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Strategies to accelerate AIML at scale

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Agenda

- Session overview
- Reality check
- Why now ?
- 6 Key drivers of success
- Resources to start your journey

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Machine learning is ~~the future~~ happening now

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AI and Machine Learning

AI's Promise

The allure and promise of Artificial Intelligence / Machine Learning is compelling

Barriers to Entry

Technology providers are democratising machine learning and lowering the initial technical and skills barriers to entry

Proof of Concepts

Machine Learning experiments and PoC's are getting easier, faster and cheaper to execute

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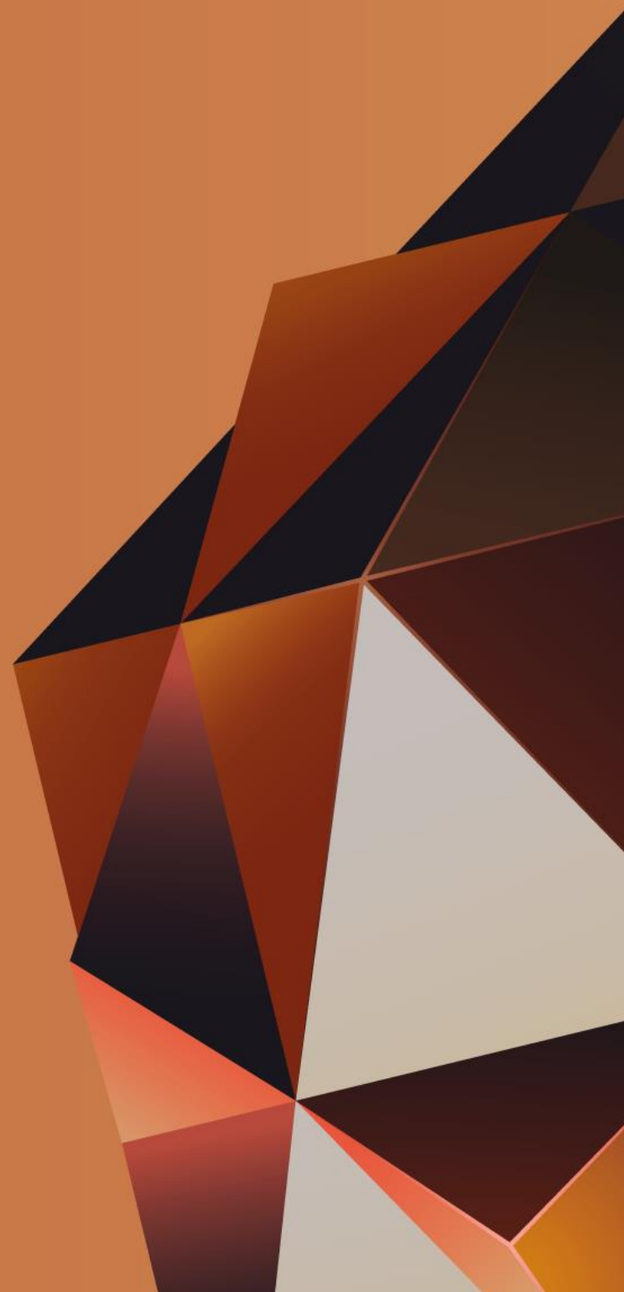
Machine learning is transformative*

*causing or able to cause an important and lasting change in someone or something



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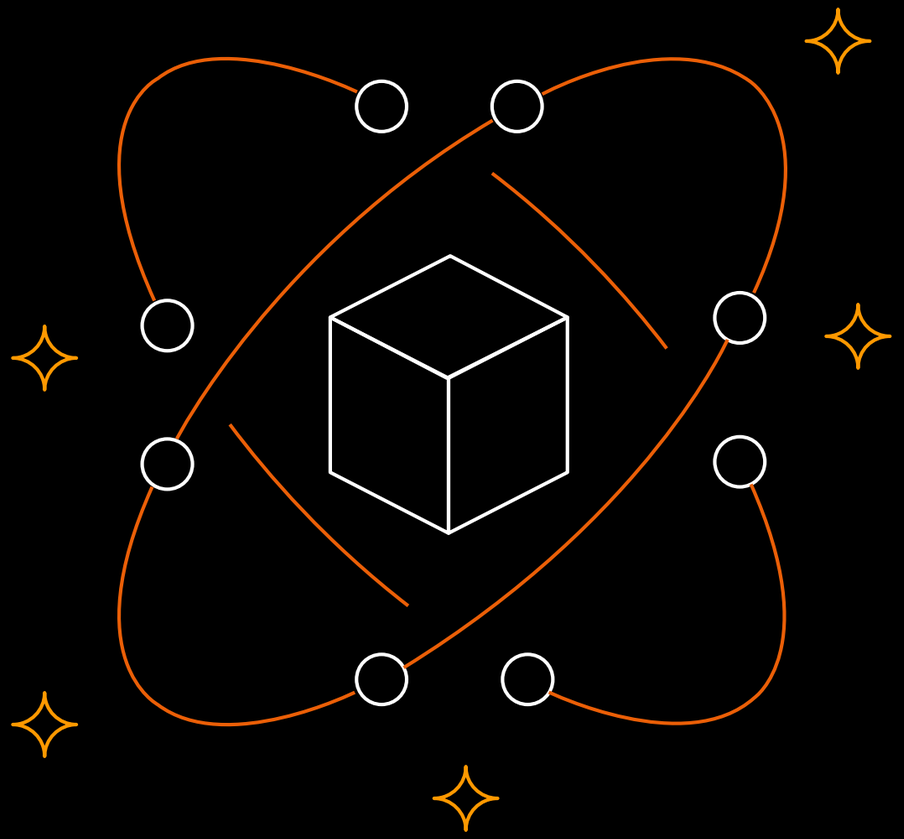

1 Get your data in order

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Understanding your data strategy

What data is available today?

What data can be made easily available?

In one year, what data will we wish we had started collecting today?

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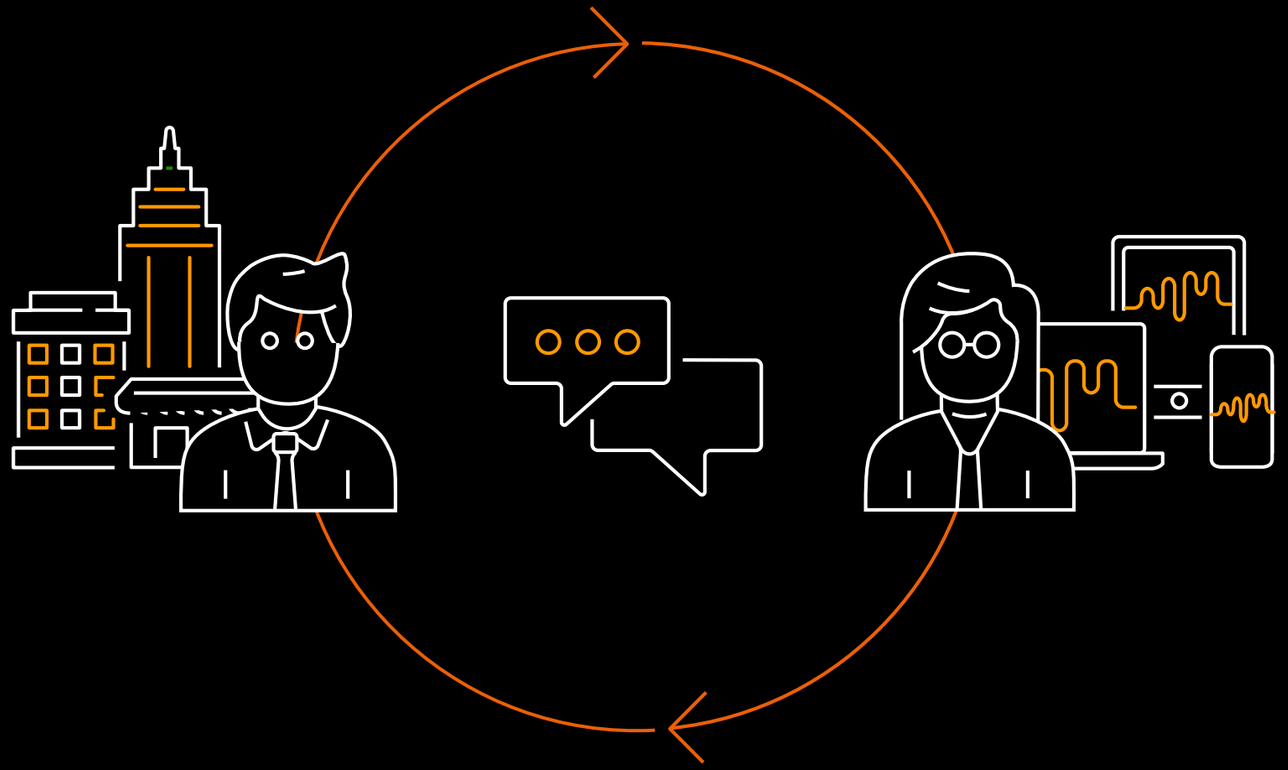

2 Understanding where to apply ML

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Picking your first use case: balance speed with value

1. Can you achieve success in the 6-10 months?
2. Does it solve a real problem for the business?
3. Are there places where you already have a lot of untapped data?
4. Does it need machine learning?

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Where to apply ML

DATA READINESS

Low High

BUSINESS IMPACT

Low High

ML APPLICABILITY (Chance of success based on state of the art and team skills)

Low High

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Where to apply ML

DATA READINESS

BUSINESS IMPACT

ML APPLICABILITY (Chance of success based on state of the art and team skills)

Frustrated data scientists

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Where to apply ML

DATA READINESS

BUSINESS IMPACT

ML APPLICABILITY (Chance of success based on state of the art and team skills)

Good prototype to build experience

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3 Developing your team

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1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. Big Data Specialists

Top 20 job roles in increasing demand across industries

—World Economic Forum, 2020

http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

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Develop your team – Technical experts

- Build your team
- Broadly enable all developers to use ML
- Training, training, training

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Domain experts

Technical experts

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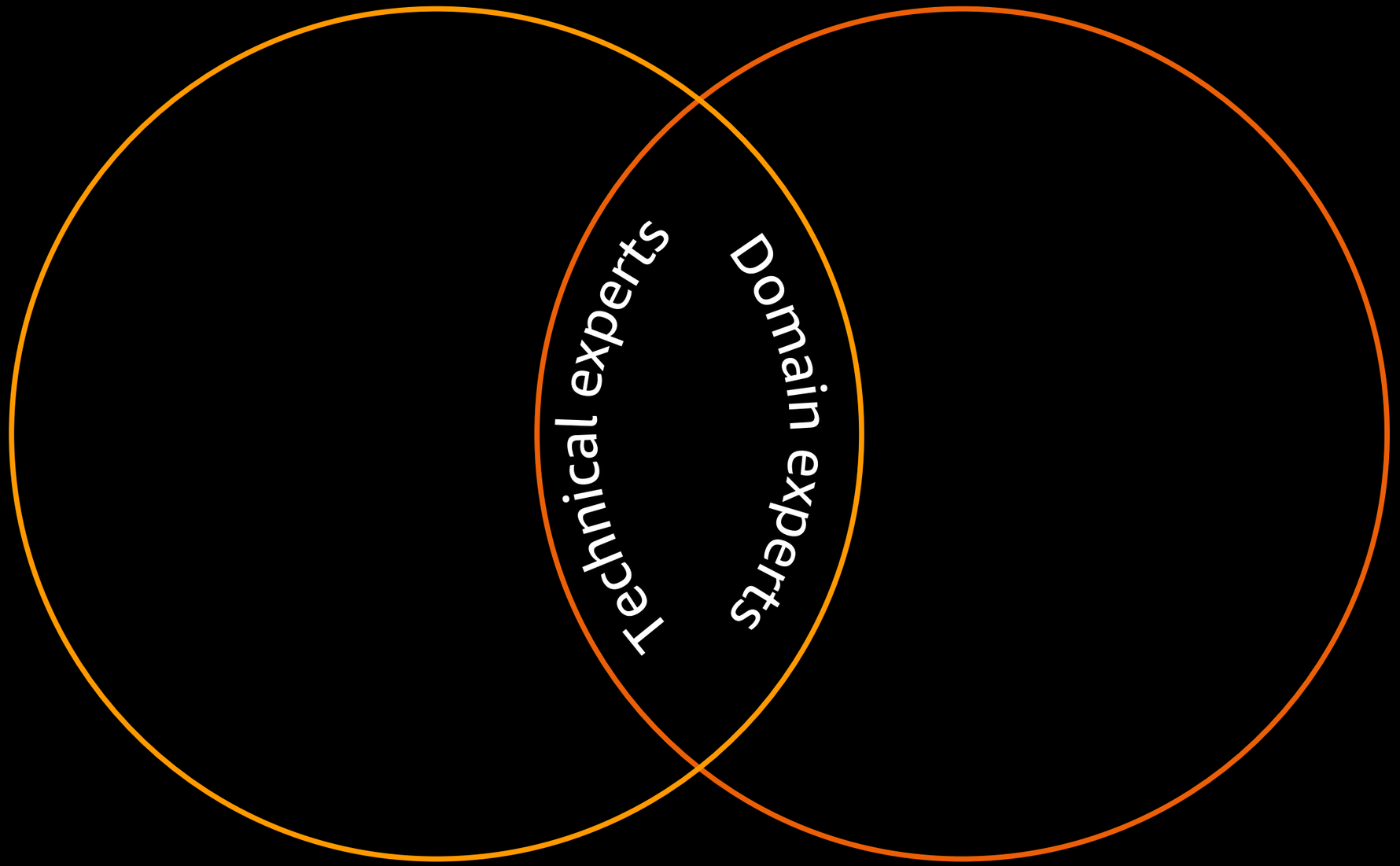

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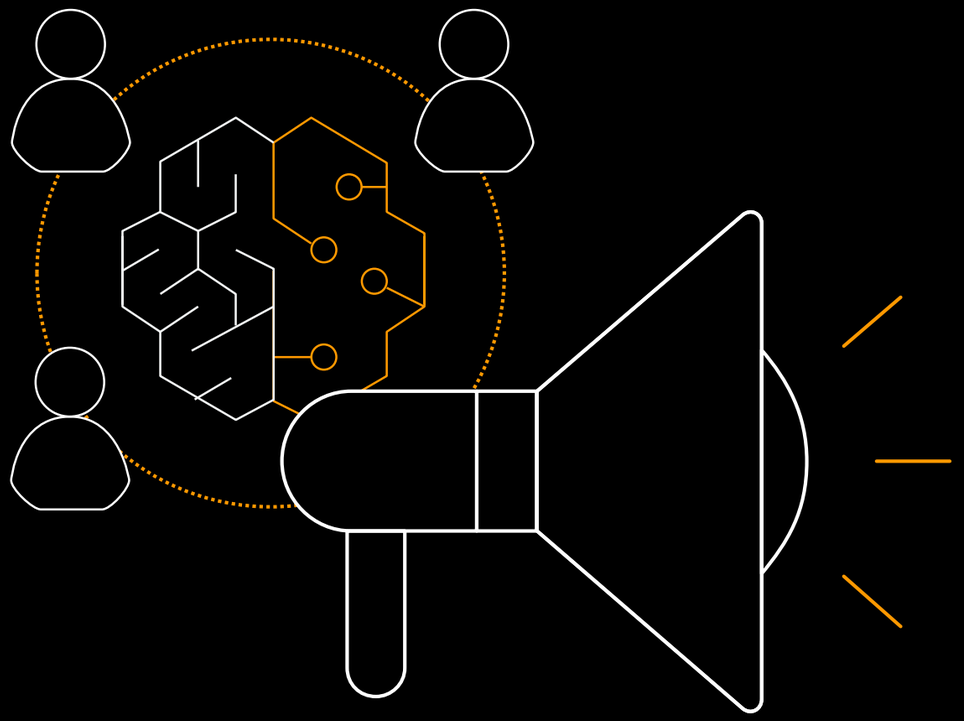

4 Championing a Culture of AI

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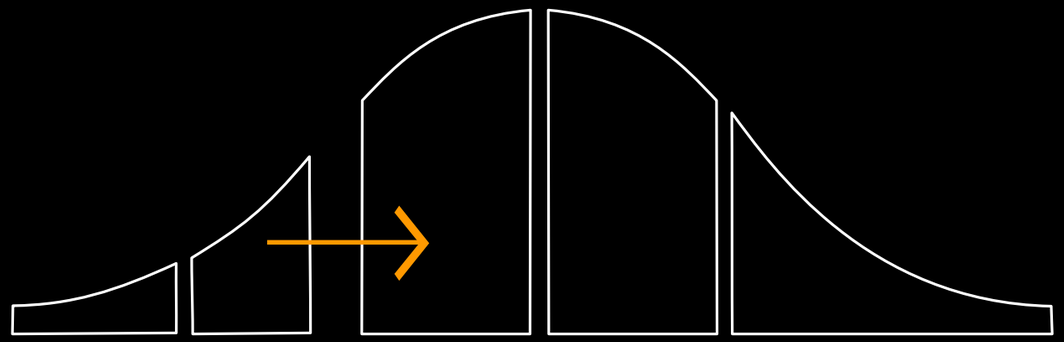
Crossing the culture chasm



People, Process and Technology

Only **8%** of firms engage in core practices that support widespread adoption of AI.

— HBR, Building the AI-Powered Organization

https://hbr.org/2019/07/building-the-ai-powered-organization

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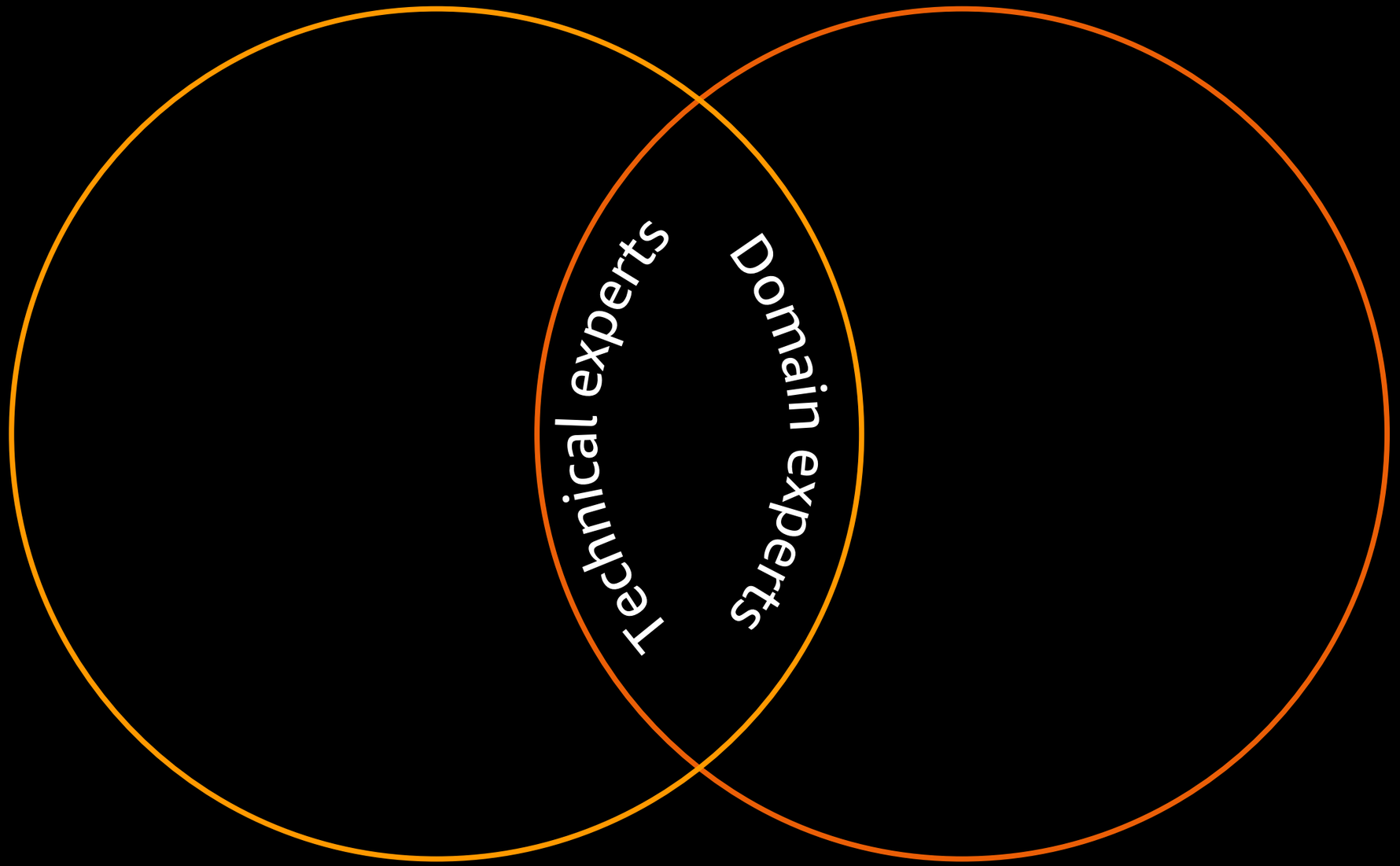
Executive sponsorship



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How will you use machine learning?

"We won't" is not an acceptable answer

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Setting expectations

- Set big, top-down goals
- Be tolerant of failure
- Take a long-term view
- Celebrate success

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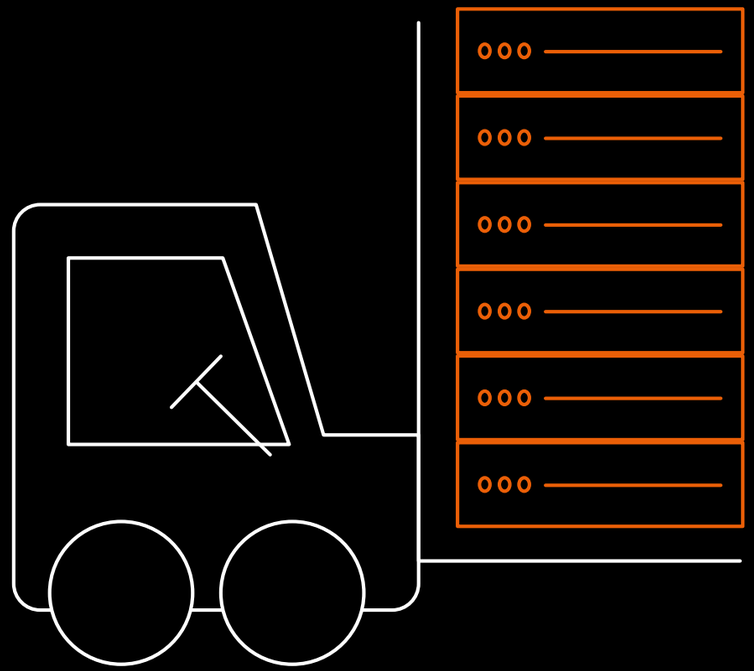

5 Remove undifferentiated heavy lifting

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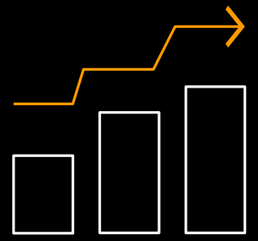
Why AWS for ML?

BROADEST AND DEEPEST SET OF AI AND ML SERVICES

250 new features and services launched this last year for everyone from ML scientists to application developers



ACCELERATE YOUR ADOPTION OF ML

Amazon SageMaker creates efficiencies and lowers costs

Acceleration programs and trainings

BUILT ON THE MOST COMPREHENSIVE CLOUD PLATFORM

The strongest set of compute, storage, security, database, and analytics capabilities to build upon

https://aws.amazon.com/what-is-aws/
https://aws.amazon.com/machine-learning/

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6 Architect for tomorrow, build for today

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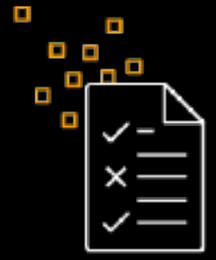
Taking applications to production

Write

Write source code for your software

Build

Build / compile the software



Test

Test to make sure it works as expected

Deploy

Deploy the software to servers

Use

Use the software in production

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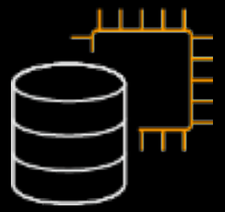
Taking Machine Learning models to production

Data ingestion



Data preparation

Feature engineering

Model training

Model evaluation & tuning

Model deployment

Inference

Model monitoring / re-training

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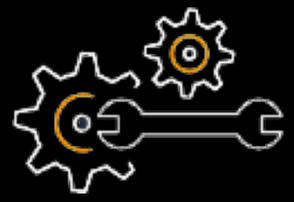
AWS Well-Architected Framework



Operational excellence

Security

Reliability

Performance efficiency

Cost optimization

https://aws.amazon.com/architecture/well-architected

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ML Lens - AWS Well-Architected Framework

Well-Architected pillar	Key Best Practices for ML
Cost Optimization	Use managed services to reduce cost
Operational Excellence	Version ML inputs and artifacts Automate machine learning deployment pipelines
Reliability	Train once and deploy across environments
Security	Restrict access to ML services
Performance Efficiency	Continuously monitor and measure system performance

https://docs.aws.amazon.com/wellarchitected/latest/machine-learning-lens/welcome.html

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Get your journey of to a great start

1. Get your data in order
2. Understanding where to apply ML
3. Developing your team
4. Championing a Culture of AI
5. Remove undifferentiated heavy lifting
6. Architect for tomorrow, build for today

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Visit the AI and Machine Learning Resource Hub for more resources

Dive deeper with these resources, get inspired and learn how you can use machine learning to accelerate business outcomes.

- The machine learning journey e-book
- Machine learning enterprise guide
- 7 leading machine learning use cases e-book
- A strategic playbook for data, analytics, and machine learning
- Accelerating ML innovation through security e-book
- … and more!

Visit resource hub »

https://tinyurl.com/aiml-aws

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Flexibility to learn your way

Learn online with 65+ on-demand digital courses or live with virtual instructor-led training, plus hands-on labs and opportunities for practical application.

Validate your expertise

Demonstrate expertise in building, training, tuning, and deploying machine learning models with an industry-recognized credential.

aws.training/machinelearning

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