AI for Financial Services

Saviour or False Prophet?

Joshua Lloyd-Lyons
Investor at Fidelity Strategic Ventures

“Technology advances at exponential rates, and human institutions and societies do not.”

- Mitch Kapor -

AI state of the union

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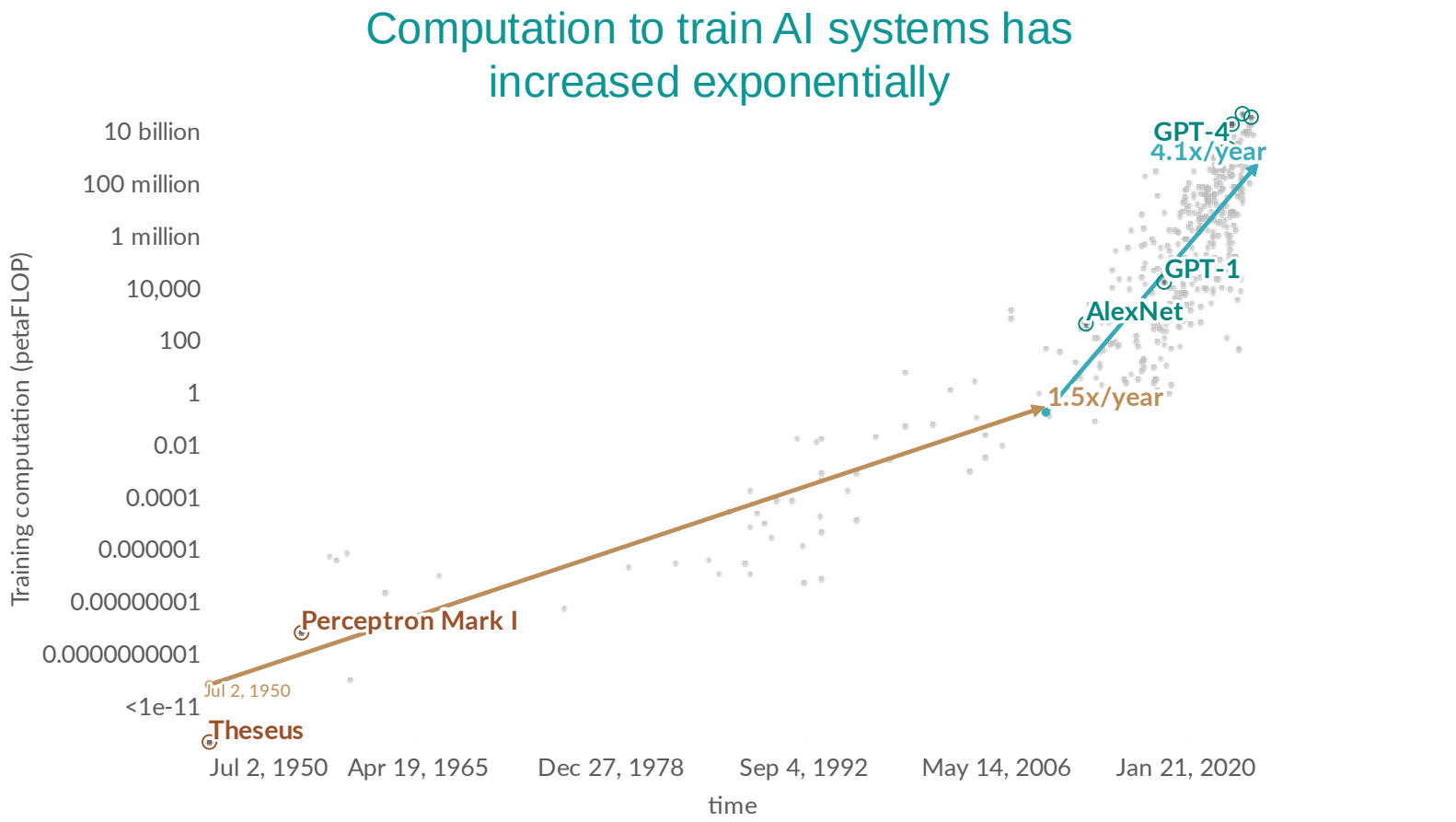
The generative AI boom

There has been an explosion in investment and innovation



Data source: Epoch (2024)

OurWorldinData.org/artificial-intelligence | CC BY

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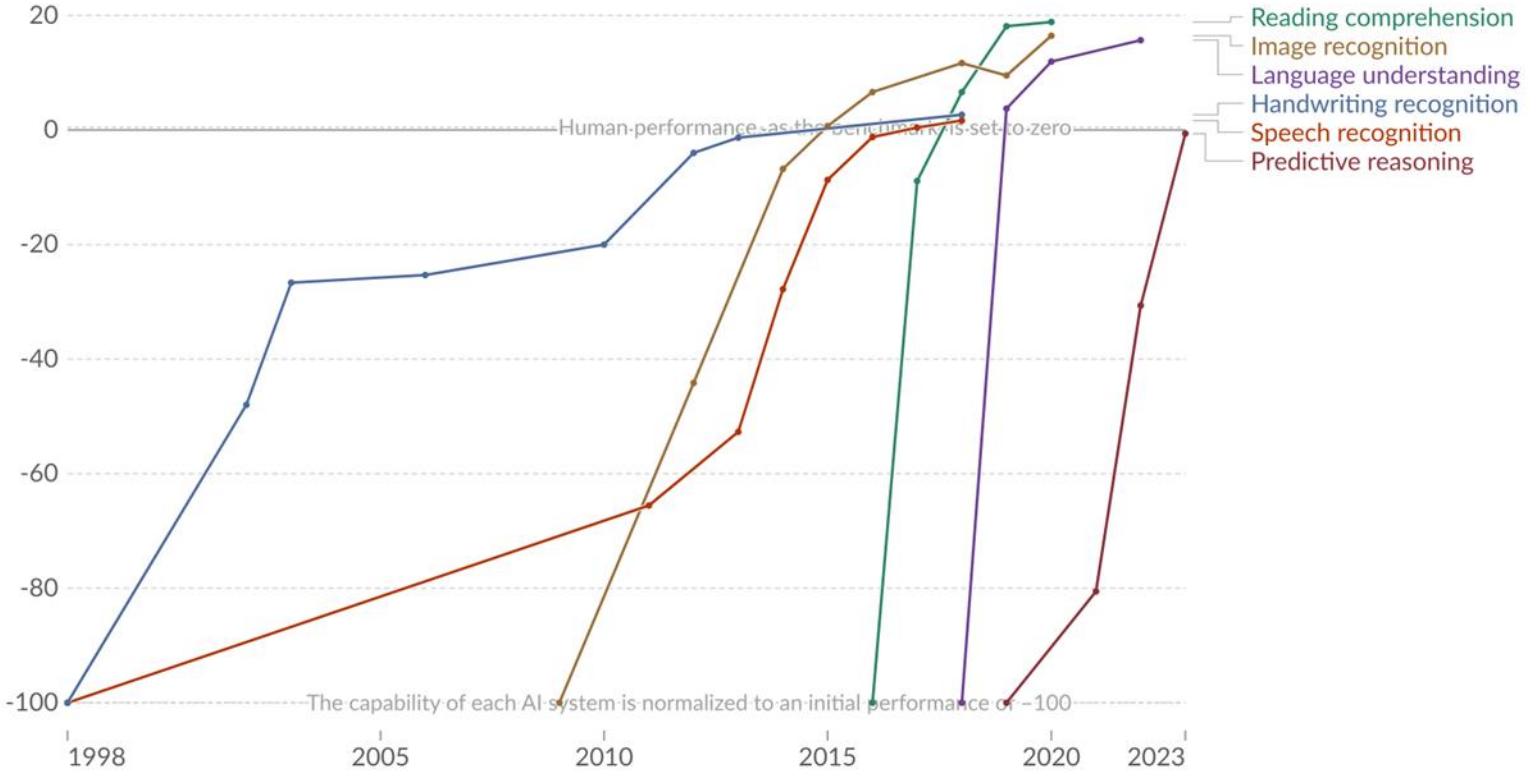
Real world efficacy of these models are increasing

Models are starting to meet or exceed key performance benchmarks



Data source: Kiela et al. (2023) OurWorldinData.org/artificial-intelligence | CC BY

Note: For each capability, the first year always shows a baseline of −100, even if better performance was recorded later that year.

Test Scores of AI systems relative to human performance

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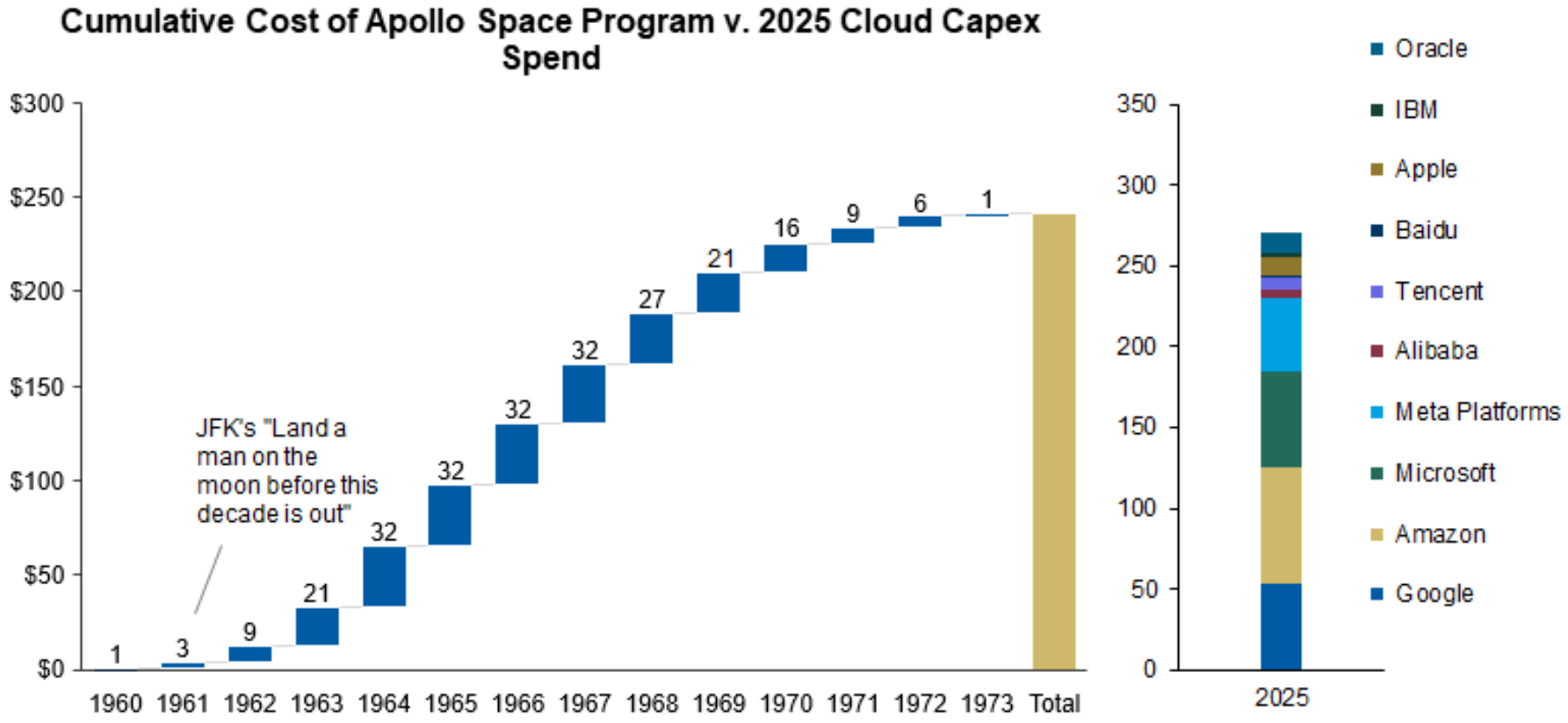
Struggle to meet massive hardware demand

Demand exceeds supply for the underlying GPUs as vast investment is poured into capex



Source: Dreier (2022), Minneapolis Fed, Morgan Stanley Research

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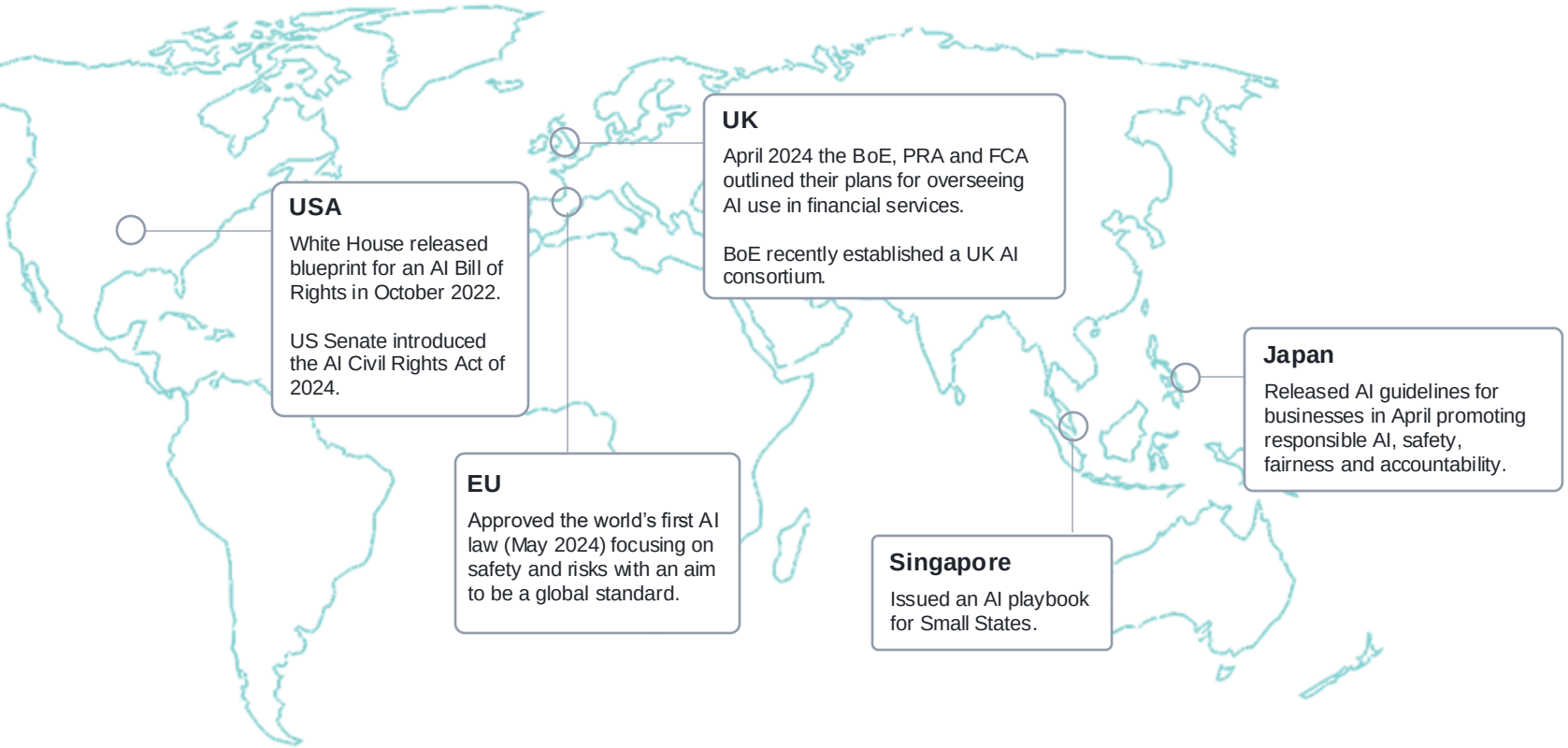
A rush to regulate

Regulators are working feverishly to regulate an industry in rapid flux



USA

White House released blueprint for an AI Bill of Rights in October 2022.

US Senate introduced the AI Civil Rights Act of 2024.

UK

April 2024 the BoE, PRA and FCA outlined their plans for overseeing AI use in financial services.

BoE recently established a UK AI consortium.

Japan

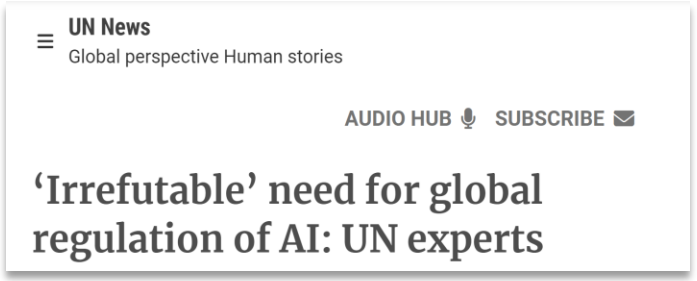
Released AI guidelines for businesses in April promoting responsible AI, safety, fairness and accountability.

EU

Approved the world's first AI law (May 2024) focusing on safety and risks with an aim to be a global standard.

Singapore

Issued an AI playbook for Small States.



Source: Data from Dr. Badre Belabbess (via LinkedIn). Please note this is a selection and not a comprehensive list.

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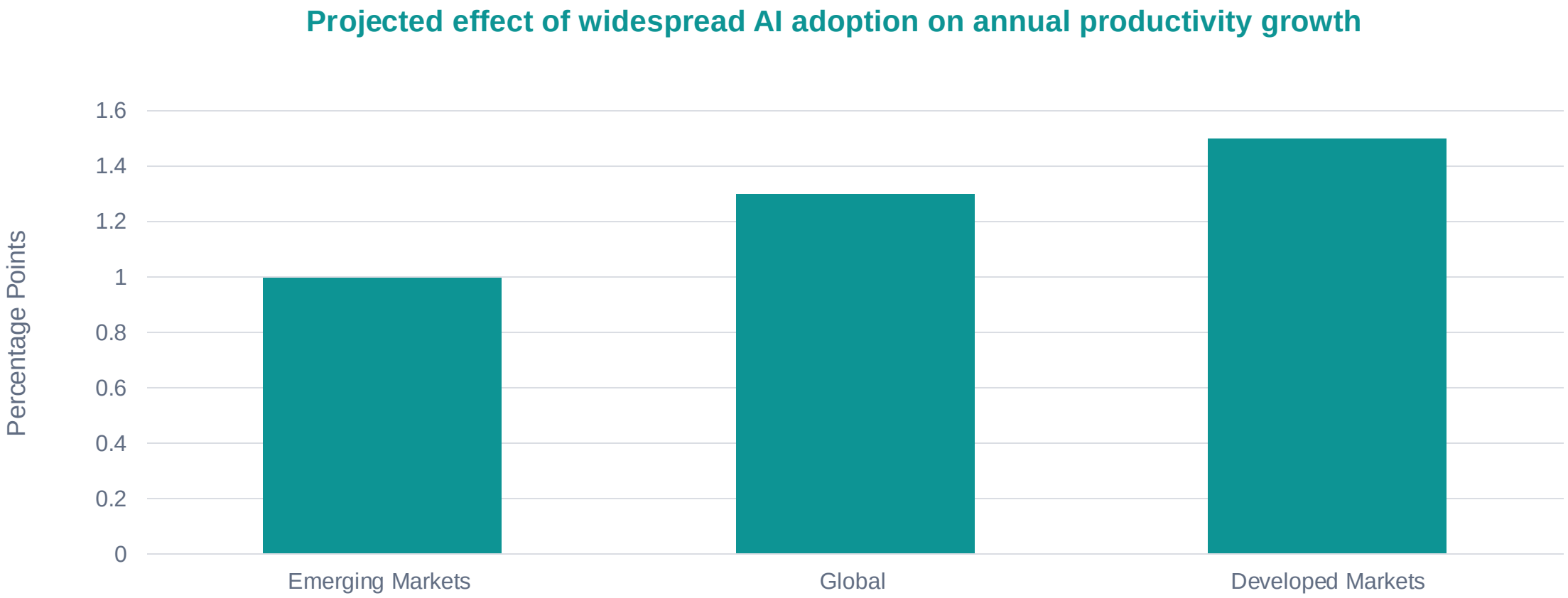
The consensus is that AI will be transformative….

Potential for enterprises to manifest significant cost savings and generate incremental revenues



Source: Goldman Sachs Research

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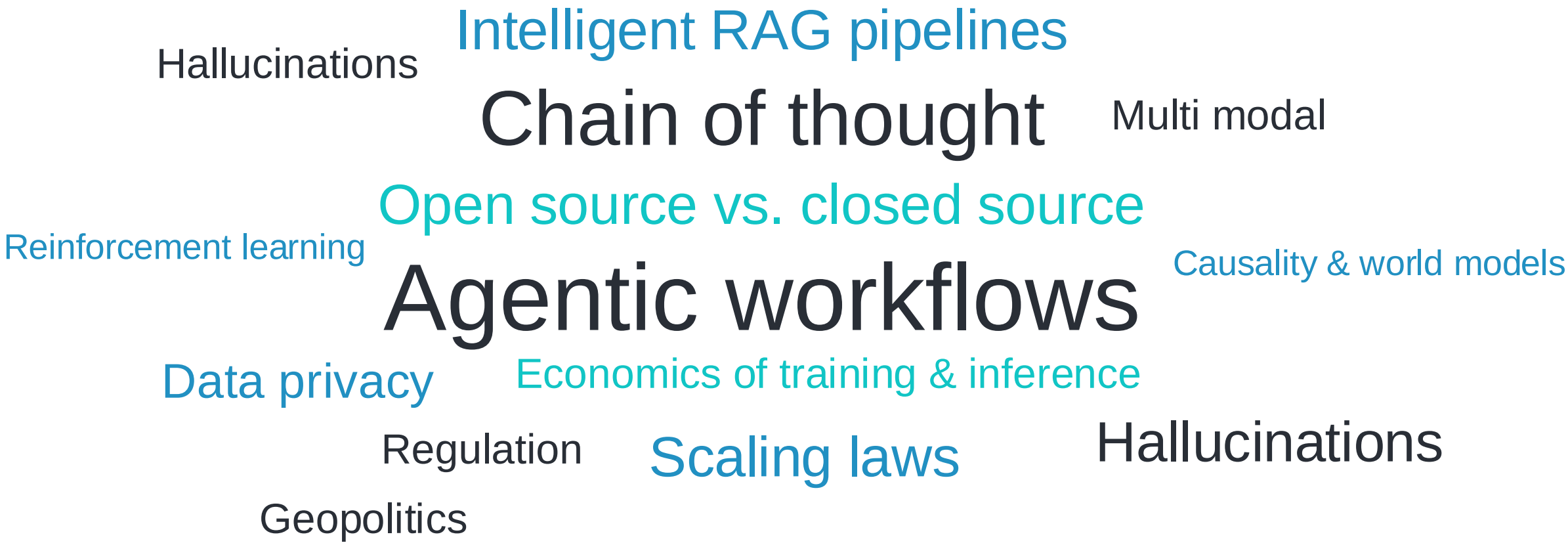
…but the landscape is changing extremely rapidly

The speed of change makes it hard to build a coherent thesis that holds up over time



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Leaving financial services executives with hard questions

Executives need to make pivotal decisions under significant uncertainty

What is my AI strategy?

Where will this technology have the most impact?

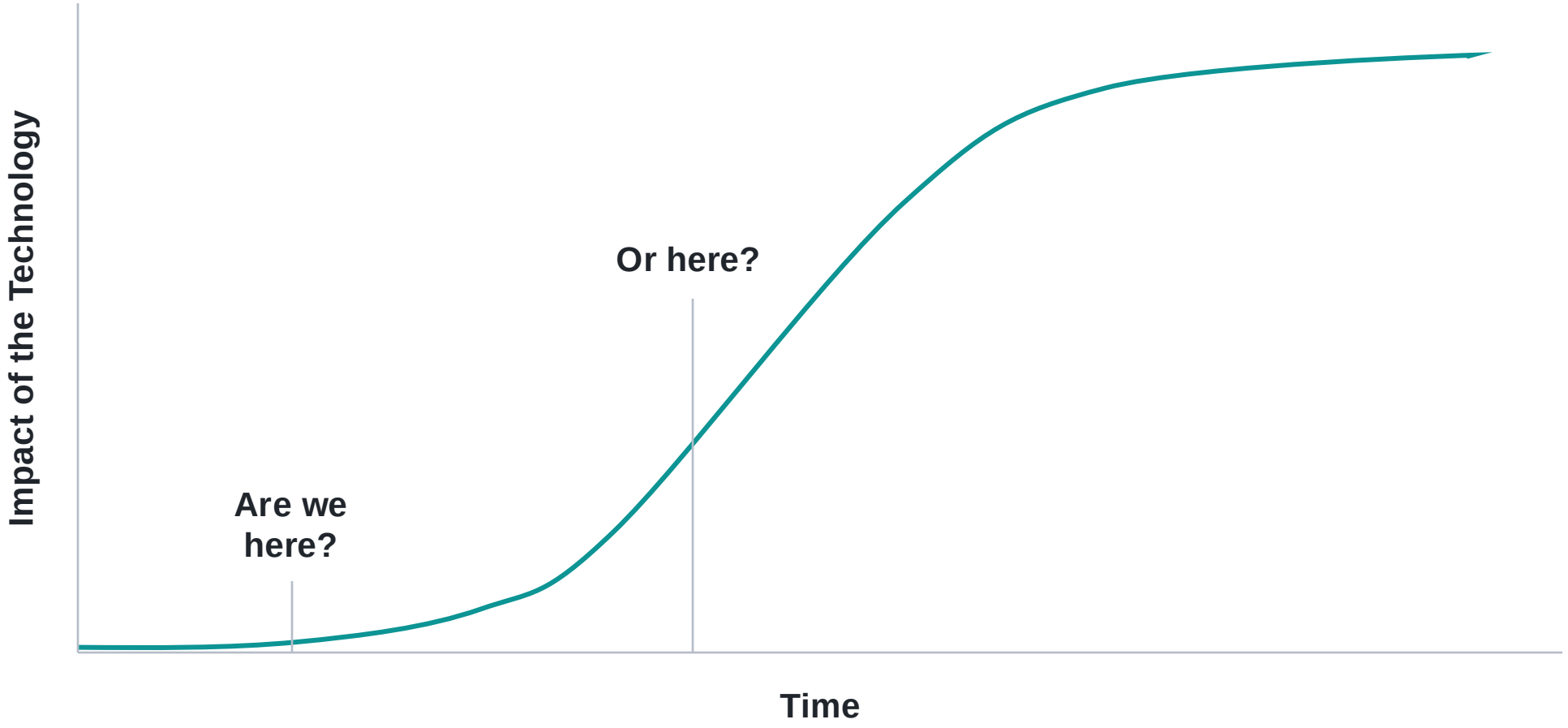
How much should we invest in the technology?

How should I manage the risk of harm?

How will this change the future of work in financial services?

We are in the middle of a technological paradigm shift

The million-dollar question is ‘where’?



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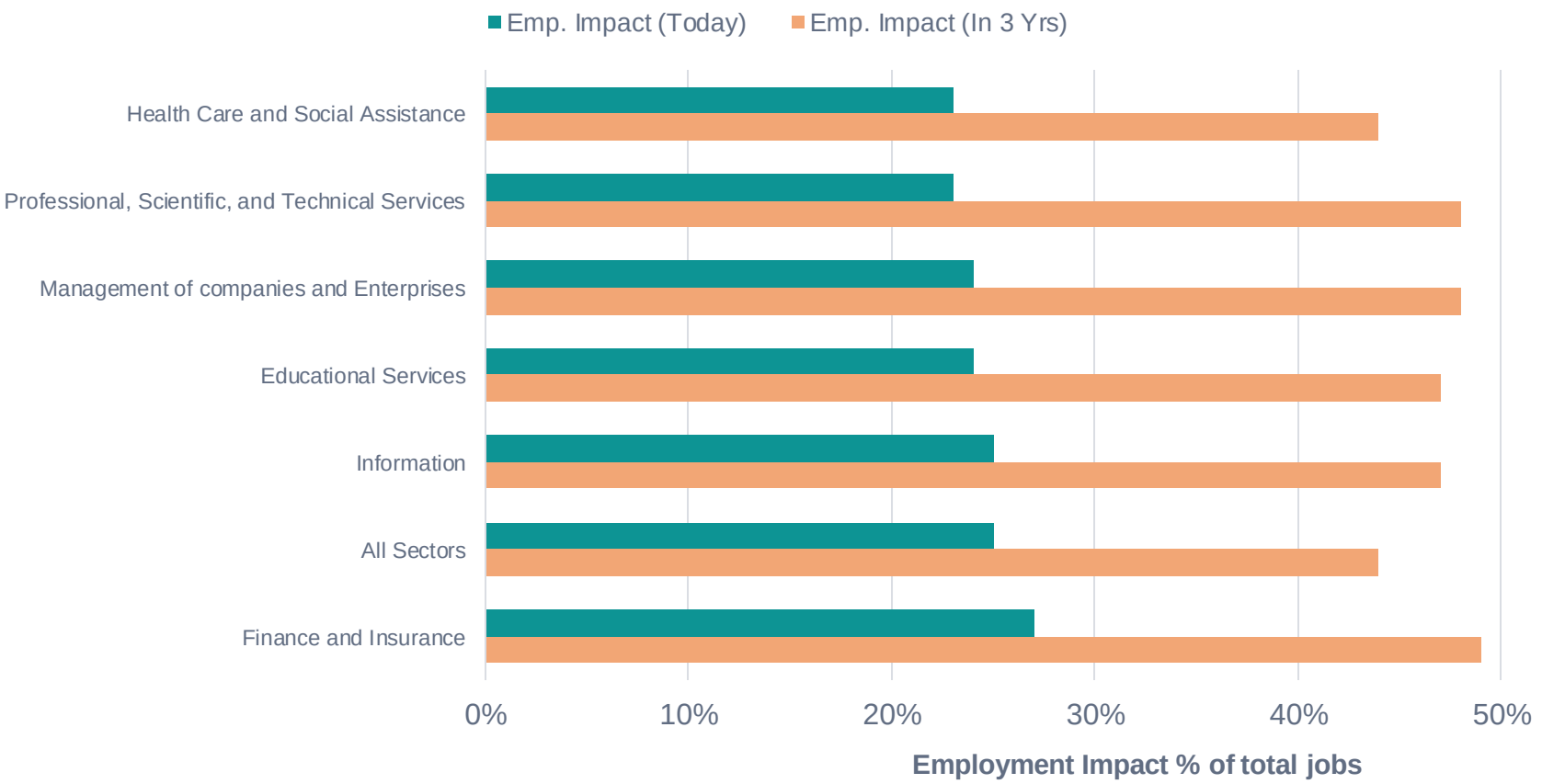
The transitionary era: 0-5yrs

But will AI have a transformative short-term impact on FS?

Many analysts are predicting transformational impacts within just a few years



Some experts expect a ~27% employment impact in Financial services today, expanding to 49% within 3yrs

Across sectors, estimating a potential ~$4 trillion economic impact in 3 years

Source: Morgan Stanley Research, Fidelity International Strategic Ventures analysis

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Generative AI is a relatively immature technology

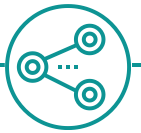
It will take time to ascertain **how** and **where** best to use it within financial services

Inherent Technological risks

- Hallucination
- Audibility
- Data loss risks / prompt injection

How can we best adopt the technology, while protecting clients?

Inherent Technological risks



- Non-deterministic outputs makes ensuring quality & consistency challenging
- Potential copyright issues
- Improperly trained models / negative outcomes

1. Taking the low-hanging fruit is attainable

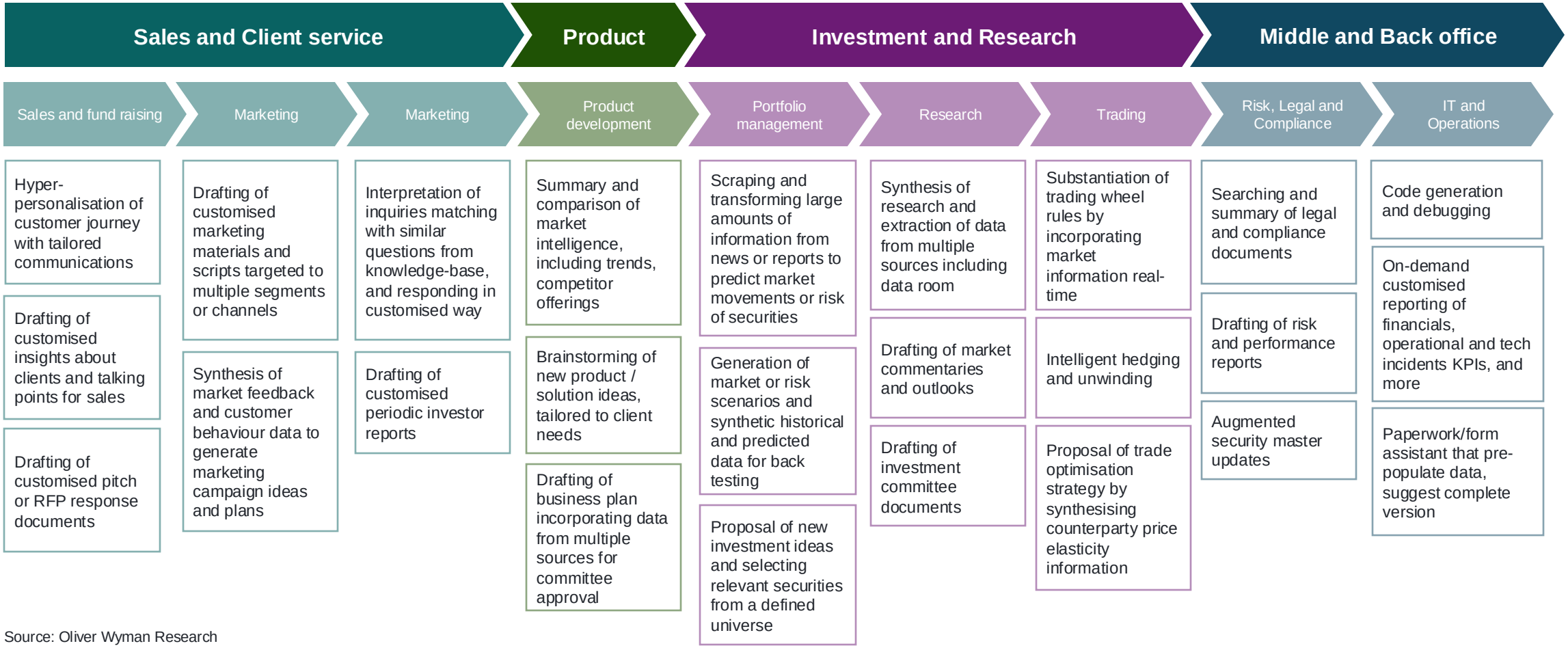
But moving into more complex use cases will take time

Gen AI Core Capabilities	Immediate use cases	Applications
▪ Text generation ▪ Summarising & organising information ▪ Searching for information ▪ Extracting insights from some unstructured data	▪ Low-level customer service ▪ Code generation / AI pair programming ▪ Simple investment research tasks ▪ Creating sales copy	Copilot GitHub Copilot INTERCOM FINSTER AI Hebbia

Verticalization

Many use cases have been put forward within finance

There is significant ambition to leverage AI across the front, middle, and back office



Source: Oliver Wyman Research

Sensible prioritisation is delivering early wins

Given the lack of a clear adoption roadmap, considered prioritisation is essential

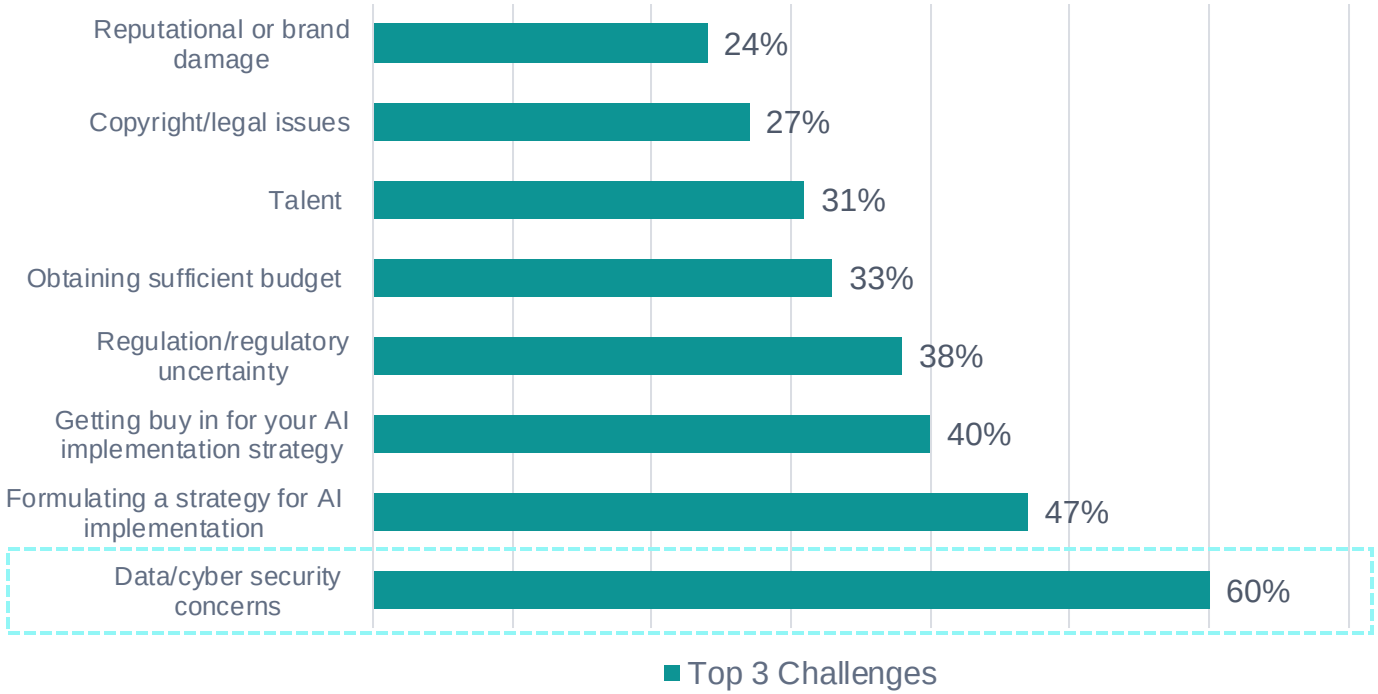
	Dimension	Consideration
Suitability	Gen AI 'fit'	Abundance of information to interpret and synthesize
		Need to generate moderately customized or creative content
		Routineness of task
	Impact potential	Potential impact on productivity, efficiency, revenue, or other business objective
	Technological advantage	Extent of Gen AI's differentiated advantage versus alternative solutions
	Ethical and regulatory	Ethical implications and regulatory compliance
Feasibility	Cost	Cost of implementation, including hardware, software, people, etc.
	Skill and expertise	Internal availability of necessary expertise or ability to source it externally
	Integration complexity	Complexity of integrating Gen AI into existing systems and workflows at scale
	Implementation timeline	Time to implement versus urgency of business need
	Risk	Alignment with risk appetite or ability to mitigate within tolerance

Source: Oliver Wyman, Gen AI use case assessment framework

But key challenges & risks are limiting applicability

Very real concerns around customer harm, regulatory sanction, and reputational damage

Data & cybersecurity concerns are the top hurdle



Other industries are telling cautionary tales

Air Canada ordered to pay customer who was misled by airline's chatbot

Company claimed its chatbot 'was responsible for its own actions' when giving wrong information about bereavement fare

The judge wrote that Air Canada's customers had no way of knowing which part of its website – including its chatbot – relayed the correct information. Photograph: NurPhoto/Getty Images

Canada's largest airline has been ordered to pay compensation after its chatbot gave a customer inaccurate information, misleading him into buying a full-price ticket.

Sources: Morgan Stanley, BBC News

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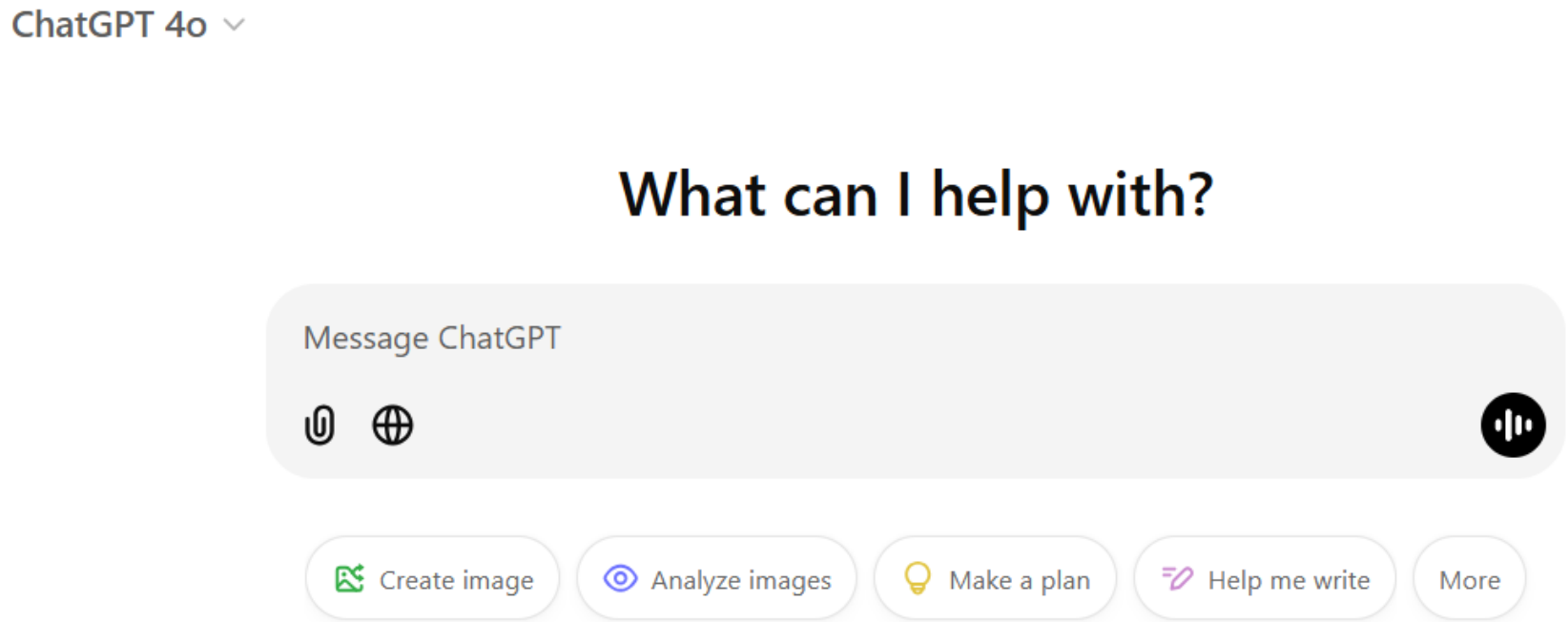
2. Generative AI isn’t productised yet

We are only just beginning to effectively productise the technology

A chat window is just the beginning



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3. Will finance suffer from a self-driving car problem?

Unclear how long it will take us to get to acceptably low error rates across more complex use cases

Self-driving cars

- Very low tolerance for error (crashes)
- Very large problem space (near infinite number of driving scenarios)

Long timeline to get error rates acceptably low

Financial Services

- Very low tolerance for error (fiduciary responsibility to customers, regulatory oversight)
- Highly complex operating environment (complicated nature of financial products & markets)

Unclear how long it will take for error rates to be low enough to expand set of addressable use cases?

4. The technology has key bottlenecks to overcome

Rate of change over the last 24 months has been extreme, but no guarantee it will continue

Diminishing returns on training?

Availability of compute?

Availability of data?

Can LLMs come to understand causation?

5. Regulatory pressure may slow adoption

Significant regulatory concern around adverse customer outcomes

G7 Guiding principles	UK White Paper	EU AI Act	US NIST Framework
Identify, evaluate and mitigate risks	Safety, security and robustness	Social and environmental well-being	Accountable and transparent
Monitor patterns of misuse	Appropriate transparency and explainability	Human agency and oversight	Explainable and interpretable
Transparency	Fairness	Privacy and data governance	Fair with harmful bias managed
Responsible information sharing and reporting of incidents	Accountability and governance	Transparency	Privacy enhanced
AI governance and risk management policies	Contestability and redress	Technical robustness and safety	Safe
Security	Sector specific implementation and enforcement	Diversity, non-discrimination and fairness	Valid and reliable
Mechanisms to enable identification of AI-generated content			
Prioritise research to mitigate societal safety and security risks			
Prioritise development of AI to address global challenges			
Develop international technical standards			
Protection for personal data and intellectual property			

Source: Goodwin PLC

6. Legacy systems will significant hamper adoption

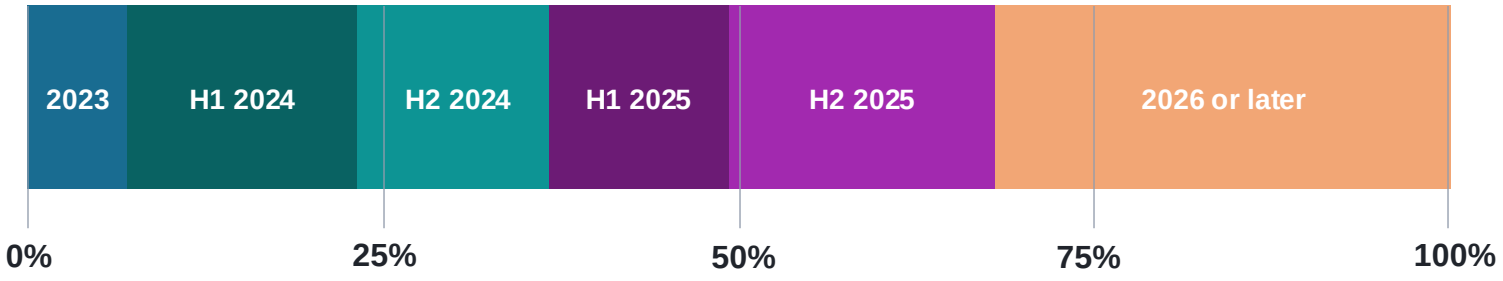
Access to high quality data is critical for successful implementations of AI

Financial services firms have legacy tech challenges…

- Data quality is poor
- Data architectures are often fragmented
- Aging monolithic platform often make integration challenging

Which may help explain the long lead times to get AI projects into product

CIO expected timing for first LLM projects in production



"All this training of AI's is garbage in garbage out, if you don't have ground truth you'll be caught in hallucinations that aren't correct and are actionable. Getting your single source of truth right… a lot of companies have done a terrible job of it."

- Martin Chavez, Vice Chairman of Sixth Street and one of the first SecDB developers

Source: Morgan Stanley CIO Survey (August 2024)

Cloud adoption is one proxy

Technologies can provide significant benefits, but financial services are often still slow to adopt

2006
AWS launches
EC2 & S3

2010
Microsoft Azure launches

As of 2022, only **13%** of financial services firms had >50% of their IT footprint in the cloud

Source: McKinsey 2022

The transformational era: 5-10yrs+

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“We shape our tools. Thereafter, they shape us”

- Winston Churchill -

AI will be more valuable than we expect

We generally underestimate the impact of new technology by orders of magnitude

“There is no reason anyone would want a computer in their home.”

Ken Olsen, founder of Digital Equipment Corporation, 1977

An agentic future

Today’s agents represent a first step towards the potential of AI to automate tasks

“AI gives you infinite interns”

How do we unlock these radical productivity gains?

Improvements are required to move from ‘AI is another tech wave’ to ‘this is a paradigm shift’

1. Reasoning
2. Improvements in domain specific models
3. Embodied Agents
4. Great productization

Stages of Artificial Intelligence

Level 1	Chatbots, AI with conversational language
Level 2	Reasoners, human-level problem solving
Level 3	Agents, systems that can take actions
Level 4	Innovators, AI that can aid in invention
Level 5	Organisations, AI that can do the work of an organisation

Source: Open AI quoted by Bloomberg reporting

What does this mean for the future of finance?

AI has the potential to automate entire classes of knowledge work tasks

Source: McKinsey, MS

Long-term use cases hold substantial promise

Certain functions could profoundly change over the next 10+ years

Equity Research Workflow with AI today: copilot for individual tasks

- Query and analyse company filings, research reports, and time series data using natural language

  Brightwave FINSTER AI

- Perform basic numerical analysis & charting. Update excel models.

  ARKIFi

- Assist in drafting research notes

  Copilot ChatGPT

Equity Research Workflow with AI in 10yrs time: end-to-end project automation?

- Analyst queries key thematic trend. System of agents then:

  1. Researches, understands, and describes the trend

  2. Analyses the magnitude of the trend & 2nd order implications

  3. Identifies universe of impacted companies

  4. Generates potential trade ideas

Saviour
or
False Prophet?

Thank you

Joshua Lloyd-Lyons

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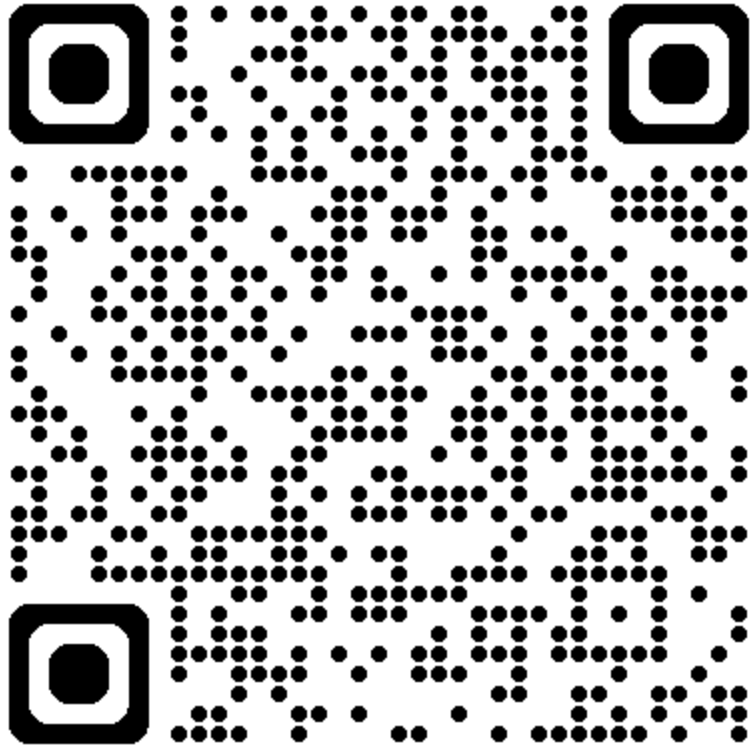

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