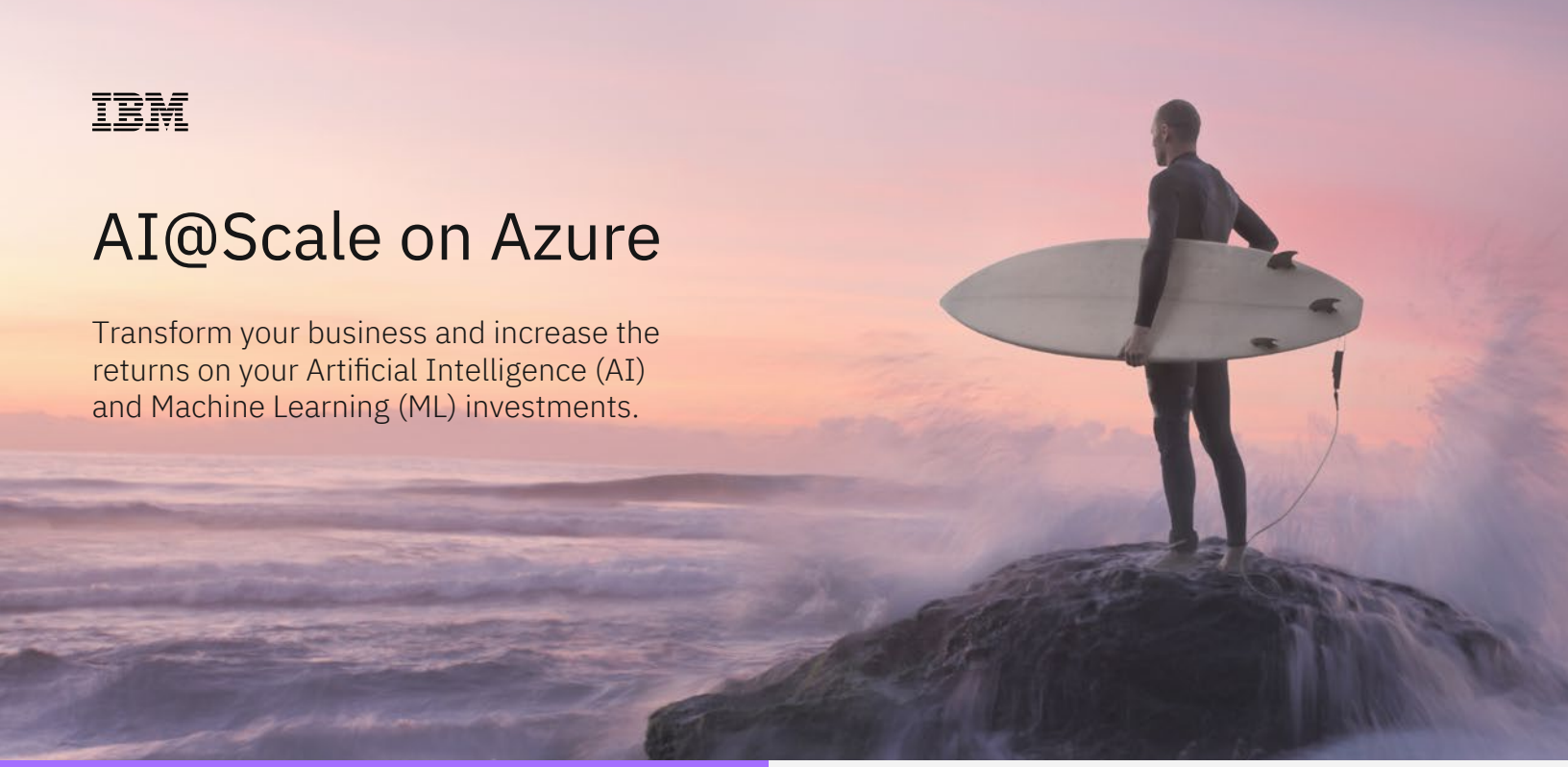
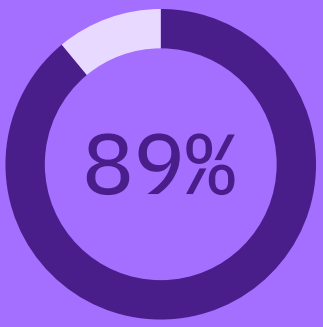


AI@Scale on Azure

Transform your business and increase the returns on your Artificial Intelligence (AI) and Machine Learning (ML) investments.



of enterprise decision makers agree that scaling AI leads to competitive differentiation[1]

An IBM survey of more than 13,000 executives illuminated a new category of data-driven companies called “Torchbearers”. These are the DATA ELITES, who have created a culture of data believers, invest heavily in their people and use analytics to improve the quality of their decisions.

Our study points out that Torchbearers now generate 69% higher revenues and 63% higher margins than their peers. Clearly organizations that have fully integrated data into their business strategies, operations and culture are on a path to higher performance. Our objective in IBM Global Business Services is help our clients become one of these high-performing, data-driven companies.

88% of corporate AI initiatives are struggling to move beyond test stages[2]

IBM Services Offering for AI at Scale

According to Forrester Consulting, organizations that scale AI are 7x more likely to be the fastest-growing businesses in their industry[2]. However, to successfully scale AI throughout your organization, data complexity, talent scarcity and a lack of trust in AI systems must be overcome.

IBM Services® for AI at Scale can help make it happen.

IBM Services for AI at Scale is a “consult-to-operate” service that will consistently integrate and scale AI/ML. It brings the engineering discipline to architect, engineer, deploy and monitor the AI/ML models while also satisfying the strategic imperatives of AI to be Trustworthy, Scalable and Sustainable.

IBM Services for AI at Scale uses our Rapid Asset Development for Machine Learning (RAD-ML) framework which defines standard solution components and provides high value accelerators such as Code Frameworks, Reference Architecture, and Best Practices. The code framework has been developed and released as Open Source Python library called MLApp. It includes Embedded MLOps, Project Scaffolding, Model Boilerplates, Data Connectors and Utilities for model tuning and deployment.

Learn more about MLApp →

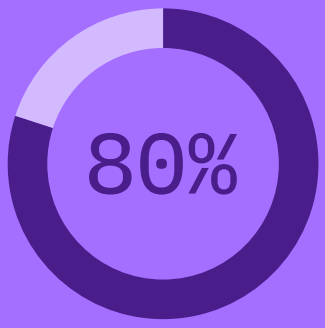
IBM's AI at Scale on Azure

AI at Scale on Azure focuses on these three key pillars

Reference architecture for Azure data platform and complete end-to-end MLOps pipeline combining Azure native services with open source MLApp framework developed by IBM Services

Model governance patterns leveraging leading open source utilities built by IBM Research for Robustness, Fairness, Explainability and Transparency deployed on Azure

An engagement and operating model based on IBM Garage Methodology to scale AI and reduce time to value



of organizations expect AI use cases to increase within the next two years[1]

IBM's AI at Scale on Azure Provides the Following Accelerators

Data Ingestion

IBM Reference Architecture for Azure Data Platform

Data ingestion pipeline built in Azure Data Factory

Data Transformation

Recommendations for data transformation tooling

IBM MLApp Asset Boiler plate with custom data transformations

Sample data pipelines on Azure

Model Build, Test & Deploy

MLApp code patterns for Azure

- ML Framework Project scaffolding
- ML pipelines
- Data Science Utilities to add (training set, validation set, performance metrics)
- Deployment Adaptors for Azure

Model Governance

Extensible to either Azure native model governance tools or IBM Research Trustworthy AI toolkits listed below

Adversarial Robustness 360

AI Fairness 360

AI Explainability 360

AI Factsheets 360

Model Consumption

Code and demos for business consumers using Microsoft PowerApps and PowerBI

Benefits of IBM Services for AI at Scale

IBM® Services for AI at Scale consistently integrates and scales AI and ML pilots straight into production to:

- **Reduce model deployment costs**. Building a portfolio of reusable assets exponentially increases data science and developer productivity.
- **Accelerate deployment**. Models make it to production more quickly, generating promised business value.
- **Increase growth**. Scaling analytics, joint experimentation and co-creation with data scientists opens up new possibilities.
- **Reduce production support costs**. Outsourcing AI and ML model management and support improves efficiencies.
- **Increase employee satisfaction**. Data scientists get to focus on model development, not model maintenance or data wrangling.
- **Reduce risk and increase adoption**. Trustworthy AI mitigates the risk of misusing models that could cause harm to humans, thus gaining user adoption, so the business can achieve value from AI.

Business Outcomes

4x
Faster time to value

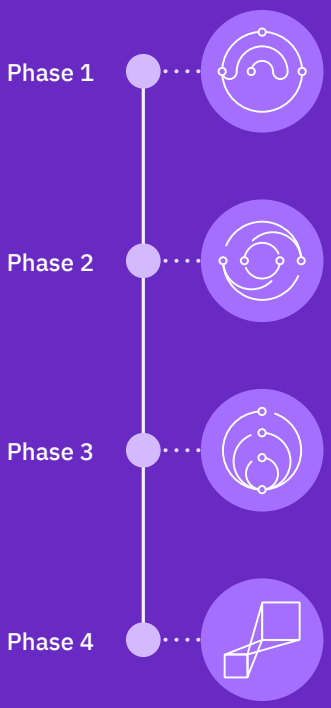
20-40%
Increase in growth

25%
Reduction in POC costs

50%
Reduction in support costs in production

Engagement Model

With the goal of minimizing time to value with minimized risk, our process includes a four-phased approach to AI at scale implementation



Assess: Week 1
– Conduct short-term gap audit
– Deliver an AI maturity assessment and roadmap to scale AI

Design: Weeks 2-3
– Collaborate across data scientists via a common AI framework
– Develop a scalability framework based on existing environment

Adopt: Weeks 4-12
– Co-deliver initial projects; pilot best 3–5
– Set up a deployment architecture and AI and ML ops processes
– Drive adoption of AI operating models

Scale Ongoing implementation
– Scale ML products in production
– Maintain AI and ML models in production while monitoring for drift, bias and more

Client Reference Story

What we did:

For one of the world's largest energy companies, IBM established a robust methodology for the client's data science team. We used our RAD-ML framework, on top of Microsoft Azure, to go from POC to production. IBM is monitoring, maintaining and supporting their AI with our groups in Romania and India.

The result:

Moving the company's AI projects into production resulted in over $500M in cost savings to their energy business.

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[1] Overcome Obstacles to Get to AI at Scale, Forrester Consulting Thought Leadership Paper, January 2020

[2] Advancing AI ethics beyond compliance: From principles to practice, IBM Institute for Business Value, April 2020

Why IBM

- Microsoft's fastest growing GSI
- 15,000 Certified Azure Specialists
- 1,000 Cloud Migrations in the past year
- 30 global centers, 55 languages, 24x7 operations
- 17 Microsoft Gold Competencies
- SAP on Azure Advanced Specialization
- Analytics on Azure Advanced Specialization
- Azure Expert Managed Service Provider (MSP)
- Microsoft Analytics Specialization