

eUTOPIA

Summer School: AI in Business and Healthcare

AI & Business value

August 25, 2026 | Susanne Strahringer, Martin Wiener

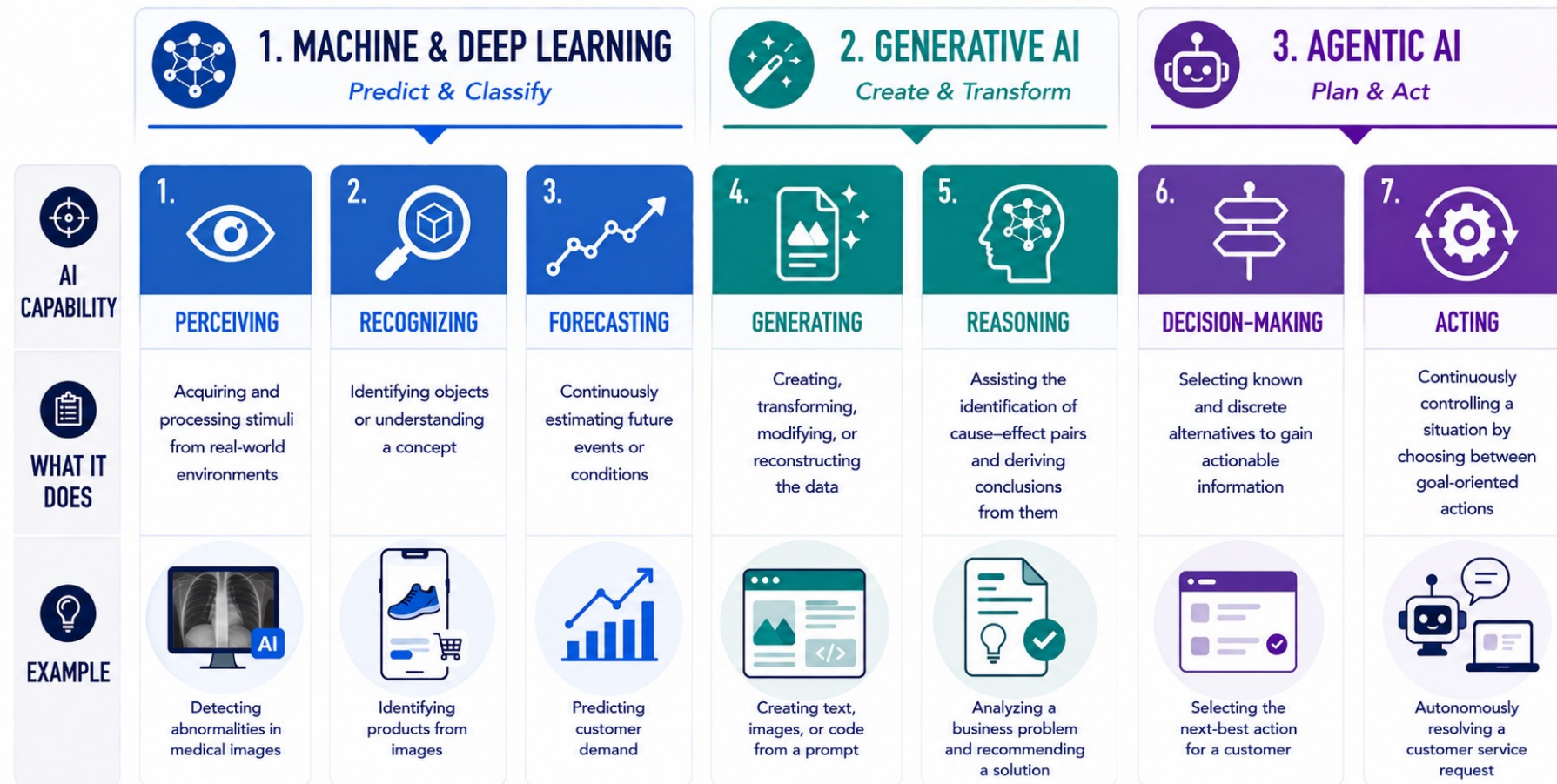
Agenda

- **Recap: AI capabilities**
- **AI value paradox**
 - The use-case problem
 - The value-definition problem
- **Business-case method**
 - Worked example
- **Takeaways**



AI increasingly performs *human-like* cognitive activities

RECAP



Hofmann et al. (2026), Li et al. (2026)

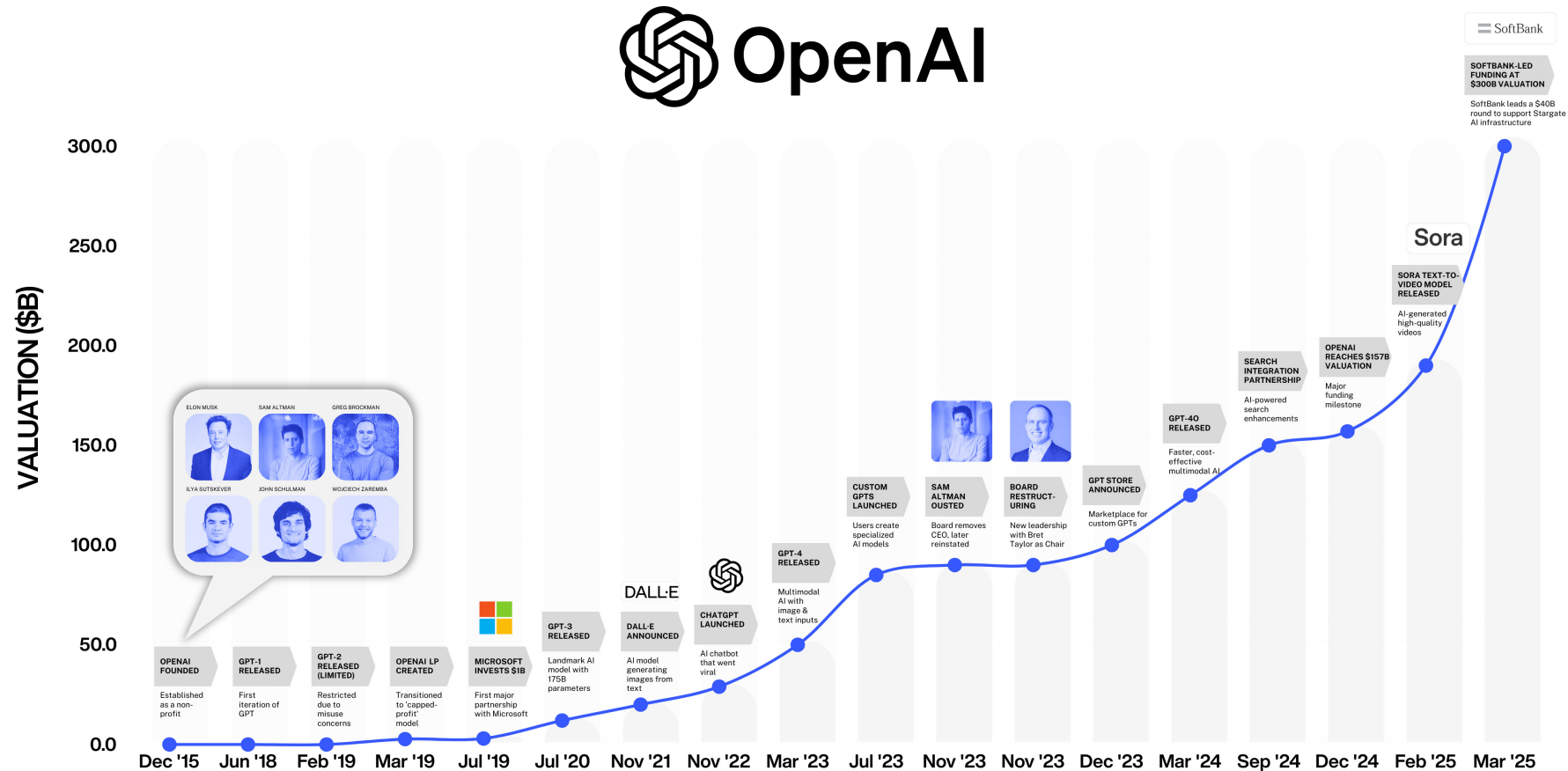
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For some firms, AI has created extraordinary (monetary) value

EXAMPLE



<https://www.news.aakashg.com/p/how-to-break-into-openai>

Yet many companies struggle to turn AI spending into returns

Forbes

Why 75% Of Businesses Aren't Seeing ROI From AI Yet

The New York Times

Companies Are Pouring Billions Into A.I. It Has Yet to Pay Off.

Corporate spending on artificial intelligence is surging as executives bank on major efficiency gains. So far, they report little effect to the bottom line.

FT FINANCIAL TIMES

How much value is AI really creating?

MIT Sloan
Management Review

\$725 Billion Later, 91% Say Organizations Still Aren't Realizing AI's Full Value



Harvard Business Review

Should You Stop Investing in AI (for Now)?

BCG BOSTON CONSULTING GROUP

The AI Adoption Puzzle: Why Usage Is Up But Impact Is Not

Deloitte.

AI ROI: The paradox of rising investment and elusive returns

BAIN & COMPANY The logo for Bain & Company, featuring the company name in red and a red circular icon with a white triangle pointing up and to the right.

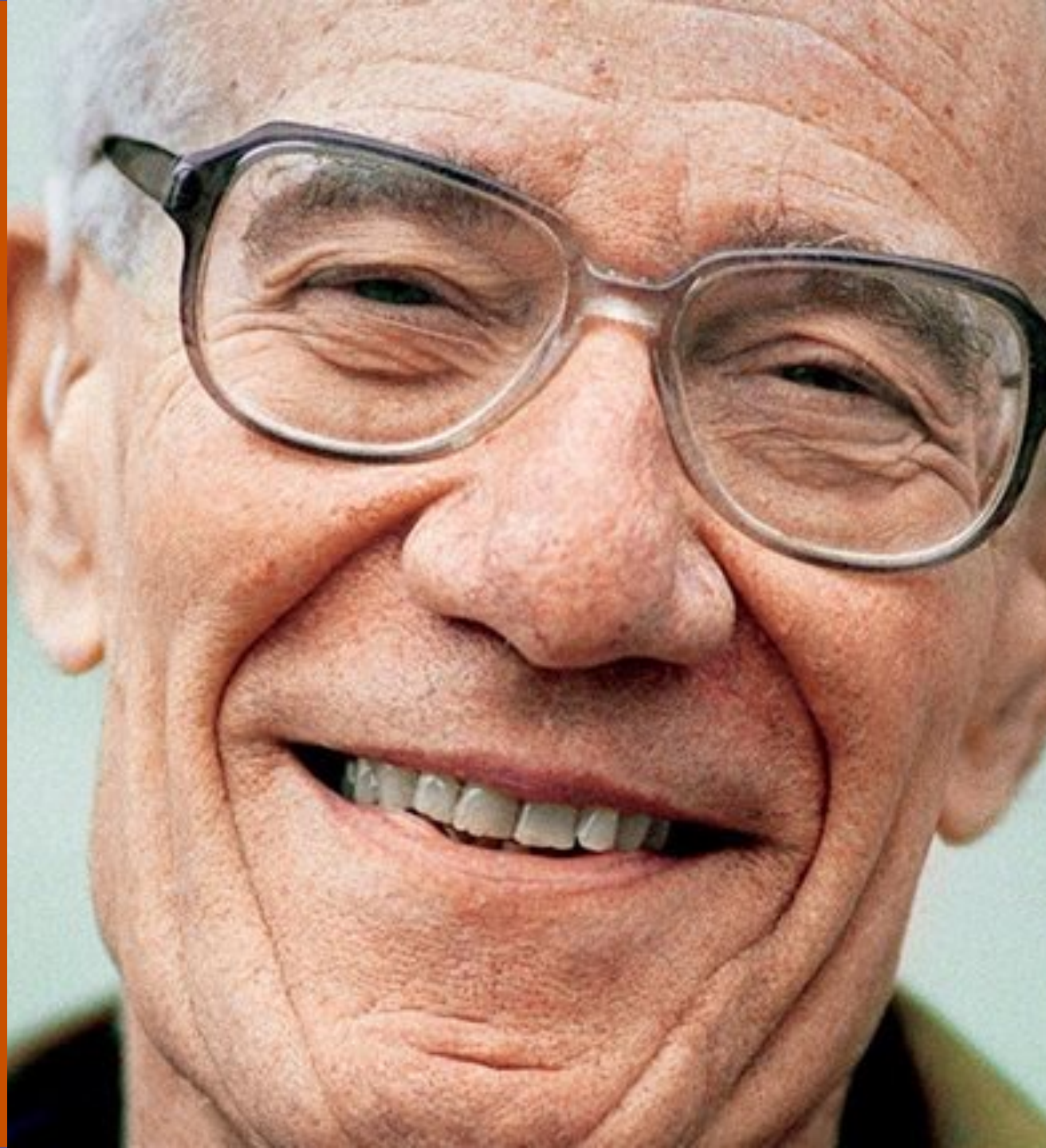
Your AI Budget Is Growing. Your Returns Aren't.

This general problem is not new

IT productivity paradox:

"You can see the computer age everywhere but in the productivity statistics."

Robert Solow (1987)



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General-purpose technologies create an *opportunity-selection* problem

	General-purpose technology	Specific-purpose technology
Classic examples	Steam engine, electricity, semiconductors, computers/IT, and increasingly AI	Payroll system, route-optimization system, spam filter, X-ray fracture-detection system
Application scope	Pervasive – applicable across many activities, firms, and industries	Narrow(er) – applicable to one or a few domains
Number of potential use cases	Very large – many uses may emerge over time	Relatively limited and more readily identifiable ex ante
Value potential	Potentially transformative; can affect productivity, products, business models, industries, and ultimately the economy	Value typically concentrated around improving or enabling particular activities
Value realization	Indirect and often delayed – requires complementary innovations and organizational changes	More direct link between implementation, intended use, and expected benefits
Key question	<i>What should we do with it?</i>	<i>Is it worth doing?</i>

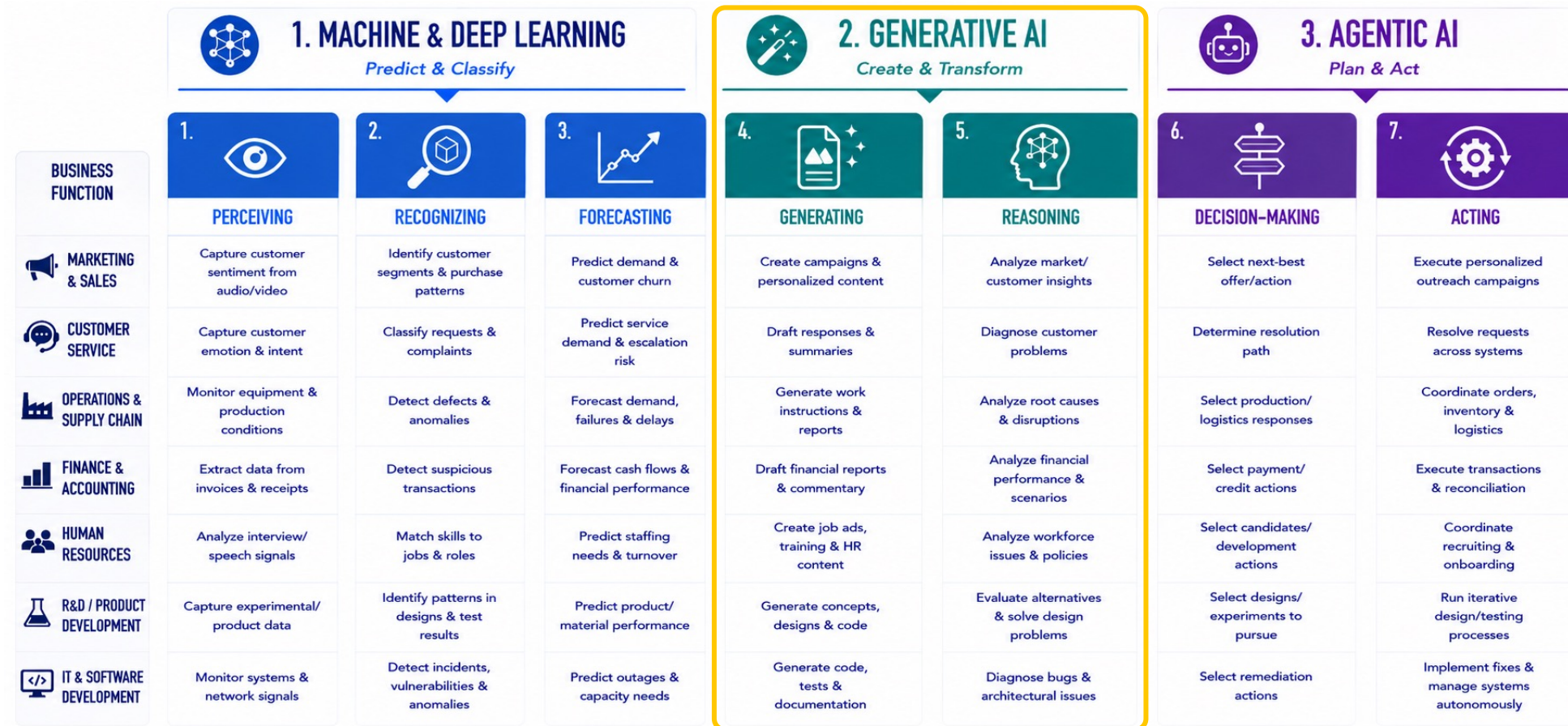
Bresnahan & Trajtenberg (1995), Jovanovic & Rousseau (2005)

Discussion: What *AI use cases* do you recall from the assigned reading?

Where AI will create value—and where it won't

The AI use-case space is enormous

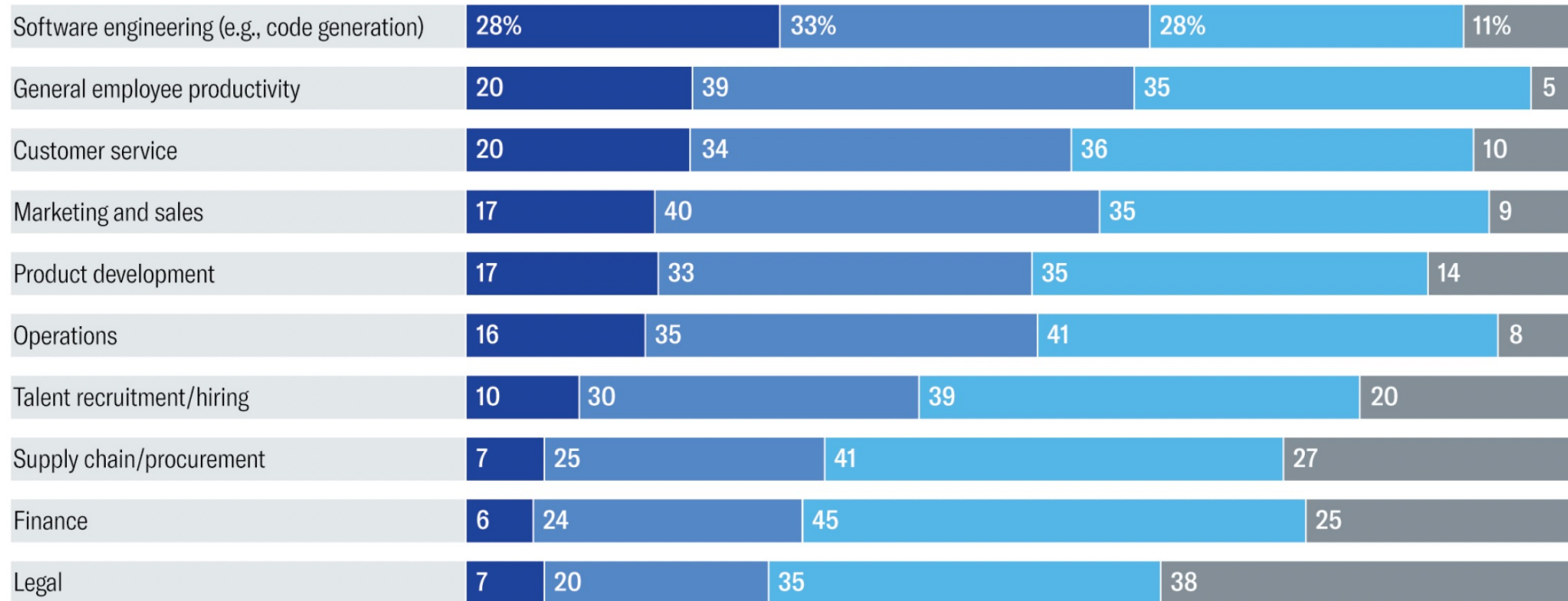
EXAMPLES



Established (generative) AI use cases vary across business functions

To what extent is your organization exploring the use of gen AI in the following areas?

■ Established use ■ Early use ■ Considering use ■ Not considering use



Base: 420 to 589 respondents; varies by row among respondents whose organizations are moving forward with gen AI and excludes "Do not have this function" and "Don't know."

HBR Analytic Services survey (August 2024)

AI use-case repositories as a potential source of inspiration

EXAMPLE

The screenshot displays the 'AI Use Case Library' interface. On the left is a dark blue sidebar with the 'ai appliedAI institute for europe' logo and navigation links: 'AI Use Case Library', 'My AI Use Cases', 'My Favorites', 'Sign in', 'About', and 'Terms of Use'. The main area features a search bar and filter tabs: 'Stage', 'AI capabilities', 'Industry', 'Organizational function', 'SDG alignment', 'Technology type', 'Data source', and 'More Filters'. Below the filters, it says 'Showing 12 of 127 Use Cases' and 'Sort by Newest'. The use cases are presented in a grid of cards, each with a title, a brief description, the organization name, and a 'Value Gain' summary. The cards include:

- Turning AI conversations into a knowledge graph** by Komplyzen GmbH (Industry, Implemented). Value Gain: Business Model Advancement, Enhanced Quality, Increased Efficiency...
- Agentic AI for professional-services delivery** by Komplyt (Industry, MVP). Value Gain: Business Model Advancement, Enhanced Customer Experience, Enhanced...
- The world runs on policy. Policy still runs on email.** by Polinova Lab (Industry, MVP). Value Gain: Cost Saving, Enhanced Quality, Increased Efficiency...
- Sovereign AI Assistant for German Citizens** by INA GPT GmbH (Industry, MVP). Value Gain: Business Model Advancement, Cost Saving, Enhanced Customer Experience...
- Coach Amp** by Coach Amp (Industry, Implemented). Value Gain: Business Model Advancement, Enhanced Customer Experience, Enhanced...
- Automated Report Intelligence at Scale** by valueverde (Social Impact, MVP). Value Gain: Business Model Advancement, Enhanced Customer Experience, Enhanced...
- Financial Data Extraction for Cooperatives** by valueverde (Social Impact, MVP). Value Gain: Business Model Advancement, Enhanced Customer Experience, Enhanced...
- DecisionLens – Real Estate AI** by Personal Project (Industry, Implemented). Value Gain: Higher Revenue, Increased Efficiency, Smarter Product or Service...
- Automated product compliance through agentic AI** by Cambrian (Industry, Implemented). Value Gain: Cost Saving, Increased Efficiency...

<https://ucp.appliedai-institute.de/en/use-cases>

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Discussion: How would you define *business value*?



Three dimensions of business value in technology contexts

Dimension	Continuum	
Manifestation <i>Where does value come from?</i>	Artifact Value is understood as being generated by the technology itself and its design and implementation.	Social Value is understood as emerging through the organizational changes, stakeholder interpretations, decisions, and practices surrounding the technology.
Purpose <i>Why do we assess value?</i>	Summative Value is assessed to evaluate the merit, worth, and significance of outcomes, typically after an investment.	Formative Value is assessed to inform and guide future action, such as prioritizing or adapting investment decisions.
View <i>What counts as value?</i>	Monetary Value is understood primarily in economic or monetary terms, such as cost savings or other financially expressible benefits.	Pluralistic Value encompasses multiple, potentially competing forms of benefit, including less tangible or measurable outcomes for different stakeholders.

Nielsen & Persson (2017; cf. Schryen, 2013)

A pluralistic framework of business value types

	Tangible value	Intangible value
Internal value	Operational & process performance (e.g., shorter processing time, higher throughput or employee productivity, lower operating costs, fewer errors)	Organizational capabilities (e.g., better decision-making, improved knowledge access, greater coordination flexibility, new employee capabilities, faster organizational learning)
External value	Financial & market performance (e.g., higher revenues, profits/margins, market share, firm value, customer acquisition or retention rate)	Market-oriented capabilities (e.g., innovative products/services, greater differentiation, improved customer experience, stronger customer relationships or competitive position)

Schryen (2013)

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Framework for developing an AI business case



Based on Ward et al. (2008)

Three-stage approach for developing an AI business case

1. Business drivers & Investment objectives

- Identify *external* and *internal* drivers
- Define objectives

2. Business case matrix

- (Brainstorm potential benefits)
- Identify organizational changes required to realize benefits
- For each change, specify benefits, measures, and owners
- Determine the explicit value of each *financial* or *quantifiable* benefit



	Do new things	Do things better	Stop doing things
Financial			
Quantifiable			
Measurable			
Observable			

3. Costs & Risks

- Identify *upfront* and *ongoing* costs
- Assess key risks (e.g., technical, financial, organizational)

Based on Ward et al. (2008)

Example: Remember the mobile phone company from Ward et al. (2008)?

Almost two decades later, similar issues persist:

- The once “new call center” is outdated and technologically behind.
- Call-center staff shortages strain operations.
- Staff complain about monotonous work and stressful customer interactions.
- Costly callbacks and high employee turnover hurt profitability.

Meanwhile, AI presents new opportunities:

- Yet *UKTel*, the mid-sized UK mobile phone company, has not embraced AI for customer service.

Post-Brexit challenges add further pressure:

- UK travelers face roaming challenges that EU customers no longer face.
- Customers calling from abroad often require immediate assistance.
- Some customers threaten to switch to larger providers offering EU-like treatment and tailored services.



1 Business drivers & Investment objectives

EXAMPLE

External drivers:

- Global players dominate; UK customers in the mid-tier segment often feel underserved
- Growing need for tailored services for UK-EU travelers
- Call-center labor shortages in the UK market

Internal drivers:

- Declining customer satisfaction due to long wait times and delayed callbacks
- Eroding profitability, partly due to costly callbacks, and declining customer-service leadership
- Retention challenges and high employee turnover
- Low employee satisfaction and morale due to monotonous work and customer bullying

Objectives: Using *AI-based* voicebots to transform the call center into a **digital contact center (DCC)** that...

- Offers new, targeted services (e.g., increase uptake of customized services among frequent UK-EU travelers)
- Improves service quality and capacity (e.g., reduce service failures and waiting times, increase service capacity)
- Relieves employees of monotonous and stressful work (e.g., automate simple service cases, avoid difficult customer interactions)

2 Business case matrix

EXAMPLE

	<i>New service offering</i>	<i>Automated call handling</i>	<i>No callbacks</i>
	Do new things	Do things better	Stop doing things
Financial	Benefit: Additional revenues from existing and new customers (business growth) Measure: ??% revenue increase, £?? million additional revenue within 5 years Benefit owner: Sales manager	Benefit: Lower service costs through automated case resolution (cost reduction) Measure: ??% of cases handled automatically, 10 million cases p.a., £?? cost per case, £?? million saved p.a. Benefit owner: Head of customer service	Benefit: Elimination of callback costs (cost reduction) Measure: 1 million callbacks p.a., £?? cost per callback, £?? million saved p.a. Benefit owner: Head of customer service
Quantifiable		Benefit: Faster service (customer satisfaction) Measure: Average case cycle time reduced by ??% Benefit owner: Head of customer service	
Measurable	Benefit: Higher retention of valuable customers through continuous feature improvements (customer loyalty) Measure: Average customer contract duration Benefit owner: Marketing manager	Benefit: Higher service quality for difficult cases through specialized staff (customer satisfaction) Measure: Sentiment change during contact Benefit owner: Head of customer service	
Observable		Benefit: More motivating work through focus on demanding cases (employee satisfaction) Measure: Staff opinion Benefit owner: HR manager	Benefit: No more customer chasing or annoyance from ill-timed callbacks (employee satisfaction) Measure: Staff opinion Benefit owner: HR manager

2 Business case matrix (cont.)

EXAMPLE

	<i>New service offering</i>	<i>Automated call handling</i>	<i>No callbacks</i>
	Do new things	Do things better	Stop doing things
Financial	Benefit: Additional revenues from existing and new customers (business growth) Measure: 5+15% revenue increase, £90 million additional revenue within 5 years Benefit owner: Sales manager	Benefit: Lower service costs through automated case resolution (cost reduction) Measure: 60% of cases handled automatically, 10 million cases p.a., £0.5 cost per case, £3 million saved p.a. Benefit owner: Head of customer service	Benefit: Elimination of callback costs (cost reduction) Measure: 1 million callbacks p.a., £1.3 cost per callback, £1.3 million saved p.a. Benefit owner: Head of customer service
Quantifiable		Benefit: Faster service (customer satisfaction) Measure: Average case cycle time reduced by 35% Benefit owner: Head of customer service	
Measurable	Benefit: Higher retention of valuable customers through continuous feature improvements (customer loyalty) Measure: Average customer contract duration Benefit owner: Marketing manager	Benefit: Higher service quality for difficult cases through specialized staff (customer satisfaction) Measure: Sentiment change during contact Benefit owner: Head of customer service	
Observable		Benefit: More motivating work through focus on demanding cases (employee satisfaction) Measure: Staff opinion Benefit owner: HR manager	Benefit: No more customer chasing or annoyance from ill-timed callbacks (employee satisfaction) Measure: Staff opinion Benefit owner: HR manager
Potential evidence	Market research: Survey of a sample of current and potential customers to estimate service uptake and new customer acquisition Internal data: Average revenue per customer	Reference sites: Potential automation rate Internal data: Average cost per case Simulation: Expected cycle-time reduction	External benchmarking: Typical callback costs

3 Costs & Risks

EXAMPLE

Upfront costs:

- Server infrastructure upgrades (if not IaaS)
- Development tools (if purchased)
- RAG solution development
- Multi-agent system development
- Staff training
- Etc.

Ongoing costs (net increase):

- AI token/API usage
- Software support & SaaS subscription fees
- Solution maintenance
- AI developer personnel costs
- Etc.

Technical risks:

- Immaturity of voicebot technology, LLM hallucinations, prompt-injection attacks, missing guardrails, etc.

Financial risks:

- Vendor lock-in (if SaaS is used), rising LLM token/API prices, high AI talent costs, etc.

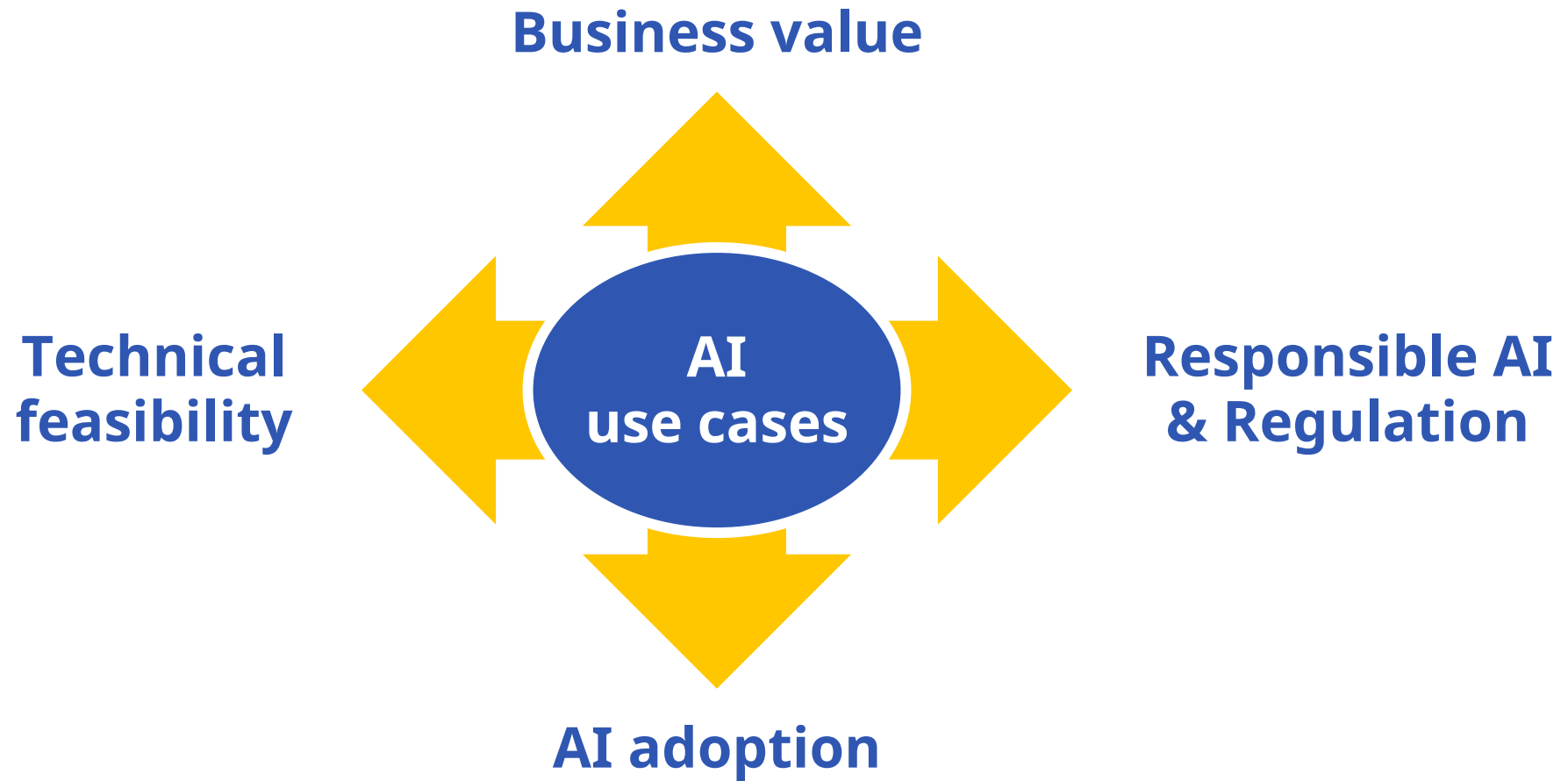
Organizational risks:

- Difficulty recruiting and retaining AI developers, etc.

Additional risks:

- **Ethical:** Bias in identifying “difficult” customers
- **Regulatory:** Incorrect decisions about when human oversight is required (EU AI Act non-compliance)
- Etc.

Summer School: Framework



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Key takeaways



1. **AI potential ≠ AI business value:** AI's broad capabilities and use-case space create an opportunity-selection problem – *What should we do with it?*
2. **AI value ≠ ROI alone:** Business value is multidimensional – tangible and intangible, internal and external, with varying degrees of explicitness (financial $\leftrightarrow$ observable).
3. **Technology alone does not create business value:** AI creates (delayed) value through the organizational changes it enables – do *new* things, do things *better*, or *stop* doing things.
4. **Make the value logic explicit:** Link change $\rightarrow$ benefit $\rightarrow$ measure $\rightarrow$ evidence $\rightarrow$ explicit value, and assign clear benefit ownership.
5. **Value must be weighed against costs and risks:** A compelling AI business case considers *upfront* and *ongoing* costs alongside *technical*, *financial*, *organizational*, and other risks.

Conclusion: The key question is not: *Does AI create business value?* –
but: *Where, for whom, through what changes, at what cost and risk, and with what evidence?*



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