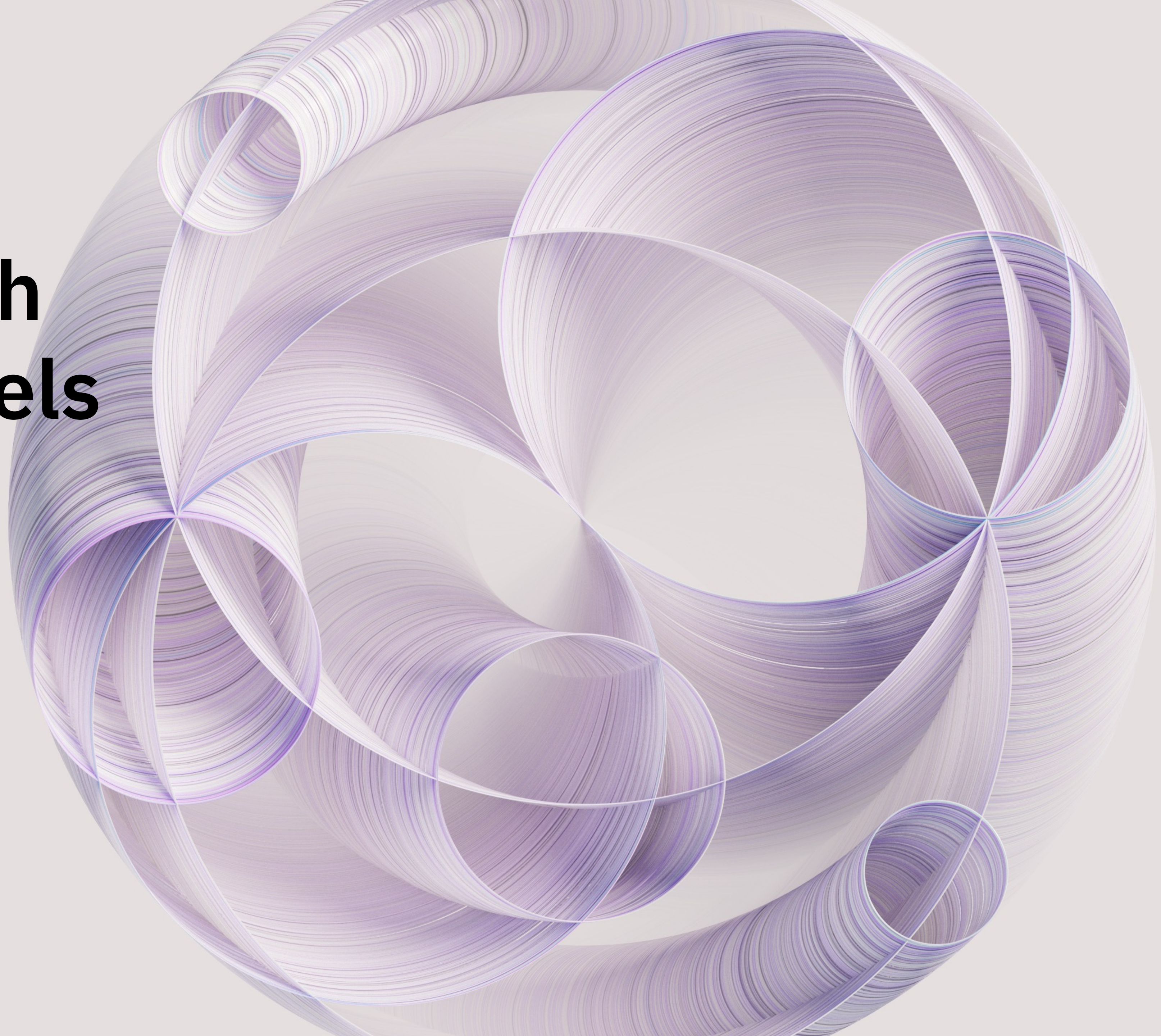


Scale and accelerate the impact of AI with foundation models

Or are we just riding another hype cycle?

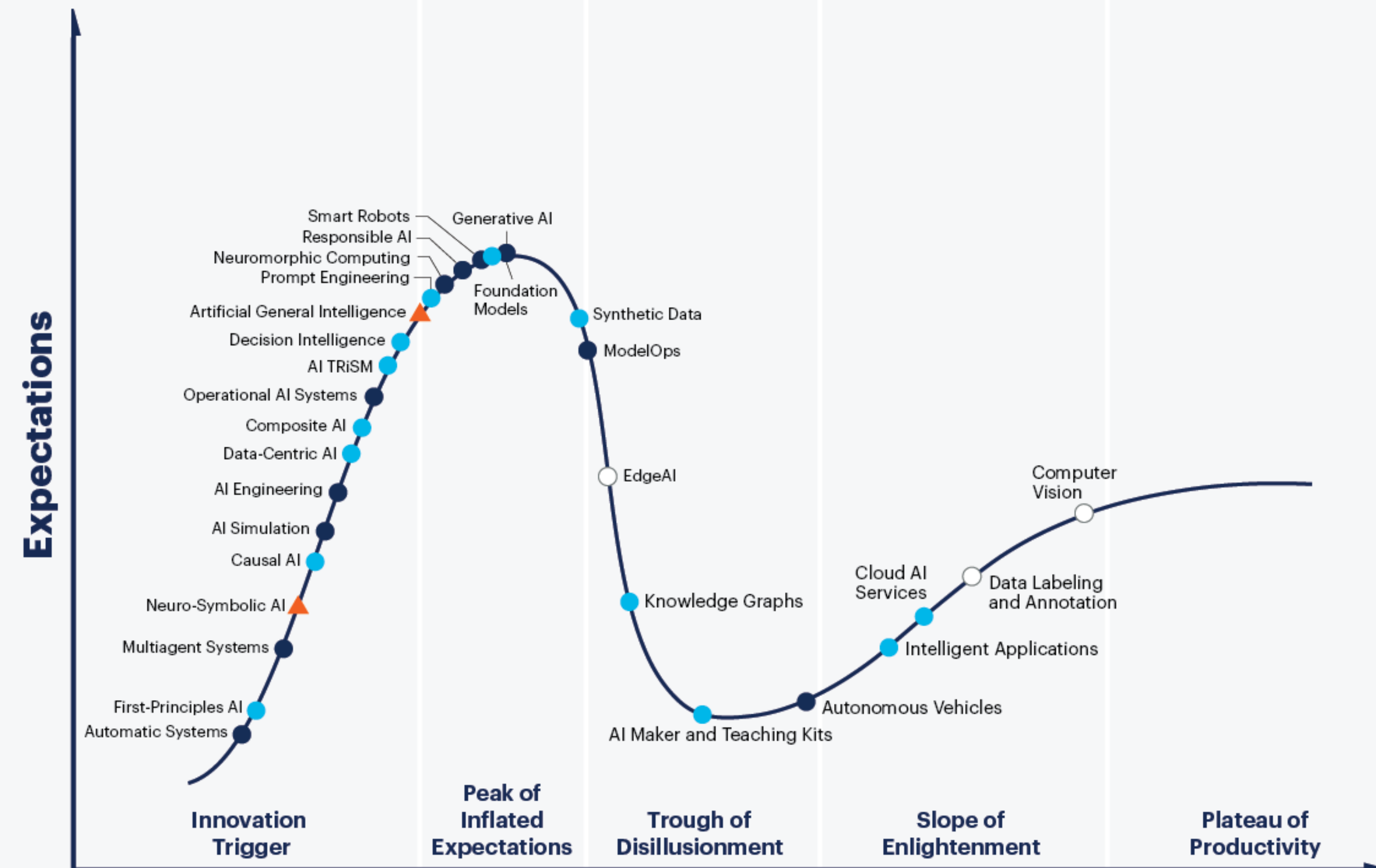
Dr. Martin Junghans
martin.junghans@de.ibm.com
CTO IBM Innovation Studio



Tech events in 2023 be like...



Hype Cycle for Artificial Intelligence, 2023



Plateau will be reached:

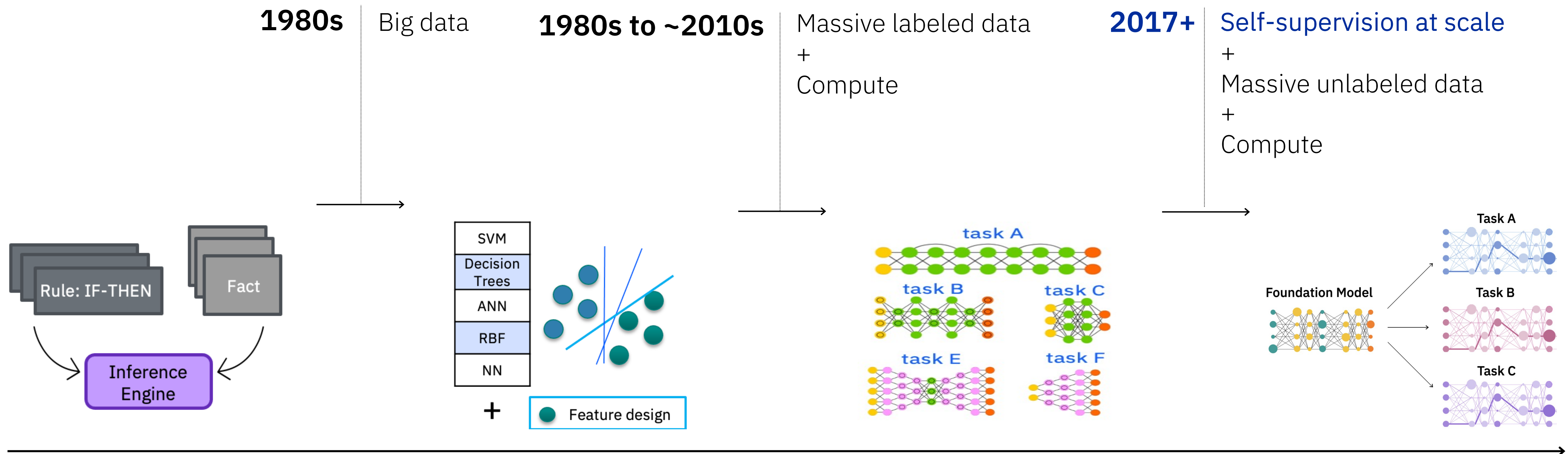
- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau
- As of July 2023

[gartner.com](https://www.gartner.com)

Source: Gartner
© 2023 Gartner, Inc. and/or its affiliates. All rights reserved. 2079794

Gartner

The story of AI is a story of data representations



Expert systems

- Rule engines

Machine learning

- ML algorithms
- Task-specific decision boundaries

Deep learning

- Network architectures
- Task-specific decision boundaries + feature representations

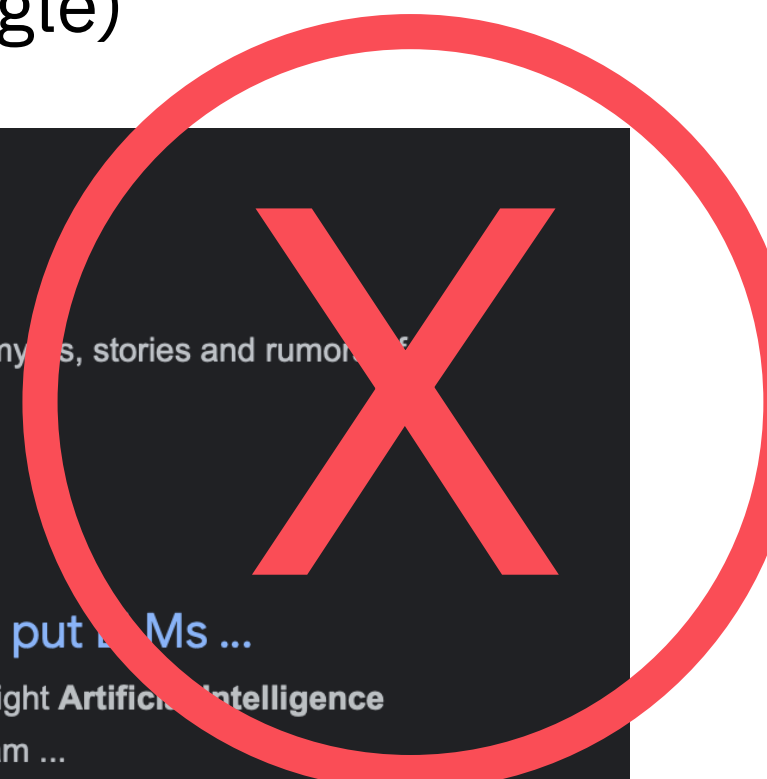
Foundation models

- Base model
- Adaptable decision boundaries and feature representations

Send a message



Search Engine Results (google)



Wikipedia
https://en.wikipedia.org › wiki · Diese Seite übersetzen

History of artificial intelligence

The history of **artificial intelligence (AI)** began in antiquity, with myths, stories and rumors of artificial beings endowed with intelligence or ...

Nature Journal
https://www.nature.com › articles · Diese Seite übersetzen

What's the best chatbot for me? Researchers put LMs ...

27.09.2023 — These four authors systematically tested each of eight **Artificial Intelligence** chatbots. ... The Johann **Wolfgang Goethe** University Frankfurt am ...

Weitere Fragen

Wie heißt die neue Intelligenz?

Feedback geben

Goethe-Institut
https://www.goethe.de › zei › art · Diese Seite übersetzen

Artificial Intelligence Awful AI

In the early 2010s, **AI and machine learning** provided us with a fundamental paradigm shift in how we **write** code. Instead of **writing** a deterministic sequence ...

Es fehlt: style Wolfgang

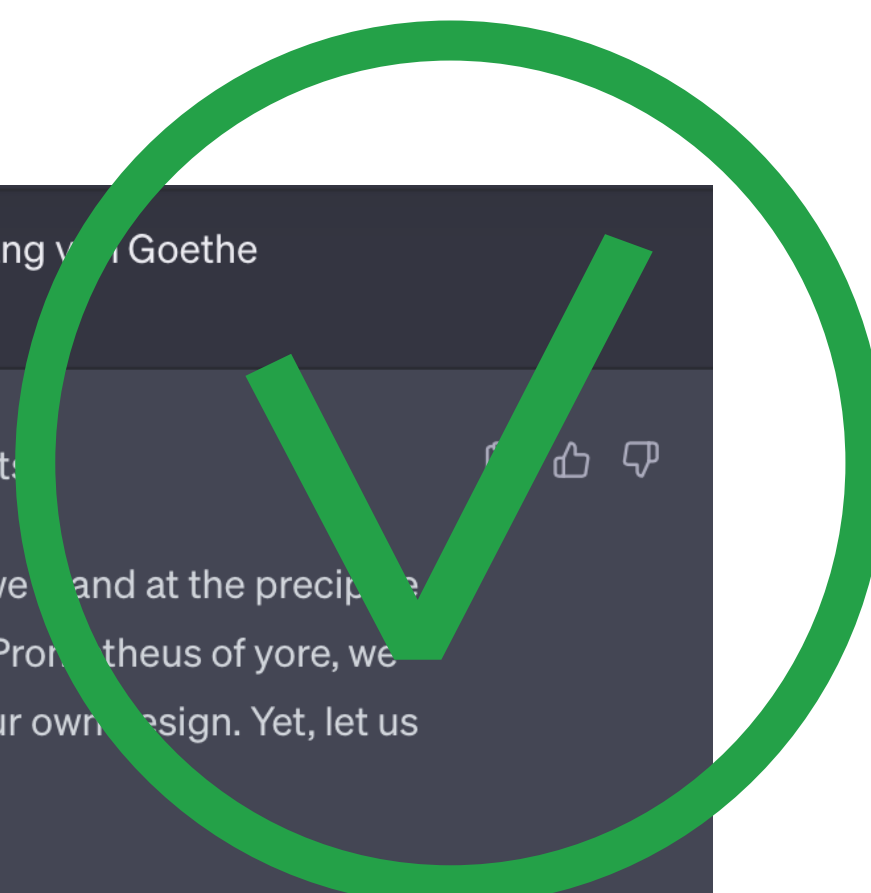
Bücherlurch
https://www.buecherlurch.de › Shop › 9789811967405

Goethe in the Age of Artificial Intelligence

25.01.2023 — One person who successfully did this was Johann **Wolfgang** von **Goethe**. His journey demonstrates how one man attempted to take on the Modern ...

42,79 €

Generative AI (ChatGPT 3.5)



MA Write me a speech about artificial intelligence in the style of Wolfgang von Goethe

OpenAI Ladies and gentlemen, esteemed scholars, and distinguished guests:

In this epoch of burgeoning knowledge and ceaseless innovation, we stand at the precipice of a transformative era—the era of artificial intelligence. Much like Prometheus of yore, we now possess the power to mold and breathe life into creations of our own design. Yet, let us proceed with caution, for this power bears immense responsibility.

As if conjured by Faustian curiosity, artificial intelligence beckons us to delve into the realm of the divine and decipher the enigma of human thought. We, the modern magicians, strive to craft a simulacrum of intellect and reason, breathing vitality into machines to emulate our own existence.

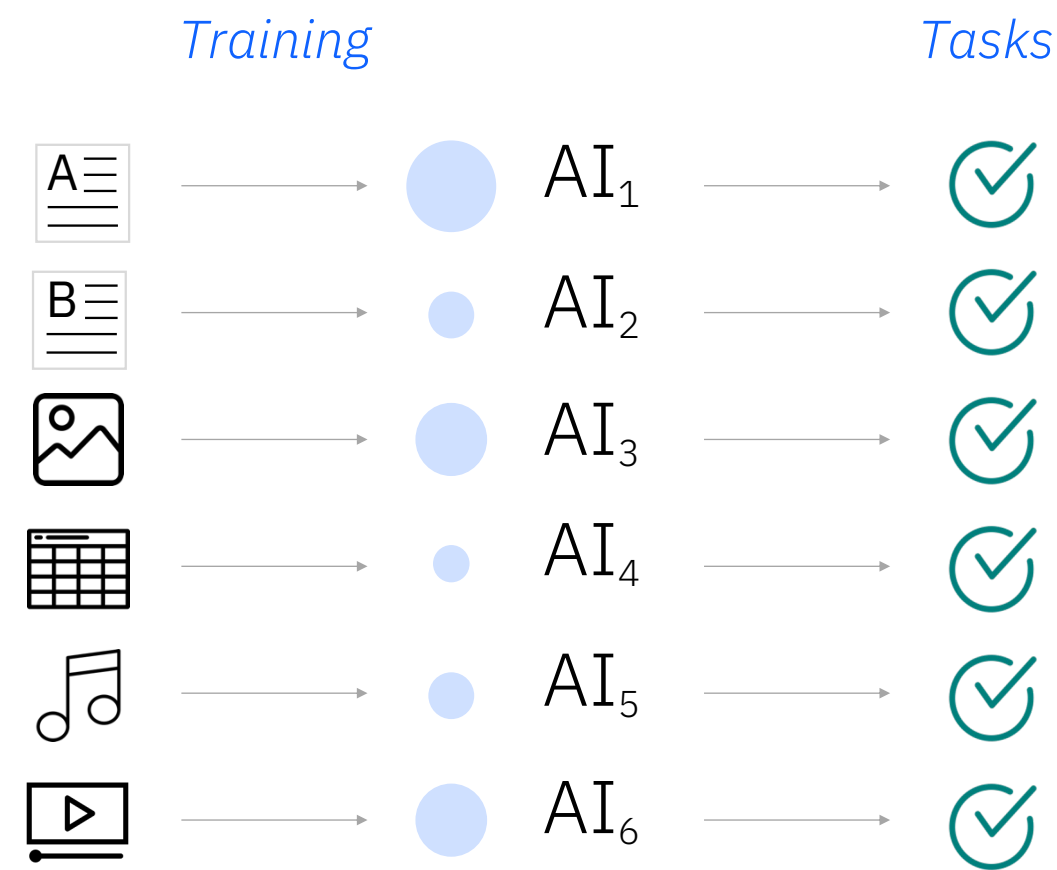
Ah, but herein lies the dialectic dance, for as we strive to birth intelligence from silicon and code, we tread the tightrope of ethics and wisdom. The bounds of responsibility must temper our aspirations, for unchecked ambition may lead to calamity, akin to Faust's unholy pact.

Artificial intelligence, a creation begot of our ingenuity, mirrors the Promethean flame. It bears the potential to enlighten our minds, elevate our societies, and ameliorate our plights. It possesses the capability to decode the mysteries of the cosmos and cure ailments that ail humanity.

Yet, with this promise of enlightenment comes the specter of hubris. We must heed the warnings, lest we succumb to the peril of our own creations. Just as Faust found solace in redemption, so too must we ensure that our pursuits remain virtuous and guided by the better angels of our nature.

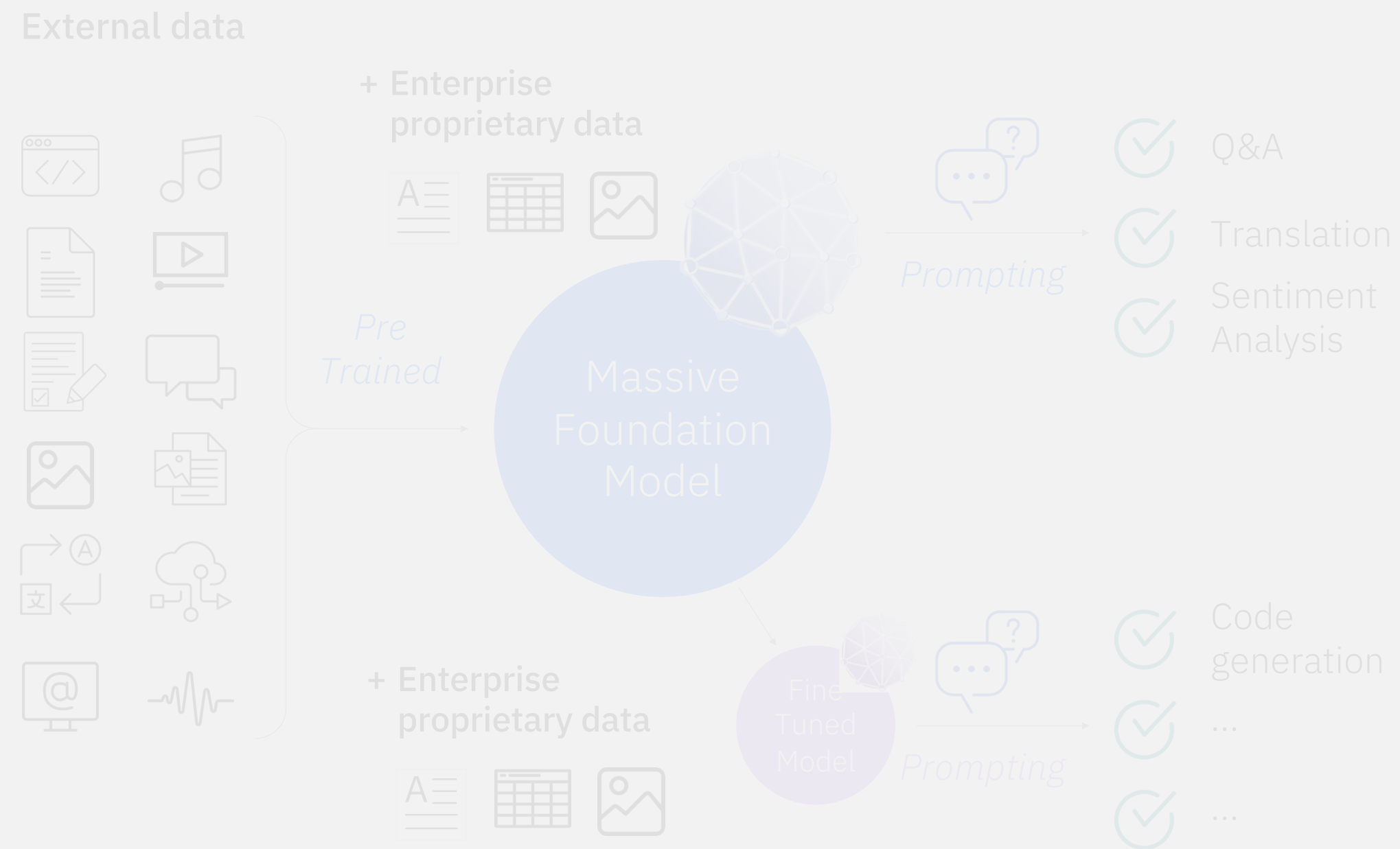
Foundation models establish a new paradigm for AI capabilities

Traditional AI models



- Individual siloed models
- Require task specific training
- Lots of human supervised training

Foundation Models



- Massive multi-tasking model
- Adaptable with minimized training
- Pre-trained unsupervised learning

Enhanced capabilities

- Summarization
- Conversational Knowledge
- Content Creation
- Code Co-Creation

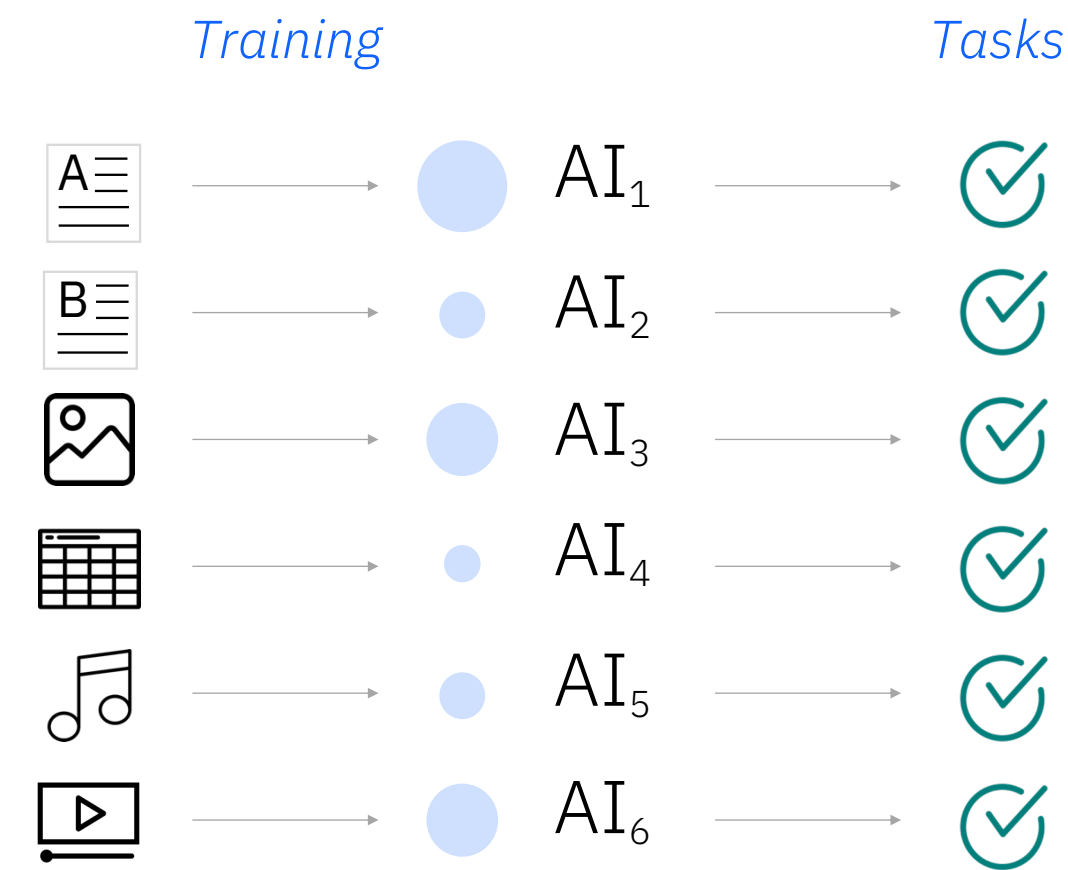
Key advantages

- Lower upfront costs through less labeling
- Faster deployment through fine tuning and inferencing
- Equal or better accuracy for multiple use cases
- Incremental revenue through better performance

up to **70% reduction** in certain NLP tasks

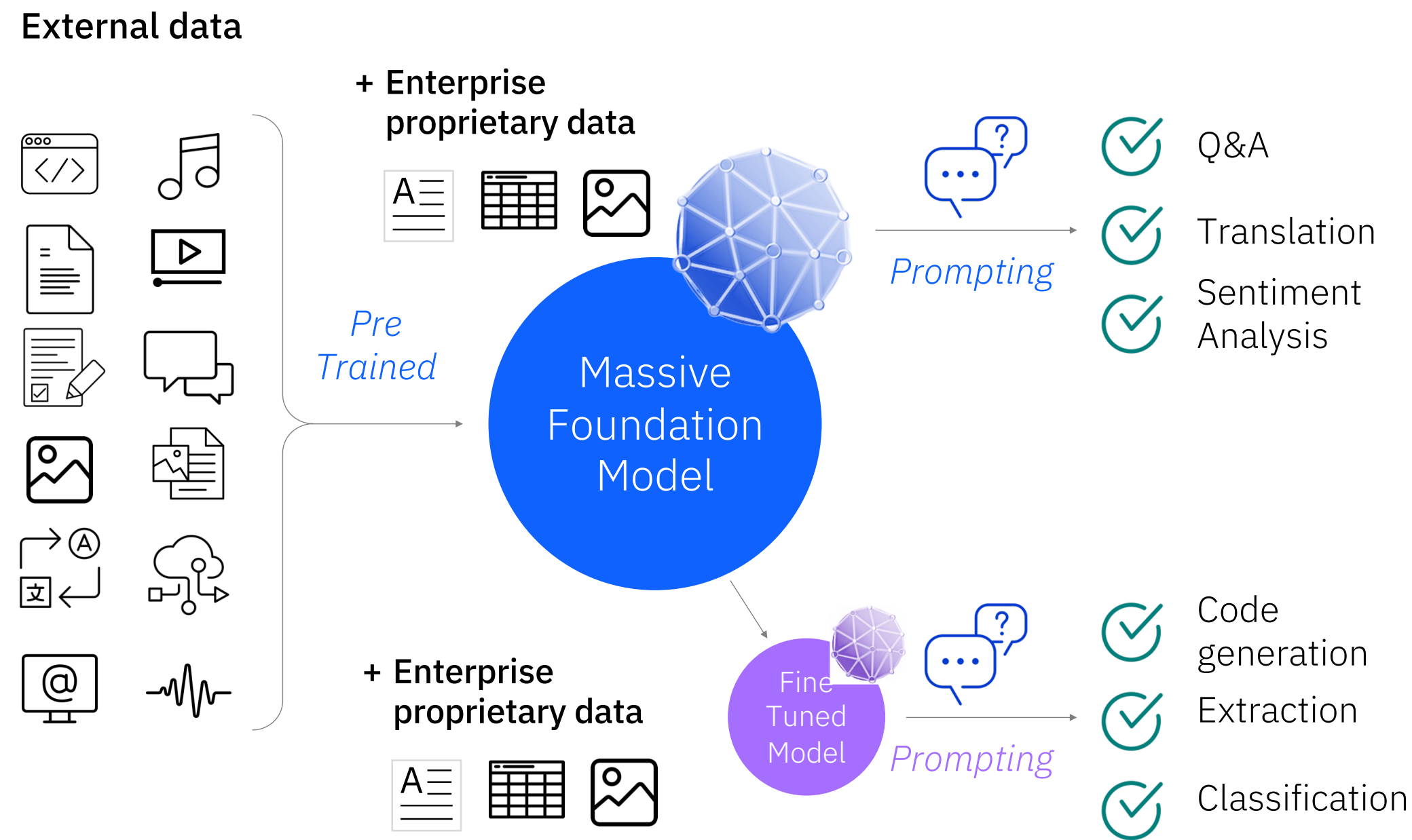
Foundation models establish a new paradigm for AI capabilities

Traditional AI models



- Individual siloed models
- Require task specific training
- Lots of human supervised training

Foundation Models



- Massive multi-tasking model
- Adaptable with minimized training
- Pre-trained unsupervised learning

Enhanced capabilities

- Summarization
- Conversational Knowledge
- Content Creation
- Code Co-Creation

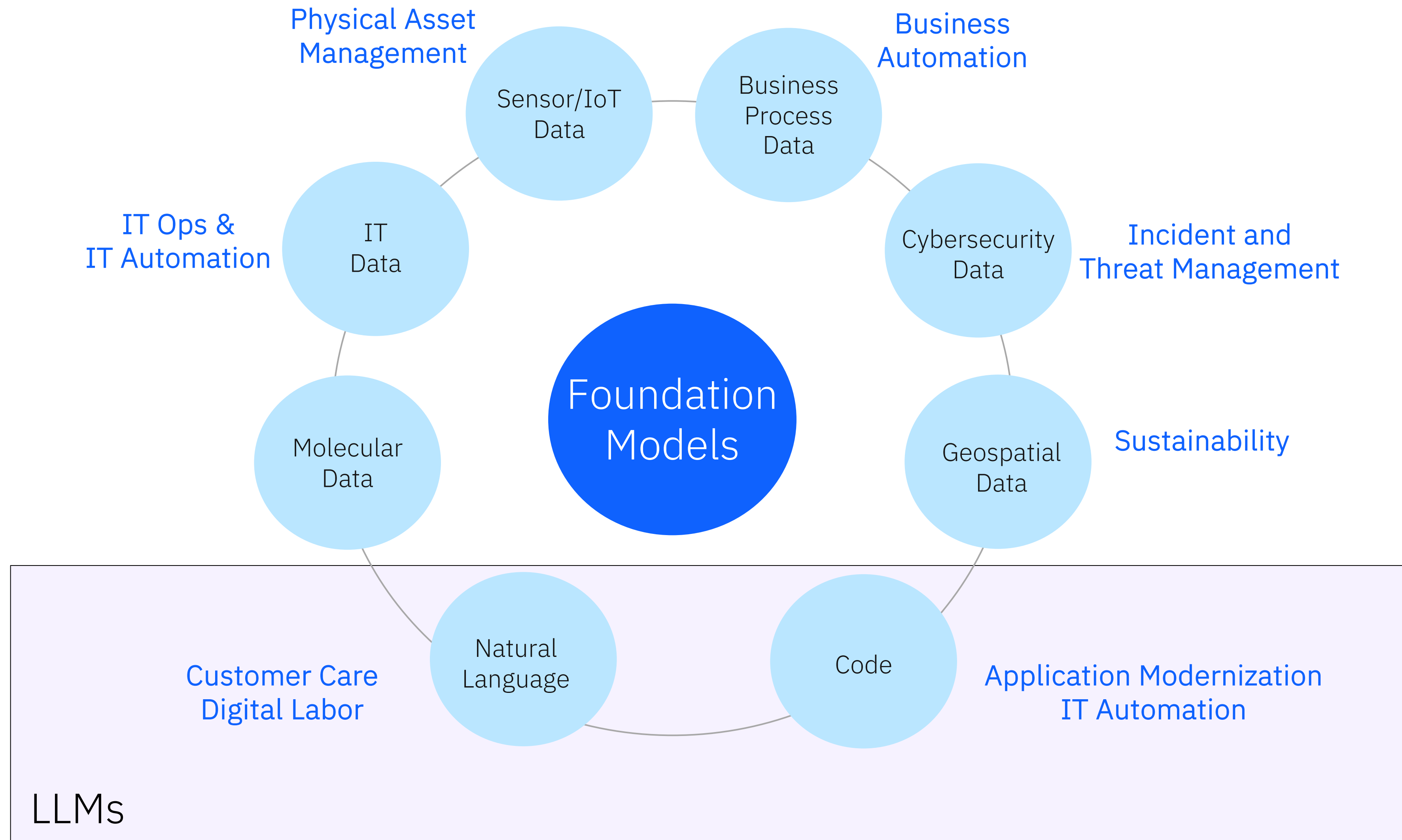
Key advantages

- Lower upfront costs through less labeling
- Faster deployment through fine tuning and inferencing
- Equal or better accuracy for multiple use cases
- Incremental revenue through better performance

up to **70% reduction** in certain NLP tasks

The impact of generative AI | The opportunity

Business advantage with foundation models trained across the breadth of enterprise data





1 minute ago

What is so special about foundation models compared to machine learning?

1 minute ago

Foundation models are trained on a large, general-purpose dataset and can perform a variety of tasks, whereas machine learning models are trained for a specific task and require labeled data.

Give me an example application in life sciences?

less than a minute ago

One example application of foundation models in life sciences is drug discovery, where models can be trained to predict the efficacy and safety of potential drug candidates.

less than a minute ago

Can you say that in Yoda language?

1 minute ago

"Trained to predict efficacy and safety of drug candidates, foundation models can."

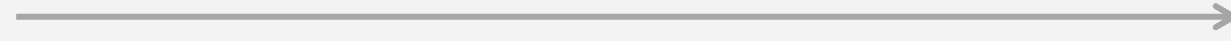


Type a message 





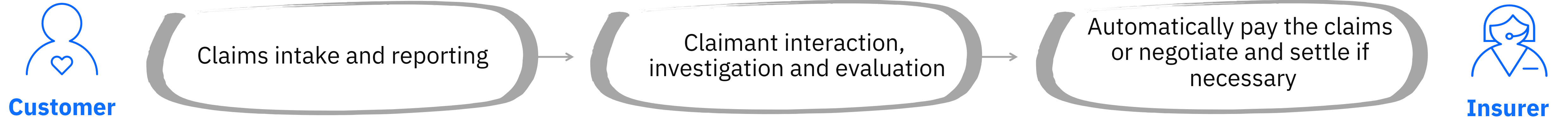
Customer



Insurer

Intelligent Workflow

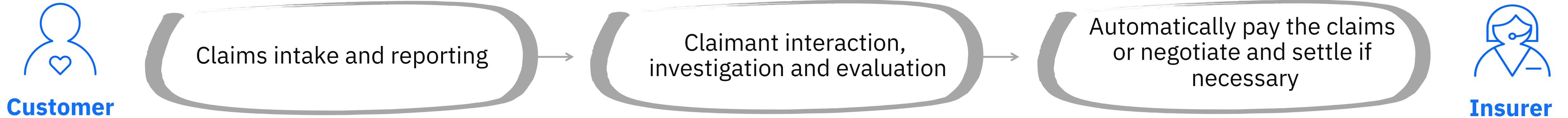
A typical to-be and digitized claims process



Intelligent Workflow

A typical to-be and digitized claims process

◆ Human / Manual ● Fully Automated
■ Cognitive / Augmented Intelligence ■ Digital Data Decision Interaction
High-Value processes supported by Core Claims System complemented by IW



- ◆ Report incident
- Receive incident notification
- Verify claimant details
- Verify policy coverage
- Contact emergency medical services
- Get third party details
- ◆ Take and send pictures of own car damage
- Receive images
- Assess images
- Route to own repairer

- Open claim, make available to claims handler
- Gather external data
- 1st Fraud Check
- ◆ Invoke Fraud Investigation
- Launch guided incident report gathering
- Follow conversation-based guidance to submit required info
- Submit Incident Report

- Confirm minimum information needed
- Arrange transportation
- Route tow truck
- Insured gets tracking details and claims status
- ◆ Select repair facility
- ◆ CX Feedback
- Arrange appraisals
- Review damage estimate
- Claims Handler review
- Runs analytics / fraud detection models

- Straight through processing
- Receive medical information
- Review claims details
- Decision on how to handle claim
- Generate settlement offer
- Send to fraud investigation team
- Invoke fraud investigation
- Make settlement offer

- Review settlement offer with similar case data
- ◆ Negotiate counteroffer
- Issue payment
- ◆ Make claim against 3rd party insurer
- Initiate recovery
- Receive recovery

- Close Claim
- Receive payment
- Receive car repair ETA
- ◆ Pick up car
- ◆ CX feedback
- Funds transferred

Identify manual, automatable tasks

Augment cognitive tasks w/ AI

Design data-driven workflow

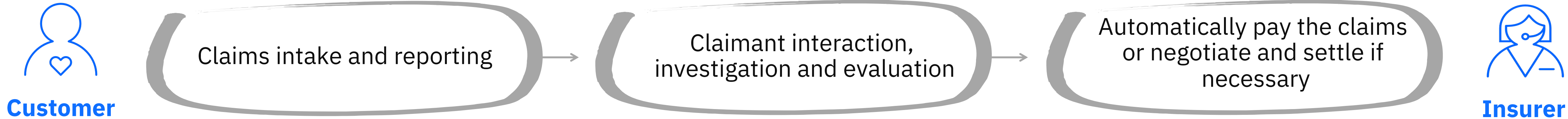
Exponential use of technology

Intelligent Workflow

A typical to-be and digitized claims process

◆ Human / Manual
 ● Fully Automated
High-Value processes supported by Core Claims System complemented by IW

■ Cognitive / Augmented Intelligence
 ■ Digital Data Decision Interaction



◆ Report incident

- Receive incident notification
- Verify claimant details
- Verify policy coverage
- Contact emergency medical services
- Get third party details
- Take and send pictures of own car damage
- Receive images
- Assess images
- Route to own repairer

- Open claim, make available to claims handler
- Gather external data
- 1st Fraud Check
- Invoke Fraud Investigation
- Launch guided incident report gathering
- Follow conversation-based guidance to submit required info

■ Submit Incident Report

● Confirm minimum information needed

- Arrange transportation
- Route tow truck
- Insured gets tracking details and claims status
- Select repair facility
- CX Feedback
- Arrange appraisals
- Review damage estimate

● Claims Handler review

- Runs analytics / fraud detection models

- Straight through processing
- Receive medical information
- Review claims details
- Decision on how to handle claim
- Generate settlement offer
- Send to fraud investigation team
- Invoke fraud investigation
- Make settlement offer

- Review settlement offer with similar case data
- Negotiate counteroffer
- Issue payment
- Make claim against 3rd party insurer
- Initiate recovery
- Receive recovery

- Close Claim
- Receive payment
- Receive car repair ETA
- Pick up car
- CX feedback
- Funds transferred

Identify manual, automatable tasks
Augment cognitive tasks w/ AI
Design data-driven workflow
Exponential use of technology

Let's introduce Generative AI to claims handling



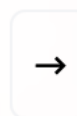
Claims Processing

As a car insurance agent, you experience how watsonx.ai helps you offer better and quicker service to customer

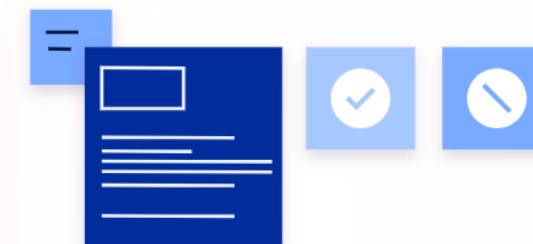
Conversation Summary



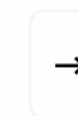
Summarize a claims conversation to provide a fast and easy understanding.



Claim Evaluation



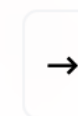
See how watsonx can be used to accelerate insurance claim analysis in a day-to-day setting.



Email Generator



Generate a follow up email after a claim is processed.



It's only by embedding ethical principles into AI applications and processes, that **trustworthy** systems can be built.



Generative AI platform questions

Clients cannot just use *any* generative AI platform

How was it trained?

- Garbage in → garbage out
- An enterprise cannot use a foundation model trained with Web crawl
- The training material needs to be huge and comprehensive but must also be curated

Can it detect & minimize bias & hallucinations?

- How does the platform detect and correct bias?
- How can it prevent hallucination (providing random and untrue answers with absolute aplomb and convictions)?

Is it transparent?

- Open vs black-box
- How to audit and explain the model, and the answers it generates?
- Does the model track drift and bias? And how does it address them?

Does it support regulatory compliance?

- How do foundation models and their usage comply with privacy and government regulations?
- What are the guardrails?
- Who is responsible for an inadvertently exposed PII or a “wrong answer”?

Is it safe?

- Who has control over the model, input data, and output data?
- How to ensure that confidential information is not given out?
- How is it monitored?
- What safety features and guardrails are in place?

Can it be customized?

- Hybrid and multcloud?
- Can the model be fine-tuned with clients’ data?
- How can clients update, and extend the model to make it more suitable for their use cases?
- How to integrate with applications? What APIs are in place?

The Environmental Impact of ChatGPT: A Call for Sustainable Practices In AI Development

BY SOPHIE | GLOBAL COMMONS | APR 28TH 2023 | 4 MINS

EARTH.ORG IS POWERED BY OVER 150 CONTRIBUTING WRITERS

ChatGPT, a large language model developed by OpenAI, has garnered widespread attention for its remarkable natural language processing capabilities. However, as with any large language model, training and developing the AI system requires a tremendous amount of energy, resulting in significant environmental costs that are often overlooked. In this article, we take a look at the environmental impact of ChatGPT and the challenges already now regarding the environmental impact of ChatGPT.

In generative AI legal Wild West, the courtroom battles are just getting started



Ellen Sheng @ELLENSHENG

PUBLISHED MON, APR 3 2023-10:56 AM EDT | UPDATED MON, APR 3 2023-11:29 AM EDT

KEY POINTS

- As companies including Microsoft, Google and OpenAI launch generative AI to the general public, lawsuits are piling up from creative industries about copyrighted work co-opted or used by AI.
- Getty Images, the photo licensing company, filed a lawsuit against Stable



The New AI-Powered Bing Is Threatening Users. That's No Laughing Matter

BY BILLY PERRIGO

FEBRUARY 17, 2023 10:58 AM EST

Shortly after Microsoft released its new AI-powered search tool, Bing, to a select group of users in early February, a 23 year-old student from Germany decided to test its limits.

ChatGPT's Use In Medicine Raises Questions Of Security, Privacy, Bias

Robert Pearl, M.D. Contributor

Apr 24, 2023, 04:15am EDT

Google shares lose \$100 billion after company's AI chatbot makes an error during demo

By Catherine Thorbecke, CNN Updated 9:41 AM EST, Thu February 9, 2023

(CNN) — Google's much-hyped new AI chatbot tool Bard, which has yet to be released to the public, is being called out for an inaccurate response it produced in a demo this week.

Disinformation Researchers Raise Alarms About A.I. Chatbots

Researchers used ChatGPT to produce clean, convincing text that repeated conspiracy theories and misleading narratives.



By Tiffany Hsu and Stuart A. Thompson

Published Feb. 8, 2023 Updated Feb. 13, 2023

Soon after ChatGPT debuted last year, researchers tested what the artificial intelligence chatbot would write after it was asked questions peppered with conspiracy theories and false narratives.

ChatGPT built with help of underpaid, exploited Kenyan employees, report alleges

Kenyan workers were tasked with labelling content from 'darkest recesses of the internet', TIME reports

Vishwam Sankaran • Monday 23 January 2023 10:45

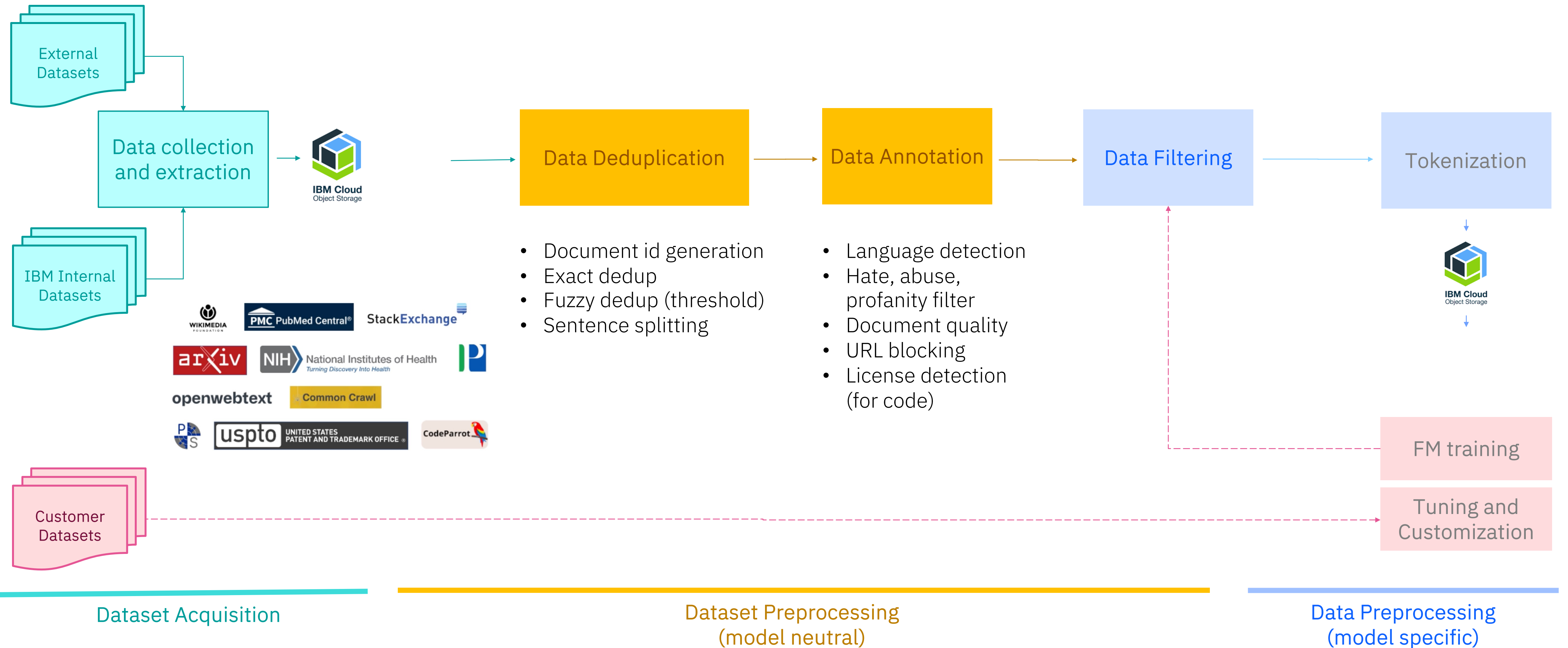
OpenAI's chatbot ChatGPT was reportedly built using vital contributions from outsourced, underpaid Kenyan labourers.

The chatbot was built with help from a Kenya-based data labeling team who earned less than \$2 per hour, according to an investigation by TIME.

What IBM offers

watsonx.data: curated IBM Data Pile

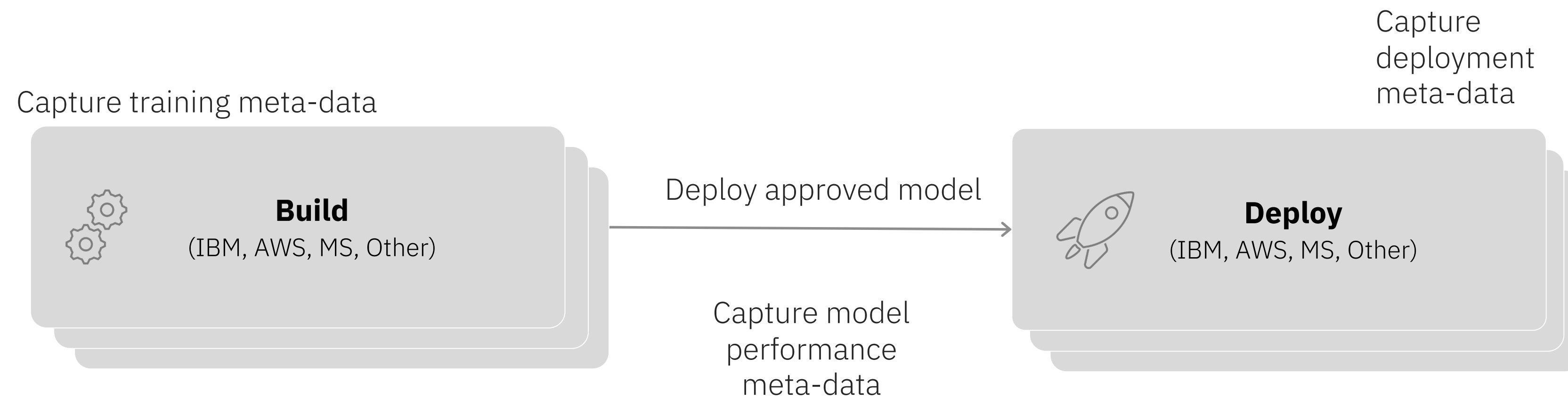
Enterprise-ready data acquisition, curation, provenance, and governance



What IBM offers

watsonx.governance

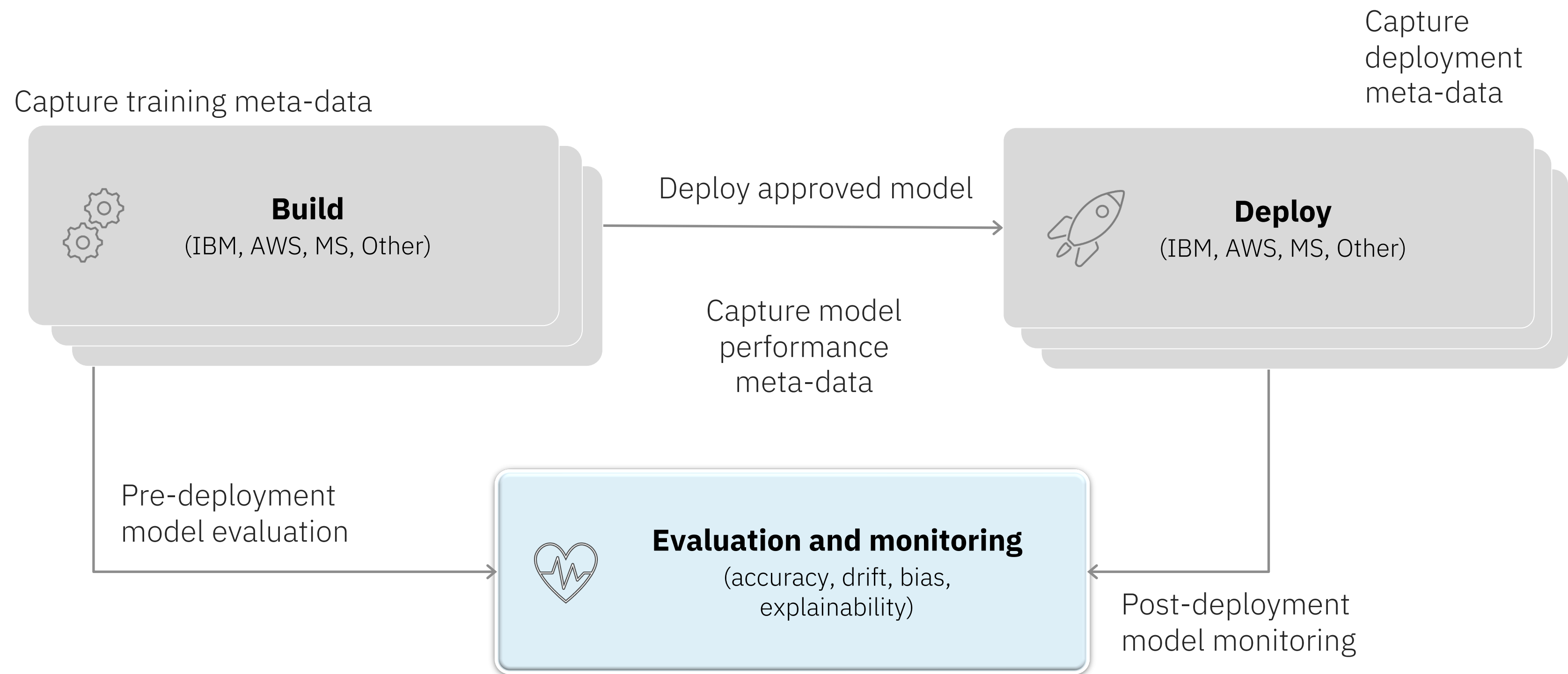
Trusted: Enable responsible, transparent and explainable AI workflows



What IBM offers

watsonx.governance

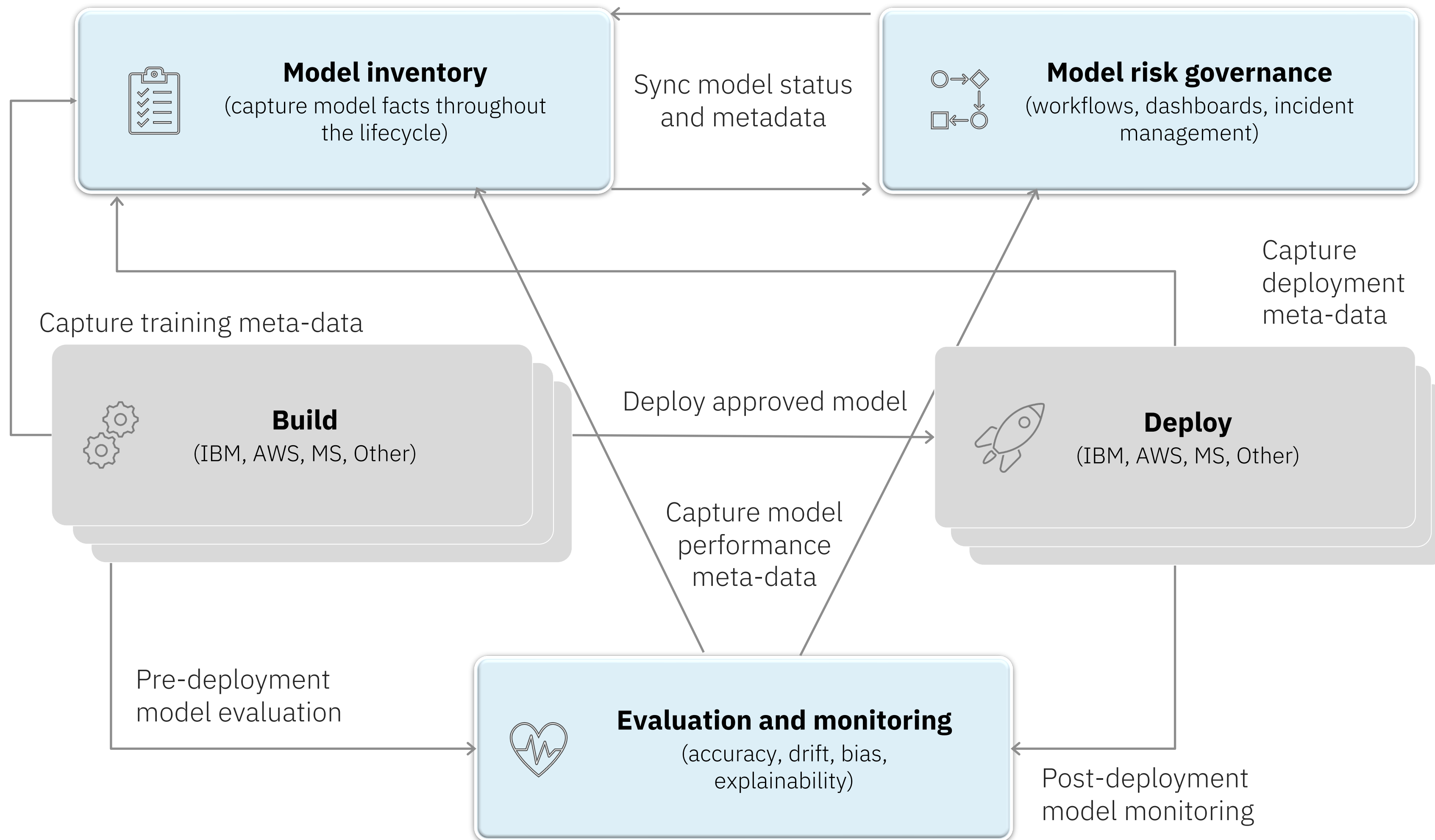
Trusted: Enable responsible, transparent and explainable AI workflows



What IBM offers

watsonx.governance

Trusted: Enable responsible, transparent and explainable AI workflows

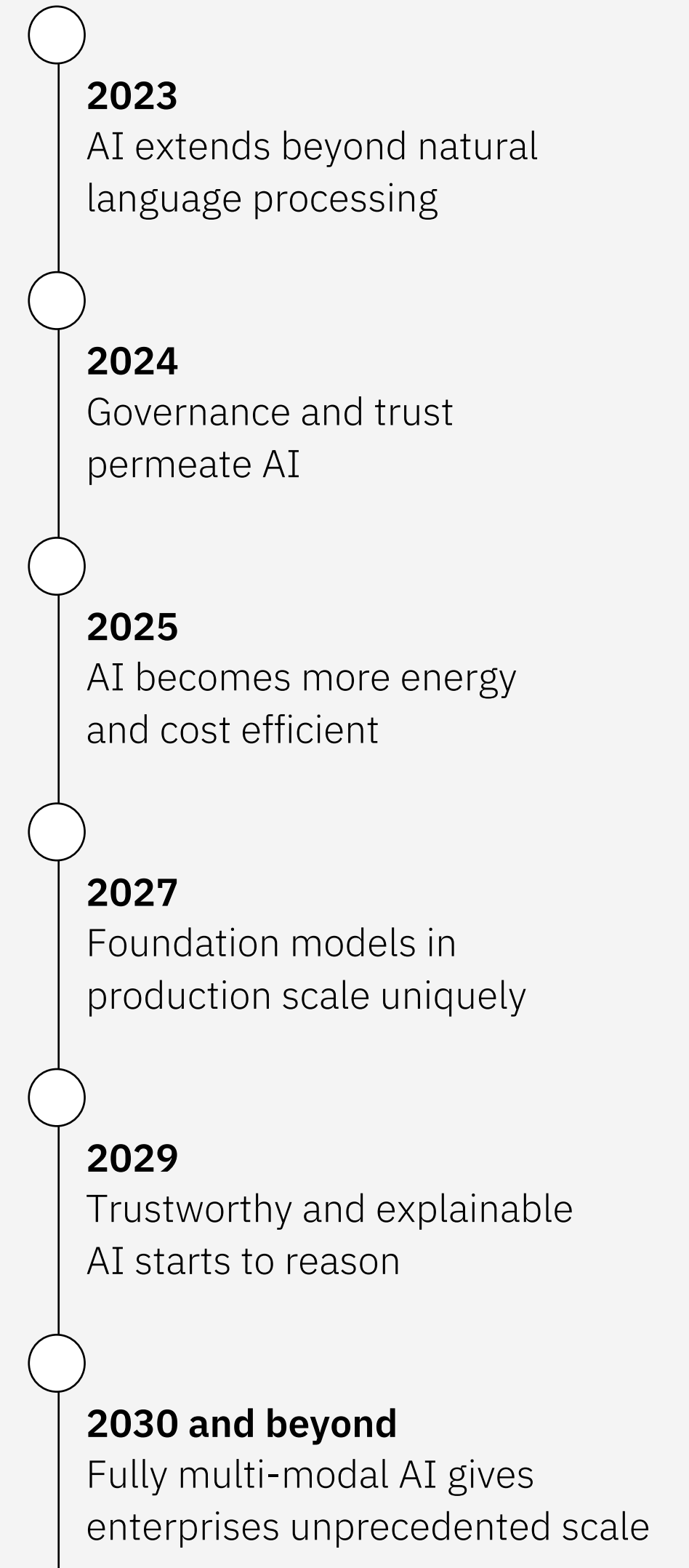


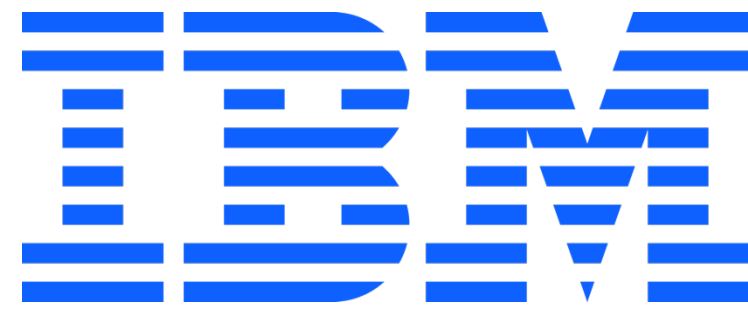
A toolkit for AI governance

- Govern any model across the entire AI lifecycle by consolidating multiple tools, applications and platforms while documenting the origin of data sets, models meta data and pipelines
- Manage risk and protect reputation by automating workflows to better detect fairness, bias and drift
- Adhere to internal compliance standards

”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





FREE TRIAL

Experience **watsonx.ai** yourself
with a free trial through
ibm.com/watsonx.

[Try our free trial](#)

Thank you

© 2023 International Business Machines Corporation

IBM and the IBM logo are trademarks of IBM Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on [ibm.com/trademark](https://www.ibm.com/trademark).

This document is current as of the initial date of publication and may be changed by IBM at any time.

Statements regarding IBM's future direction and intent are subject to change or withdrawal without notice and represent goals and objectives only.

THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IN NO EVENT, SHALL IBM BE LIABLE FOR ANY DAMAGE ARISING FROM THE USE OF THIS INFORMATION, INCLUDING BUT NOT LIMITED TO, LOSS OF DATA, BUSINESS INTERRUPTION, LOSS OF PROFIT OR LOSS OF OPPORTUNITY.

Client examples are presented as illustrations of how those clients have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

Not all offerings are available in every country in which IBM operates.

It is the user's responsibility to evaluate and verify the operation of any other products or programs with IBM products and programs.

The client is responsible for ensuring compliance with laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.