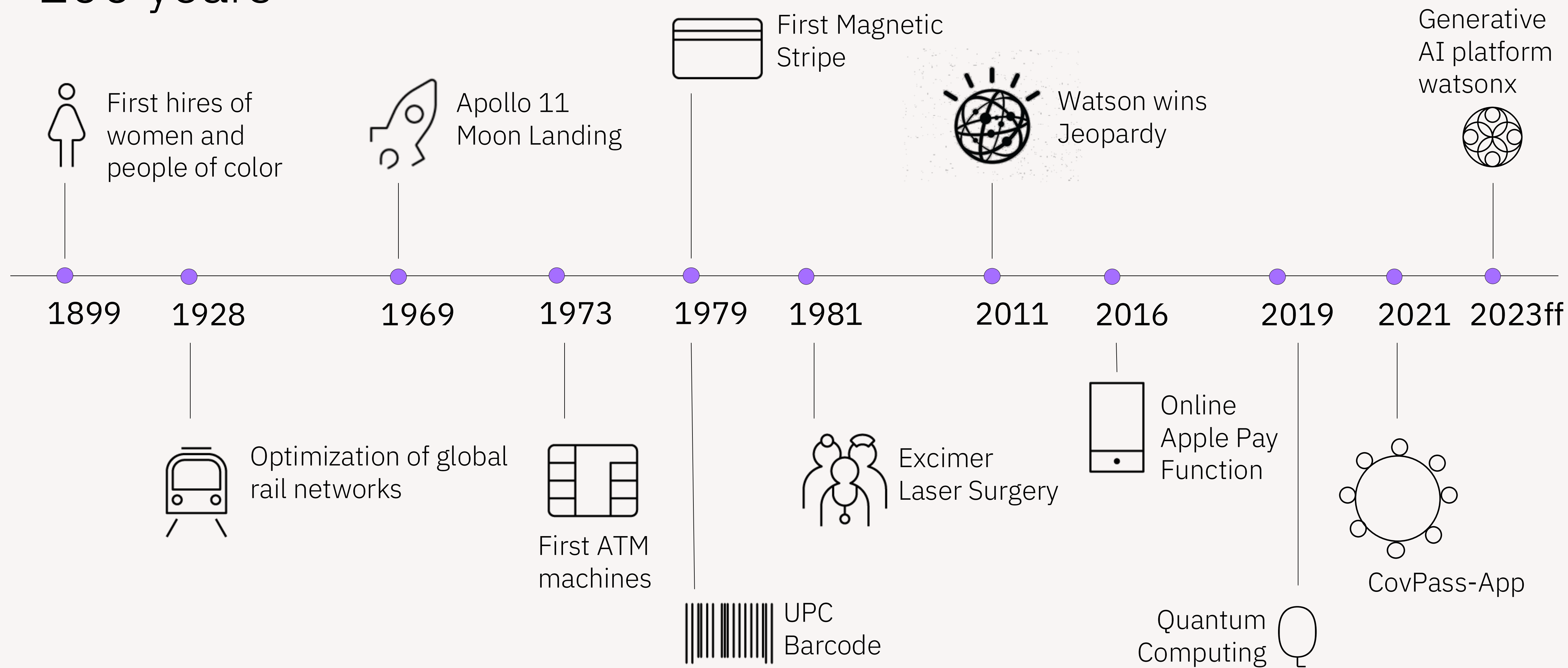


IBM has been contributing to world-changing progress for over 100 years



AI opportunities – today and tomorrow

International Tech Talks:
Artificial Intelligence in
Bavaria and Northern
Europe

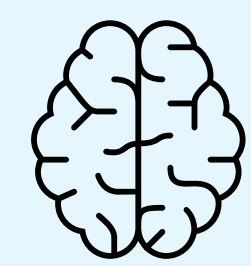
02 April 2025
IHK München



Andrea Martin, IBM Deutschland GmbH – CTO Ecosystem & Associations, IBM Distinguished Engineer
amartin@de.ibm.com, +49 172 7303427, LinkedIn: <https://www.linkedin.com/in/andrea-martin-ibm/>

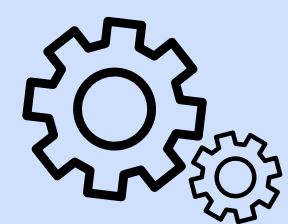
Artificial Intelligence (AI)

Human intelligence exhibited by machines



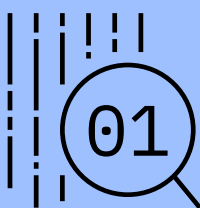
Machine Learning (ML)

Systems that learn from historical data



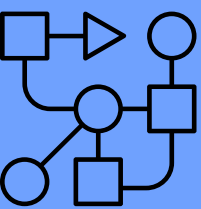
Deep Learning (DL)

ML technique that mimics human brain function

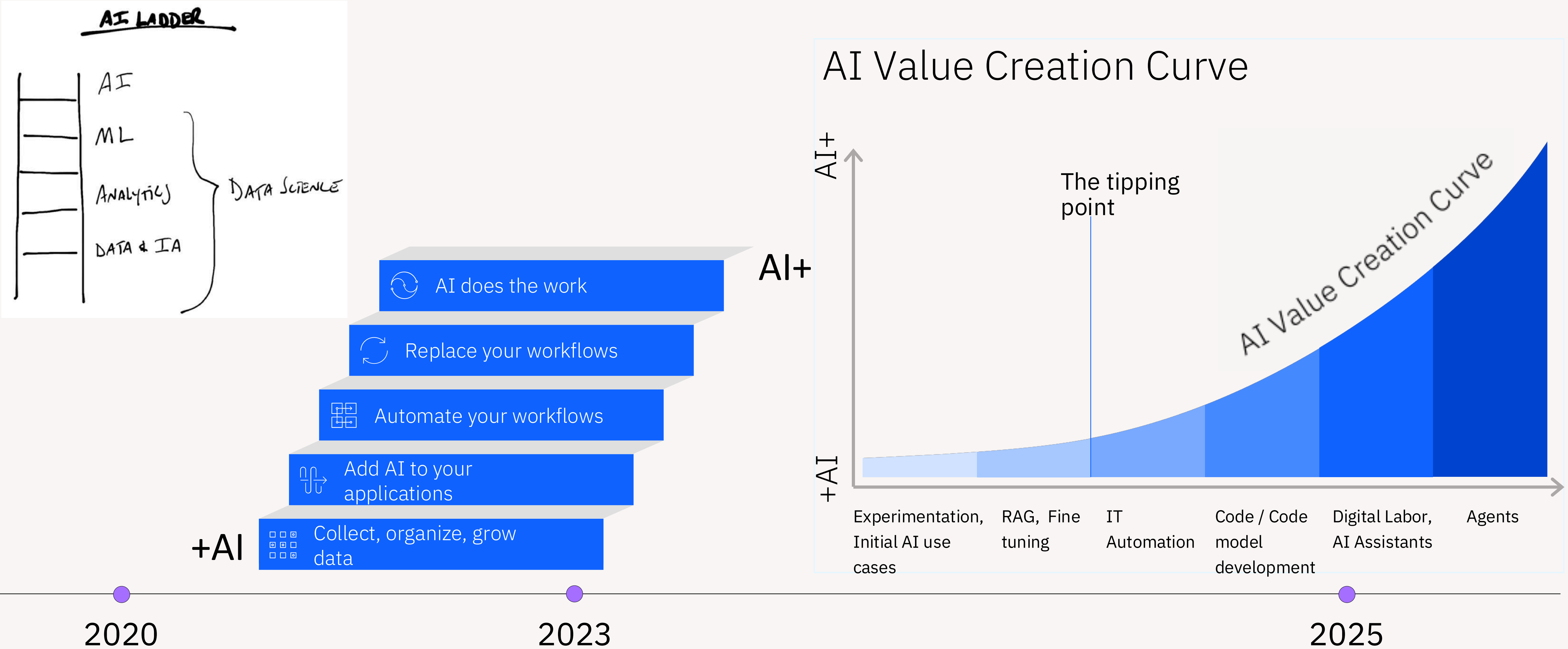


Foundation Model

Generative AI systems

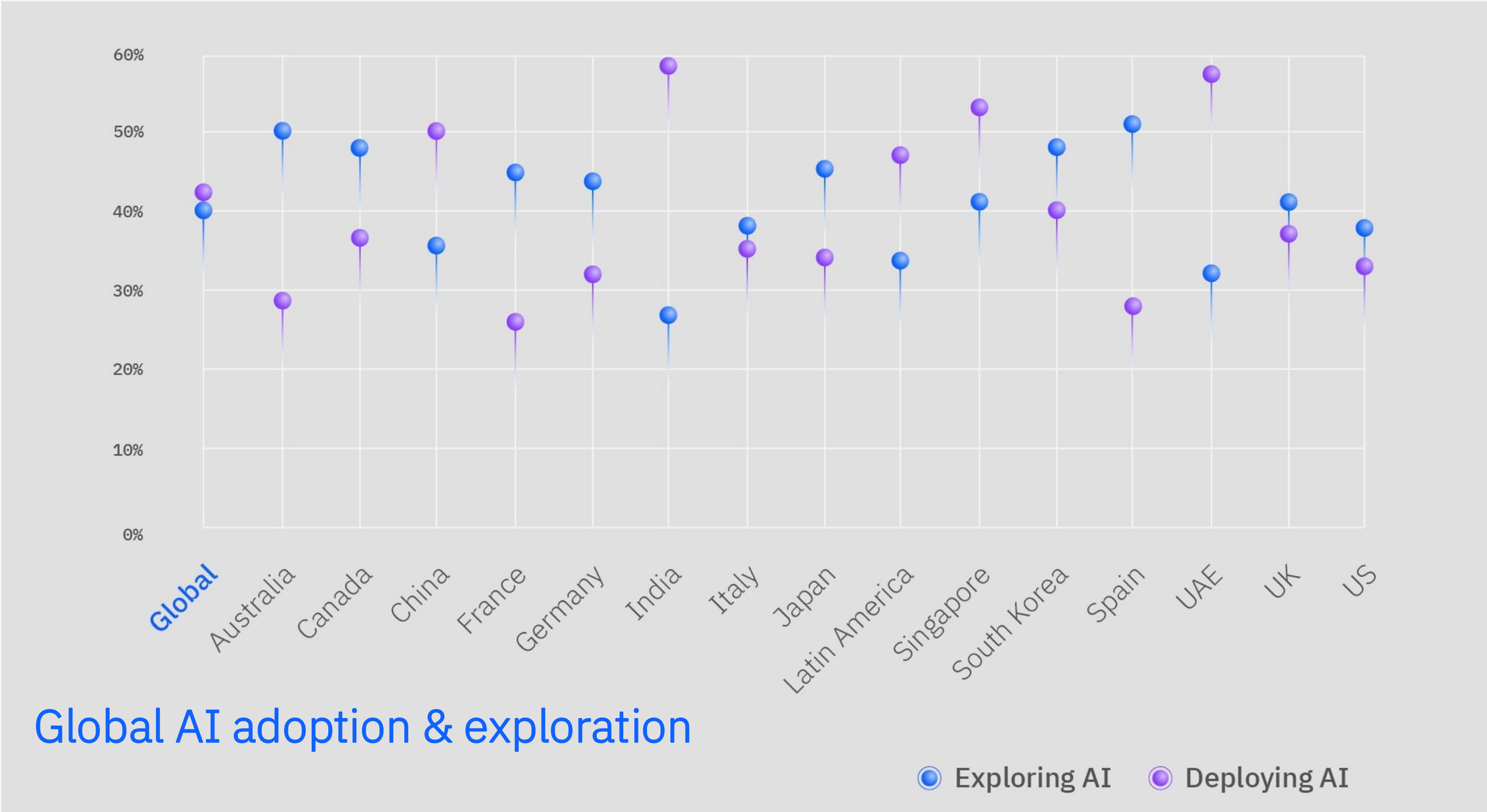


We have moved from +AI toward AI+ (The “AI Ladder”)

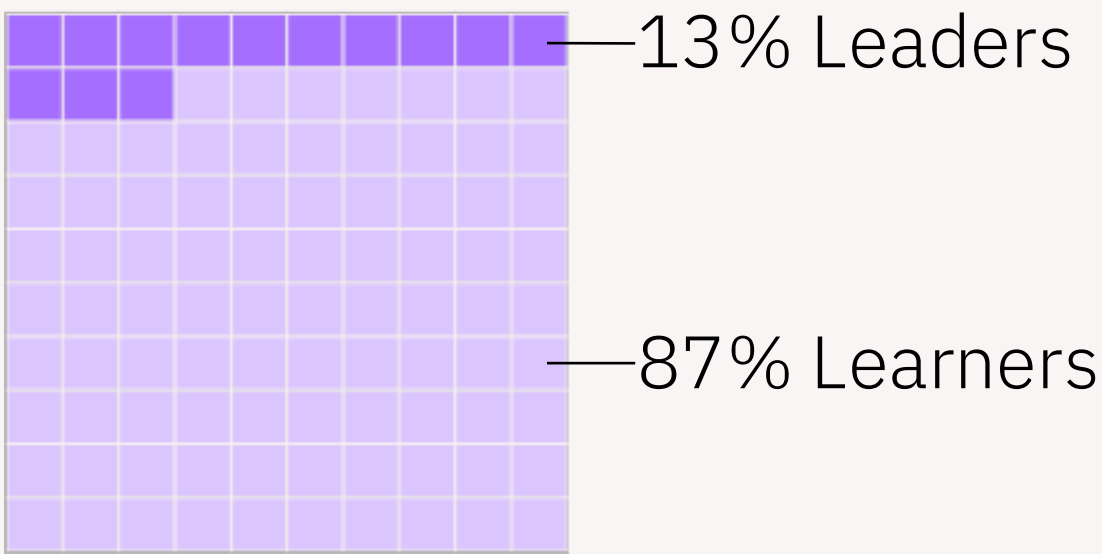


AI adoption varies across regions and sees leaders and learners

IBM AI Adoption Index



IBM AI in Action Report



A Learner will typically copy predefined scenarios using out-of-the-box technologies. But a Leader develops custom innovations

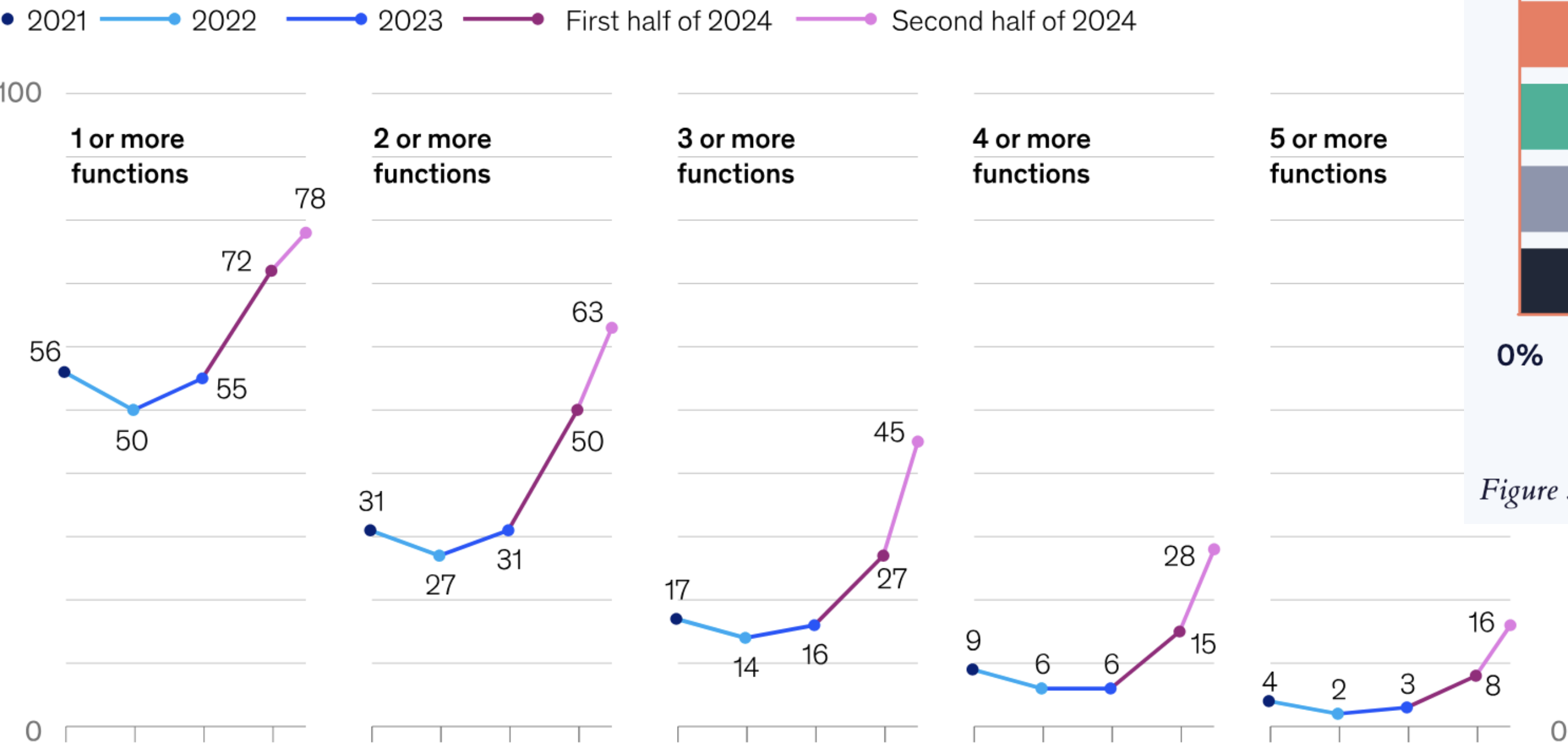
Dr. Stephan Bloehdorn,
IBM Consulting Executive Partner and
Practice Leader AI, Analytics and Automation

Sources:
<https://de.newsroom.ibm.com/2024-01-10-AI-Adoption-2024> - index based on responses from >8000 IT professionals (at least manager level) globally, all company sizes, but main several results are based on companies with >1000 employees
<https://newsroom.ibm.com/2024-01-10-Data-Suggests-Growth-in-Enterprise-Adoption-of-AI-is-Due-to-Widespread-Deployment-by-Early-Adopters> - index based on responses from >8000 IT professionals (at least manager level) globally, all company sizes
<https://www.ibm.com/think/reports/ai-in-action> - study bases on responses from 2000 companies globally
<https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai> – study based on >1490 companies globally, all company sizes
<https://www.silo.ai/ebooks-reports/nordic-state-of-ai-third-edition#get-report> – survey filled in from 35 Nordic companies with >1000 employees and >50Mio€ annual revenue

AI adoption also varies in its extent

McKinsey Study

Business functions at respondents' organizations that are using AI,¹ % of respondents



¹In 2021, n = 1,843; in 2022, n = 1,492; in 2023, n = 1,684; in Feb–Mar 2024, n = 1,363; in July 2024, n = 1,491. The survey question asks about 11 functions: HR; IT; manufacturing; marketing and sales; product and/or service development; risk, legal, and compliance; service operations; software engineering; strategy and corporate finance; supply chain/inventory management; and other corporate functions (eg, knowledge management). Source: McKinsey Global Surveys on the state of AI, 2021–24

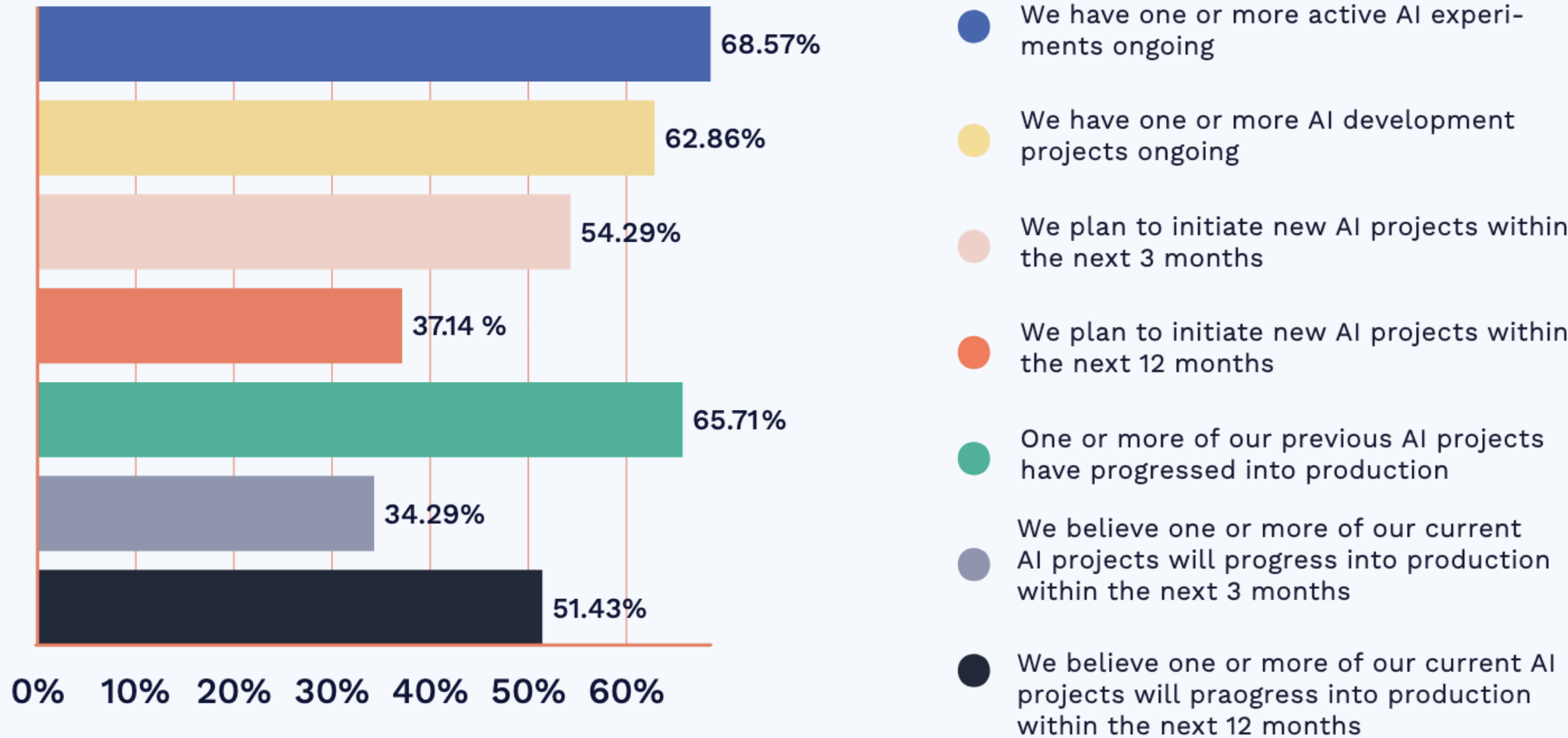


Figure 3. From experimentation to production, where are you now?

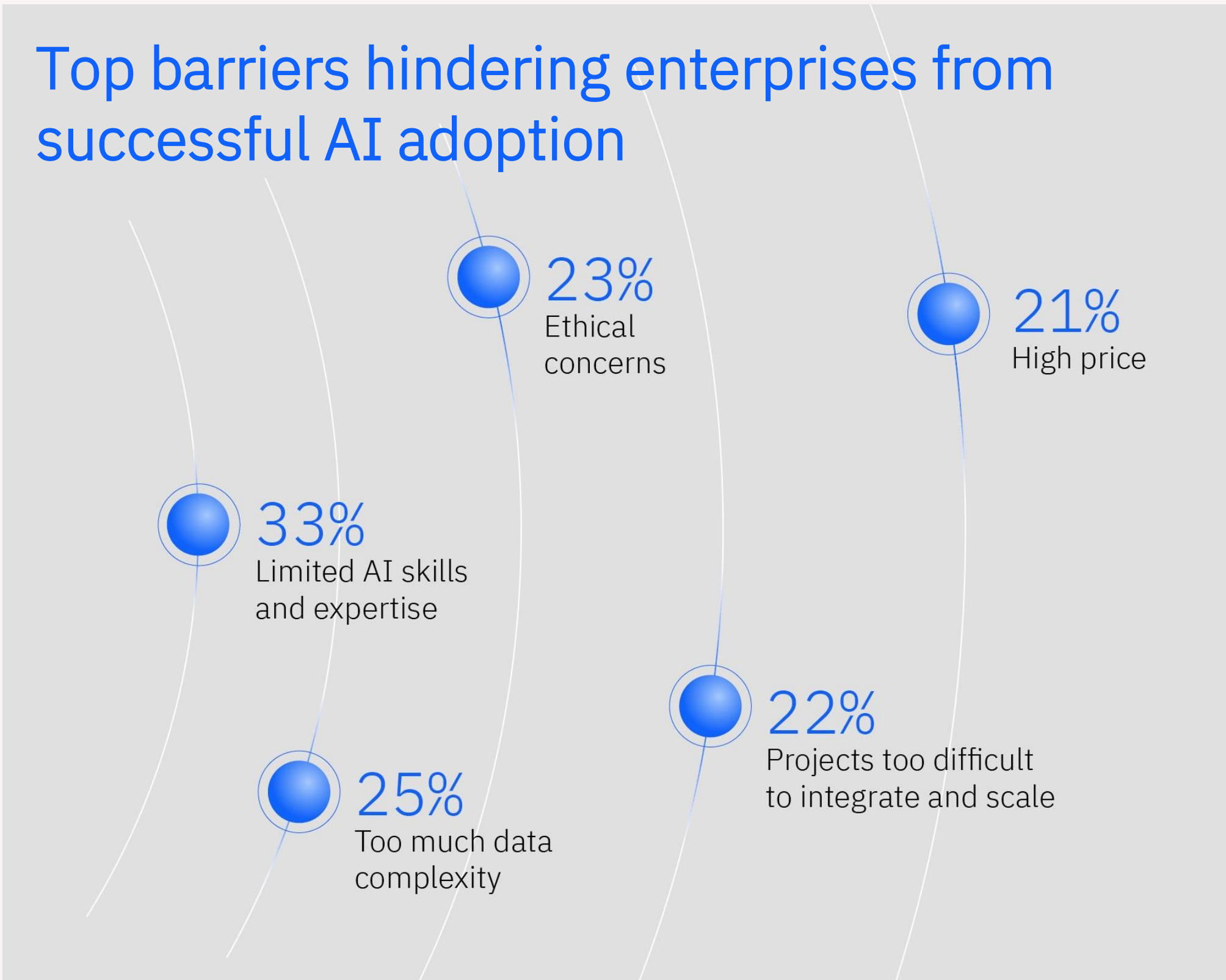
Nordic State of AI

Sources:

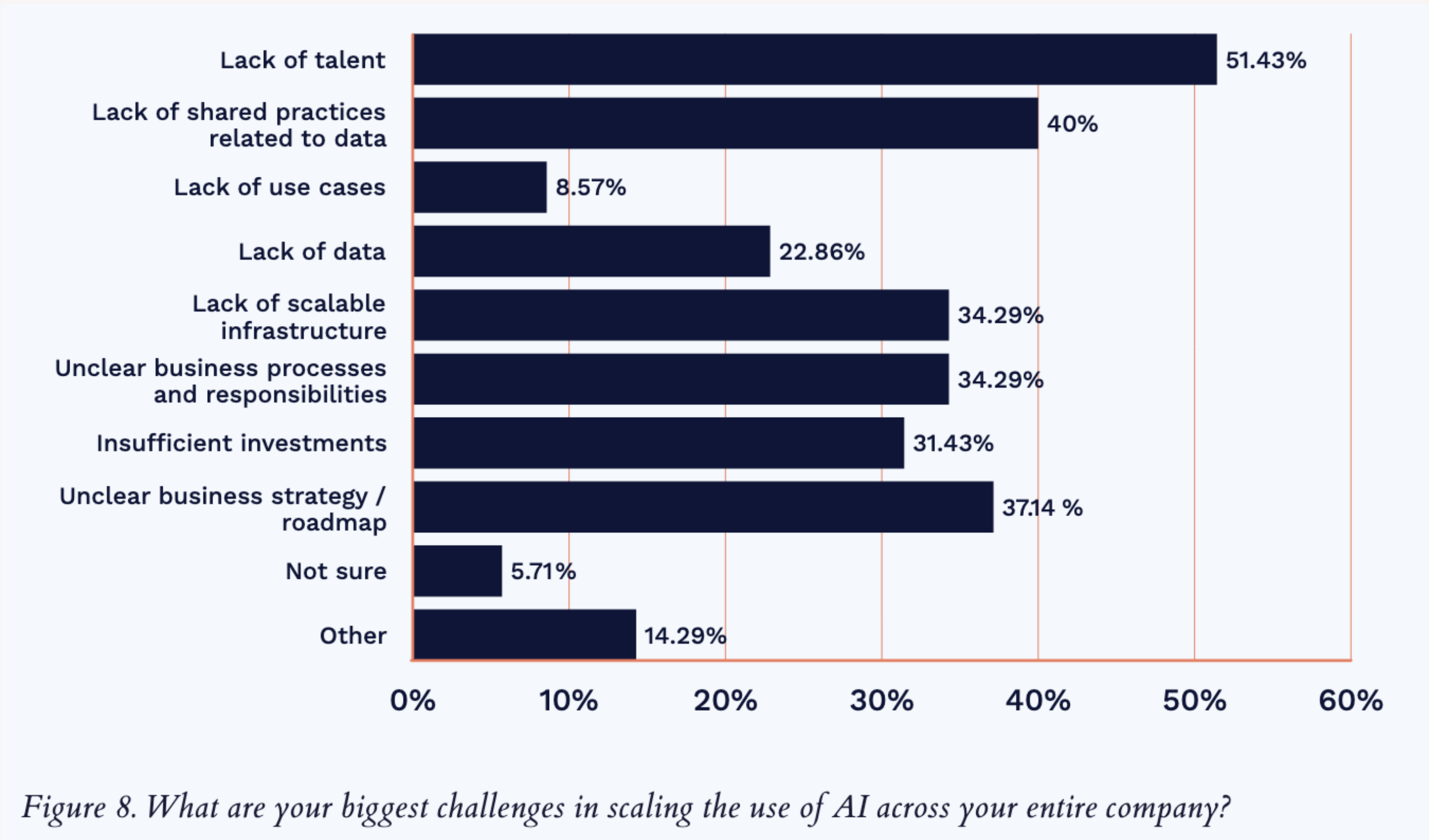
- <https://de.newsroom.ibm.com/2024-01-10-AI-Adoption-2024> - index based on responses from >8000 IT professionals (at least manager level) globally, all company sizes, but main several results are based on companies with >1000 employees
- <https://newsroom.ibm.com/2024-01-10-Data-Suggests-Growth-in-Enterprise-Adoption-of-AI-is-Due-to-Widespread-Deployment-by-Early-Adopters> - index based on responses from >8000 IT professionals (at least manager level) globally, all company sizes
- <https://www.ibm.com/think/reports/ai-in-action> - study bases on responses from 2000 companies globally
- <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai> – study based on >1490 companies globally, all company sizes
- <https://www.silo.ai/ebooks-reports/nordic-state-of-ai-third-edition#get-report> – survey filled in from 35 Nordic companies with >1000 employees and >50Mio€ annual revenue

Some companies are hesitant in adoption AI because they see challenges

IBM AI Adoption Index



Nordic State of AI



Sources:

<https://de.newsroom.ibm.com/2024-01-10-AI-Adoption-2024> - index based on responses from >8000 IT professionals (at least manager level) globally, all company sizes, but main several results are based on companies with >1000 employees

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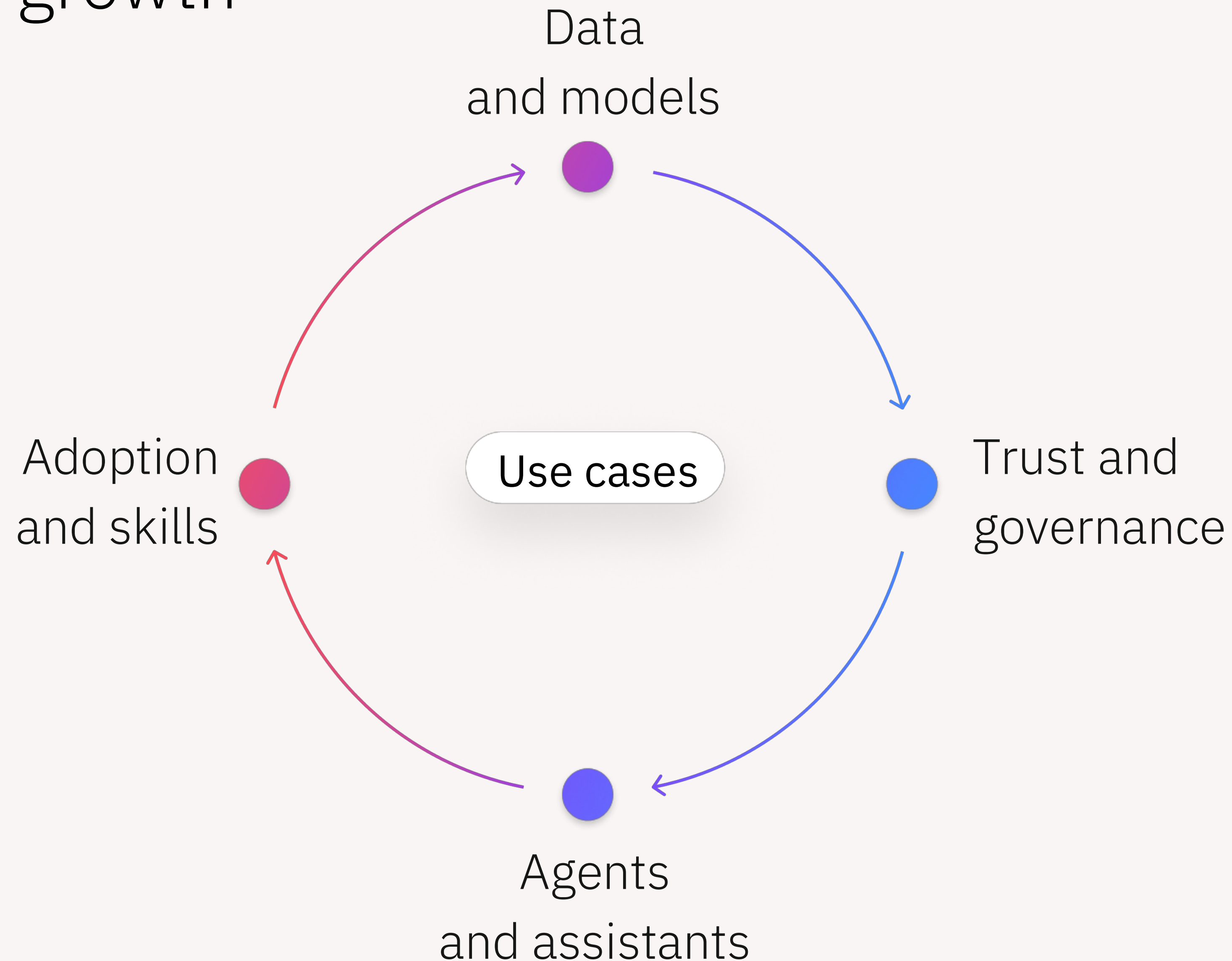
<https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai> – study based on >1490 companies globally, all company sizes

<https://www.silo.ai/ebooks-reports/nordic-state-of-ai-third-edition#get-report> – survey filled in from 35 Nordic companies with >1000 employees and >50Mio€ annual revenue

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7

So, let's see which topics need to be addressed for AI in a strategy for growth



Boehringer Ingelheim and IBM collaborate to advance generative AI and foundation models for therapeutic antibody development



BaFin improves quality of supervisory function and increases productivity in manual activities with IBM watsonx



Blendow Group pilots an AI-enhanced legal intelligence analysis with IBM

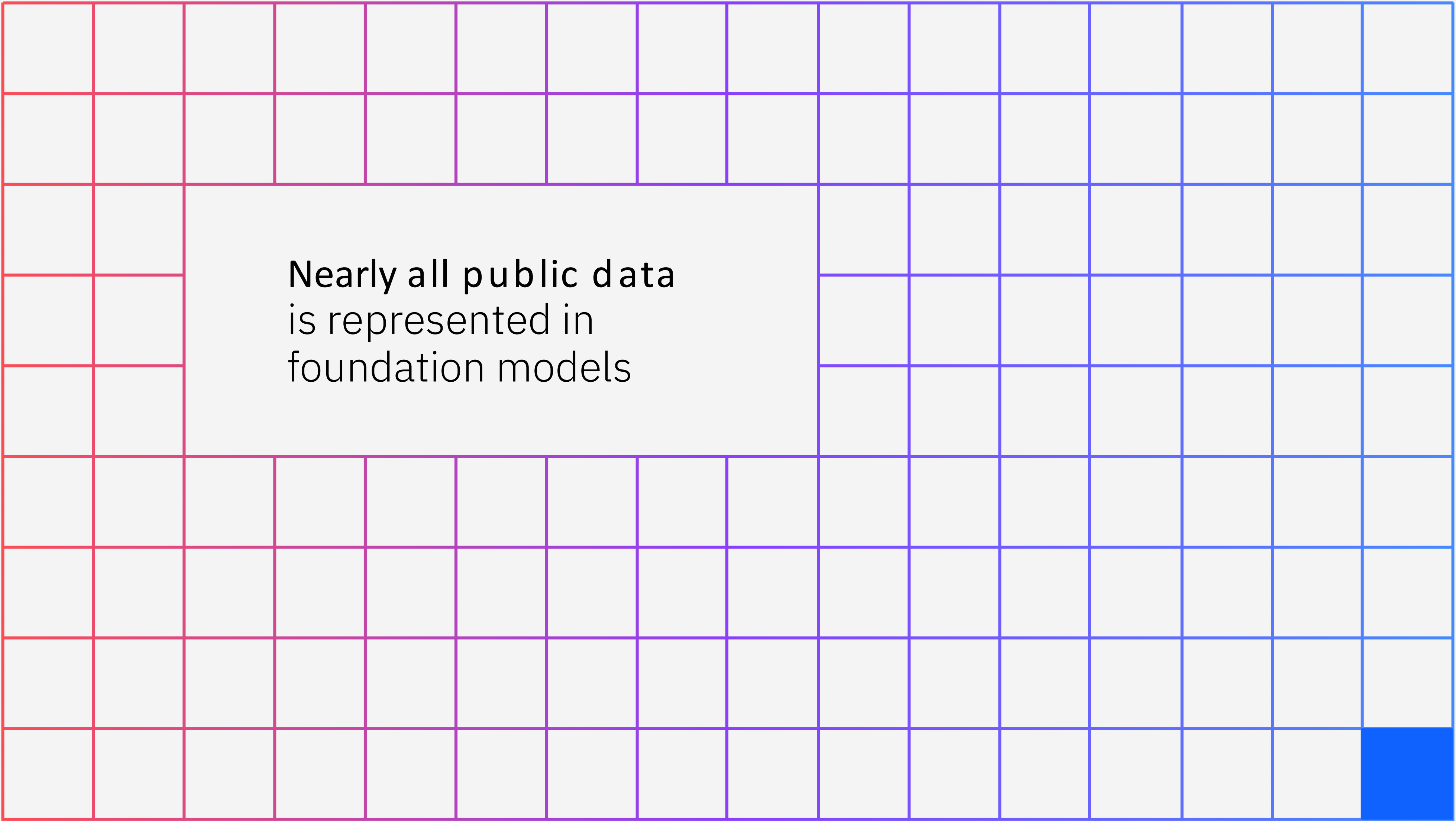


IBM and WWF Germany to build new AI solution to support conservation of keystone species

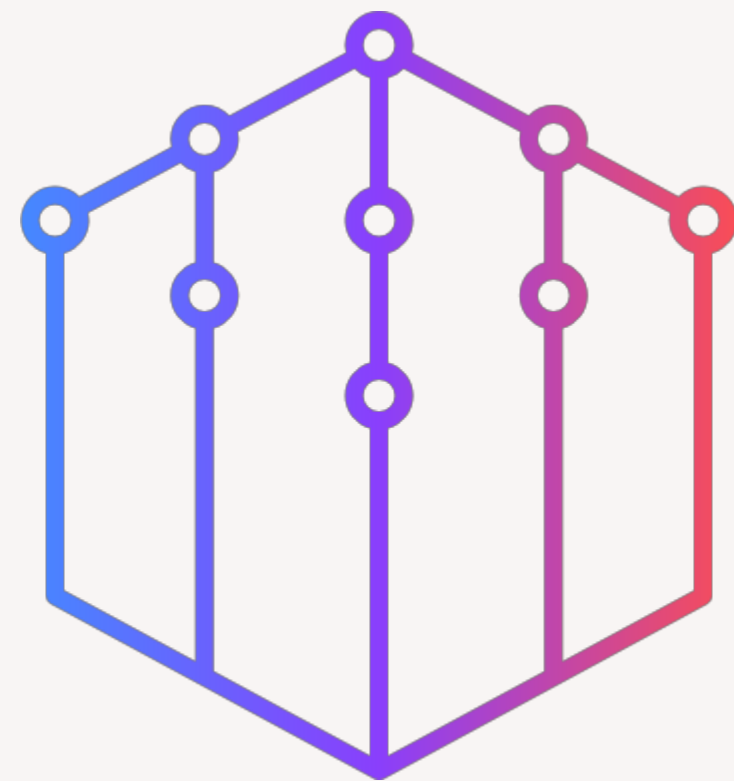
Use cases



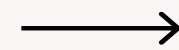
Data is the fuel for an effective AI strategy



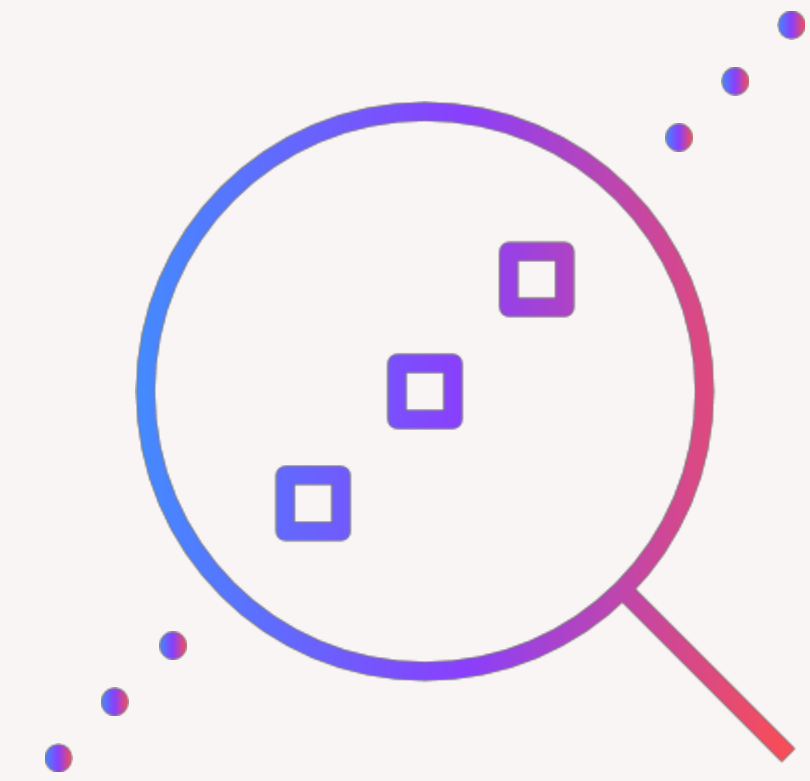
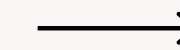
The IBM approach is to create fit-for-purpose models



Your data



The right model



Targeted use case
fine tuning

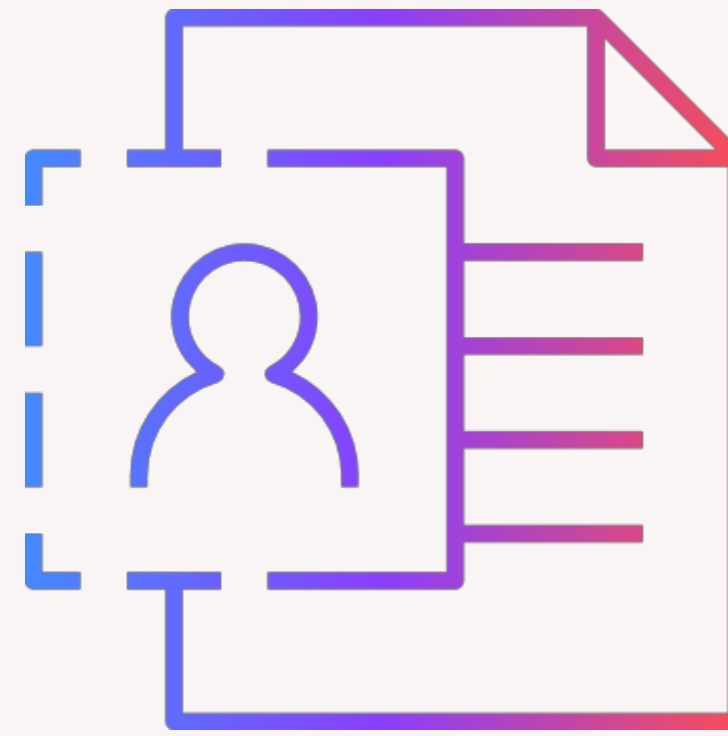
To create trust, you need several pre-requisites

● Trust and governance



Accuracy

+



Transparency

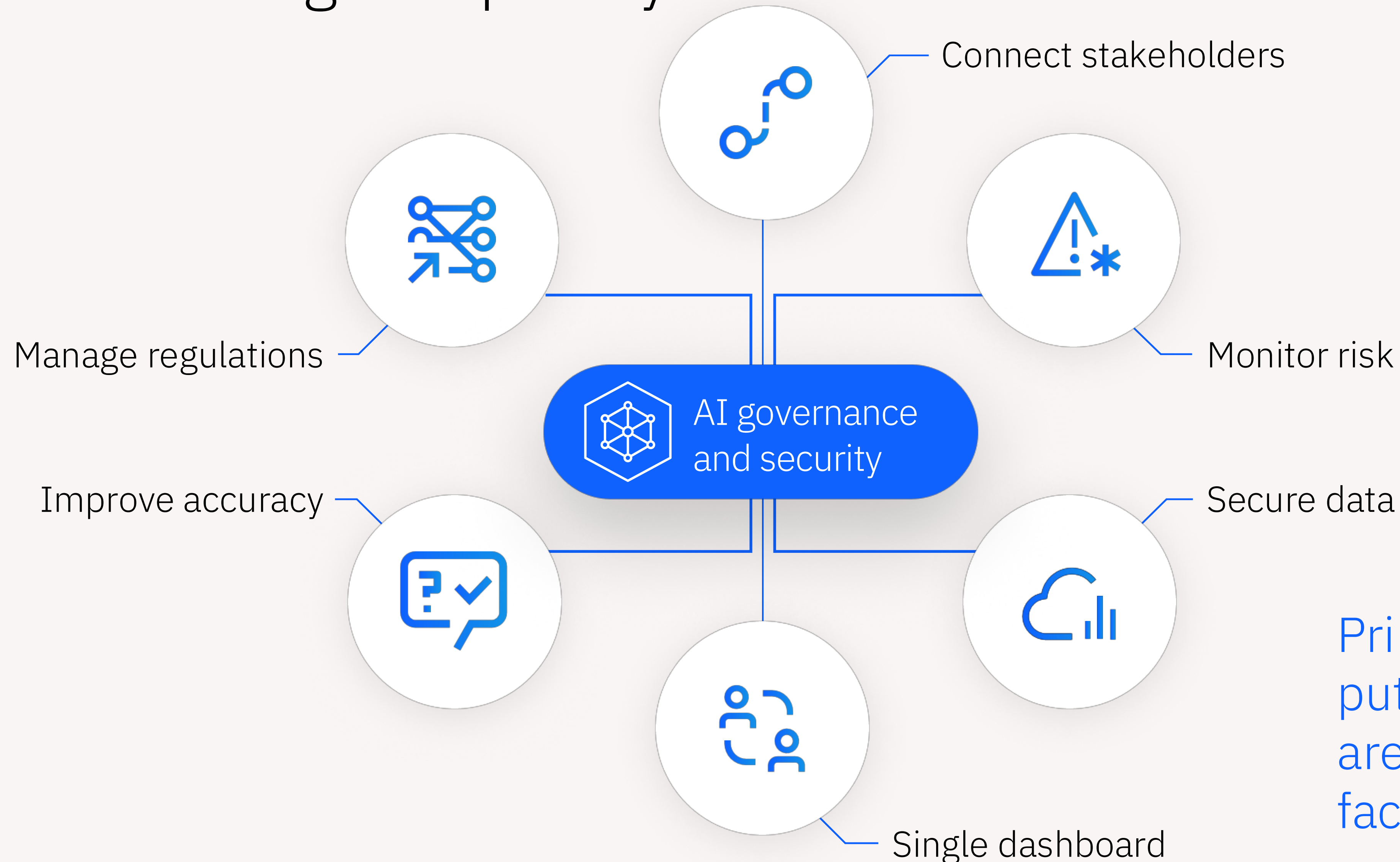
+



Security

AI governance is the key to managing the existing complexity

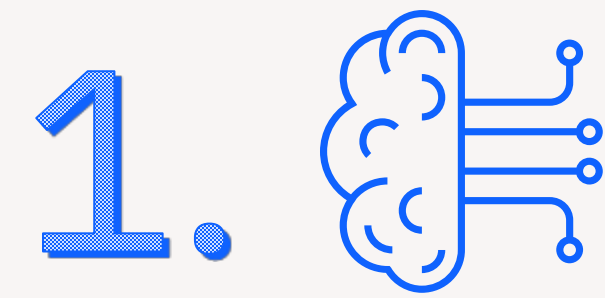
● Trust and governance



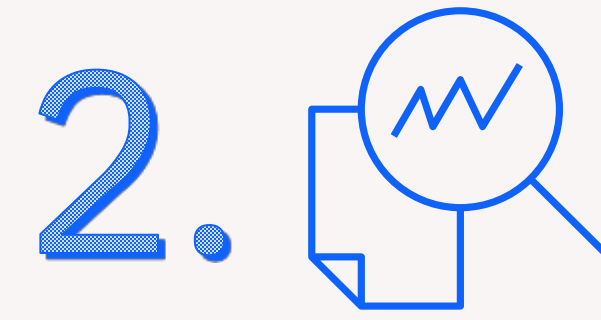
Principles, pillars and putting things in practice are key critical success factors for AI governance.

(IBM) Principles for Trust & Transparency

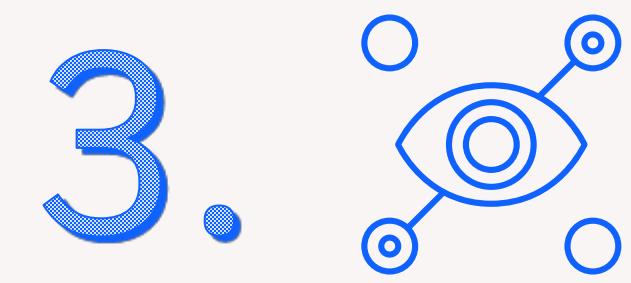
If you strive for [responsible innovation](#) capable of bringing [benefits to everyone](#) and not just a few, you need some basic values and subsequently principles for your business conduct and AI governance.



The purpose of AI is to augment human intelligence



Data and insights belong to their creator



New technology, including AI systems, must be transparent and explainable

PRINCIPLE

 Trust and governance



(IBM) Pillars of trust

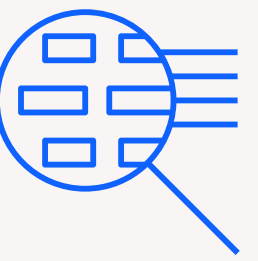


Transparency



An AI system's ability to include and share information on how it has been designed and developed.

Explainability



An AI system's ability to provide a human-interpretable explanation for its predictions and insights.

Fairness



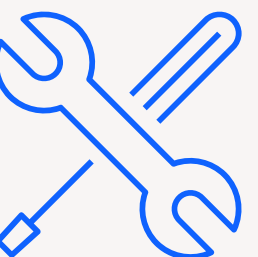
An AI system's ability to treat individuals or groups equitably, depending on the context in which the AI system is used.

Privacy



An AI system's ability to prioritize and safeguard consumers' privacy and data rights.

Robustness



An AI system's ability to effectively handle exceptional conditions, such as abnormalities in input.

Trust and governance

These principles and pillars also need to be put in practice

Governance



e.g.

- AI Ethics Board –
- Business Unit Advocate
- Chief Privacy Office / Chief Data Office
- Legal Department
- Enterprise Security

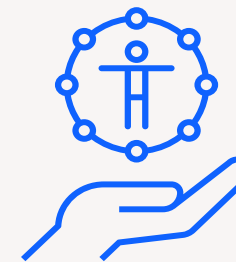
Skills



e.g.

- Who needs what skills?
E.g. general AI education, critical thinking, data literacy, ...
- Who will use which AI tools in their jobs?

Methods



e.g.

- Ethics by design
- Human Friendly Automation

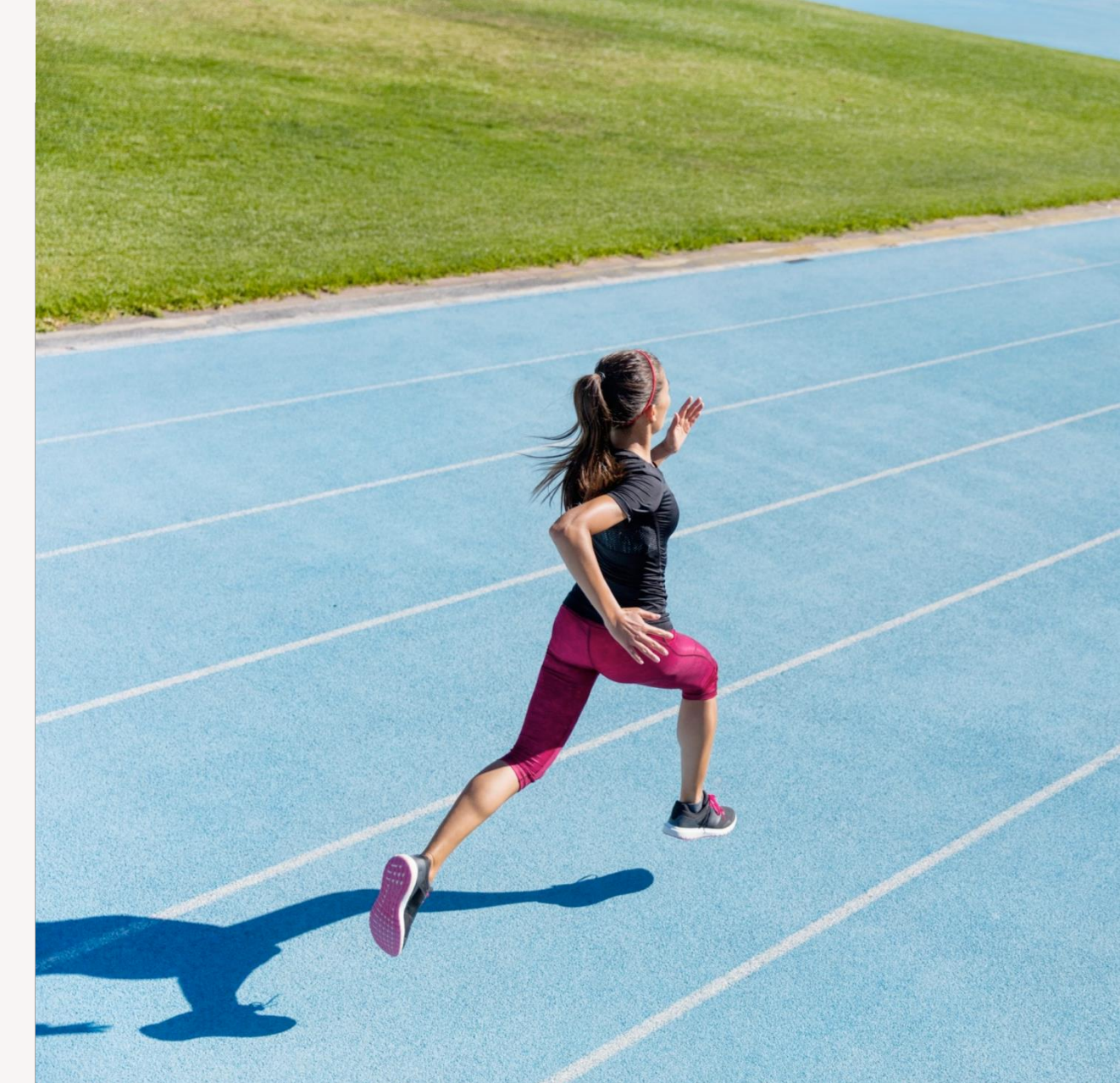
Tools



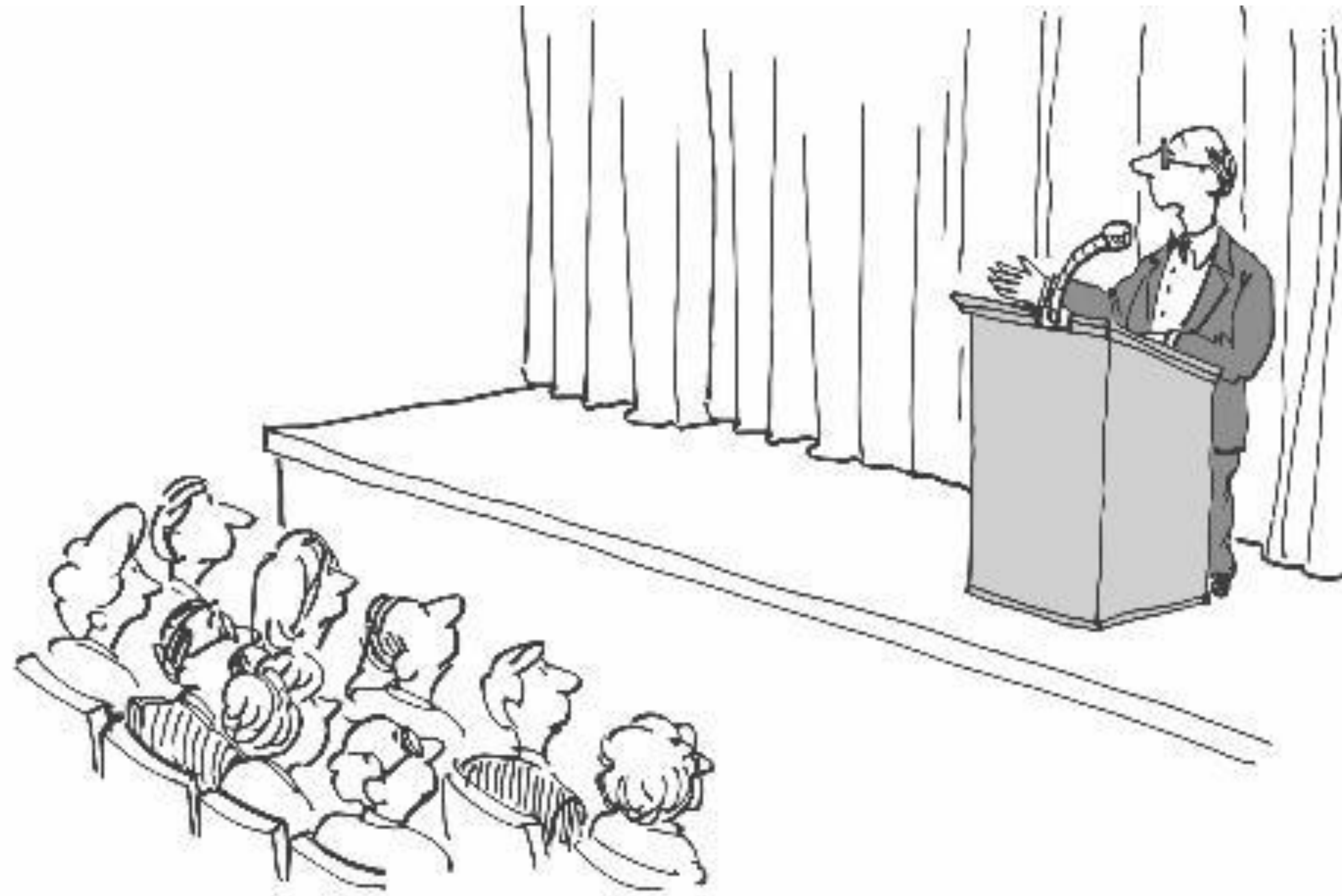
e.g.

- AI Fact Sheets
- AI Explainability 360
- AI Fairness 360
- Adversarial Robustness 360
- watsonx.governance

Partnerships & Associations



Trust and governance



“Welcome to the AI Ethics Summit- where we believe AI Ethics is a multi-disciplinary effort! You designers, psychologists, lawyers, diversity advocates, sociologists, behavioral scientists, anthropologists and the like can all exit the premises now. We need those seats.”

NOT

PK Beindaris

AI, especially
AI Governance,
is a **TEAMSPORT**.

These principles and pillars also need to be put in practice

Governance



e.g.

- AI Ethics Board –
- Business Unit Advocate
- Chief Privacy Office / Chief Data Office
- Legal Department
- Enterprise Security

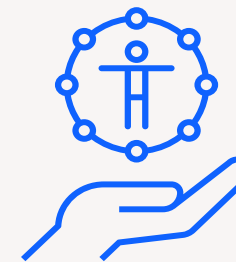
Skills



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e.g.

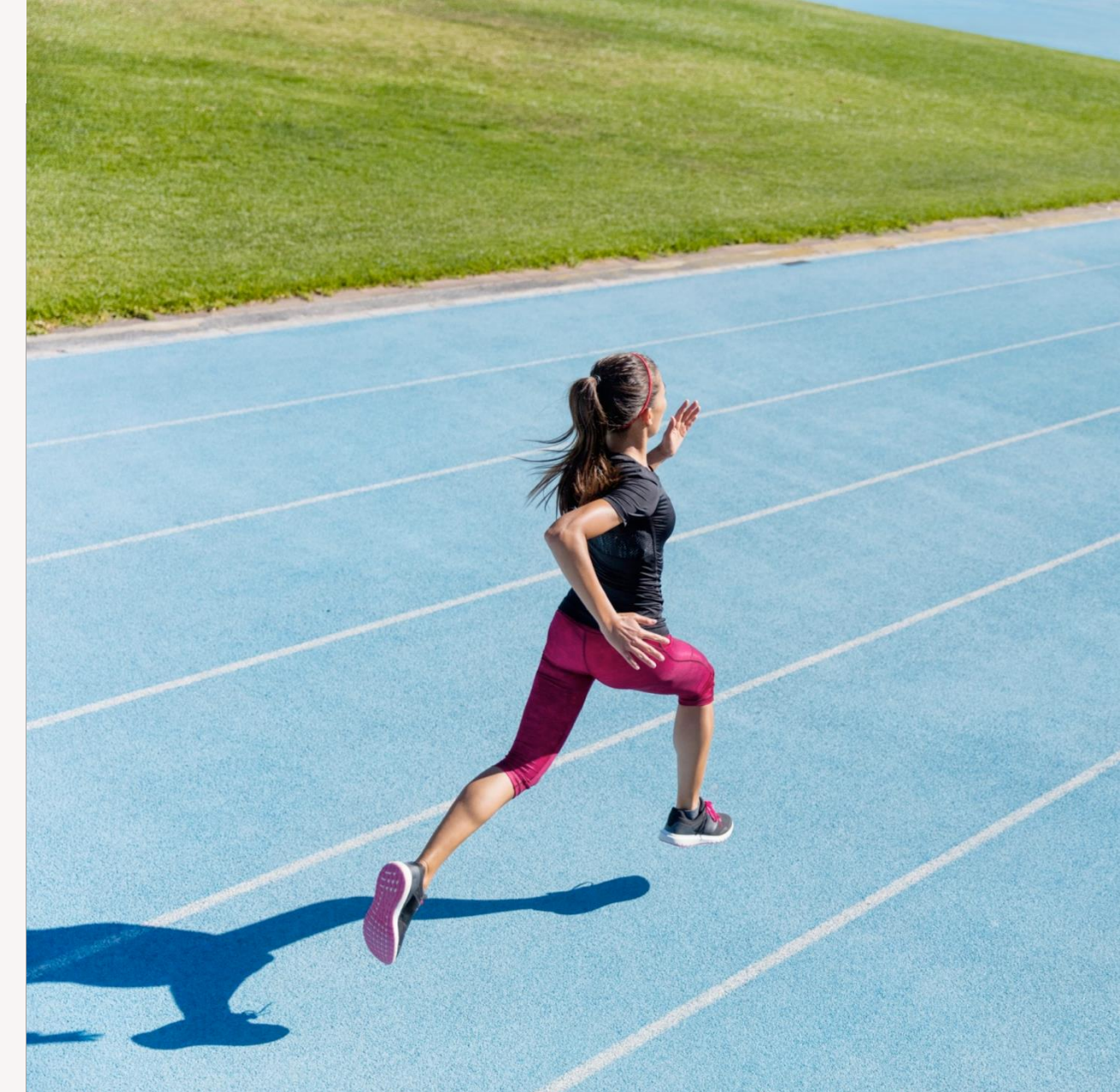
- AI Fact Sheets
- AI Explainability 360
- AI Fairness 360
- Adversarial Robustness 360

Partnerships & Associations



e.g.

- AI Alliance
- MIT-IBM Watson AI Lab
- Rome Call for AI Ethics
- High Level Expert Group on AI of the EU
- AI Commission of the German Parliament
- Bavarian AI Advisory Council

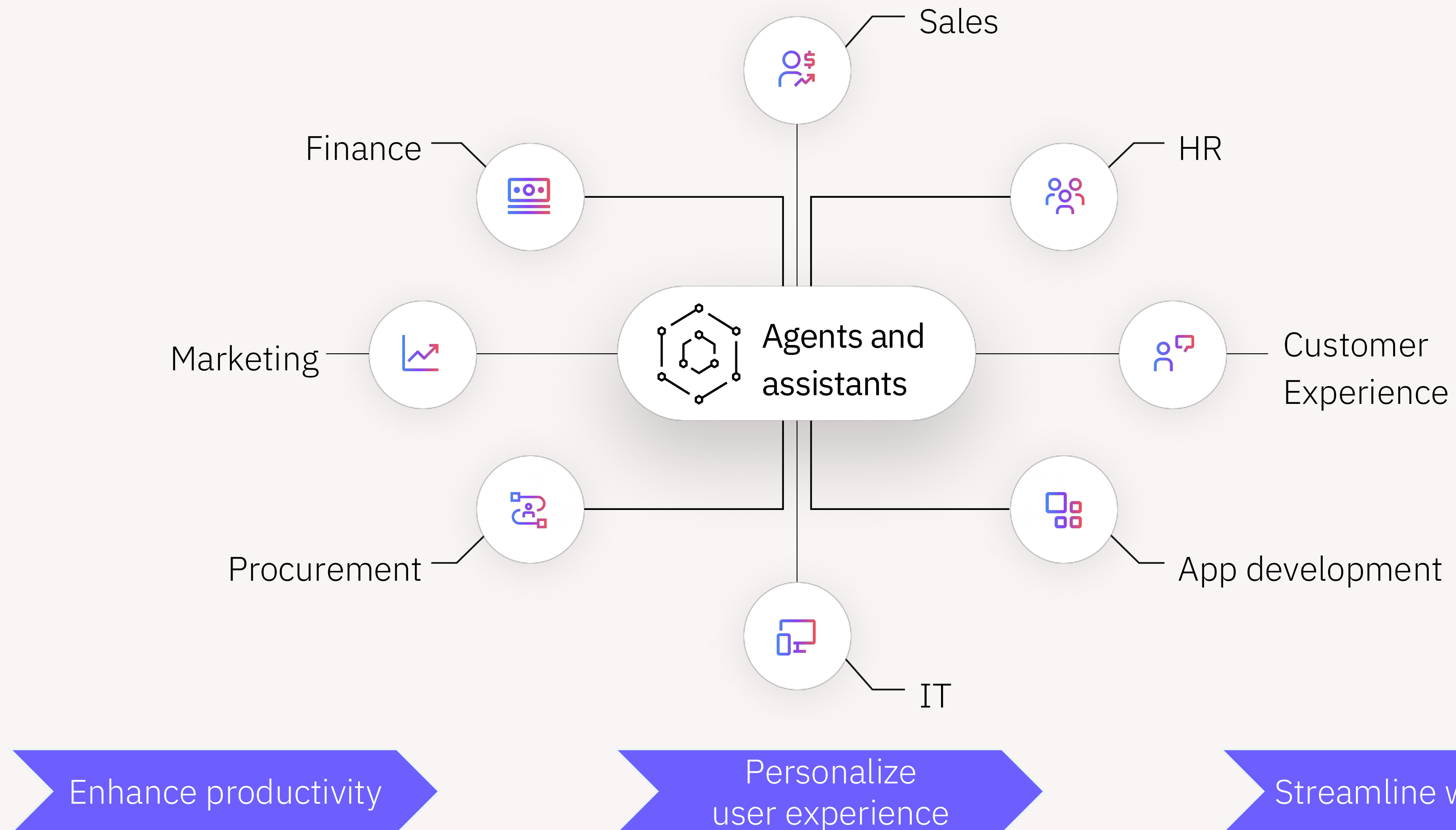


Trust and governance

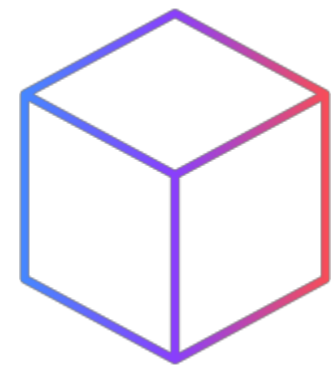
AI will transform how work gets done

- Agents and Assistants -

● Agents and assistants



The move toward agents is an evolution



Traditional task and workflow automations augmented by generative AI

Models

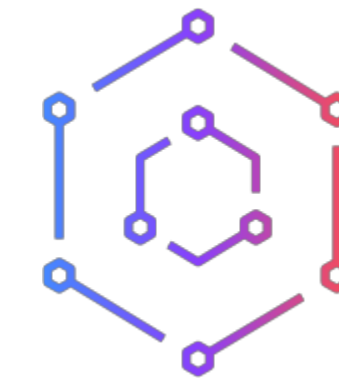
- Problem-solving
- Logical thinking
- Pattern matching



AI-assisted experiences that are human trained and designed

Assistants

- Reactive: Prescriptive tasks
- Information retrieval & user input
- Single-step processes



Autonomous AI-driven execution of expert tasks

Agents

- Proactive: Autonomous action-taking
- Self-correcting
- Multi-step processes

There are four steps to diffuse AI through your organization

 Adoption and skills

1

Embrace
change

2

Redesign
the work

3

Get hands on
experience

4

Know when
to push

One approach to support adoption and acknowledge the impact on work is Human Friendly Automation

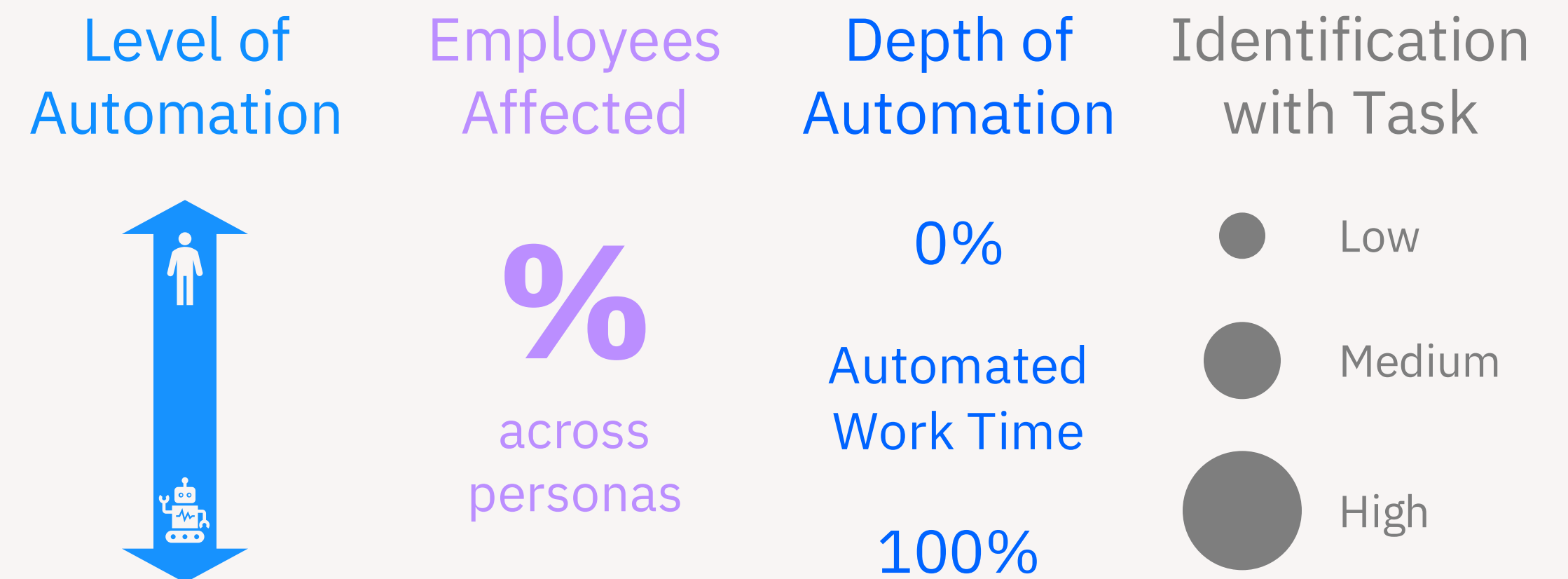
Their purpose:

- We promote the development of knowledge on AI and digital automation projects to *organize human work well*.
- We want to contribute to increasing *impact assessment and change competence* in companies in the wake of AI and digital automation.
- We want to place AI and digital automation projects on a *value basis* in order to preserve *dignified and value-creating human work* (in line with UN Sustainable Goal No. 8 (Decent Work)).

Their Values & Principles:

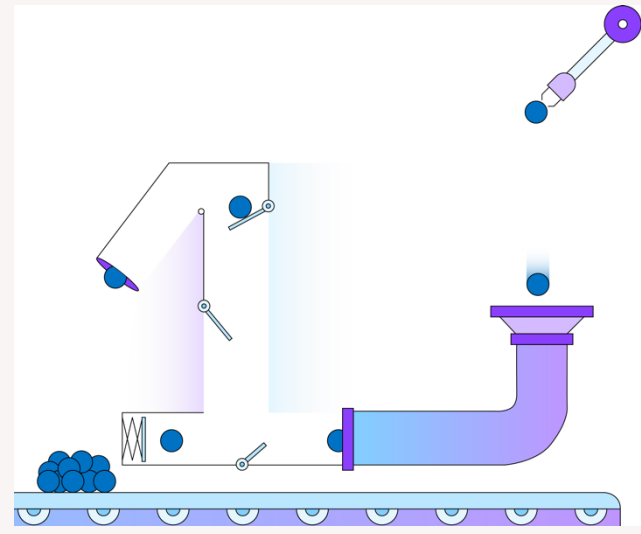
- Humanity & Autonomy
- Openness & Transparency
- Development & Empowerment
- Holism & Long-term Orientation

Assessment Areas, e.g.:

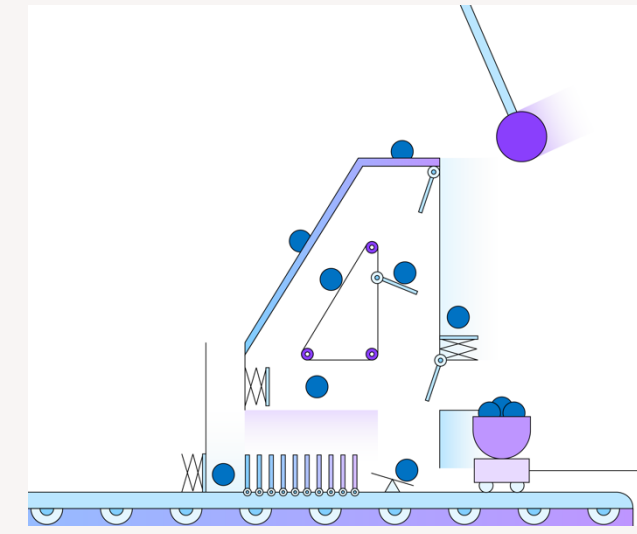


Looking into the future: 5 trends for 2025

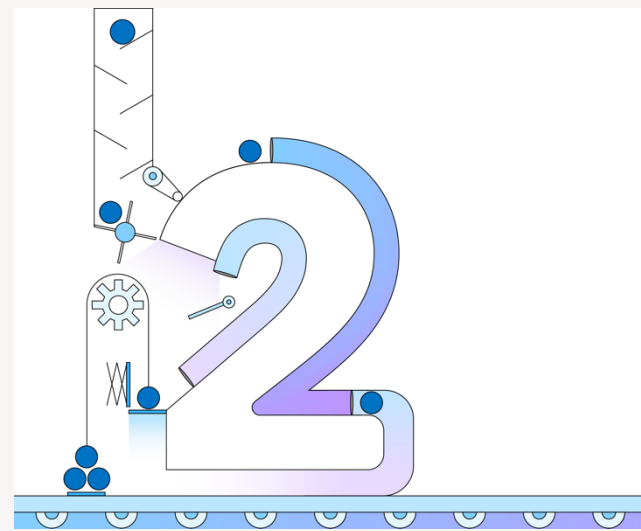
Innovation will be ignited with people-powered AI



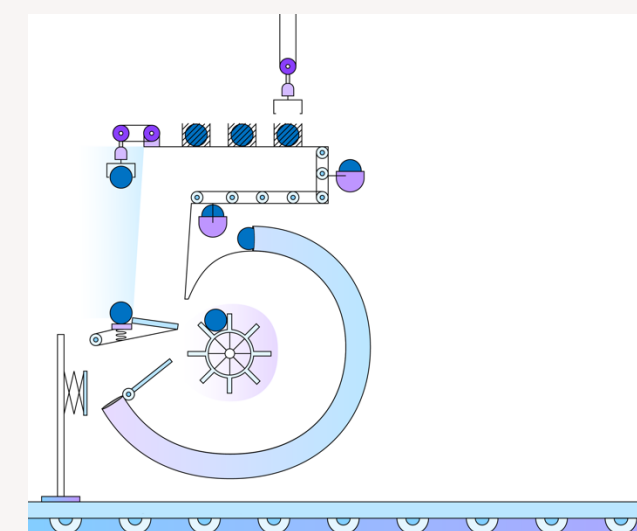
Agentic AI will transform your business – but first you must reskill your people.



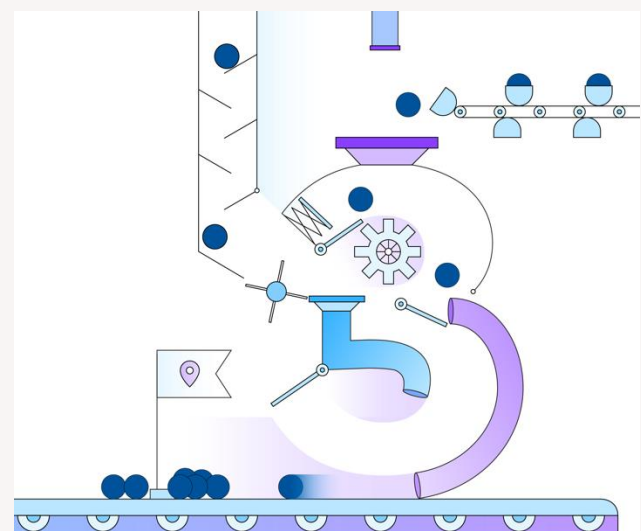
The rapid pivot to AI has upended IT budgets, but self-funding is imminent.



Despite efforts to slow its growth, technical debt continues to increase.



AI product and service innovation is the #1 CEO goal, yet business models aren't keeping up.



In the age of AI, location is everything.

To fully leverage AI, these five emerging trends in 2025 must be addressed. Emphasizing agility and empowering teams will be essential for overcoming challenges and driving growth.

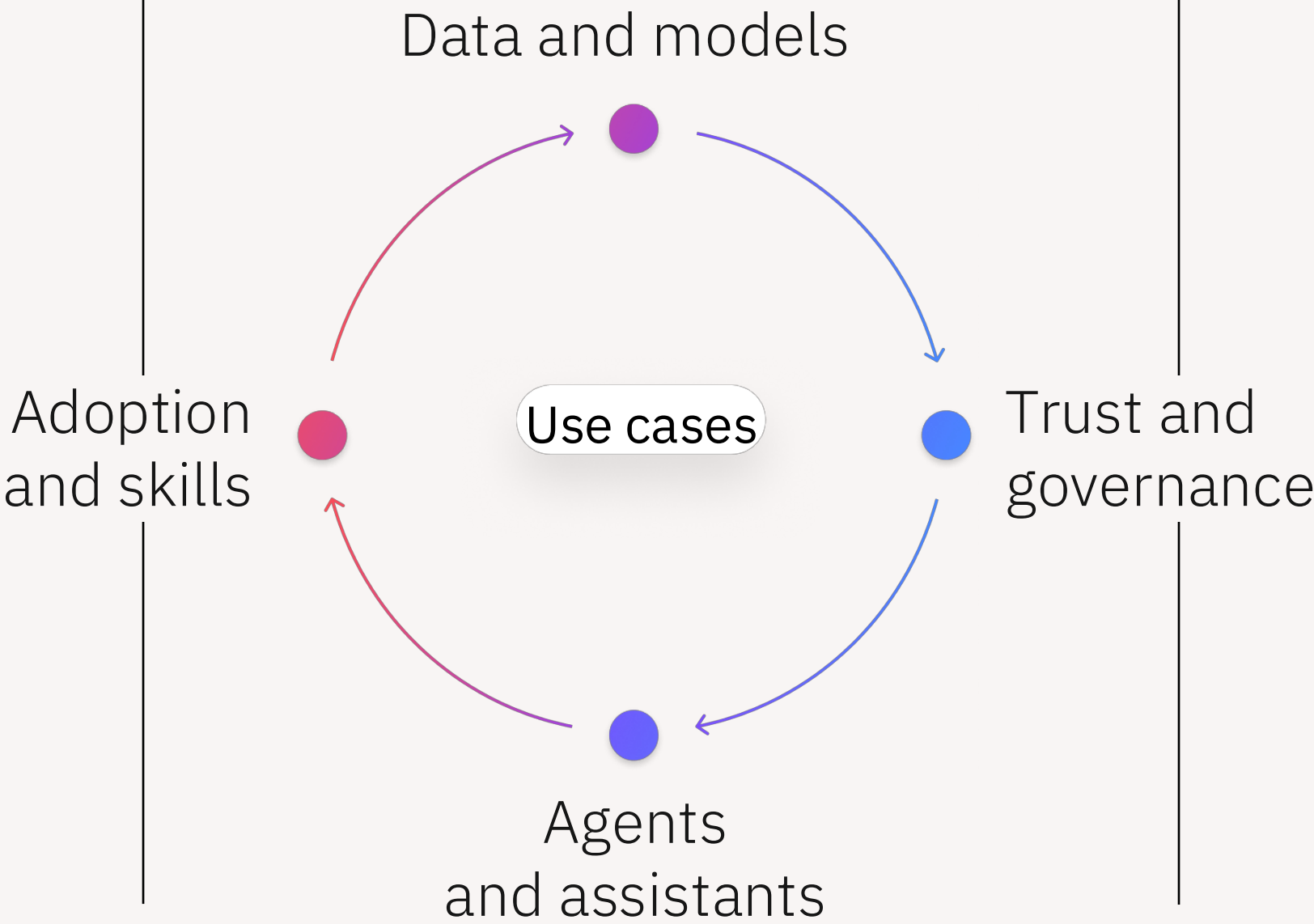
Conclusion



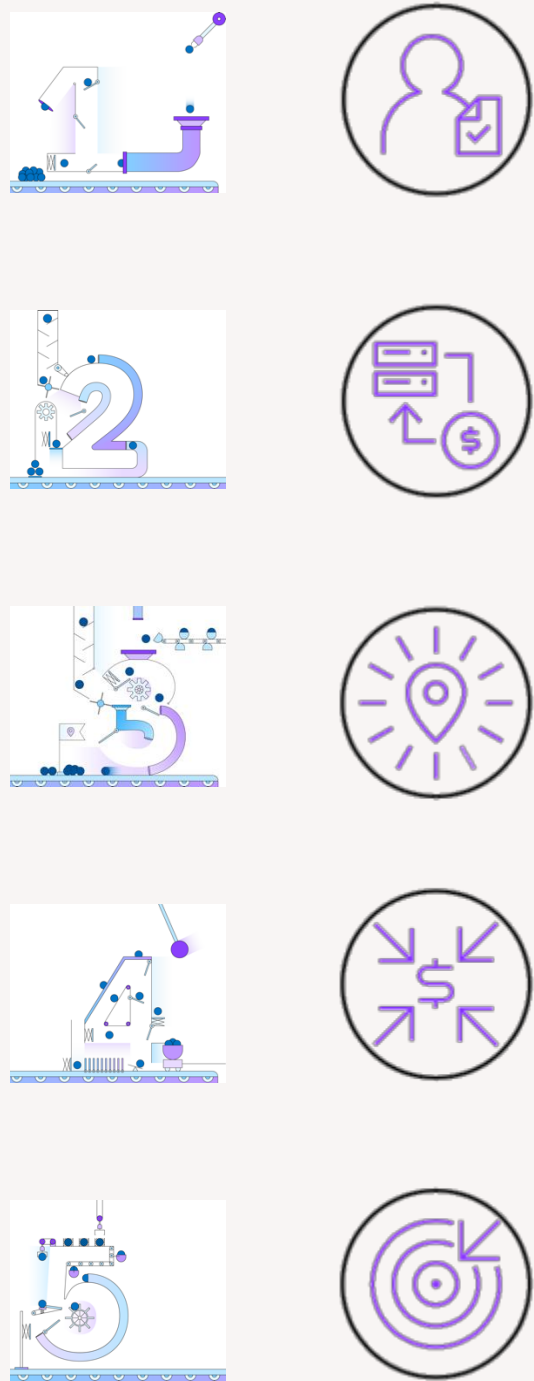
There’s still room for improvement for AI adoption



Several topics are relevant for AI value creation



Trends need to be observed to stay competitive

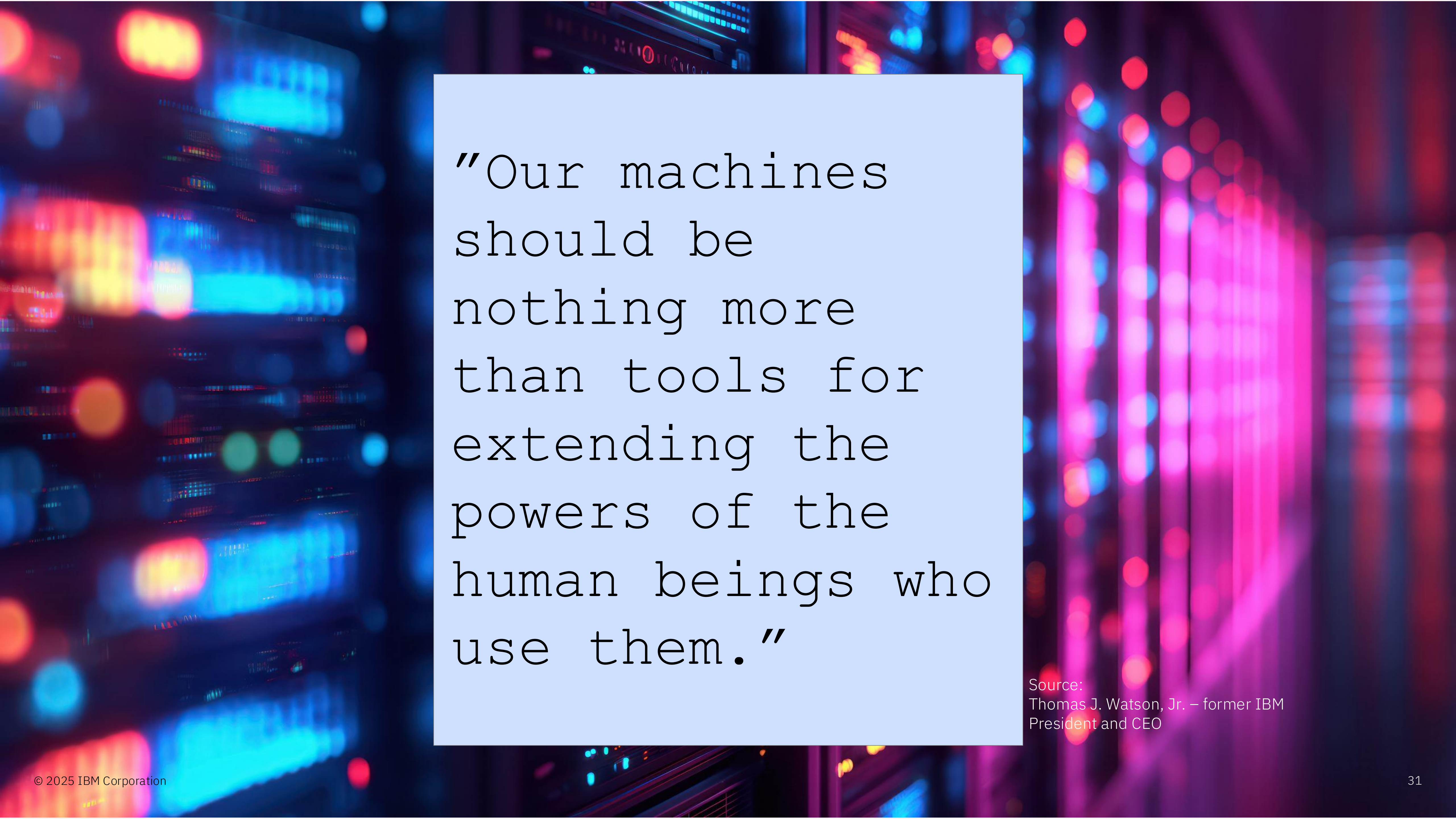


There are many opportunities, and the risks can be mitigated

– Let’s create!

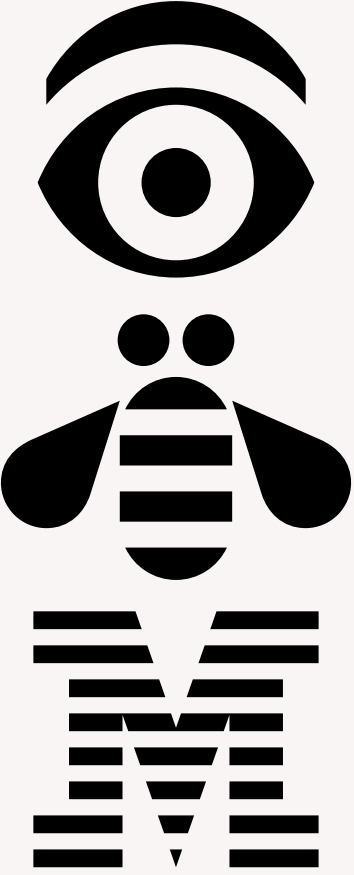
<https://www.ibm.com/watsonx>

Not everything
that *can* _____ **technical**
or *may* be done, _____ **legal**
should be done. _____ **ethical**



"Our machines
should be
nothing more
than tools for
extending the
powers of the
human beings who
use them."

Source:
Thomas J. Watson, Jr. – former IBM
President and CEO



Resources



Andrea Martin

[IBM AI Ethics Webpage](#)

[IBM's Principles for Trust and Transparency](#)

[IBM's Pillars of Trust](#)

[Responsible Use of Technology: The IBM Case Study](#)

White paper from World Economic Forum and Markkula Center for Applied Ethics presenting IBM's ethics journey

[A Policymaker's Guide to Foundation Models](#)

IBM's guide to benefits and risks of foundation models, as well as recommendations for policymakers

[Don't Pause AI Development; Prioritize Ethics Instead](#)

Blog by IBM Chief Privacy Officer Christina Montgomery and IBM Global AI Ethics Leader Francesca Rossi about putting ethics at the forefront in the age of generative AI

[How to Make AI More Ethical, Transparent, and Useful for Everyone](#)

US Chamber of Commerce interview with IBM Chief Privacy Officer, Christina Montgomery

[IBM's CPO 'on the cutting edge' of technology in privacy](#)

IAPP interview with IBM Chief Privacy Officer Christina Montgomery