

Agile AI

Carlo Appugliese

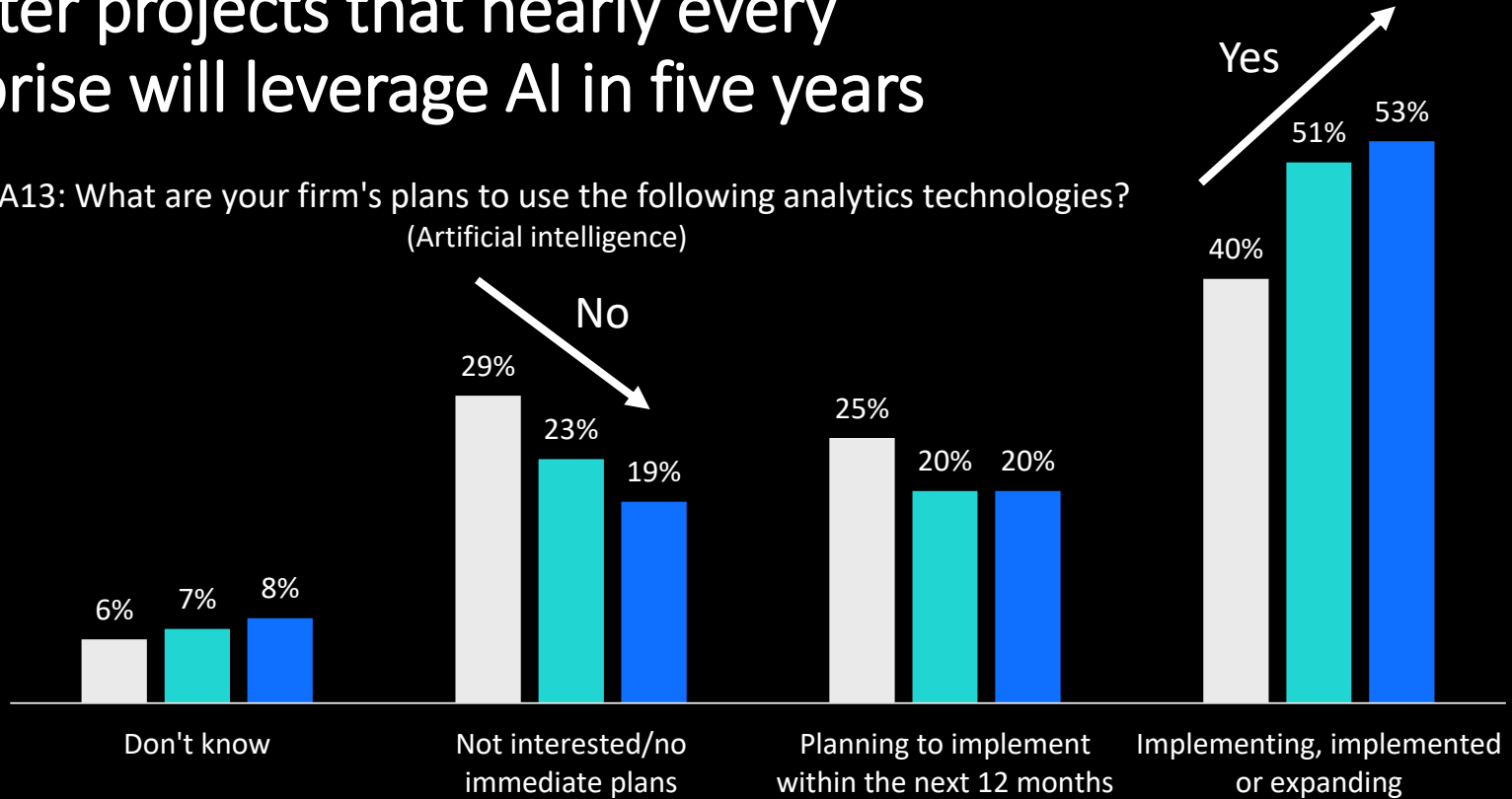
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“In 2021, AI augmentation will generate \$2.9 trillion in business value and recover 6.2 billion hours of worker productivity” - Gartner

Forrester projects that nearly every enterprise will leverage AI in five years

Q.A13: What are your firm's plans to use the following analytics technologies?
(Artificial intelligence)



Base: 2094, 2106*, 1742+ data and analytics decision-makers

Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2016, 2017, 2018

What is AI?

Artificial Intelligence

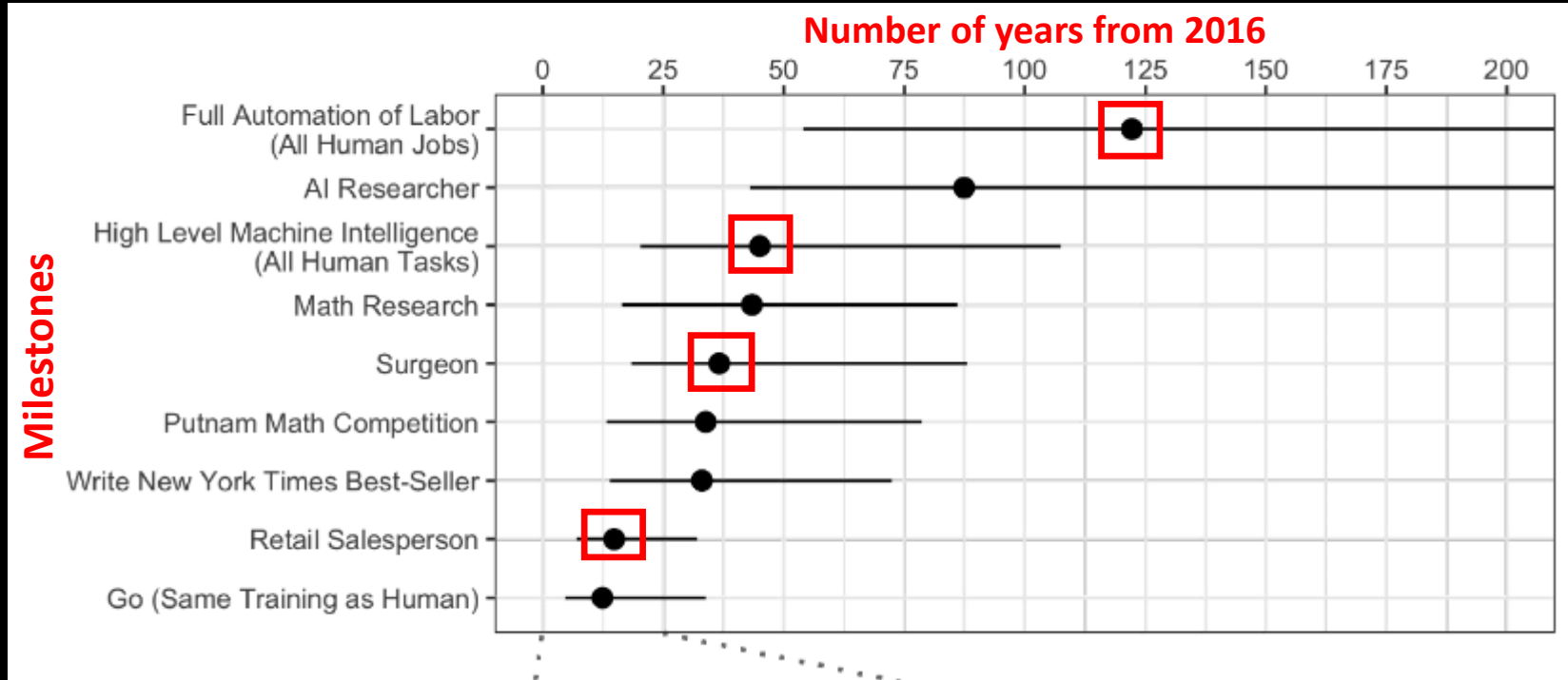
Machine Learning



Deep Learning



AI researchers predict that Pure AI has a 50% chance of being achieved in 125 years



Source: When Will AI Exceed Human Performance? Evidence from AI Experts; May 30, 2017



THINK

ΣΚΕΨΟΥ

DENKE

PENSER

सोचिए

\$300,000

Who is Stoker?
(I FOR ONE WELCOME OUR
NEW COMPUTER OVERLOADS)
\$ 1,000

\$1,000,000

Who is Bram
Stoker?
\$ 17,973

\$200,000

WHO IS
BRAM STOKER?
\$5600

Focused AI, is narrow in scope and can exceed human intelligence.

Business of Artificial Intelligence

“Over the next decade, AI won’t replace managers, but managers who use AI will replace those who don’t.”



“Business of Artificial Intelligence” by Harvard Business Review

Source: <https://hbr.org/cover-story/2017/07/the-business-of-artificial-intelligence>

Only **20%** of companies surveyed have implemented AI into some of their processes

- *MIT Sloan*

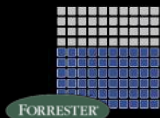
70% of business executives rated it as “very” or “extremely important”, but just **2%** say they have achieved “broad positive results”

- *The Economist*

The keys to turning AI aspirations into outcomes

DATA

The lifeblood of AI, but complexity slows progress



60%

Are challenge in managing data quality

TALENT

AI skills are rare and in high demand



62%

Are challenge to acquire talent [and build skills]

TRUST

Skepticism of AI systems & processes



62%

Need an approach to AI production readiness

**Stuck in
Experimentation**

51%

find operationalizing, sustaining and scaling AI challenging



Challenge #1: Data headaches

- Data silos
- Moving data is costly, risky, and slow
- Accessing various data sources requires complex coordination
- Lack access to data for Data Scientist



Challenge #2: Talent Shortage

- Scarcity in data science practitioners
- Inconsistent hiring standards given with diversity in skill levels
- Skills vary from one practitioner to another
- High turn over, Loss of IP and progress



Challenge #3: AI operationalization

- Lack of understanding and trust
- Difficulty in integration and support efforts
- Security, scalability, governance constraints
- Excludes humans in process

IBM Data Science and AI Elite Team

Meet the Experts

Who are we?

A global and diverse team of Data Science and AI experts with deep knowledge of all aspects of AI/ML.

What do we offer?

Guidance, skills, tools, and a proven methodology to put AI projects on an accelerated track and scale.

What do you get?

Investment from IBM in your business with the expertise to transform your business with AI

What do we ask?

Your team working side by side with our team

Work side by side with *YOU* to achieve business impact



95

Data Scientist

160+

Client Projects

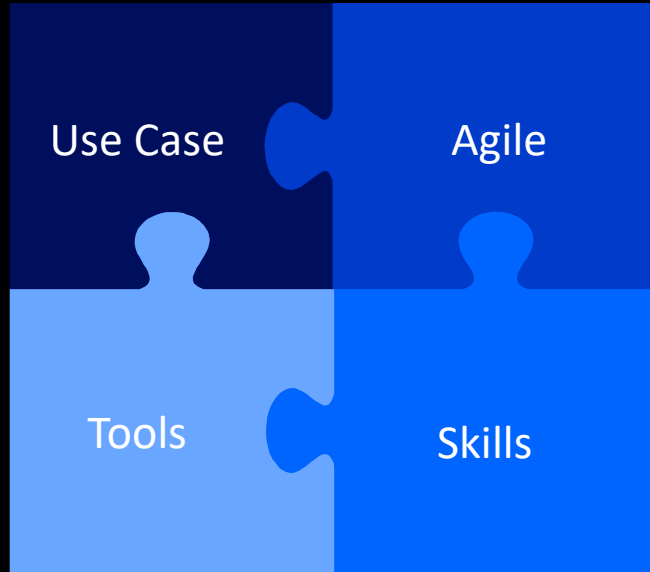
42+

Countries

How we approach AI for business

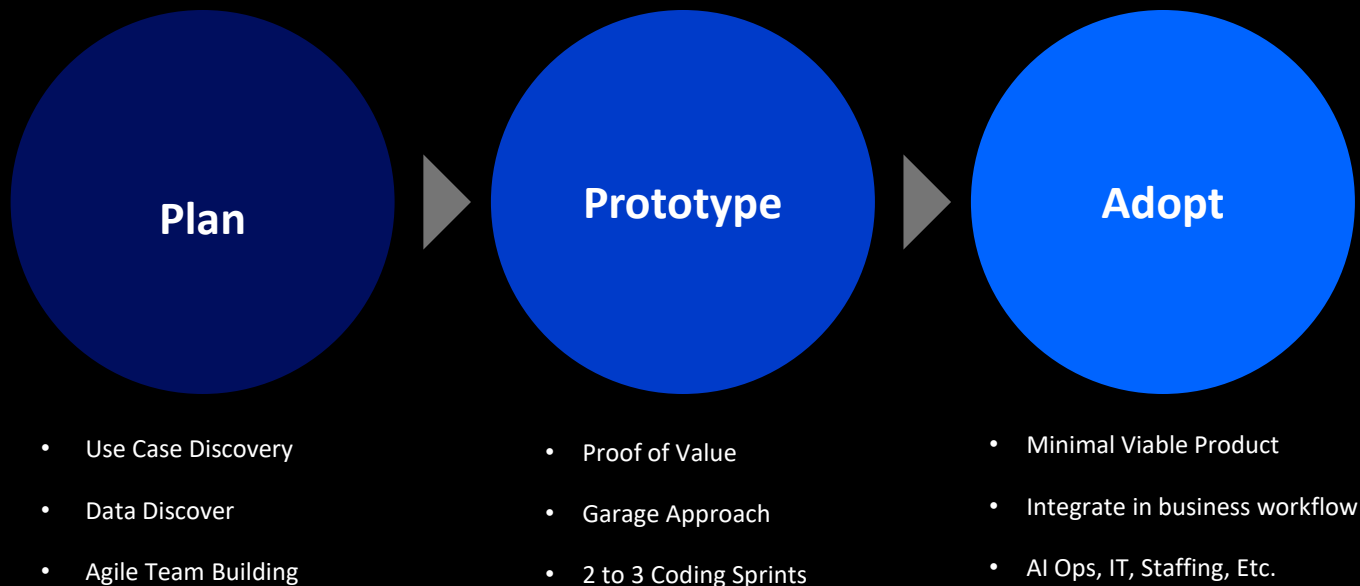
Operationalizing Data Science and AI

*Four elements are
required to
effectively use AI
for Enterprise*



How we take AI Journey

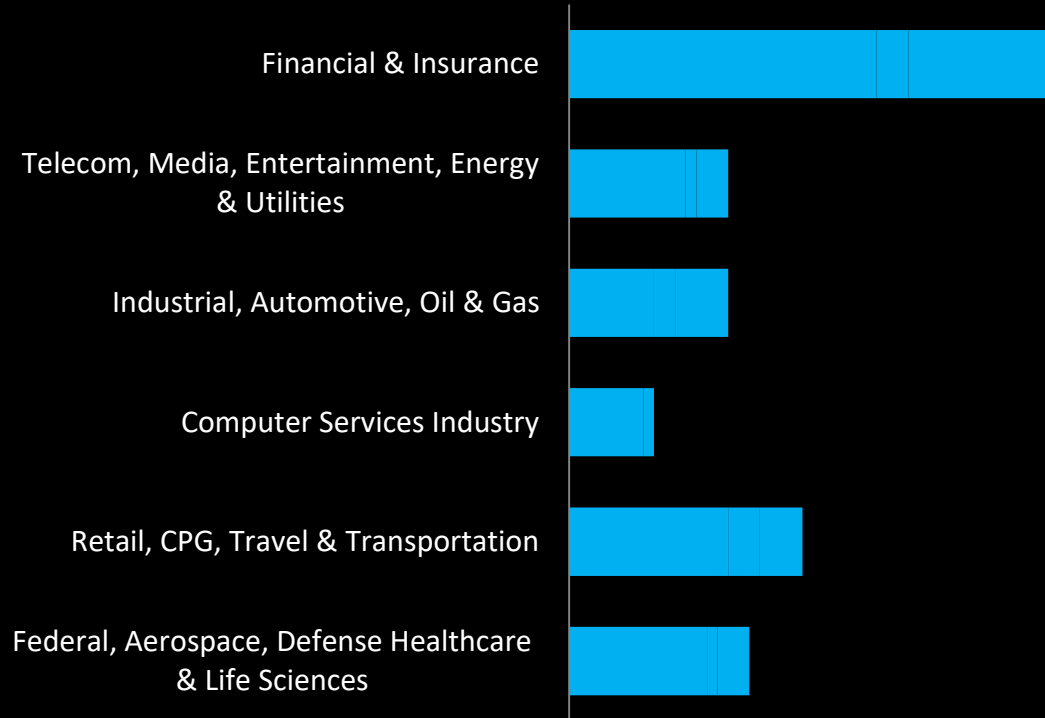
An agile approach



DSE Engagements across all Industries

The Data Science & AI Elite Team has engaged with a broad spectrum of industries

Cross industry experience brings a unique perspective, additional skills, and a broad array of methodologies



Agile Sprint Development – Typical Prototype

Pre-Engagement

- Use Case workshop
- Approach Review
- Tools Review
- Data deep dive workshop

Kick-Off

- Collect Data
- Confirm expected outcomes

Sprint 1

- Virtualize & Clean data
- Data Definition/ engineering

Sprint 2

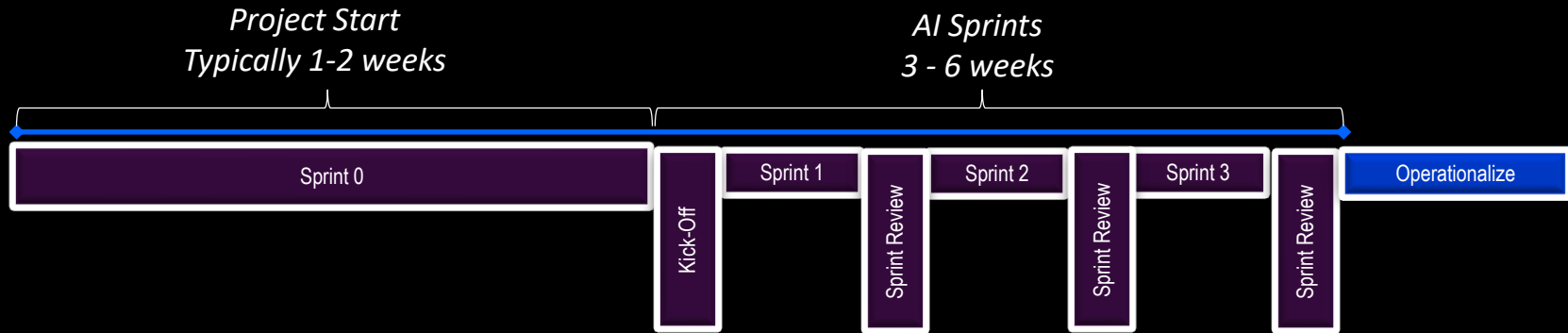
- Design approach
- Develop, test and train Models

Sprint 3

- Deploy/Test Models
- Validate results

Operationalize

- MVP Field Test
- Business Integration
- AI Ops



Tools - Open Source Ecosystem



Interfaces

Languages

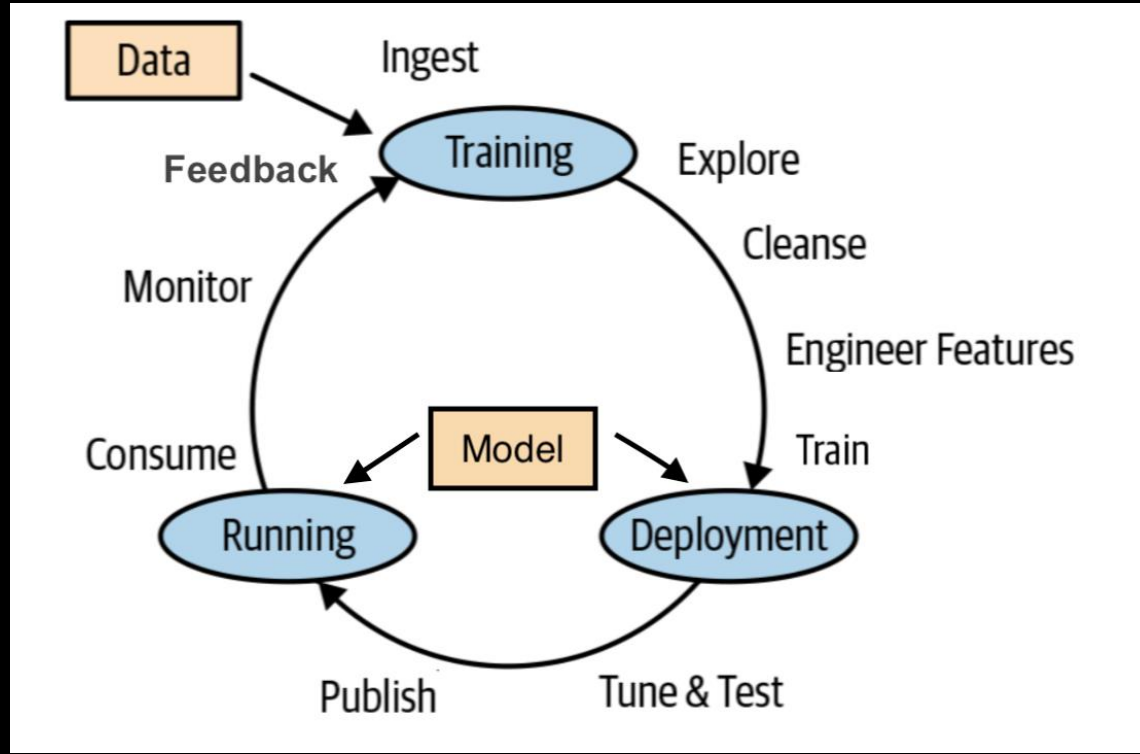
AI Frameworks

Storage

Virtualization

Infrastructure

Modeling - AI Life Cycle



Skills - Cross Functional Team

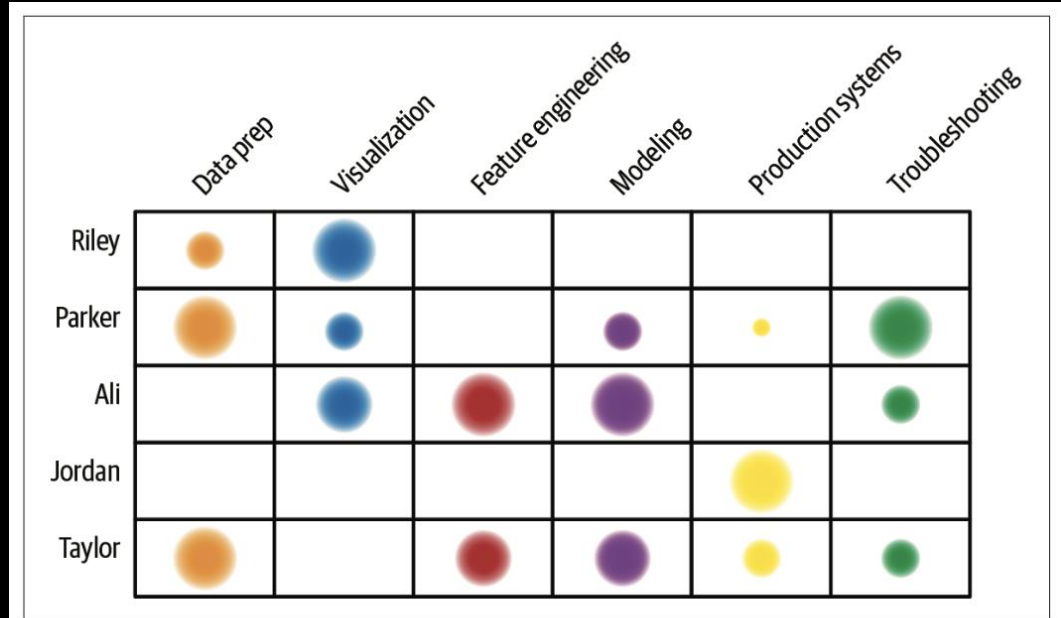
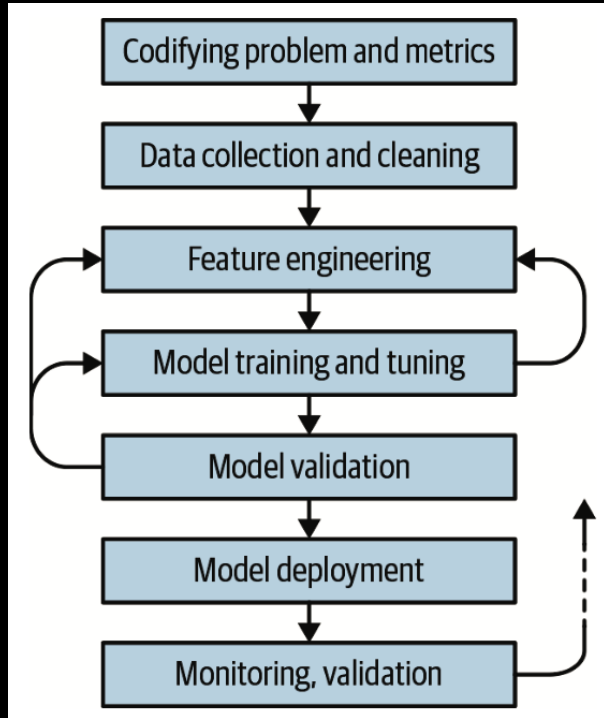
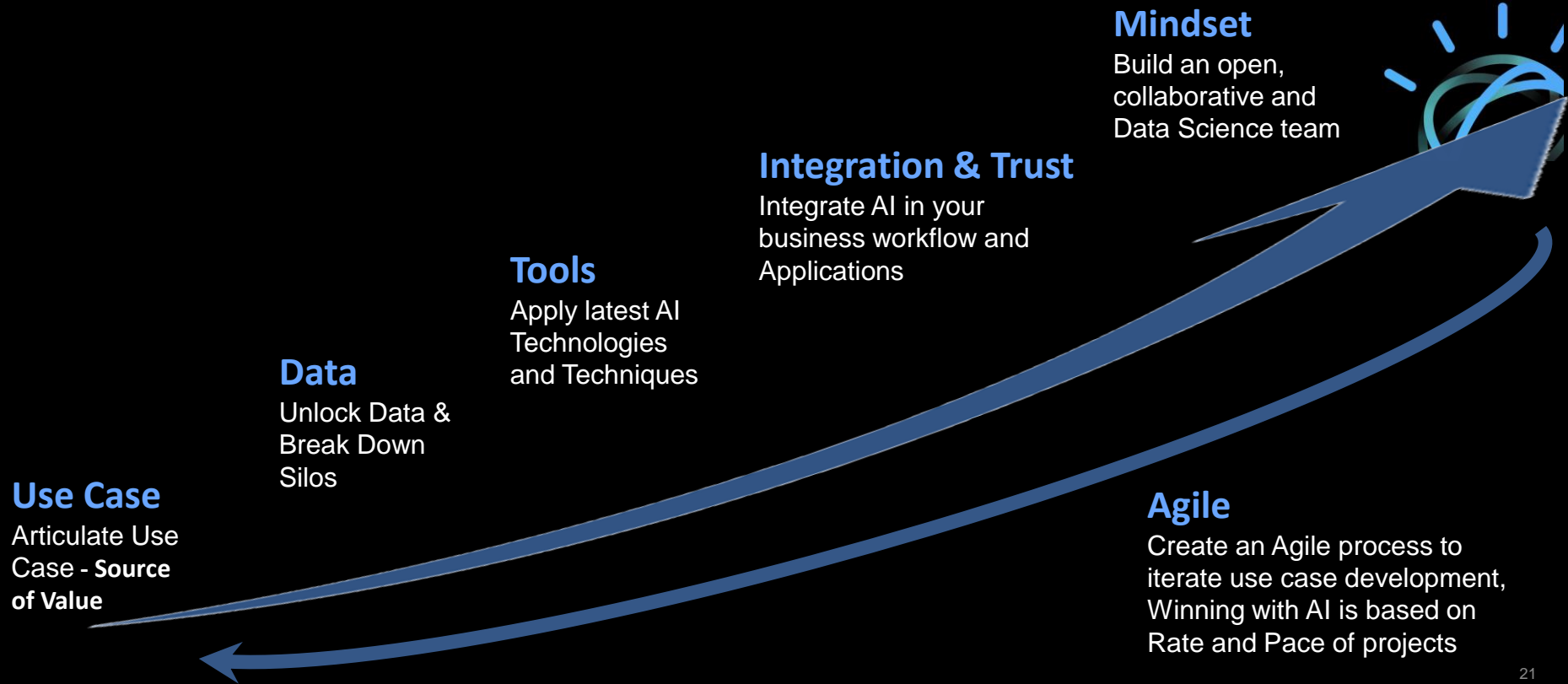


Figure 3-2. Matrix to assess team skills versus project needs

Pioneering Agile AI for Business

One use case at a time...



Agile AI

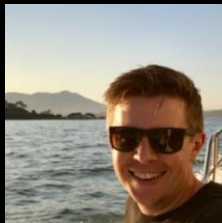
O'REILLY®



Carlo Appugliese

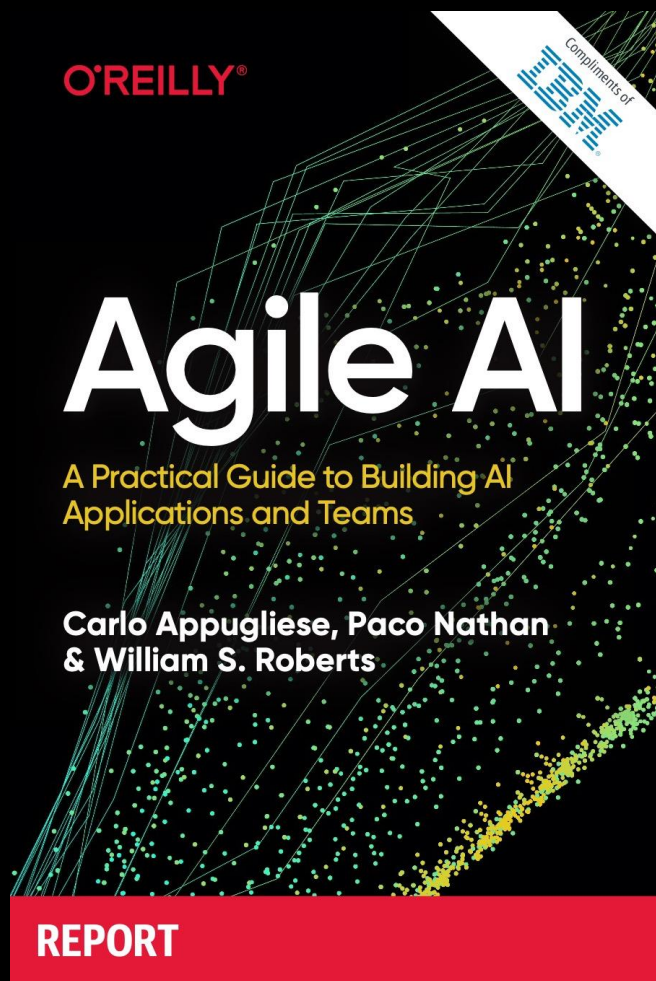


Paco Nathan



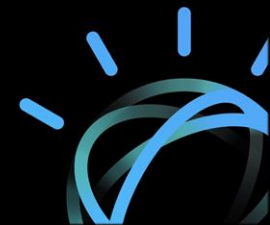
William Roberts

ibm.biz/agile-ai-ebook



Client Examples

Helping enterprises put AI to work.



Network failure predictions and optimization of recovery reduces excess capacity by 35%



Optimized use of resources and reduced costs associated with network repairs and dispatch of technicians



Reduced customer churn through targeted actions



Predict power demand and optimize for renewable energy



Improved customer retention by understanding the customer journey



Optimize the targeting and timing of ads



Surface hidden insights to optimize fantasy football outcomes



Predict and target first-time buyers in the US



Predict what credit files will fail automated scanning



Ensure predictability of tax, audit & advisory services



Optimized procurement management saves \$150M per year



Predict savings capacity to optimize next offer

CASE STUDY

IBM'S Data Science and AI Elite Helps Banco Macro understand their Customer



USE CASE

Banco Macro wants to deepen its relationships with its customers by:

- **Predicting customers' *savings capacity***: who may need credit to cover a shortfall, or a savings product to take advantage of extra funds
- **Optimize customer experience with an offer** that is unique to their savings capacity to help drive deposits or offer credit.

UNIQUE CHALLENGE

High inflation in Argentina and annual union-negotiated pay raises lead to highly volatile account balances

BENEFIT

Increased Customer base and retention

3-4x increase in campaign response rate

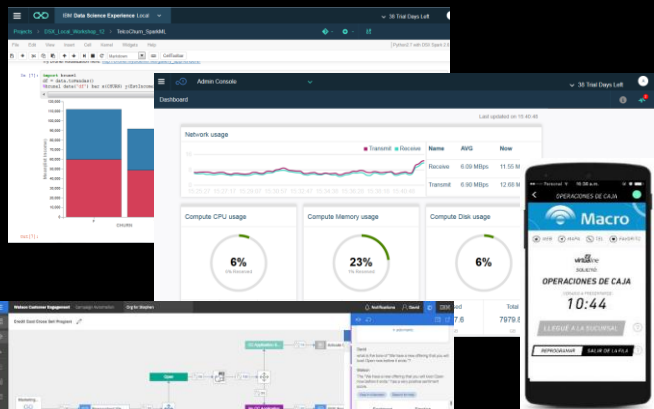
Banco Macro AI Journey



Banco Macro AI Architecture for the Future...

End Users

IBM Watson Studio

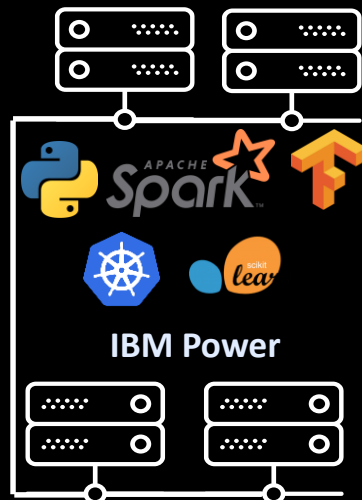


Mobile Customers

IBM Watson Campaign Automation

AI Platform

IBM Watson Studio & Watson ML



Data

Flat file and Unstructured



Amazon Cloud Object Storage



Amazon Elastic Map Reduce

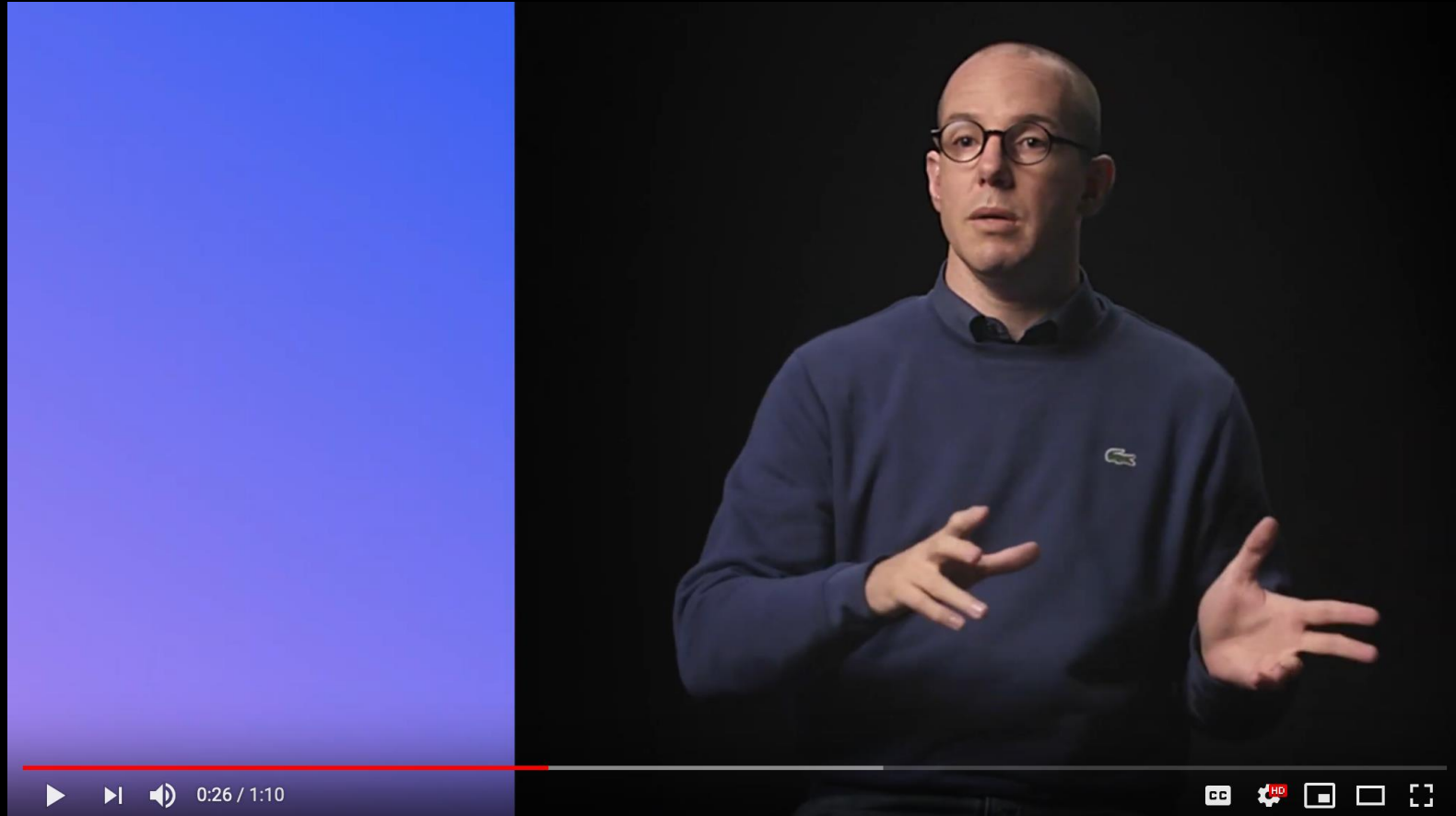


IBM Pure Data for Analytics & Other Databases



Dev Ops – Governance - Security

Ned Bank AI Journey



IBM's Data Science Elite helps Optimize Nedbank's ATM Experience

"Even with a team of experienced data scientists on the ground, IBM was able to augment my team, provide strong technical leadership, and put in place a strong practice to set us up for quick delivery, but also enabling us for success in the future."

Guy Taylor, Head of Data & Data-Driven Intelligence, Nedbank



NEDBANK

USE CASE

Provide fully functional ATMs , Better predict cash-outs & machine failures, Optimize service and cash replenishment schedules

UNIQUE CHALLENGE

Difficult to predict machine fault category

Lengthy planning cycle due to uncertain travel times, custodian skills & availability



BENEFIT

Improve customer experience, Reduce planning cycle

IBM's Data Science Elite helps Experian improve matching corporate entities for credit scoring



USE CASE

Experian maintains 5000+ corporate hierarchies and have a significant backlog of unmatched entities that are manually reviewed. IBM seeks to:

Improve the current matching method using Deep Learning both in terms of speed and error rate

Reduce the manual labor of maintaining their current hierarchies

UNIQUE CHALLENGE

Matching millions of entities with low error rate

Sub-setting the matching problem into manageable blocks for matching and retraining

BENEFIT

Improve matching speed and data quality of hierarchies allowing more coverage while reducing cost.



Joni Rolenaitis

CDO, Business Information Services

Experian

“Within 90 days, we had a proof of concept, the results of which had demonstrated that we could improve our coverage by 500% and lower our costs by 80%.”

**— Joni Rolenaitis,
Chief Data Officer
BIS - Experian**

Pioneering Agile AI for Business

One use case at a time...

To Accelerate AI,
You need right
Platform

Use Case

Articulate Use
Case - **Source
of Value**

Data

Unlock Data &
Break Down
Silos

Tools

Apply latest AI
Technologies
and Techniques

Integration & Trust

Integrate AI in your
business workflow and
Applications

Mindset

Build an open,
collaborative and
Data Science team

Agile

Create an Agile process to
iterate use case development,
Winning with AI is based on
Rate and Pace of projects



The AI Ladder – Scale, Speed and Simplicity..

A prescriptive approach to accelerating the journey to AI



AI

INFUSE – Operationalize AI with trust and transparency

ANALYZE - Scale insights with AI everywhere

ORGANIZE - Create a trusted analytics foundation

COLLECT - Make data simple and accessible

Data of every type, regardless
of where it lives

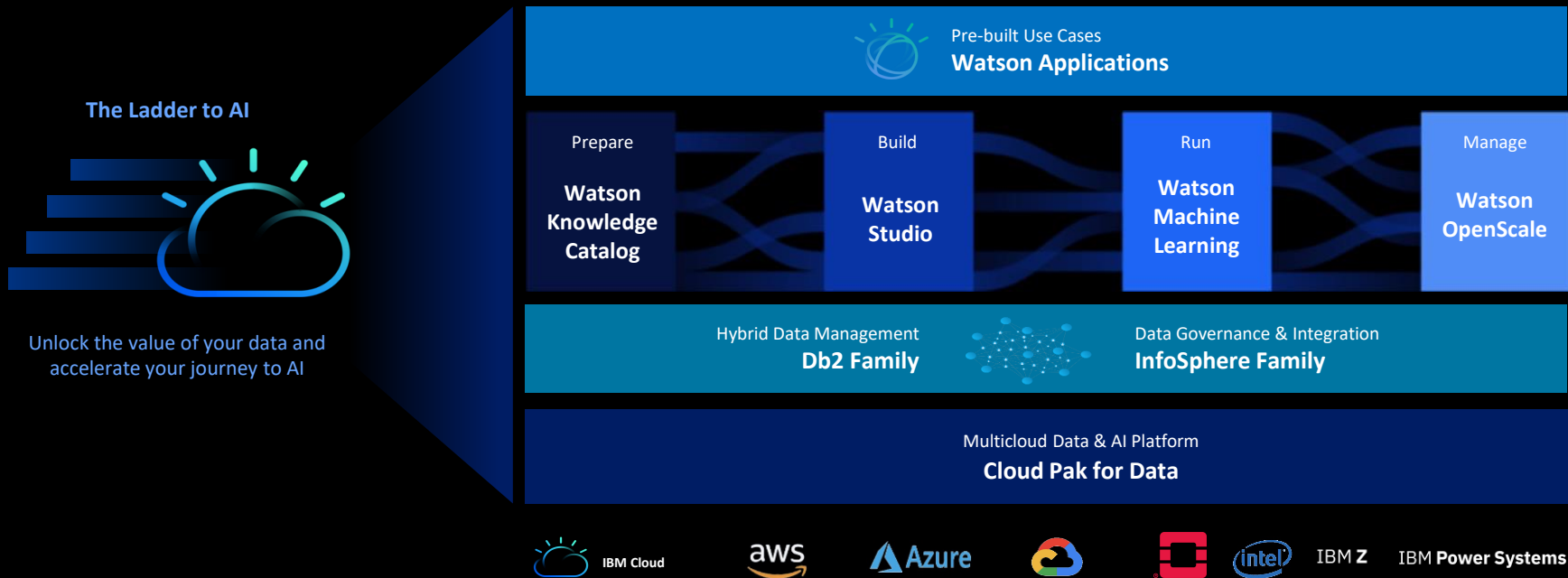


MODERNIZE

your data estate for an
AI and multicloud world

IBM's AI Portfolio

Everything you need for Enterprise AI, on any cloud



Cloud Pak for Data

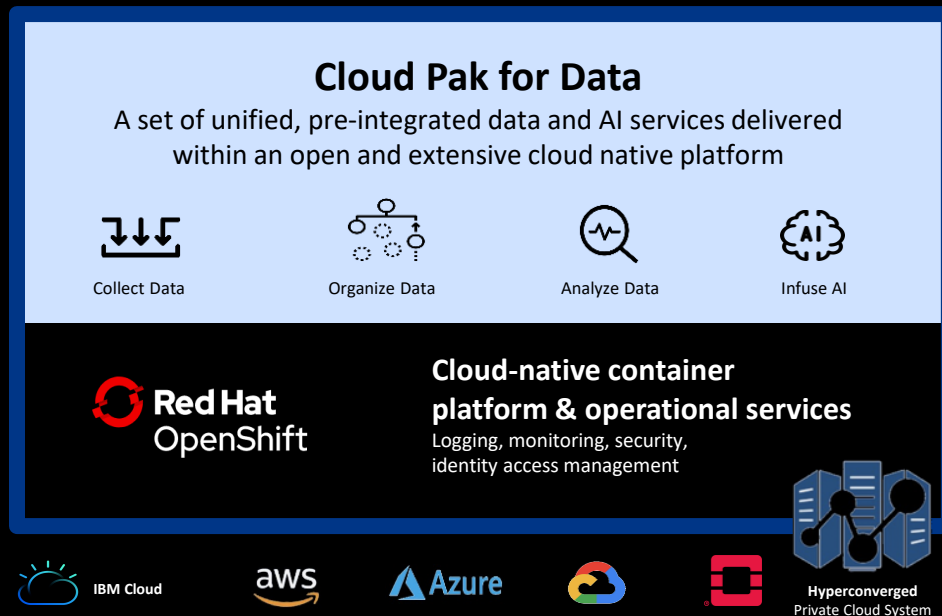
Delivers the foundational platform for deploying an information architecture for AI, on any cloud

- Eliminate data silos, connect all data

- Automate and govern the data & AI lifecycle

- Operationalize AI with trust & transparency

- Avoid lock-in, run anywhere with agility



Open source to the core

The most open, enterprise-grade data & AI platform on the planet!

The innovation & skills of Open Source Communities

Custom Extensions App Developers Data Engineers Data Stewards Data Scientists Business Users & Analysts

Unified Data & AI Microservices

Modernize

Collect

Organize

Analyze

Infuse

Cloud-native Architecture:

Micro services

Containerized Workloads

Multicloud Provisioning

AI Open Source:

python

TensorFlow

jupyter

R Shiny

Spark ML

Data Open Source:

Hadoop

mongodb

PostgreSQL

APACHE

Cloud Open Source:

docker

kubernetes

HELM

CLOUD FOUNDRY

Red Hat OpenShift

IBM Cloud

aws

Azure

GCP

OCI

IBM
Design
Thinking
by DSE Team

Learn more

ibm.com/community/dse



Thank you!

Carlo Appugliese
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The image features the iconic IBM logo, composed of eight horizontal white stripes, centered in the upper half of the frame. The background is a night-time photograph of the Golden Gate Bridge in San Francisco. The bridge's towers and suspension cables are illuminated with warm orange and yellow lights, which reflect on the dark water below. In the distance, the city lights of San Francisco are visible against the dark horizon. The sky is dark with some light clouds and a few stars. The overall mood is serene and majestic.

IBM