BEYOND THE HYPE: PROMISES, PITFALLS, AND ILLUSIONS OF AI IN POLICYMAKING

EMPOWERING POLICY EXCELLENCE, UCD GEARY INSTITUTE FOR PUBLIC POLICY
4 DECEMBER 2025

Dr Omar A Guerrero
University of Helsinki

ARE WE RIDING A WAVE?


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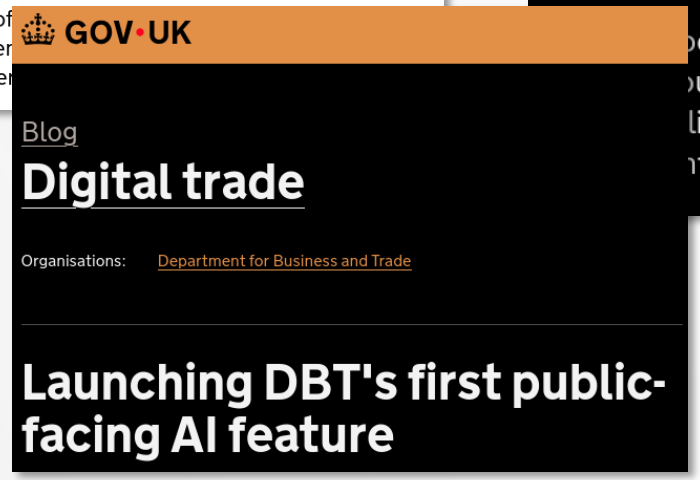
Home > Business and industry > Science and innovation > Artificial intelligence

Press release

AI to power national renewal as government announces billions of additional investment and new plans to boost UK businesses, jobs and innovation

A major package of
heart of governmer
and spread prosper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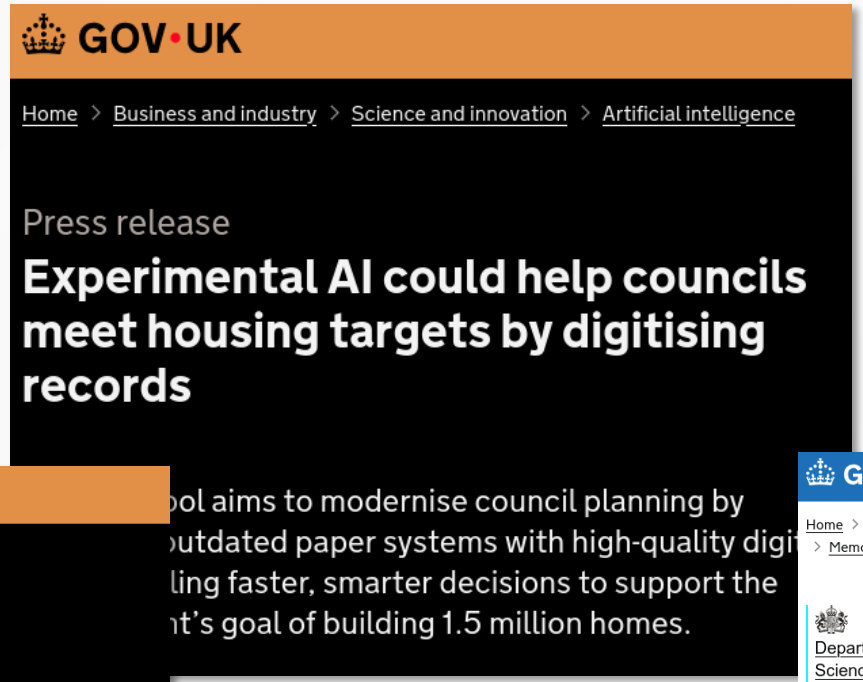
Blog

Digital trade

Organisations: Department for Business and Trade

Launching DBT's first public-facing AI feature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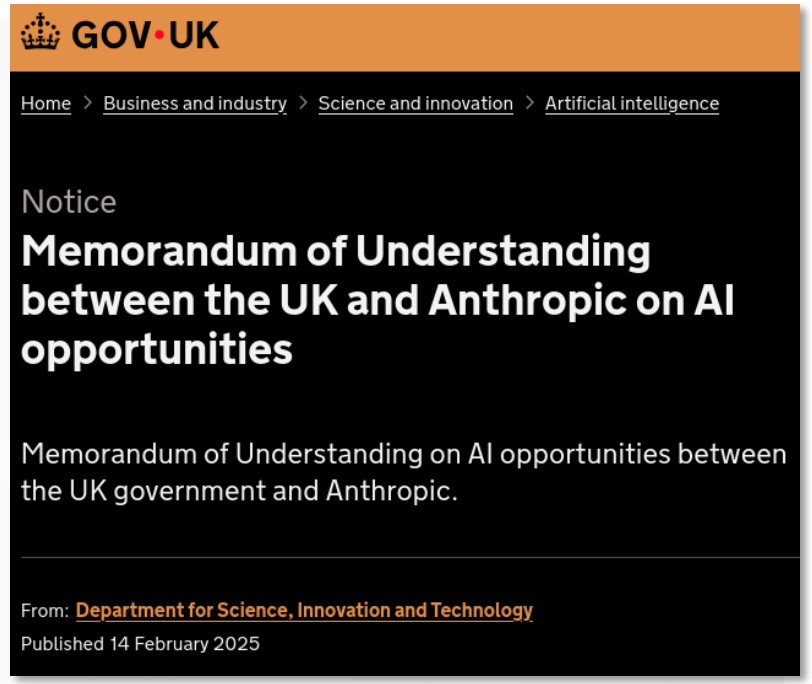
Press release

Experimental AI could help councils meet housing targets by digitising records

ool aims to modernise council planning by
utdated paper systems with high-quality digi
ling faster, smarter decisions to support the
t's goal of building 1.5 million homes.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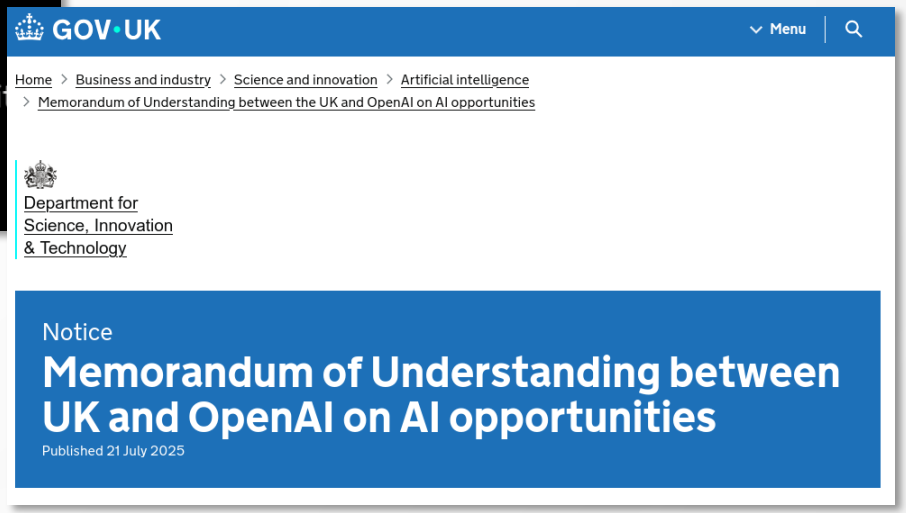
Notice

Memorandum of Understanding between the UK and Anthropic on AI opportunities

Memorandum of Understanding on AI opportunities between the UK government and Anthropic.

From: Department for Science, Innovation and Technology

Published 14 February 2025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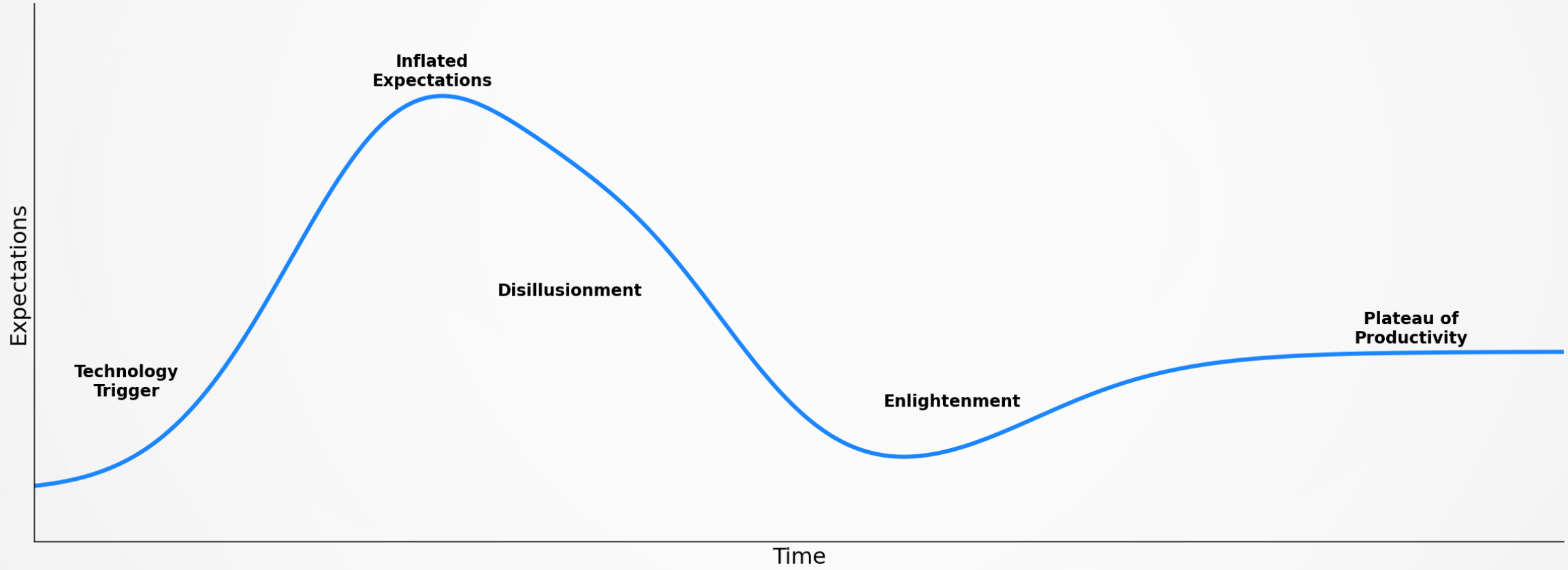
Department for Science, Innovation & Technology

Notice

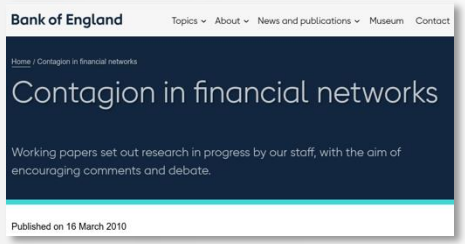
Memorandum of Understanding between UK and OpenAI on AI opportunities

Published 21 July 2025

THE GARTNER HYPE CYCLE



HYPES AND ADOPTIONS IN UK POLICY DURING THE LAST DECADE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Contagion in financial networks

Working papers set out research in progress by our staff, with the aim of encouraging comments and debate.

Published on 16 March 2010


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Press release

Behavioural insights could save millions of pounds

Using behavioural insights could save taxpayers hundreds of millions of pounds and thousands of lives a year, according to an annual report.

From: Cabinet Office and The Rt Hon Oliver Letwin

Published 6 February 2012


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Press release

£73 million to improve access to data and drive innovation

David Willetts unveils £73 million of new funding to help the public and academics unlock the potential of big data.

From: Department for Business, Innovation & Skills, Arts and Humanities Research Council, Economic and Social Research Council, Medical Research Council, Natural Environment Research Council and The Rt Hon Lord David Willetts

Published 6 February 2014


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Press release

Distributed ledger technology: beyond block chain

A new report by the Government Chief Scientific Adviser sets out the future of distributed ledger technology.

From: Government Office for Science, The Rt Hon Matt Hancock and Ed Vaizey

Published 19 January 2016


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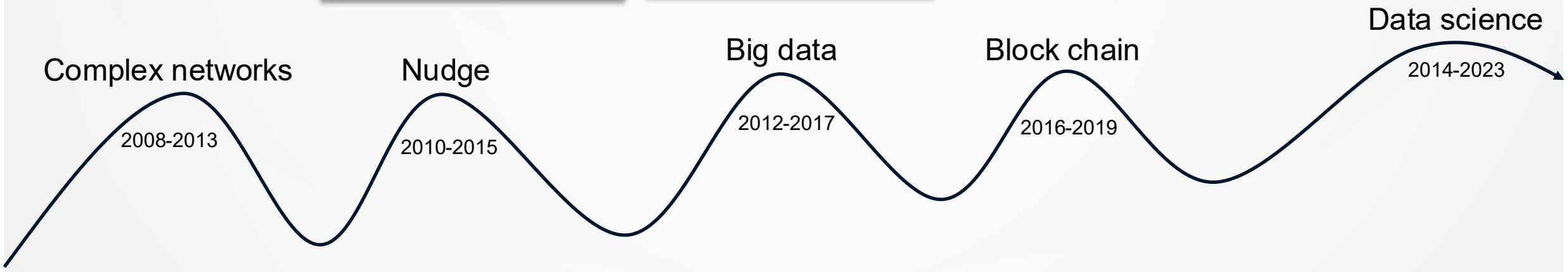
News story

New Turing Institute at London's Knowledge Quarter announced by Chancellor

Headquarters of the £42 million Alan Turing Institute for Data Science will be at London's new Knowledge Quarter – with 'spurs' around the country.




I C A N
D O
PROMISES
A N Y T H I N G

COMMON PHRASES ABOUT AI IN MEDIA

- Unleashing creativity
- Unlocking jobs
- Multiplying productivity
- Transforming economies
- Reshaping labour market skills
- Boosting investment
- Supporting policy goals
- Enhancing better spending
- Securing the country

EVIDENCE ON AI'S IMPACT IS MIXED


Contents lists available at ScienceDirect

Journal of Economic Behavior and Organization

journal homepage: www.elsevier.com/locate/jebo

Artificial intelligence and firm-level productivity

Dirk Czarnitzki [a,b,c,*], Gastón P. Fernández [d], Christian Rammer [c]

[a] Dept. of Management, Strategy and Innovation, KU Leuven, Belgium
[b] Centre for R&D Monitoring (ECOOM) at KU Leuven, Belgium
[c] Department Economics of Innovation and Industrial Dynamics, ZEW - Leibniz Centre for European Economic Research, Germany
[d] Department of Economics, KU Leuven, Belgium


JOURNAL ARTICLE

Generative AI at Work*

Erik Brynjolfsson, Danielle Li, Lindsey Raymond

The Quarterly Journal of Economics, Volume 140, Issue 2, May 2025, Pages

https://doi.org/10.1093/qje/qjae044

Published: 04 February 2025 Article history

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Park, Donghyun; Shin, Kwanho

Working Paper

Implications of artificial intelligence and robots for employment and labor productivity: Firm-level evidence from the Republic of Korea

ADB Economics Working Paper Series, No. 769

Provided in Cooperation with:
Asian Development Bank (ADB), Manila


The simple macroeconomics of AI*

Daron Acemoglu

Massachusetts Institute of Technology

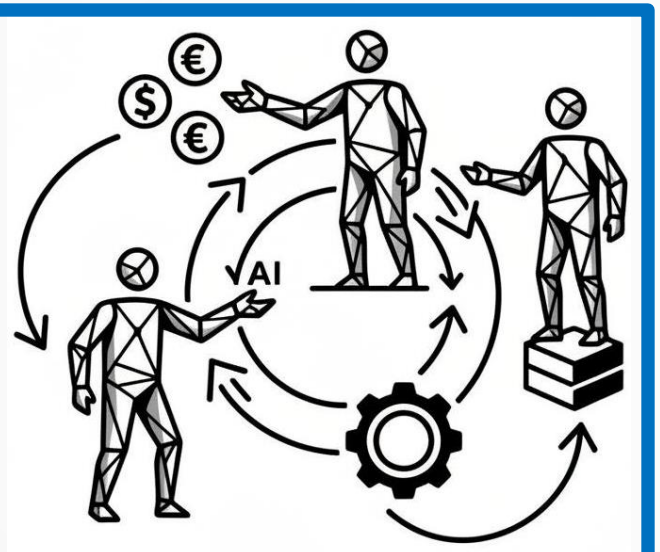
HOW TO NAVIGATE A SEA OF PROMISES?

- Ask questions
- Understanding one's problems
- Knowing the data
- Understanding the ideas/epistemology behind methods
- Working around institutional constraints and incentives misalignments
- Avoiding pitfalls
- Seeing through illusions

WHAT DO WE MEAN BY AI?

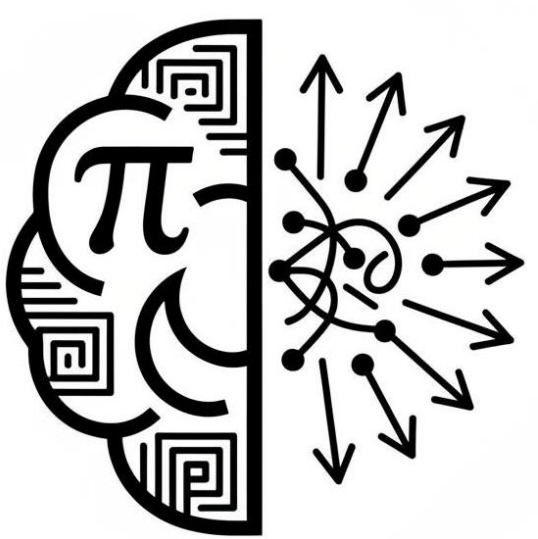
Machine learning

Agency



Cognition

Logic



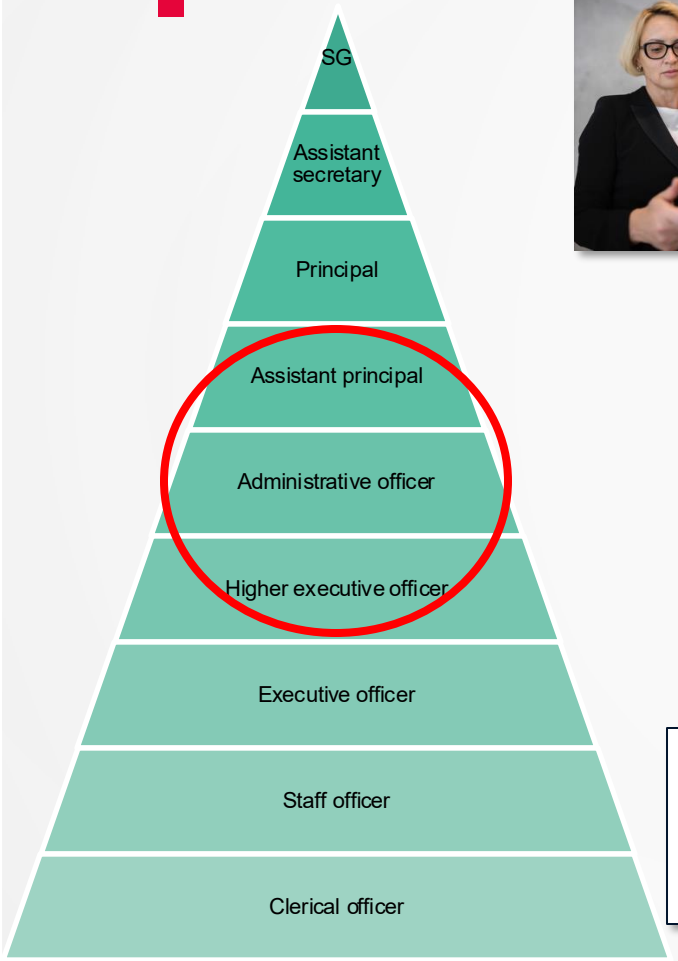
Classification according to Russell & Norvig (2002)

PITFALLS

COMMON PITFALLS WHEN ADOPTING AI

- Some common issues include bias reinforcement, hallucinations, poor replicability, lack of robustness, model drift ...
- However, most of the important issues are not inherent to methods/models, but to wrongful or careless adoptions
  - Task does not need the tool (overengineering)
  - Data are not good or the tool is not meant to work with the data
  - Hardware is not adequate
  - Contracts are imperfect
  - Skills are not ready
  - Priorities are upside down
  - Gains are marginal
  - Changes in practice are not profound

THE INCENTIVES CURSE



AI

A digital elephant?

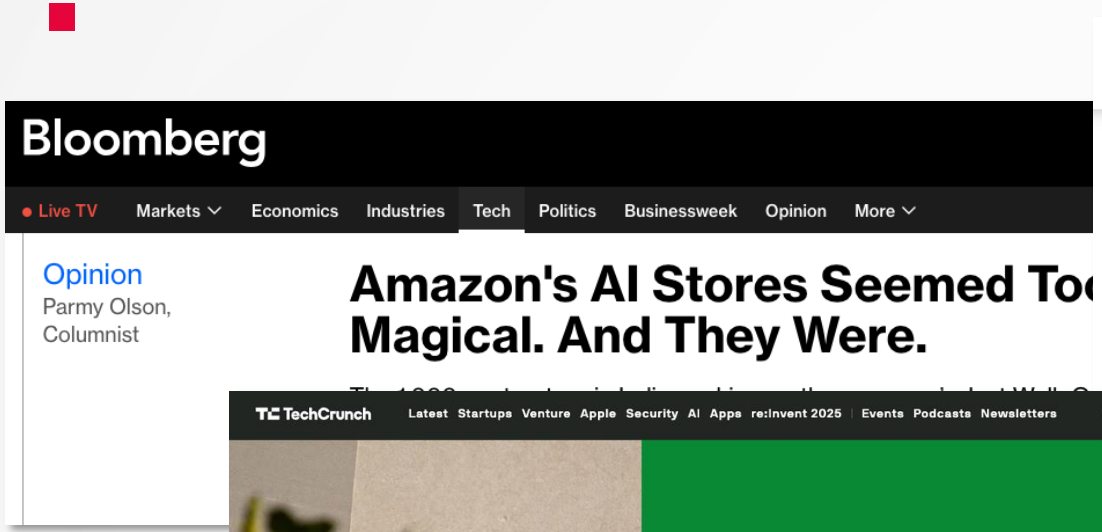
- Management
- Leadership
- Alignment
- Strategic priorities
...

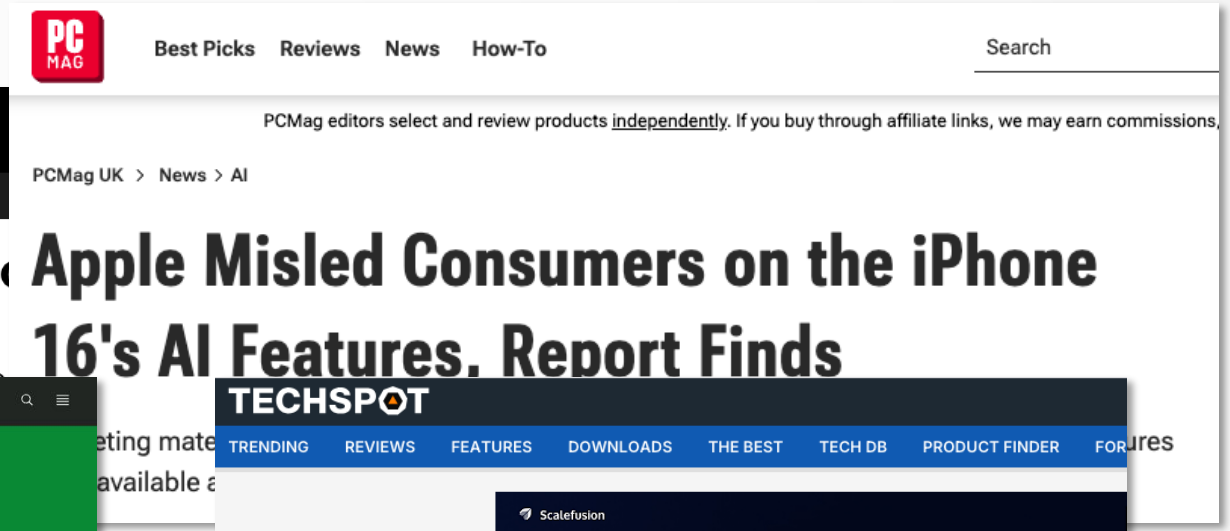
SO MANY THINGS CAN GO WRONG

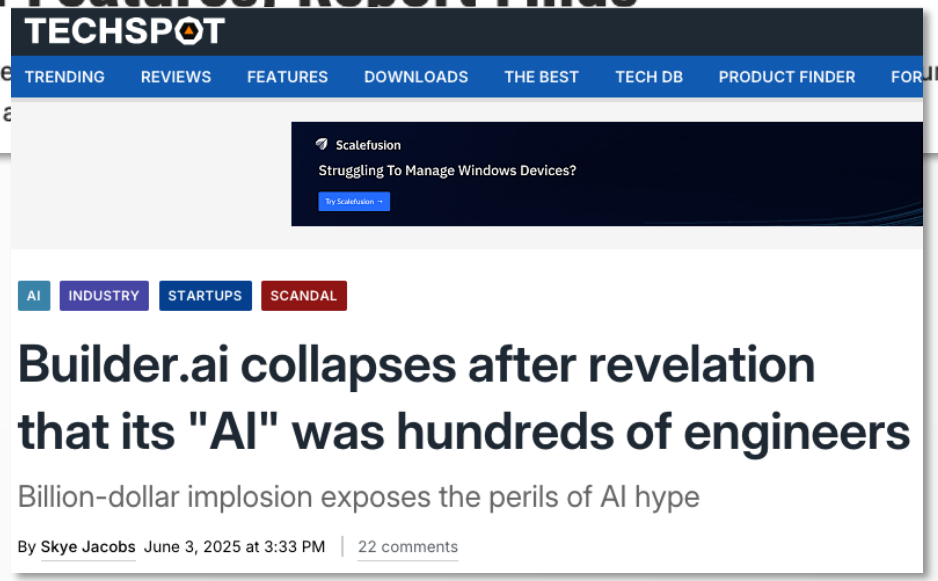
- Most of the times, inadequate adoptions are not intentional
- Institutional constraints and incentives structures set the conditions for things to go wrong:
  - Poor handover procedures
  - Bad contracts
  - Barriers to data access
  - Overwhelming paperwork
  - Prior commitments
  - Limited understanding of the method/tool


ILLUSIONS

DISGUISED PITFALLS ARE NOT NEW

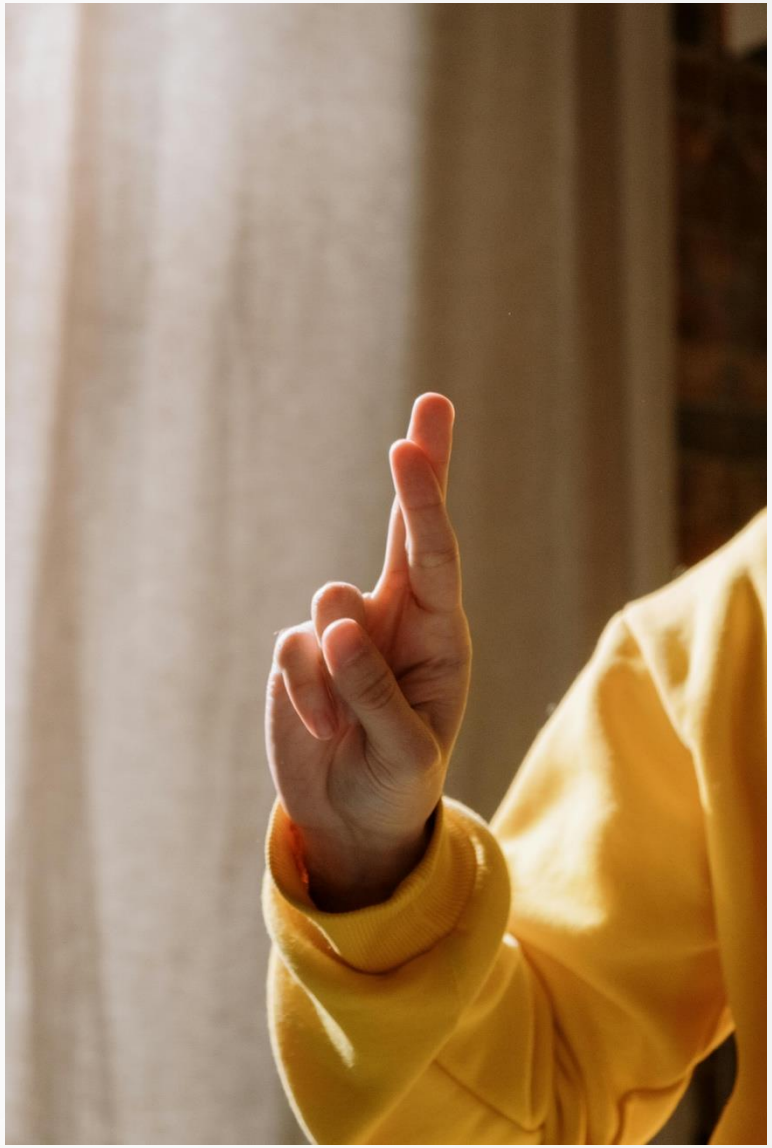






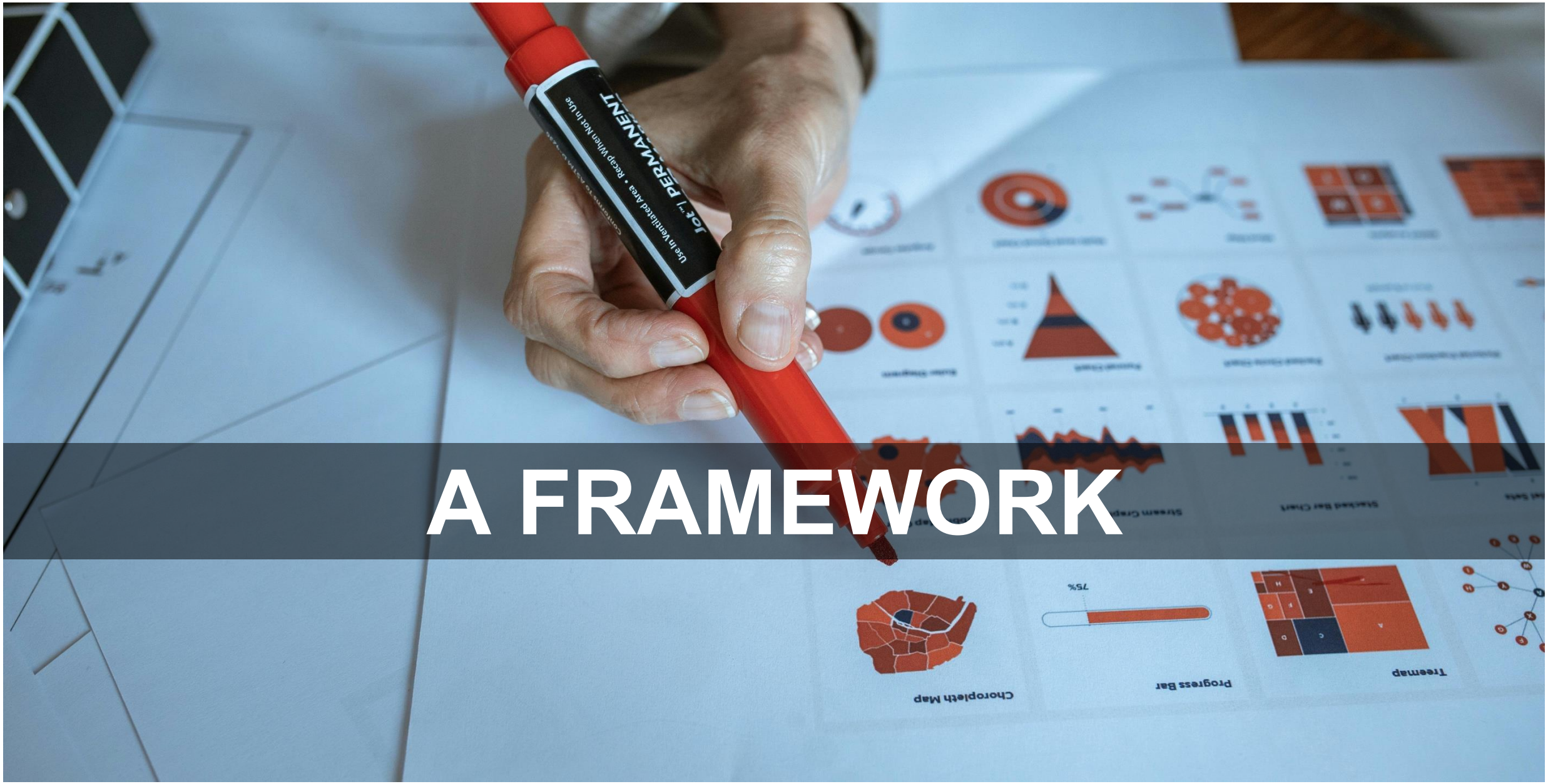
ON THE ILLUSIONS

- Not necessarily intentionally misleading
- Products designed for market demand but not necessarily for policy needs
- Overblown claims and demos are not representative
- Important details are often omitted
  - Robustness
  - Uncertainty quantification
  - Training data
- The incentives curse may lead to overlook the illusions, event if one does not believe them



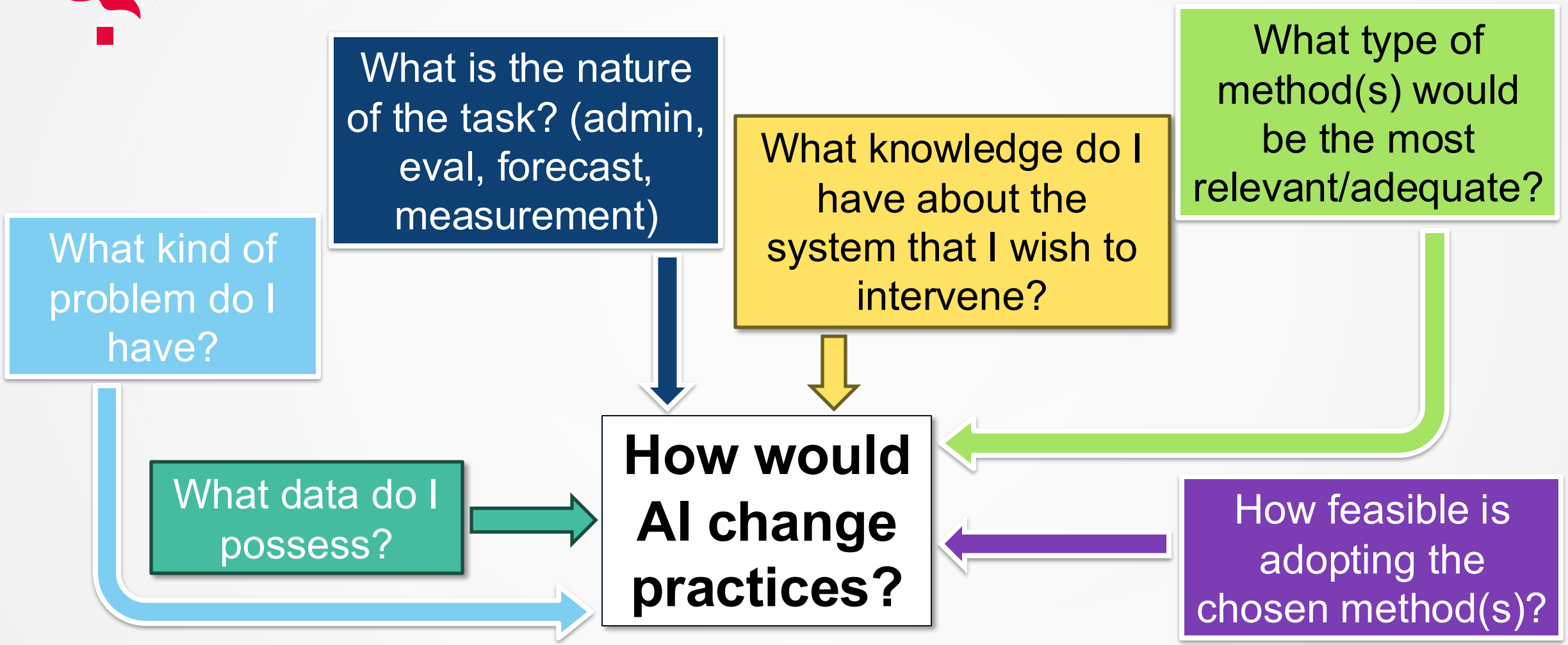
AI FOR POLICYMAKING

- Public institutions should be held accountable for their policy decisions
- AI for policymaking should be subjected to the same principles of accountability and transparency
- The misalignment of incentives creates a mined field
- Seeing through the illusions can be challenging, especially without strong internal capacity
  - Short vs long term vision
  - Capacity building vs outsourcing
  - Ability to discriminate between different technologies


PERMANENT
Use In Ventilated Area • Recep Vilen Not In Use
Choropleth Map
75%
Progress Bar
Treemap

A FRAMEWORK

SOME QUESTIONS WE SHOULD BE ASKING



THE 3PS APPROACH

Three dimensions to think about the adoption of AI in policymaking:

- **Pace**: Can some methods be adopted and deployed at a faster pace than others?
- **Penetration**: Can some tools achieve a deeper degree of penetration in public organisations in terms of how generalised is their adoption?
- **Profundity**: Can adoption translate into fundamental changes in the policymakers' understanding of the world and everyday practices?

LSE Public Policy Review

Are All Policymakers Data Scientists Now? Data, Data Science and Evidence in Policymaking

RESEARCH

OMAR A. GUERRERO
HELEN MARGETTS
*Author affiliations can be found in the back matter of this article

LSE Press

ABSTRACT

Traditional government bureaucracies operated in a world of official statistics and filing systems, but without transactional data that might be used to inform policymaking, administrative design or the provision of public services. In a world powered by data science – there are many ways in which policymaking can be informed by data and 'data-driven'. There has been a step change in the availability of data and methods of analysis. It is no longer acceptable to rely on custom-built statistics and consultants' reports to inform high level policy discussions. We need to embed data science models into every stage of the policy process; understanding a population that the policy is to serve; running predictions on demand; elaborating detailed and sophisticated models for counter factual analysis and intervention; and simulating policy interventions to discover unintended consequences before policy interventions are introduced. These opportunities for policymaking place new demands on civil servants, and rapid updating of practices, standards and tools and the breaking down of boundaries between technical/analysis and non-technical/generalist teams.

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KEYWORDS:
Data science; policymaking; artificial intelligence; digital government; information capacity

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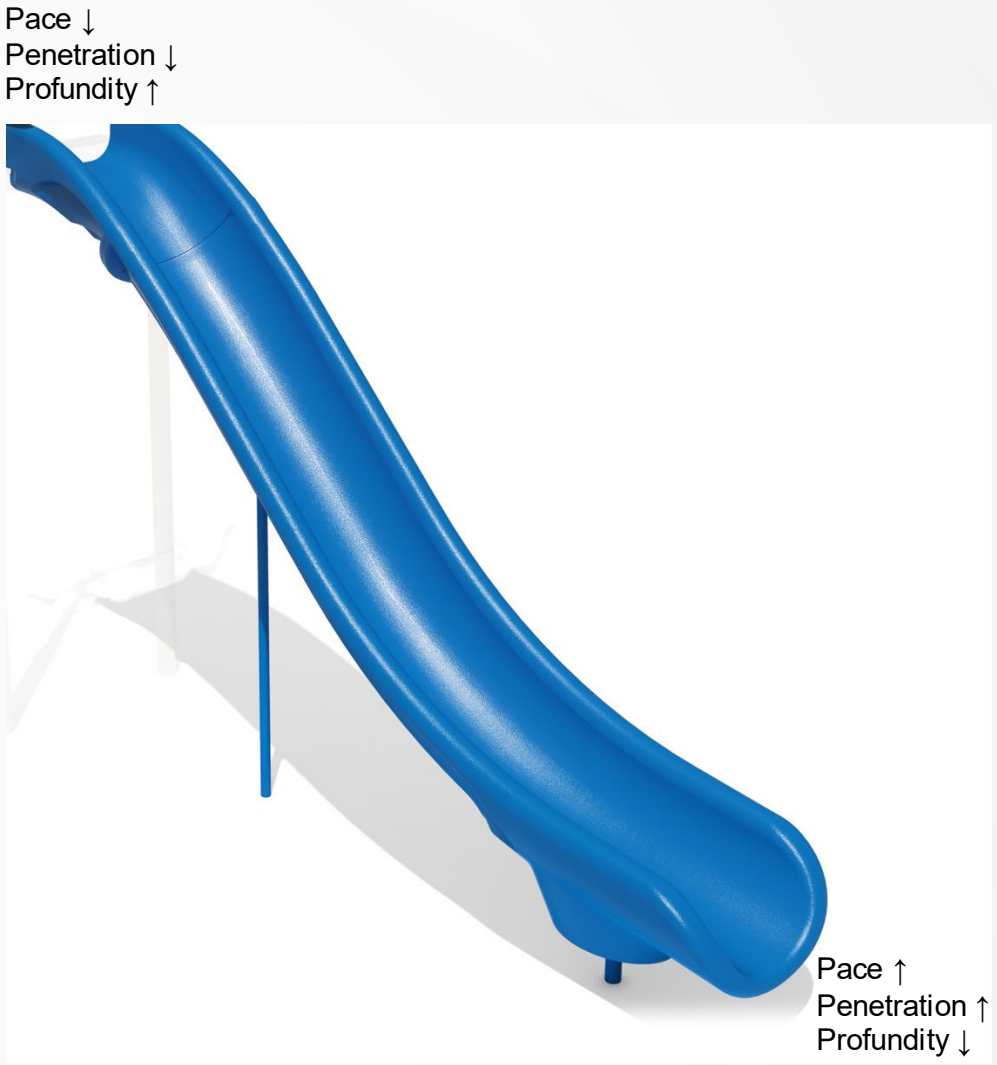
Guerrero OA, Margetts H. Are All Policymakers Data Scientists Now? Data, Data Science and Evidence in Policymaking. *LSE Public Policy Review*. 2024; 3(3): 9, pp. 1–10. DOI: https://doi.org/10.31389/lseppr.116

THE 3PS SLIDE

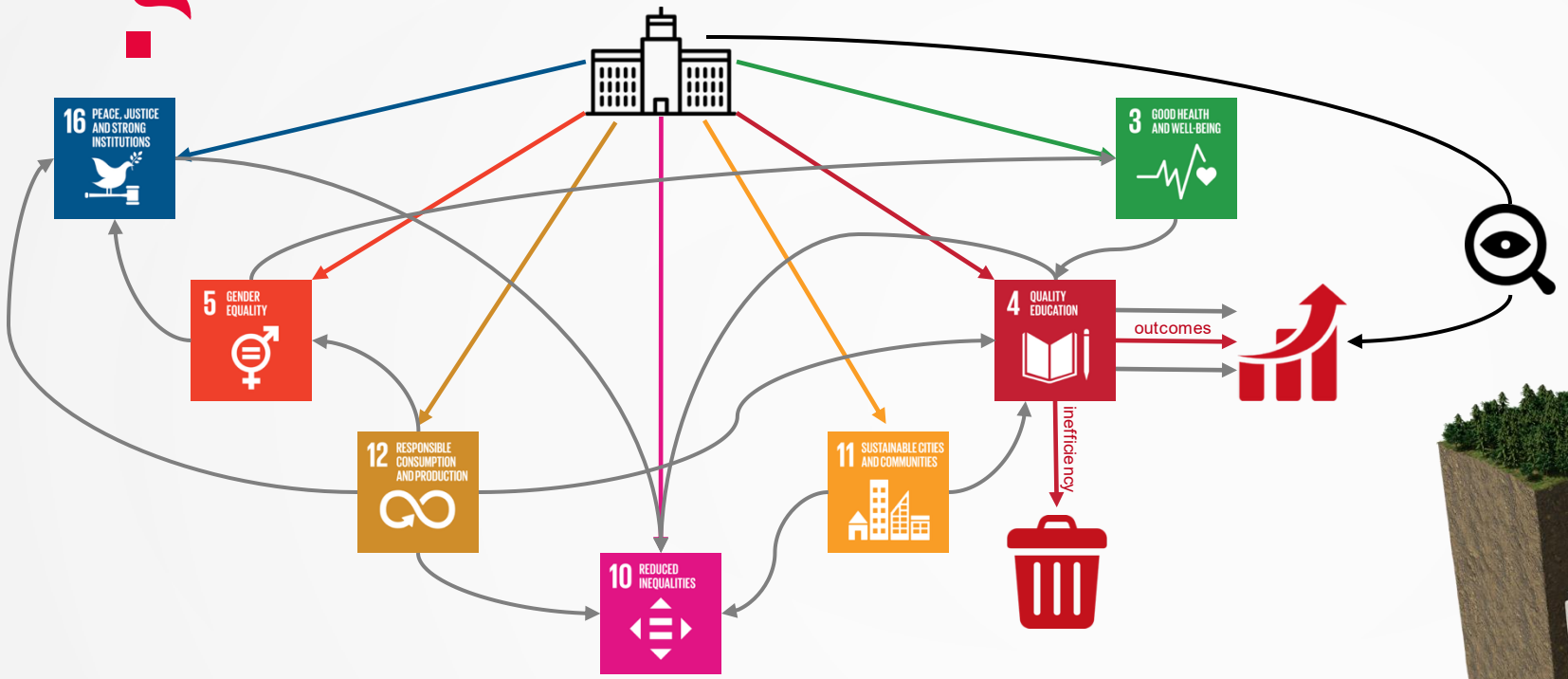
- All models have strengths and limitations
- More specialised models may provide a better understanding at the cost of a lower capacity to be socialised
- **In the short term**, movement in the 3P space is constraint
- Trade-off between pace of adoption, how broad is its penetration, and how profound is the change it produces on practices



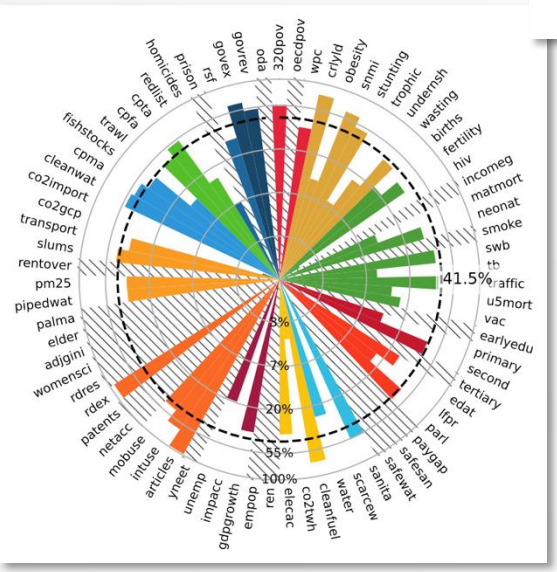
EXAMPLE: AGENCY

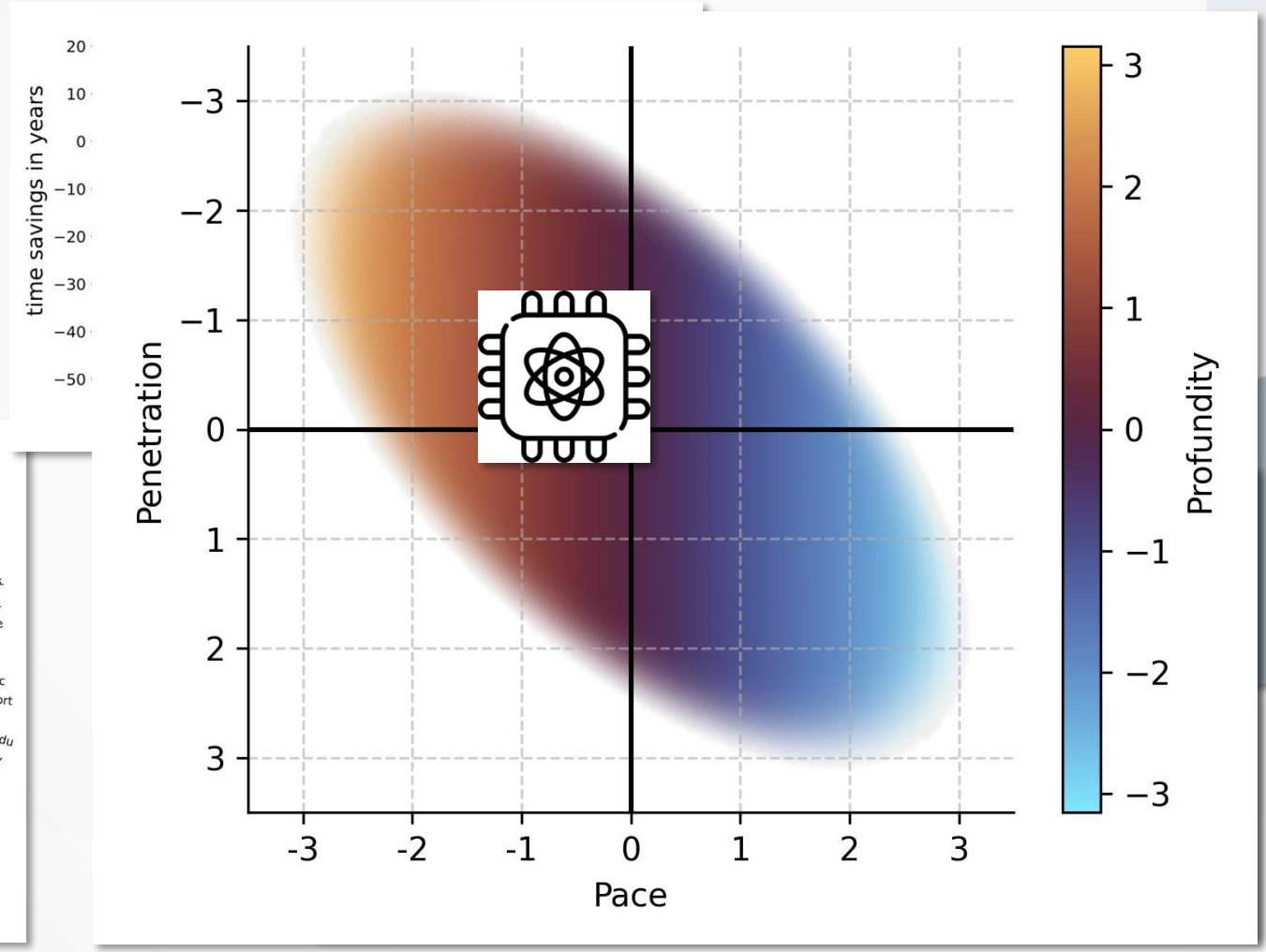
- **Problem**: evaluating the impact of government spending on the SDGs (UNDP)
- **Nature of task**: measurement and evaluation
- **Data**: short time series on indicators and spending
- **Potential methods**: econometrics, machine learning, integrated assessment frameworks, CGEs, network analysis, agent computing
- **Considerations**: complex interdependencies, scalability, transparency, theories of change, data intensiveness, counterfactual analysis
- **Best choice**: agent computing

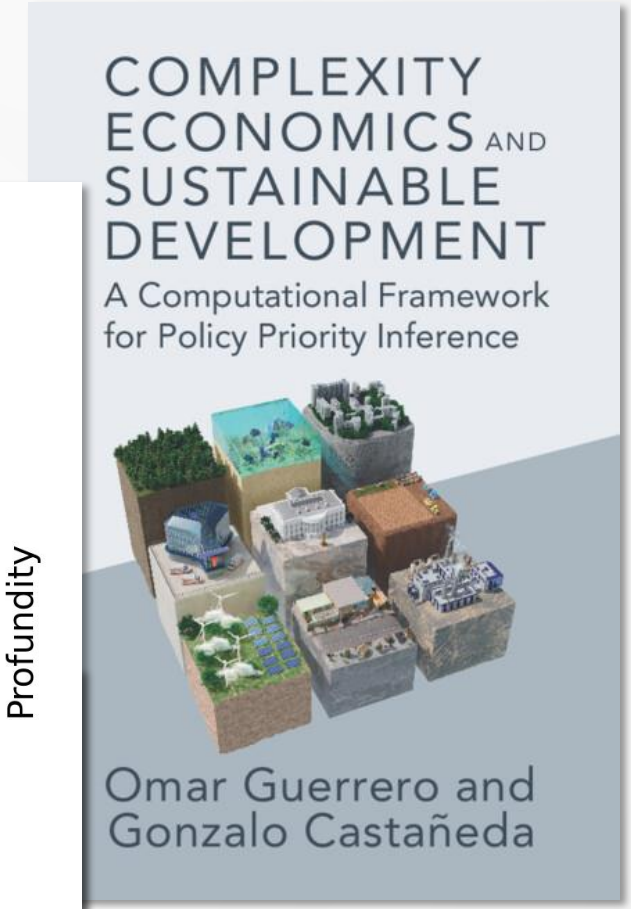
BEYOND FORECASTING



POLICY TASKS ARE DIVERSE



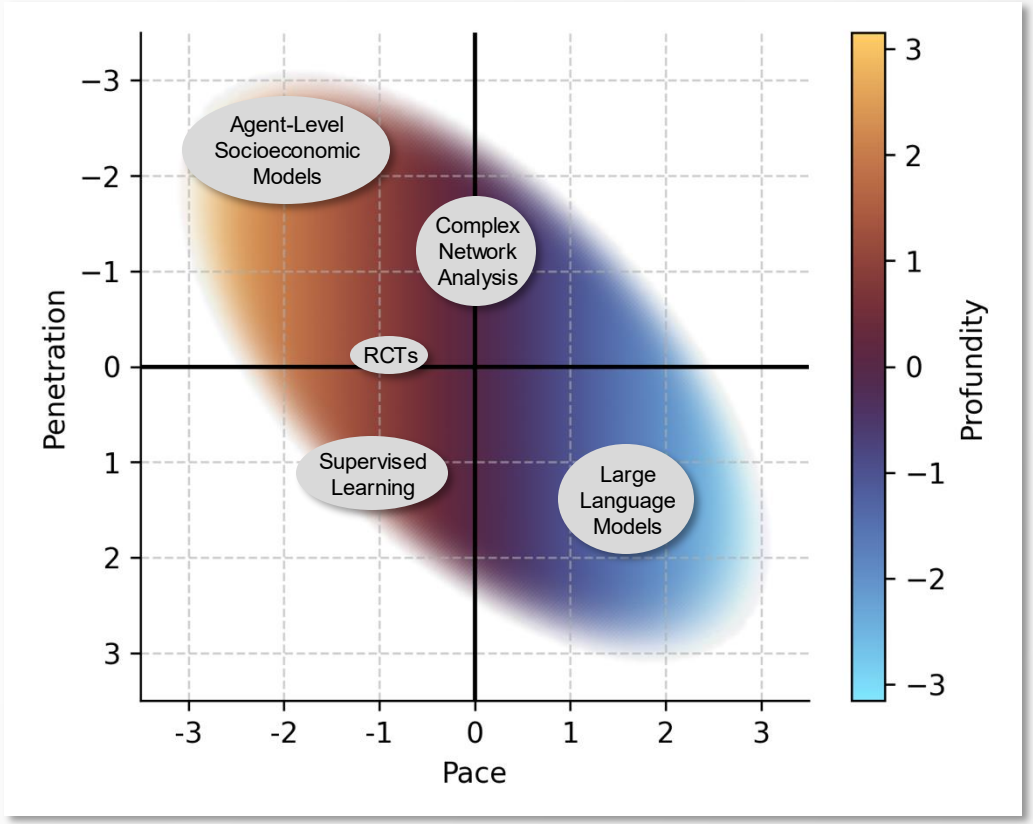




policypriority.org

SOME USEFUL QUESTIONS

- What is the nature of the task?
- Is the method/tool adequate?
- Are the data adequate?
- What pragmatic issues do I need to consider (e.g., computational resources, human capital, data access)?
- How robust is the approach?
- How feasible is its training/calibration?
- What is the value for money compared to alternatives that show marginally lower performance?
- Can we exploit economies of scale?
- **Positioning in the 3P slide is dynamic (there is such thing as right timing)**
- **Complexity of the method/tool does not determine the position in the 3Ps slide**



CONCLUSIONS

- Successfully adopting AI and related tools is challenging
- While it is impossible to overcome all institutional constraints and incentives misalignments, asking the right questions can help in a substantial way
- As methods mature and are socialised, they move along the 3P slide, so there are good and bad times to adopt them
- The challenge is to **always** have internal capacity to ask the questions, avoid pitfalls, and see through illusions

THANK YOU

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