TD SYNNEX IBM & Red Hat Innovation Days 2024

Drive (Gen)AI safely to production

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Foundation models are bringing an inflection point in AI...

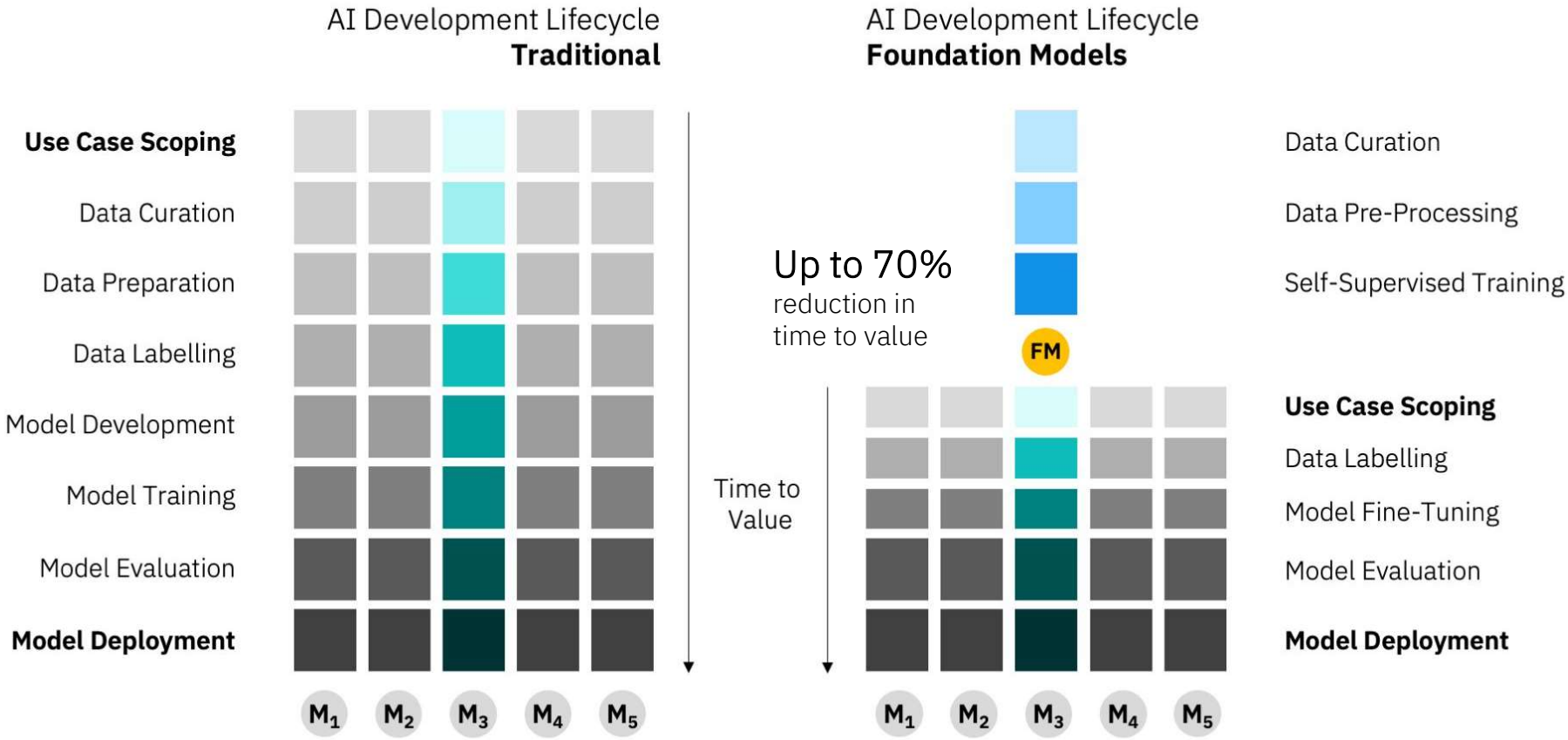
...but how enterprises adopt and execute will define whether they unlock value at scale

AI models have evolved significantly in the past decade

Advanced Analytics	Machine Learning	Deep Learning	Foundation Models
Step by step logic & instructions coded by human developers. Very deterministic.	Human crafted features with supervised learning to analyze data for a specific task	Unsupervised learning where AI is fed outcomes and data to create rules and algorithms	Unsupervised AI that ingests massive amount of data, to then generate net new human-like text, art, images, video etc.
eg. BI, rule based anomaly detection etc.	eg. prediction, price optimization etc.	eg. image recognition, autonomous driving etc.	eg. DALL-e, ChatGPT, BERT, T5, LaMDA etc.
eg. given a housing database of rate per sq.ft and the size of recent listings, highlight the best value homes	*eg. predict the price of a new house listing, by leveraging features eg. # yrs old, school rating, mean price per sq ft etc.*	*eg. predict the price of a new house listing*	*eg. you are a realtor. Write the description of a $2M home in Plano, TX and generate an ad listing*

IBM

Foundation models establish a new paradigm for AI development



Artificial Intelligence has evolved significantly in the past year

Artificial Intelligence = the ability to mimic human intelligence
eg. understand, reason and learn

Traditional AI

Programs that can analyze content to make predictions and prescribe actions

eg. forecast revenue based on historical sales

eg. prescribe next best offer

eg. visually identify product defect

Analytics | Machine Learning | Deep Learning

Generative AI

Programs that can generate net new content and better understand existing content

eg. create image from prompt

eg. answers questions from PDFs

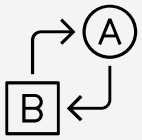
eg. summarize an article

Foundation Models | Large Language Models

Building blocks of generative AI

ChatGPT
inspired interest...

LLM

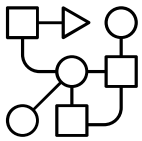


Great
at text

But there is
a bigger concept...

Foundation
model

Transformer

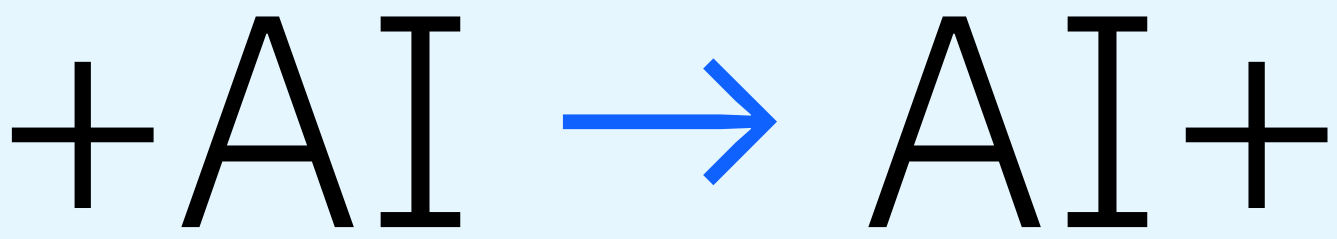


Unlabeled
data

Which will
change business

Generative AI

Anything
that creates
new content



Reinventing how work gets done across business domains and industries

Generative AI is not about chatbot

Chatbot as a main use case

- Chatbots have been the main use cases requested by our customers over the last year

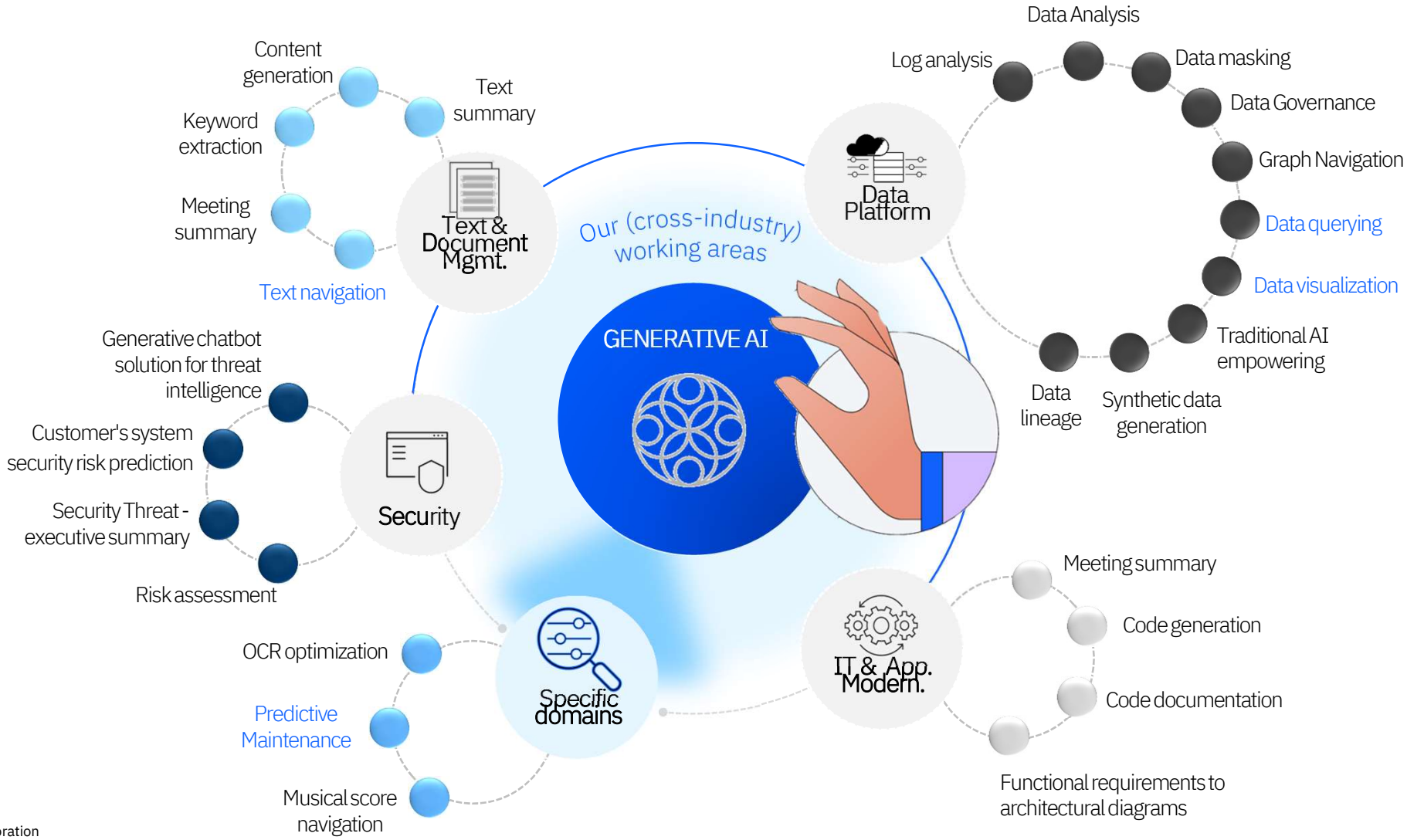
Chatbot as a gate

- The implementation of the GenAI chatbots has allowed us to delve deeper into the real needs of our customers.

Beyond Chatbots

- A chatbot is not the entirety of generative AI; rather, it's just one manifestation of a much larger phenomenon.

Generative AI capabilities framework



Reinventing how work gets done | +AI to AI+

IBM is actively engaging with enterprise clients across a broad set of business domains

Client results and analyst studies

Customer-facing functions and experiences	HR, Finance, and Supply chain functions	IT development and operations	Core business operations
Customer service Empower customers to find solutions with easy, compelling experiences 90% customer inquiries handled by an AI assistant	**HR automation** Reduce manual work and automate recruiting, sourcing and nurturing job candidates 40% improvement in HR productivity	**App modernization, migration** Generate code, tune code generation response in real time 60% software development content auto generated by AI	**Threat management** Reduce incident response times from hours to minutes or seconds Contain potential threats 8x faster
Marketing Increase personalization, improve efficiency across the content supply chain Reduce derivative content creation spend	**IT automation** Reduce automation development, identify deployment issues, avoiding incidents, optimize application demand to supply Reduce mean time to repair (MTTR) by 50%+	**Supply chain** Automate source to pay processes, reduce resource needs and improve cycle times Reduce cost per invoice by up to 50%	**Asset management** Optimize critical asset performance and operations while delivering sustainable outcomes Reduce unplanned downtime by 43%
Content creation Ex. Enhance digital sports viewing with auto-generated spoken AI commentary Scale live viewing experiences cost effectively	**Planning and analysis** Make smarter decisions, focus on higher value tasks with automated workflows and AI Process planning data up to 80% faster	**AIOps** Assure continuous, cost-effective performance and connectivity across applications Reduce application support tickets by 70%	**Product development** Ex. Expedite drug discovery by inferring structure with AI from simple molecular representations Faster and less expensive drug discovery
Knowledge worker Enable higher value work, improve decision making, and increase productivity Reduce 90% of text reading and analysis work	**Regulatory compliance** Support compliance based on requirements / risks, proactively respond to regulatory changes Reduce time spent responding to issues	**Data platform engineering** Redesign the approach for data integration using generative AI Reduce data integration time by 30%+	**Environmental intelligence** Provide intelligence to proactively plan and manage impact of severe weather and climate Increase manufacturing output by 25%

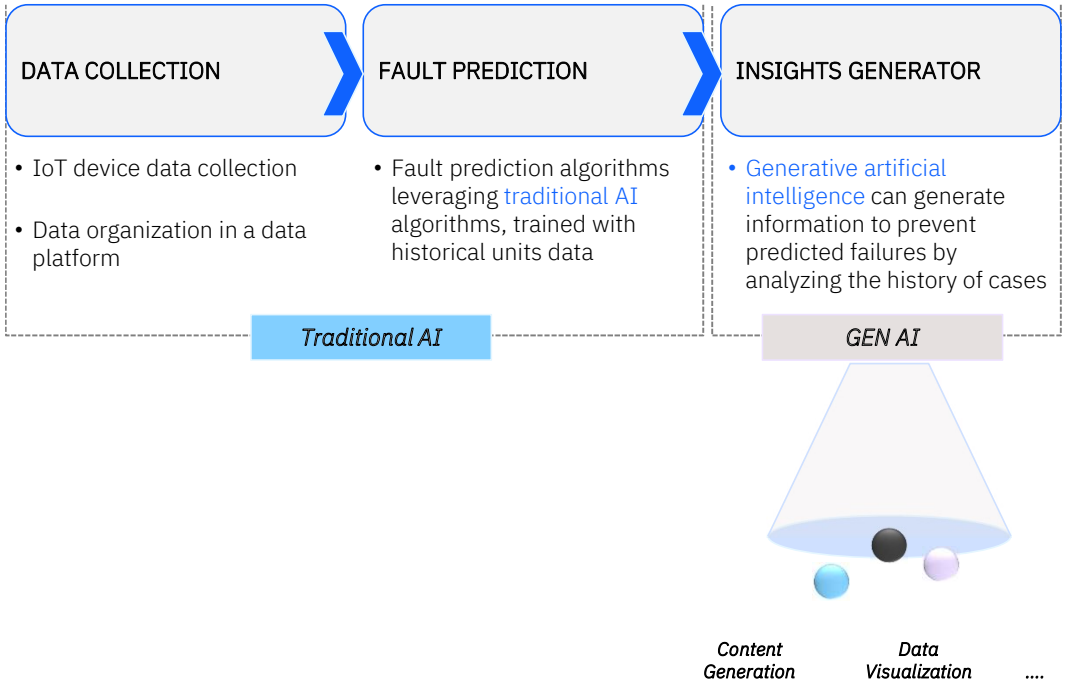
Predictive maintenance of refrigeration units

empowered by generative AI

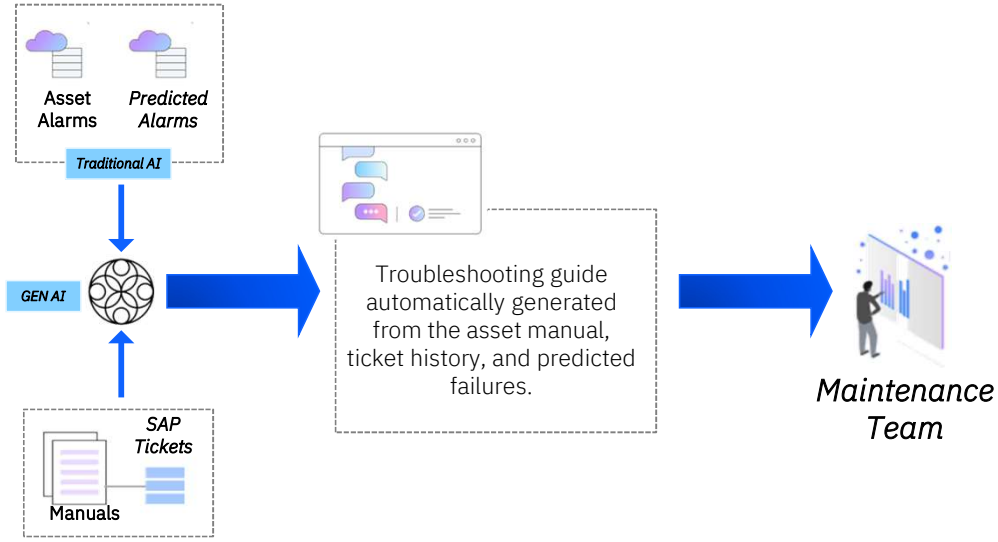
Client's Need

An Italian airport manages and develops activities associated with and supplementary to airport management. They desire to adopt Generative Artificial Intelligence to make their operations more efficient. Specifically, the use case involves the possibility of supporting the maintenance staff of refrigeration units by generating ad-hoc guides for troubleshooting and fault resolution.

Logical Flow

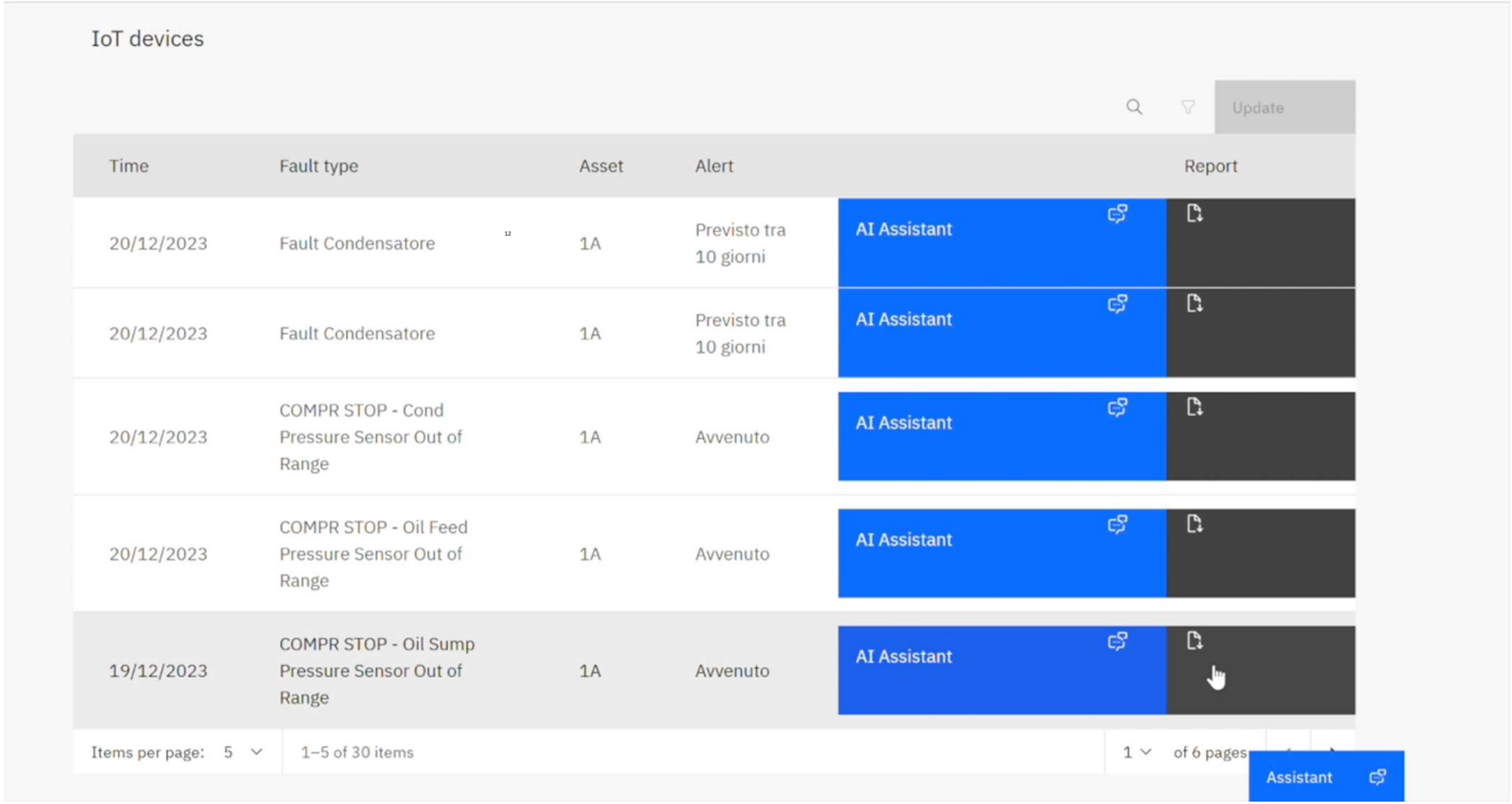


High level architecture



Predictive maintenance use case

DEMO

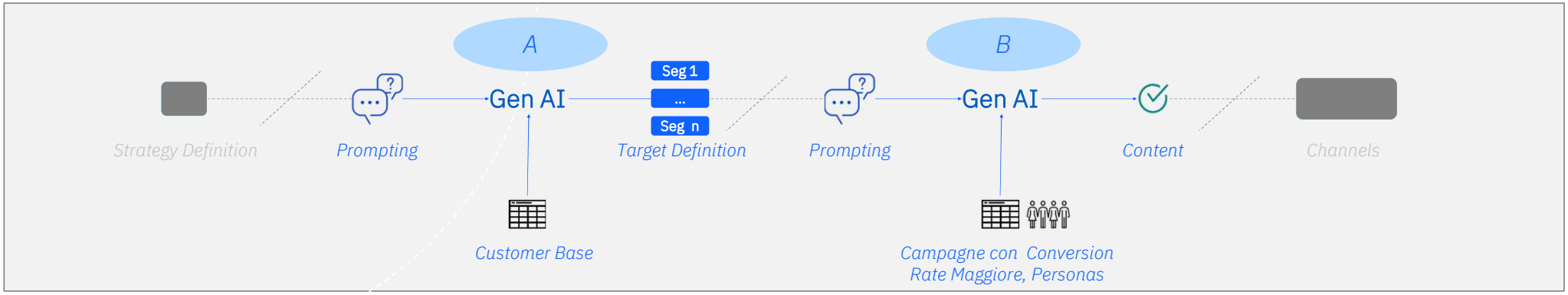


Generative AI – Marketing application for Travel&Transportation

Dynamic Segments and Campaign Personalization

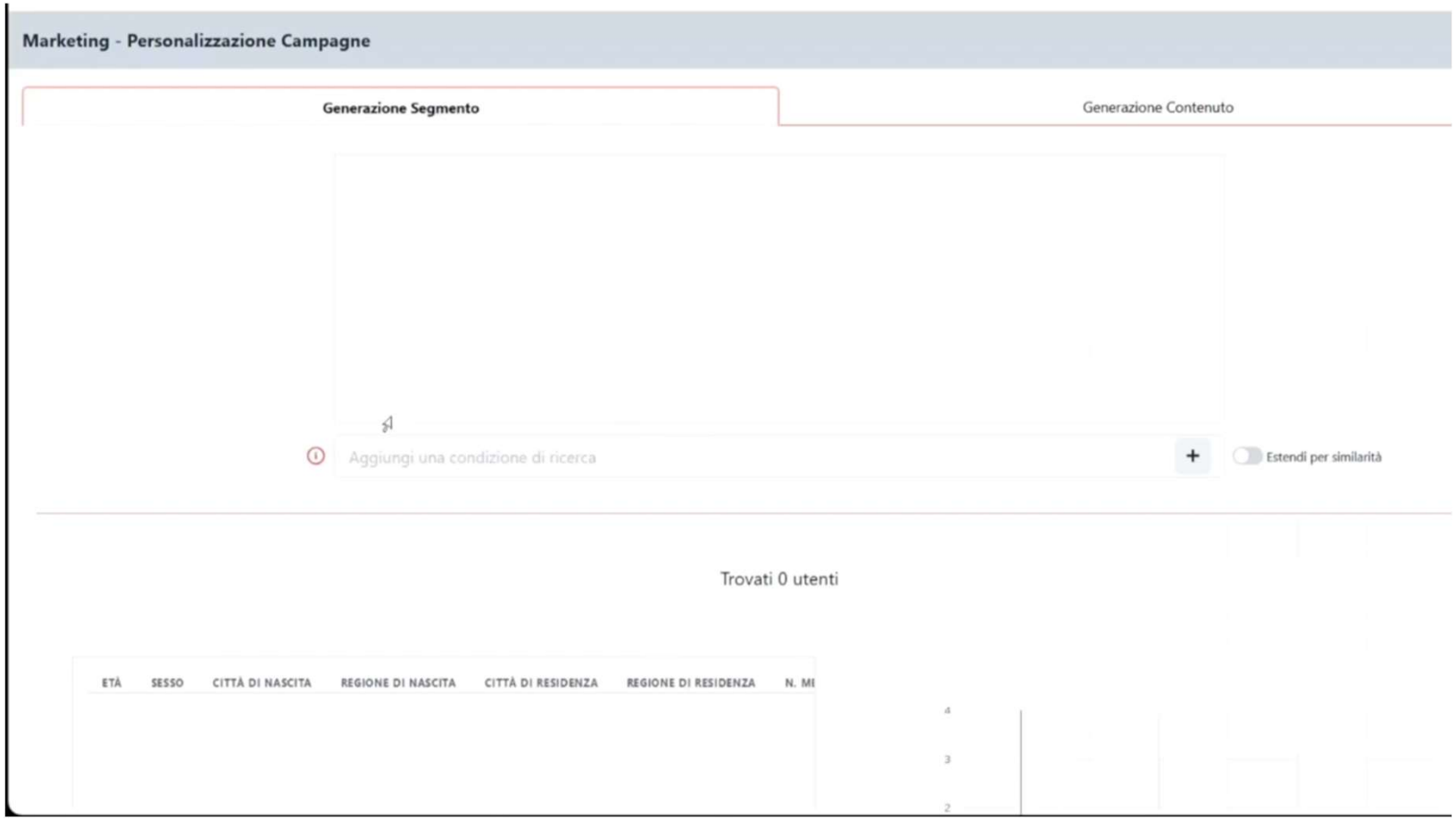
A Leveraging AI to dynamically segment customers over time based on personal characteristics and interactions

B Gen AI tools for generating personalized content in campaigns for customers, e.g., generating texts whose style and content are adapted to the individual characteristics and preferences derived from the customer database, increasing the effectiveness of campaigns delivered via email, web pages, and app content.



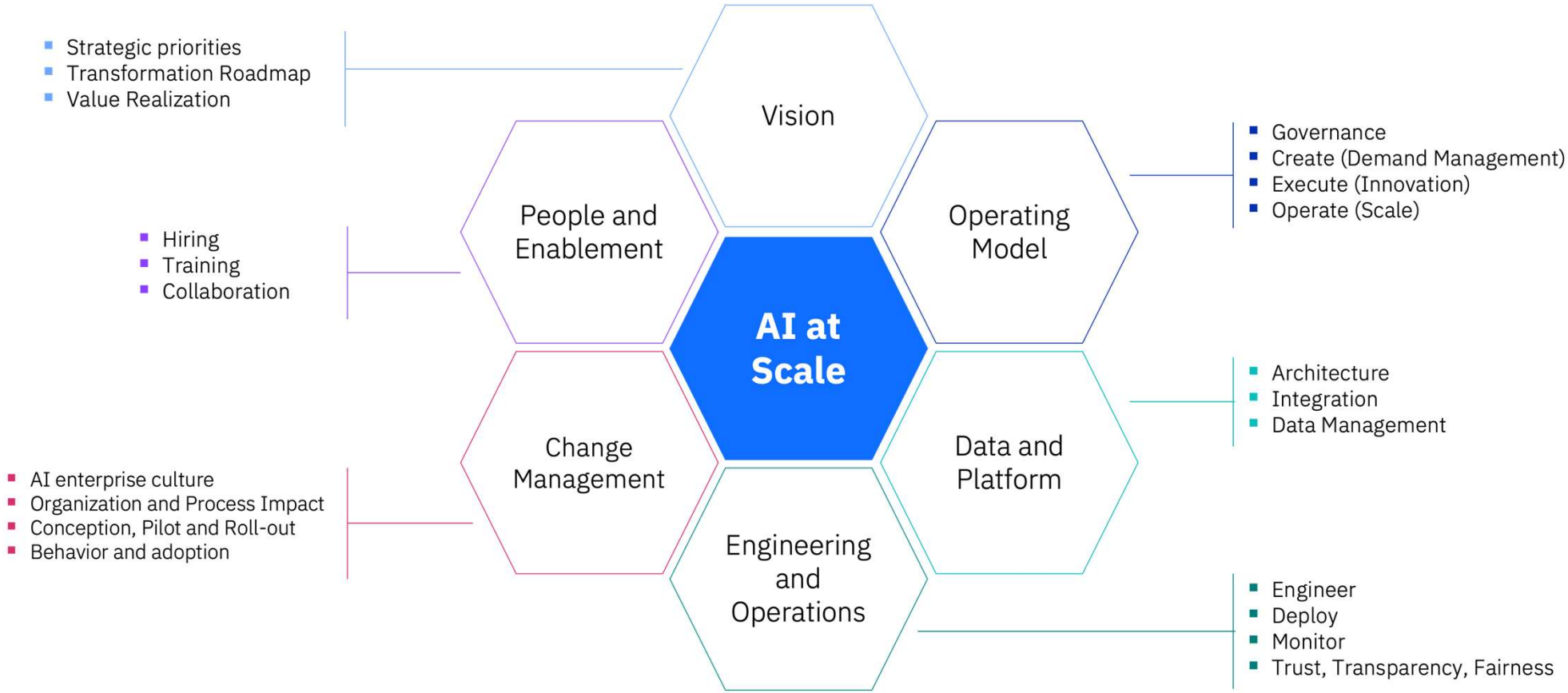
Generative AI – Applicazione al Marketing

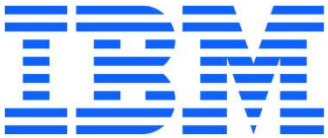
Demo



The IBM “AI at Scale” framework

is the mean to guide companies on their AI journey – from end to end – helping them get their AI models past POCs into production

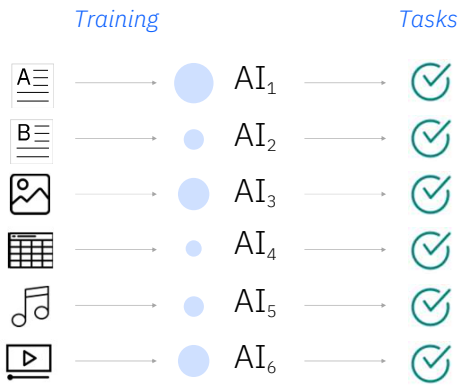




Backup

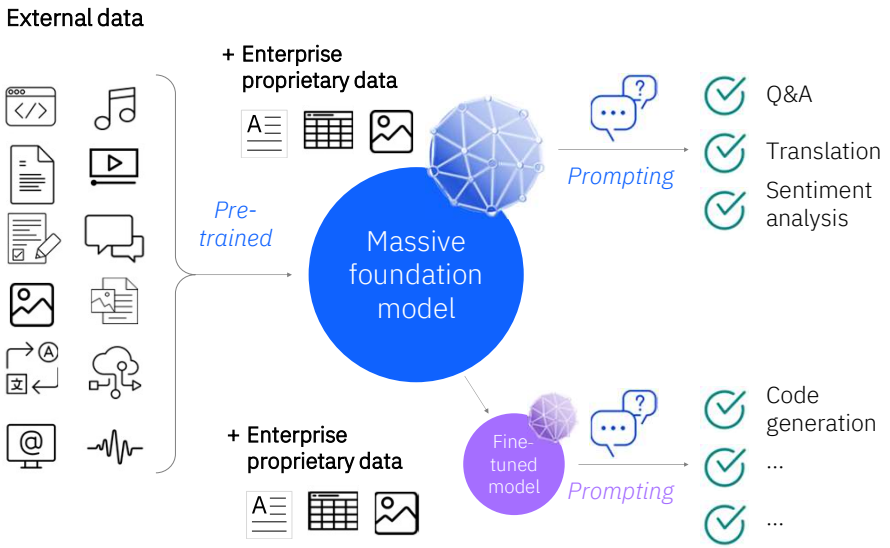
Foundation models establish a new paradigm for AI capabilities

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
- Equal or better accuracy for multiple use cases
- Incremental revenue through better performance

up to 70% reduction in certain NLP tasks

Generative AI has immense potential to accelerate digital transformation

Scale of impact points to swift adoption over next 3 years

$3-4T forecasted economic benefits to the global economy across industries

80% productivity gains across classes of knowledge workers and creative tasks

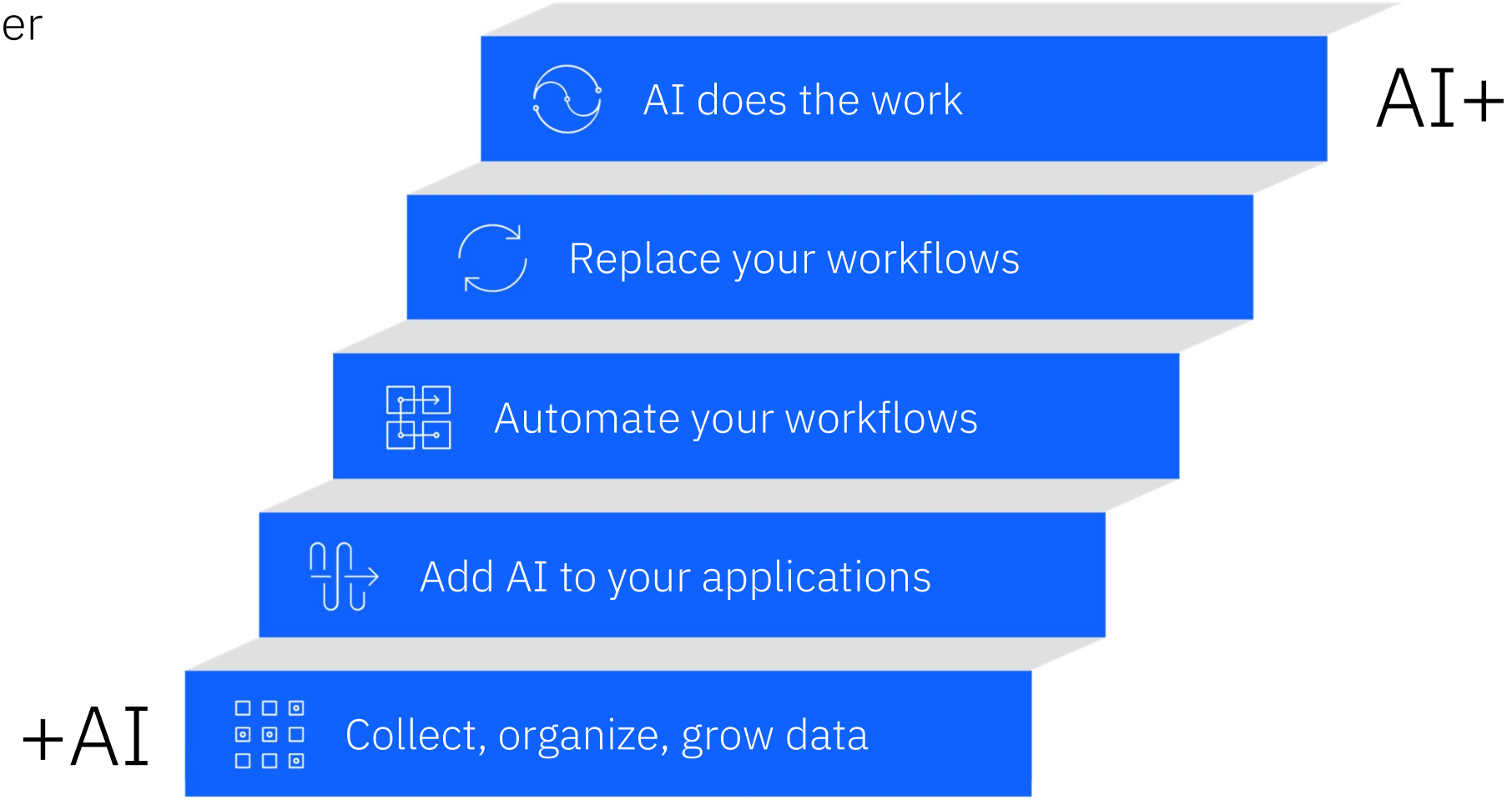
80% of enterprises will have incorporated Gen AI into their business processes

70% of software vendors will integrate Gen AI in their enterprise applications

Sources: Gartner

Reinventing how work gets done |
+AI to AI+

The modern-day AI ladder



Generative AI: IBM value

Skills, Organization, Framework, and Methodologies

Skills

Abbiamo investito sulla crescita delle competenze attraverso la partecipazione ad accademie GenAI, dando contributo attivo (student e trainers)

Organization

- +1000 esperti AI a partire dal 2015
- Definizione di una Generative AI Local Practice focalizzata sullo sviluppo delle opportunità

Framework & tools

Definizione di un Generative AI capabilities catalog, comprensivo di use cases, reference architectures ed assets di industria

Methodologies

Definizione delle nuovo modalità di gestione di progetti Generative AI (WBS progettuali, staffing inclusivo di Generative AI advisor)

>14

Mesi di progettualità GenAI

+110 in Italy

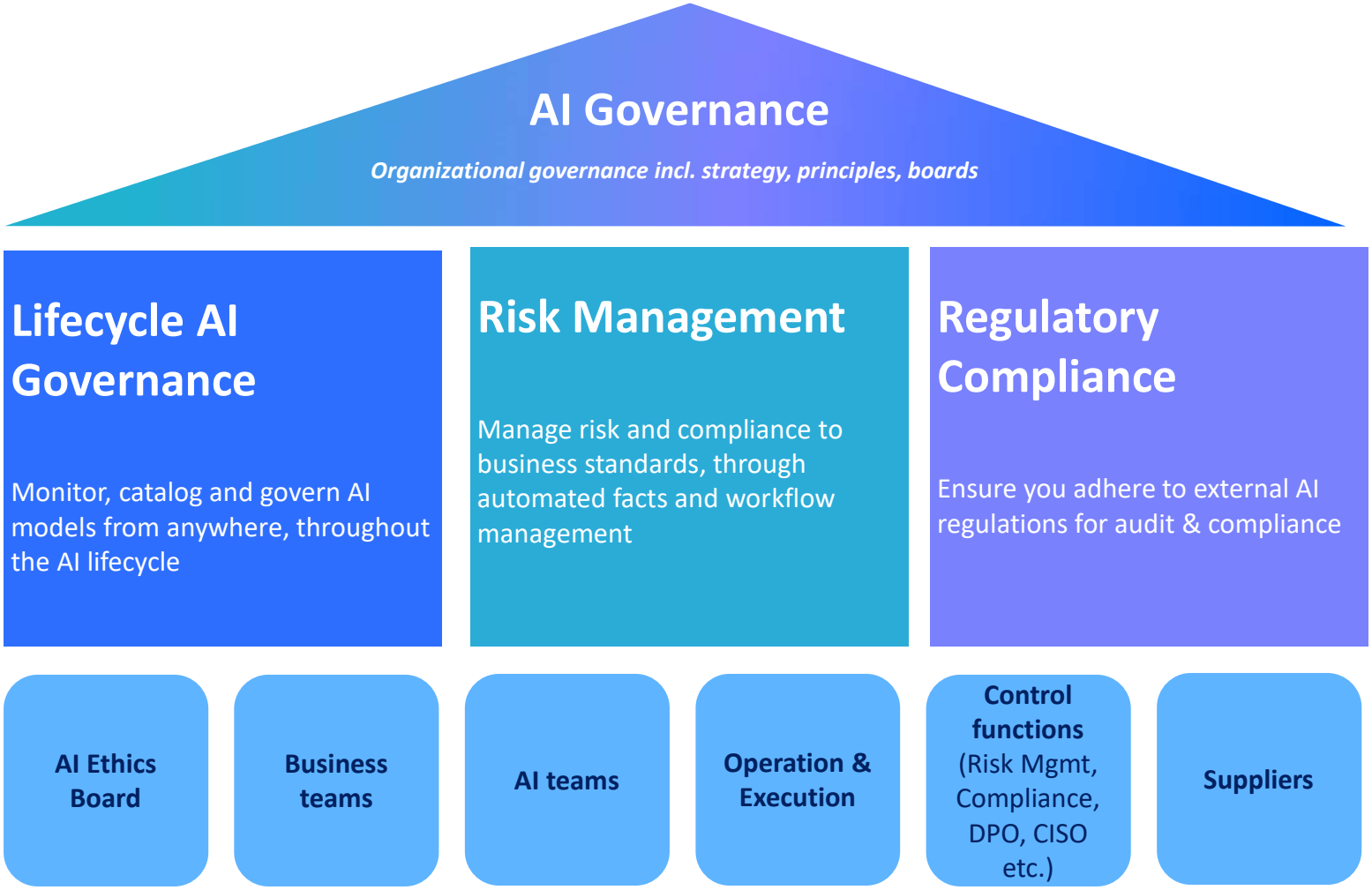
IBM GenAI Specialists / Advisors

+25

Attività generativeAI in Italia

IBM AI Governance

The ability to direct, manage and monitor the AI activities of an organization.



Trustworthy AI,
a responsibility for all
and applies to all