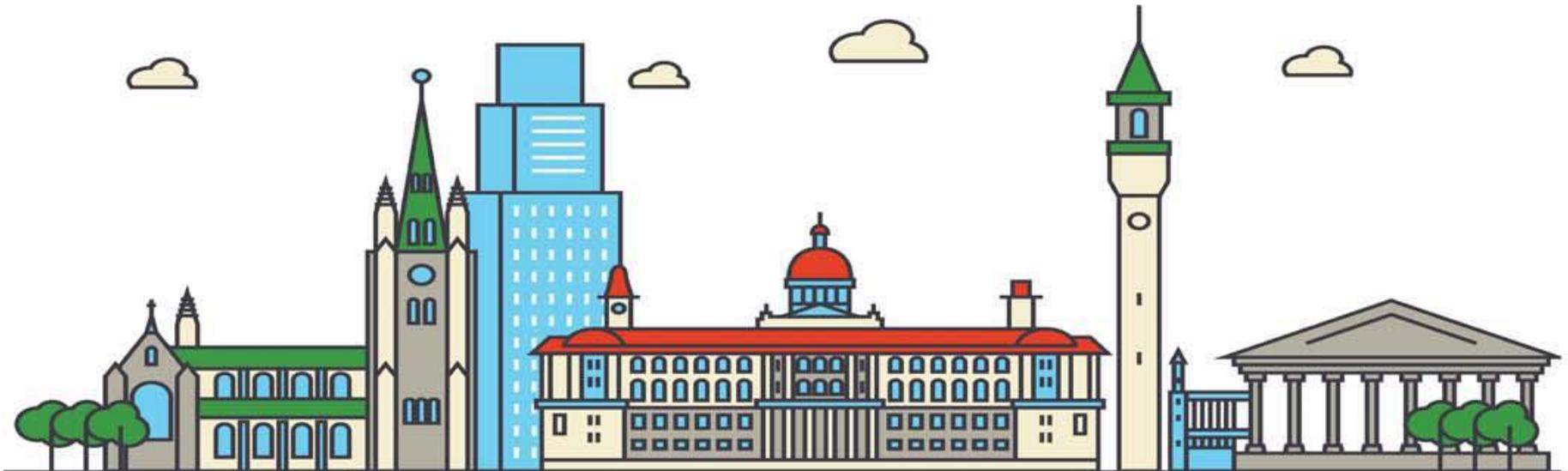# Fully automated luxury communism

## Colin Rowat / 5 November 2018

# AI, biggest data sets let China leapfrog

1. Artificial Intelligence will power the next economic revolution

2. The country that can best harness AI will take the lead
    a. the UK: the Industrial Revolution
    b. Silicon Valley: the silicon revolution

3. China: the AI revolution
    a. largest population + state support + less privacy $\Rightarrow$ biggest data $\Rightarrow$ best trained algorithms, winner takes all

(h/t to Tim Gordon for prompting these thoughts)
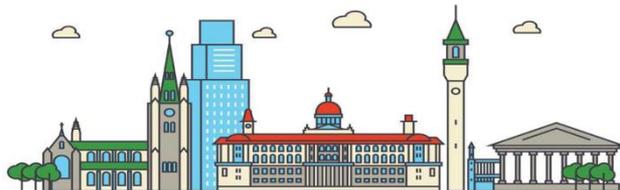
# It's happening already

A.I. implementation … plays to a … set of strengths … which are manifested in China: abundant data, a hypercompetitive business landscape and a government that actively adapts public infrastructure with A.I. in mind.
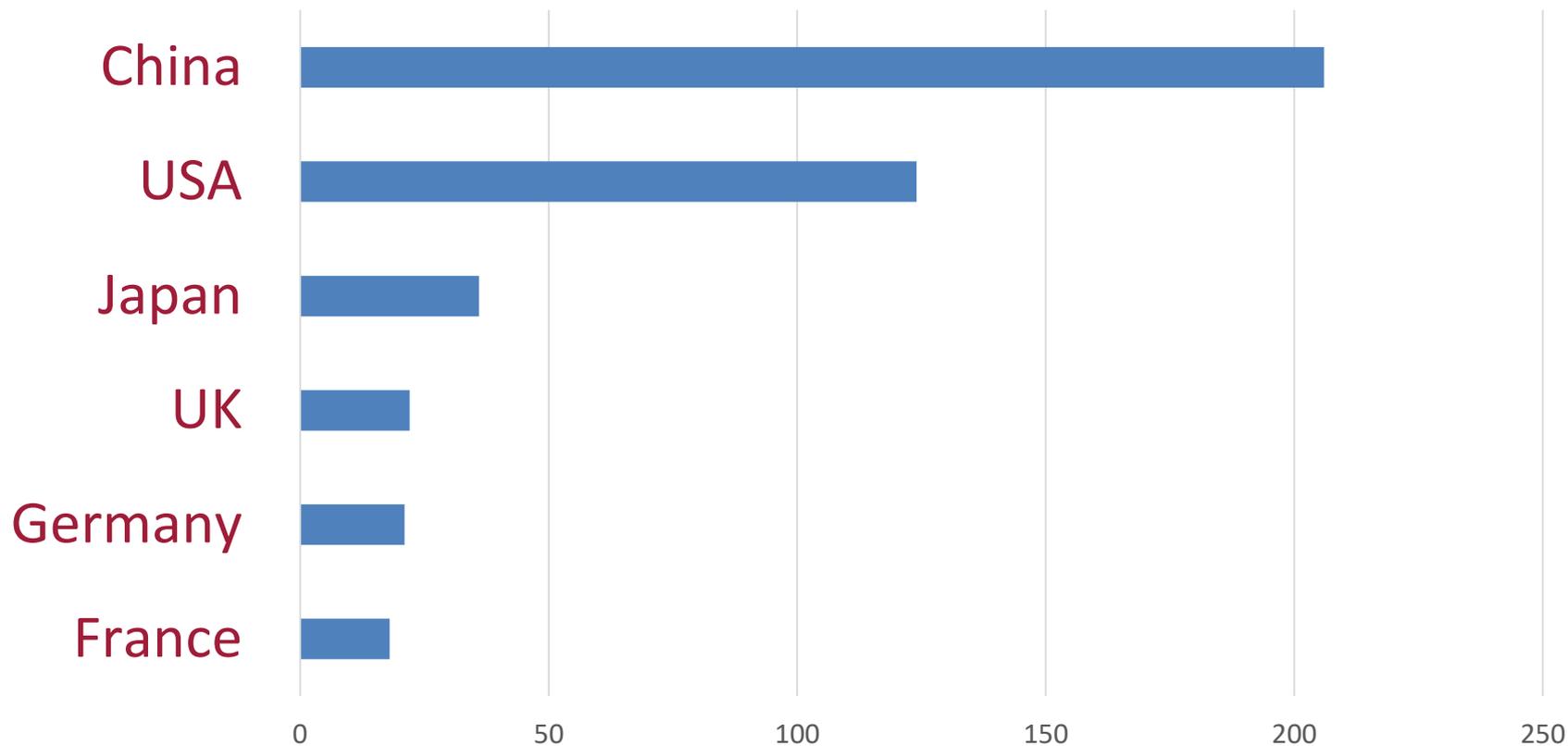
Chinese consumers regularly use apps like WeChat to … buy groceries, book doctor's appointments, manage their electricity and water utilities, take out microloans. [They] make up 68 percent of global demand for bike-sharing and ride-hailing apps.

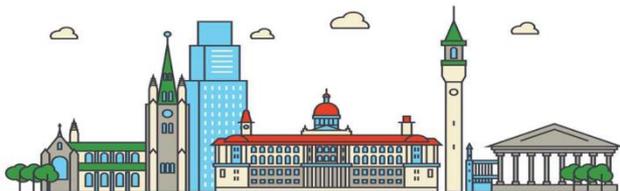The Chinese government understands that … if we want autonomous cars … we may need to embed sensors in our roads.

Kai-Fu Lee (22/09/18 NYT; ex-Carnegie Mellon, Apple, Google)

# Supercomputers in the TOP500 list



| Country | Count |
|---------|-------|
| China   | ~205  |
| USA     | ~124  |
| Japan   | ~36   |
| UK      | ~22   |
| Germany | ~21   |
| France  | ~18   |

(axis: 0, 50, 100, 150, 200, 250)

# Circumstantial evidence: a quiz

1. In the 1960s, Norbert Wiener's cybernetics, [from which AI developed](), had the most prestige in … ([Graham](), 1973).

    a.   Austria          b.   China          c.   the USA          d.   the USSR

2. Firms in developed market economies were, on average, … those in the Soviet economies ([Newbery & Kattuman](), 1992).

    a.   > 10 x          b.   2 x          c.   1/2 x          d.   < 1/10 x

3. "Science has substantially enriched the theoretical arsenal of planning, by developing methods of mathematical-economic modelling, systems analysis. … [W]e must establish the statewide automated system of information collecting and processing" ([Cave]()).

    a.   Amaya, 1980     b.   Brezhnev, 1969     c.   Kennedy, 1961   d.   Xi, 2018

4. "The … rate of growth "is well above the U.S. rate of growth over [1929—57]" ([Erlich](), 1967).

    a.   Chinese          b.   French          c.   Japanese          d.   Soviet
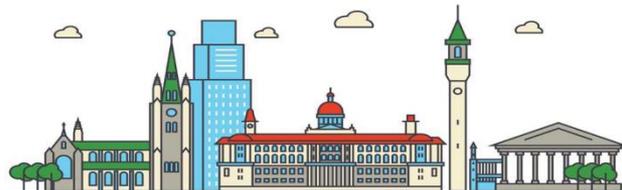
# Circumstantial evidence: a quiz

5. "The essence of this transformation was the emerging possibility, enormously facilitated by the appearance of the high-speed computer, of dealing quantitatively with much more complex systems of interdependent variables than had ever been possible before." (Milikan)

   a. China          b. Japan          c. the USA          d. the USSR

6. "the average age of researchers was about 25 … [They] imagined a kind of smart neural network … In addition to countless mainframe computer projects, other theoretical schemes included automata theory, the paperless office, and natural language programming…

   "[They published] papers such as 'On Wanting to Remain Invisible – At Least to the Authorities' … issued pun-filled faux passports, wedding certificates, newsletters, punchcard currency and even a Cybertonia constitution … Cybertonia was governed by a council of robots" (Peters, 2016)

   a. RAND Institute, Santa Monica, 1950s
   b. Institute of Cybernetics, Moscow, 1960s
   c. Google X, Mountain View, 2010s
   d. Social Credit System, Beijing, 2010s
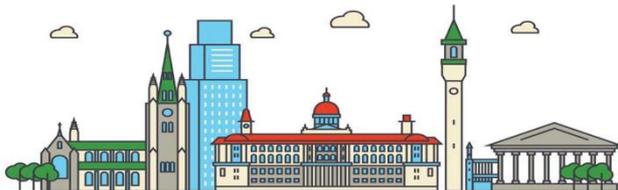
# Déjà vu all over again?

Without centralized planning, it was argued, there would be no comparable rates of growth; without extensive social ownership no effective centralized planning would be possible; and without thoroughgoing modernization and concentration of production in the wake of rapid economic growth, both planning and social ownership would lack a firm basis and would eventually either be subverted from within or destroyed from without.

… the operation was backed up by the application of outright compulsion and repression on a hitherto unparalleled scale, and could not have succeeded otherwise against popular resistance and the normal slow motion processes of the bureaucratic "business as usual"
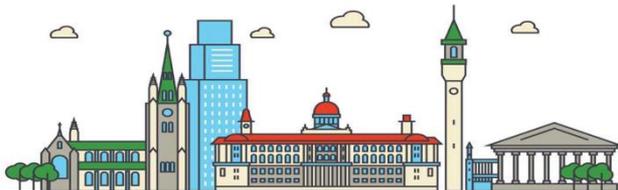
Alexander Erlich, Development Strategy & Planning (1967)
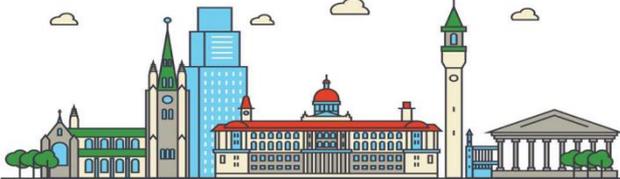
# Good engineering ≠ good economics
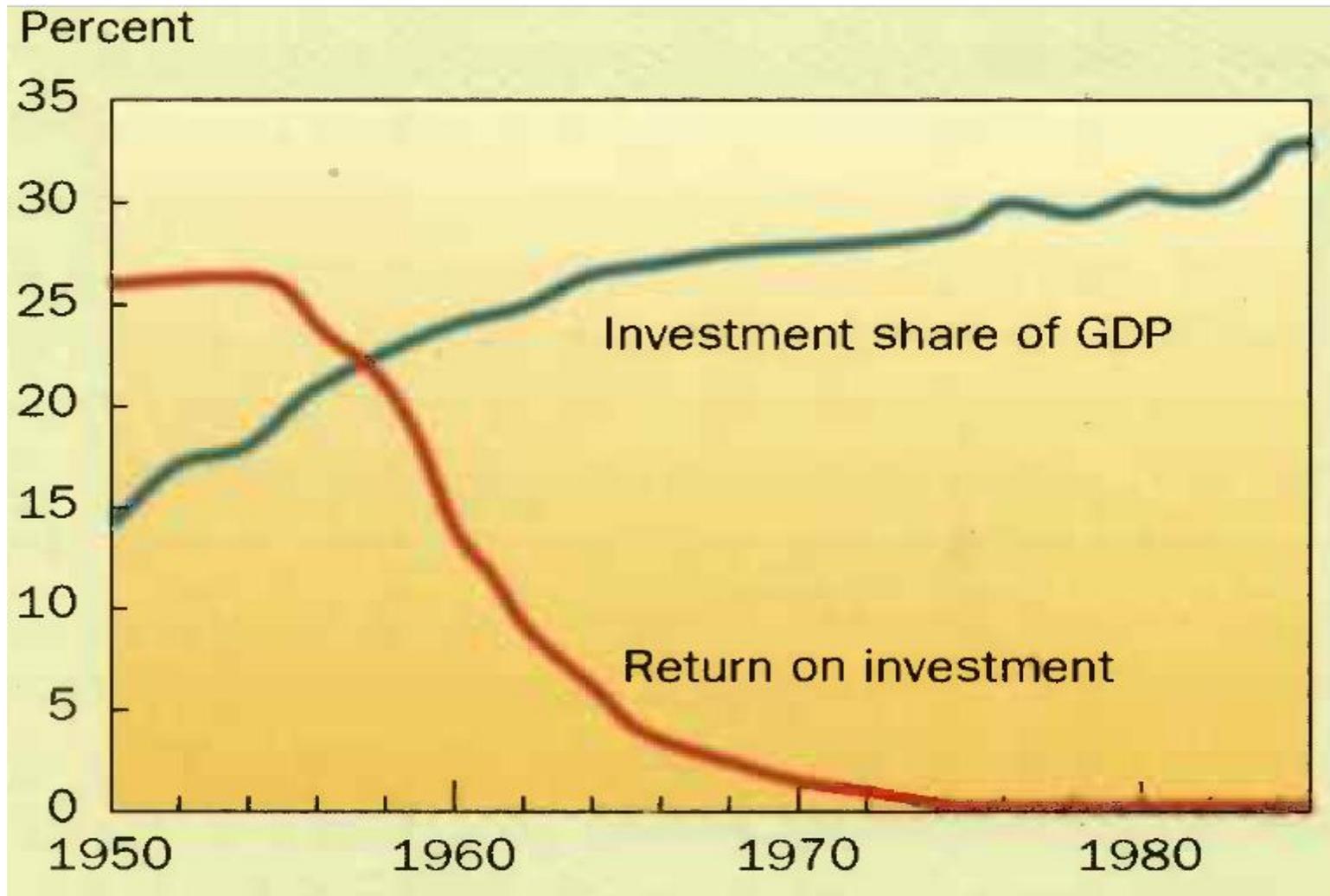


Easterly & Fischer (1995), via World Bank (1996)

# Will China dodge the Soviet trap?

1. it's bigger
   a. large ≠ competitive: soft budget constraint, 'too big to fail', the financial crisis
   b. big data: size v diversity & quality of data
      i. Facebook, Google, Snowden backlash (v Apple)

2. AI ≠ cybernetics
   a. they're both ways of analysing data to control systems
   b. AI's finally come of age (but there's more data to crunch, and more rivals crunching it)

3. a market economy at the margin to aggregate information

4. didn't politically liberalise during economic liberalisation
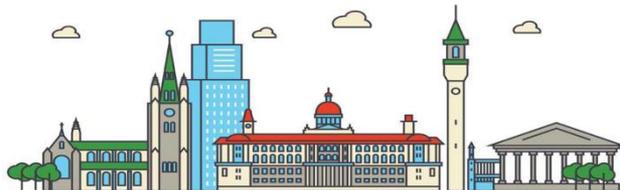
# Quis custodiet ipsos custodes?

"cash flows of the 10 largest oil companies were $48.5 billion, 28% of the total cash flows of the top 200 firms … management did not pay out the excess resources to shareholders. Instead, [it spent] heavily on [exploration and development] activity even though average returns were below the cost of capital" (Jensen, 1986)

- negative correlation between exploration announcements and market values (unlike other industries' announcements)

- "$1 of cash in a poorly governed firm is valued at only $0.42 to $0.88. Good governance approximately doubles this value" (Dittmar and Mahrt-Smith, 2007)

- corporate governance provisions earn 2.8% (Cuñat et al., 2010)

# What, specifically, will AI do?

1. optimise production engineering
   a. Google DeepMind's [cuts cooling bill by 40%](#)
   b. is China doing better? Best autonomous cars still foreign

2. better estimate consumer preferences: perfect ad targeting?

3. aid innovation (e.g. computational biochemistry)
   a. relevance of population size unclear

4. philosopher king: better governance
   a. [Arrow's impossibility theorem](#): which AI system?
   b. [Gibbard-Satterthwaite theorem](#): fiddling ⇒ GIGO
   c. traditional econometrics doesn't replace the need for human expertise; AI won't either

# AI: a dangerous distraction?

- Lucas critique: past data may be uninformative

- since Lucas, macroeconomic models have become much smaller: thousands of equations provide little help when the data generating process changes

- [gigaGIGO](#): big data & AI may provide illusion of understanding

- when backed by state power, free cash flow all over again?
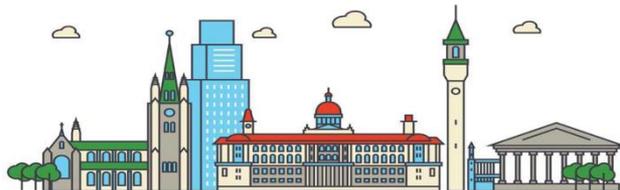
# Conclusions

- economics ≠ engineering: agency, incentives differentiates them

- AI argument seems to ignore these governance issues

- my guesses:
    - China has been catching up, as Asian tigers have
    - AI will be part of ongoing technological developments
    - with [Fukuyama](#) (1989): I still see markets & democracy as best information aggregation system

"The kind of free intercourse required for the efficient exchange of products and market-related ideas can only be impeded by regimes that restrict other forms of social intercourse." ([Stiglitz](#), 1994)

- watch this space: India\China; Hong Kong; non-performing loans