

Track 3 | Session 2

從傳統 legacy 邁向數位化與現代化架構

Kim Kao

Solutions Architect

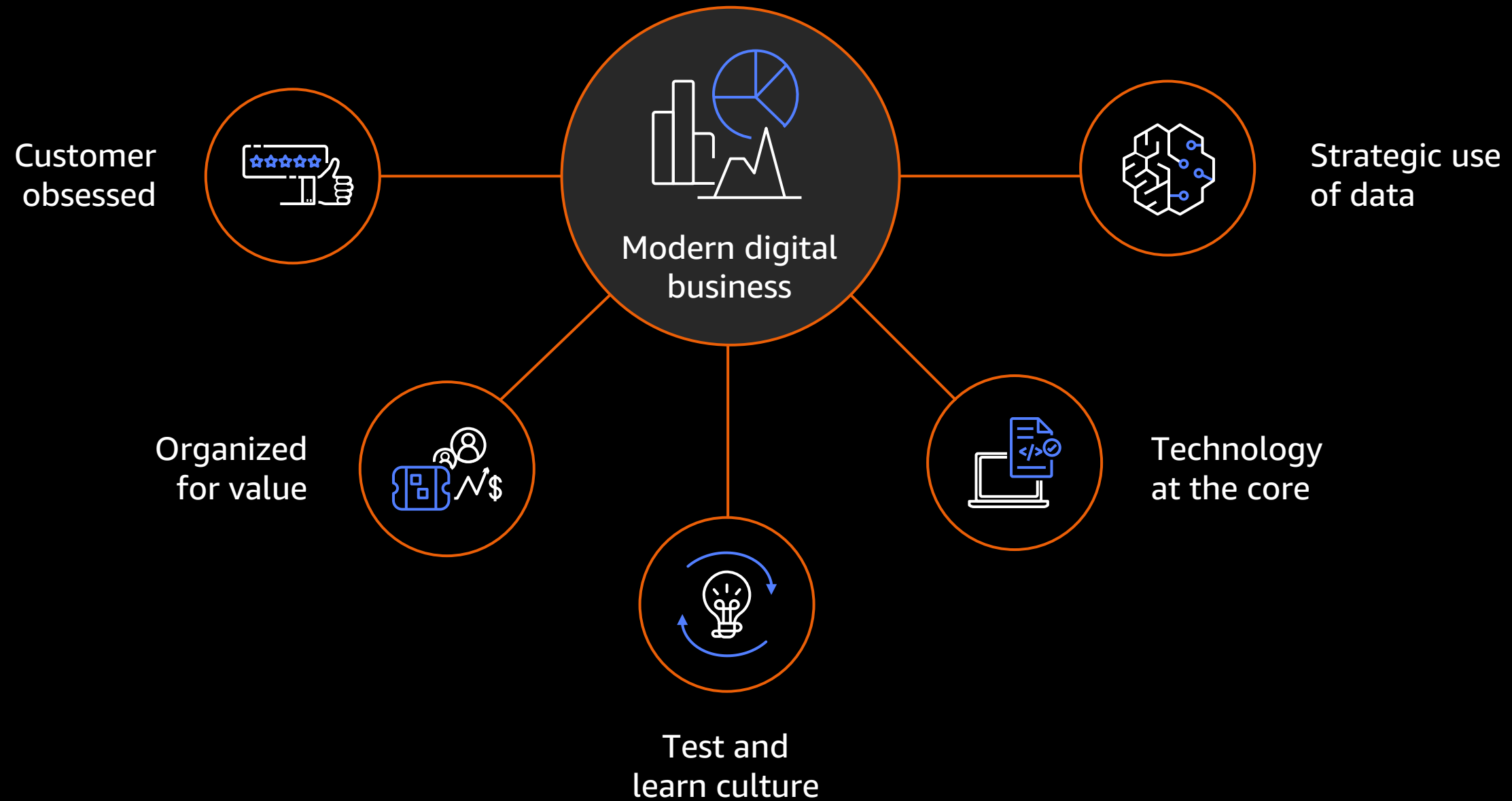
Amazon Web Services



67% of business leaders believe they need to have significantly more **digital** capability in order to remain competitive

Source: Gartner

Characteristics of a modern digital business



Modern digital business

Common
capabilities



Unified digital platform







Analytics and intelligent insights



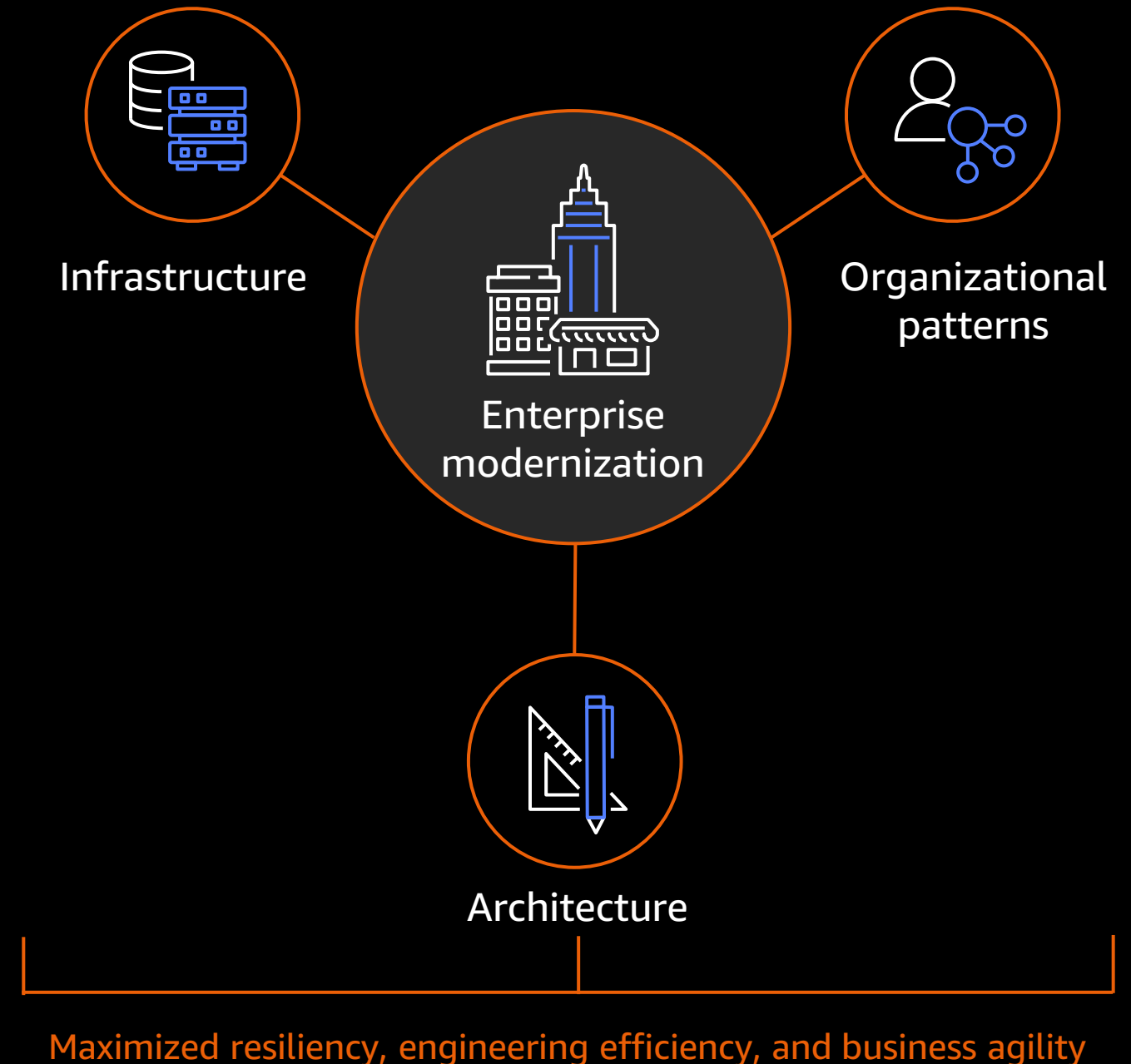
Business and IT integration

Common business outcomes

Speed		Take ideas to users faster
Agility		Build and operate on foundation of innovation
Reduced risk		Operate with more resilient IT model
Operational efficiency		Focus on what differentiates your business with cost savings

What is enterprise modernization?

Modernization is the refactoring of legacy enterprise technology portfolios by combining modern infrastructure, architecture, and organizational patterns together to maximize resiliency, engineering efficiency, and business agility—all with operational excellence



“Modernizing is critical to our strategy of changing the way the world buys, sells, owns, and uses cars.”



Chris Dillon

Vice President Architecture
Cox Automotive

A long history in the automotive industry

1968



1999



2010



2012



2014



2015



2018



2019



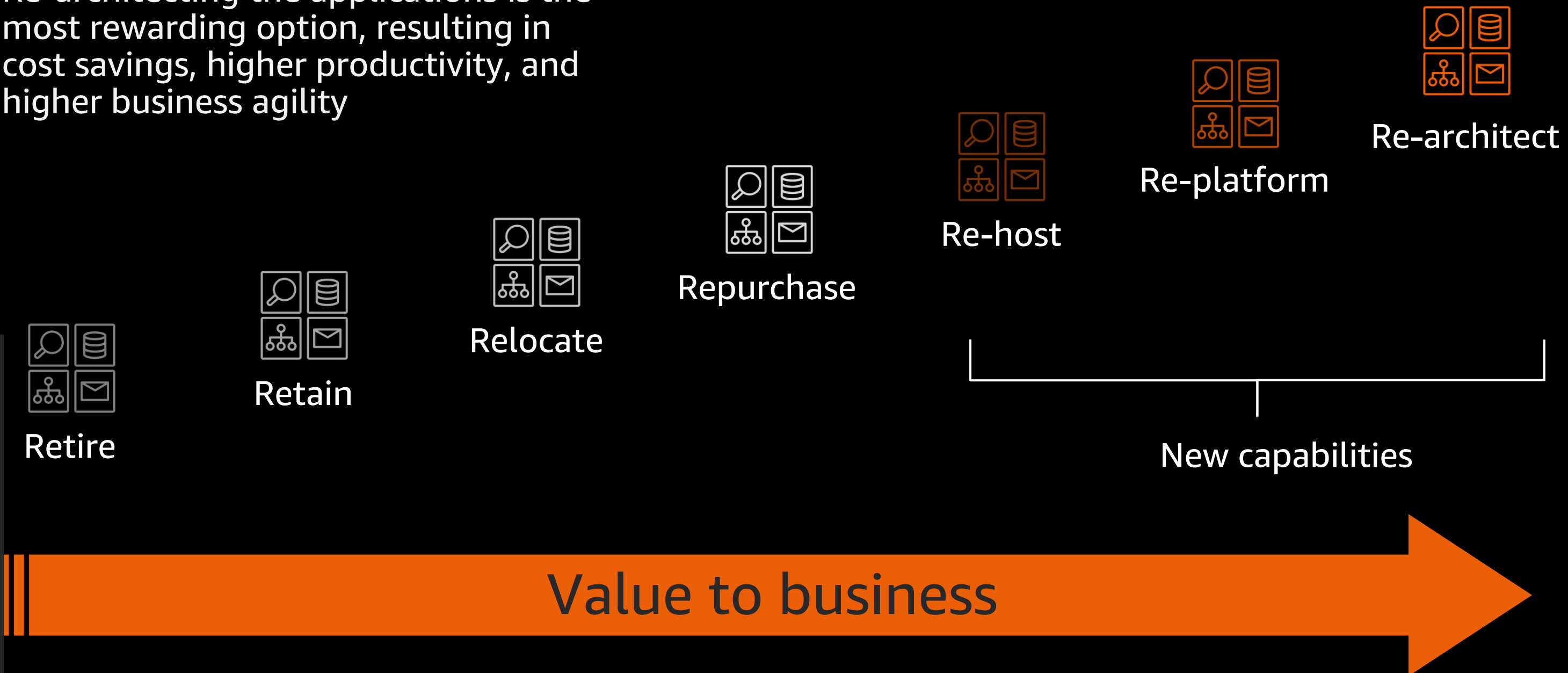
The context for our modernization journey

- 27 brands
- 53 data centers
- 2,000-strong engineering organization
- 350 engineering teams
- 30 locations
- Many technology stacks
- Diverse skills and cultures



Question 1: “Why do organizations stall on their modernization journeys?”

Re-architecting the applications is the most rewarding option, resulting in cost savings, higher productivity, and higher business agility



*According to Gartner and NTT Data

Anti-pattern 1: Slow cycle plan with big projects



Anti-pattern 2: Non-convergent pursuits

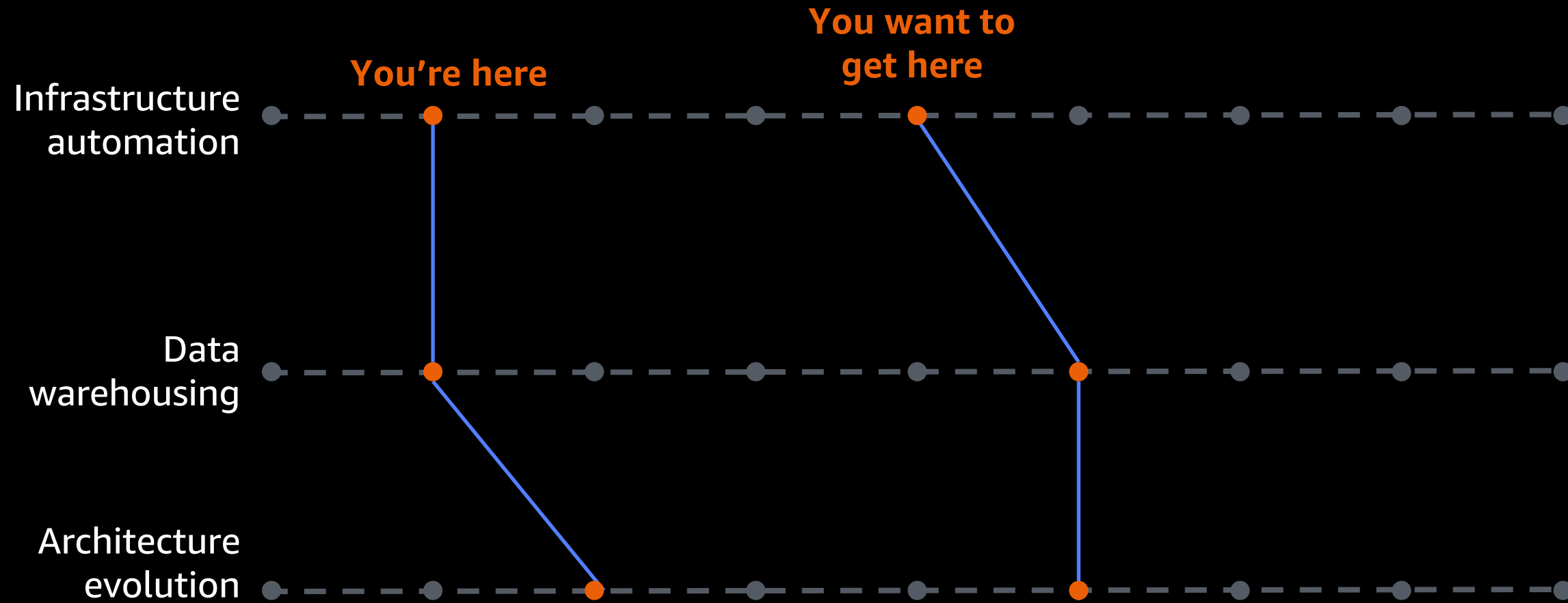
Application
stability,
scalability,
resiliency
issues

Ongoing
operations
cost and
resource
drain

Non-convergent pursuits

Process
causing
slowness

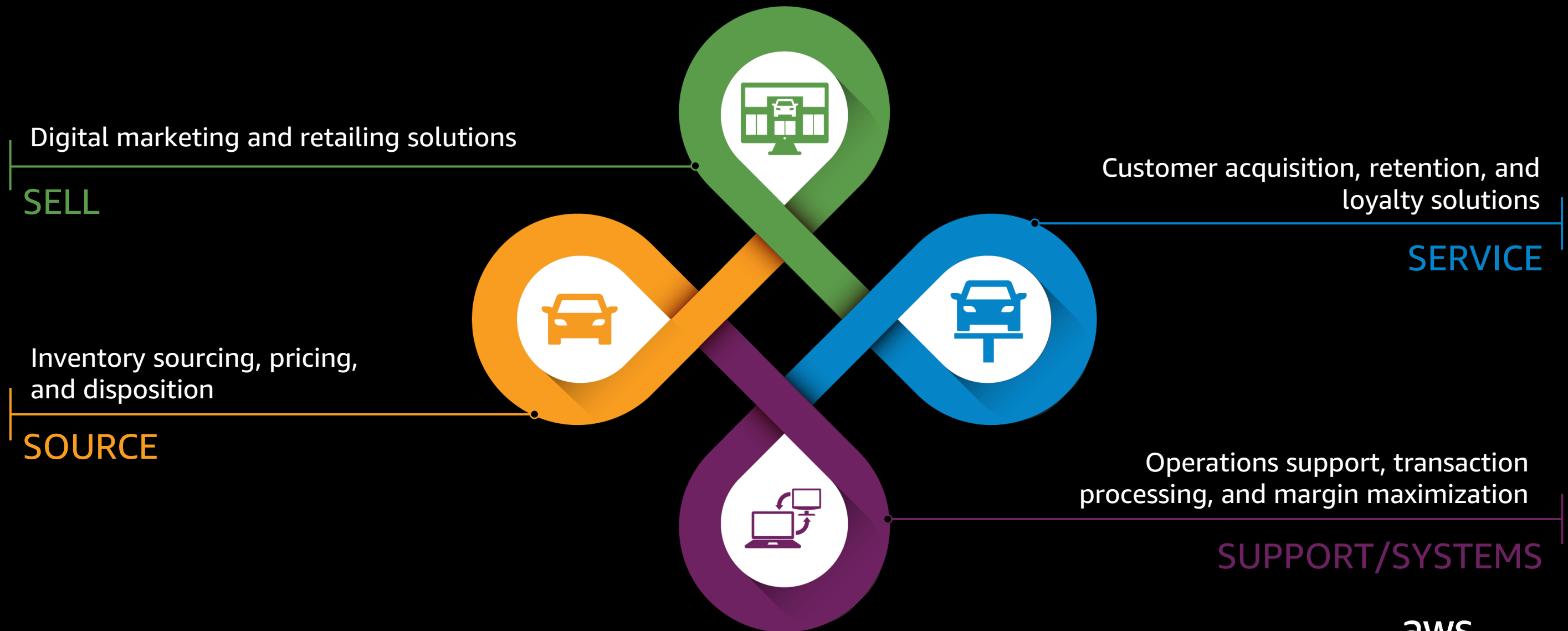
Antipattern 3: Serialized, dependent execution



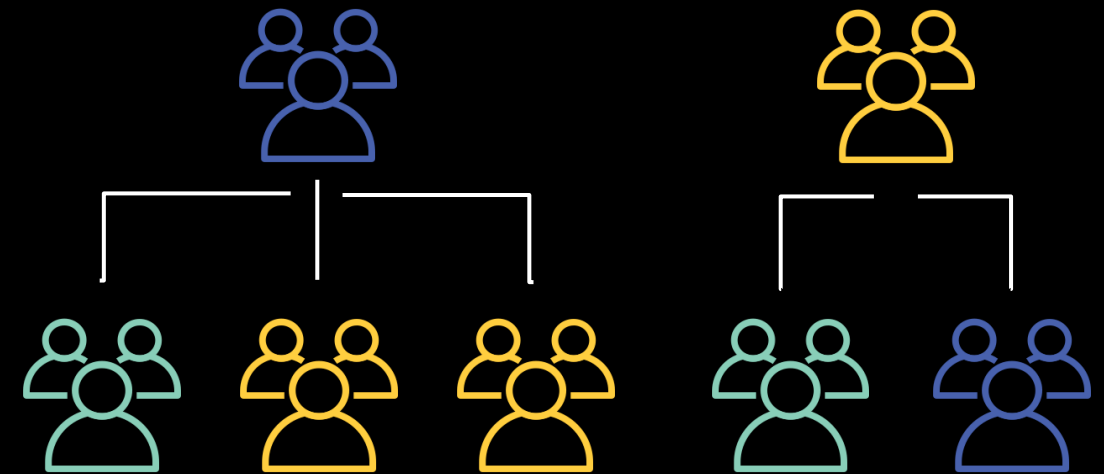
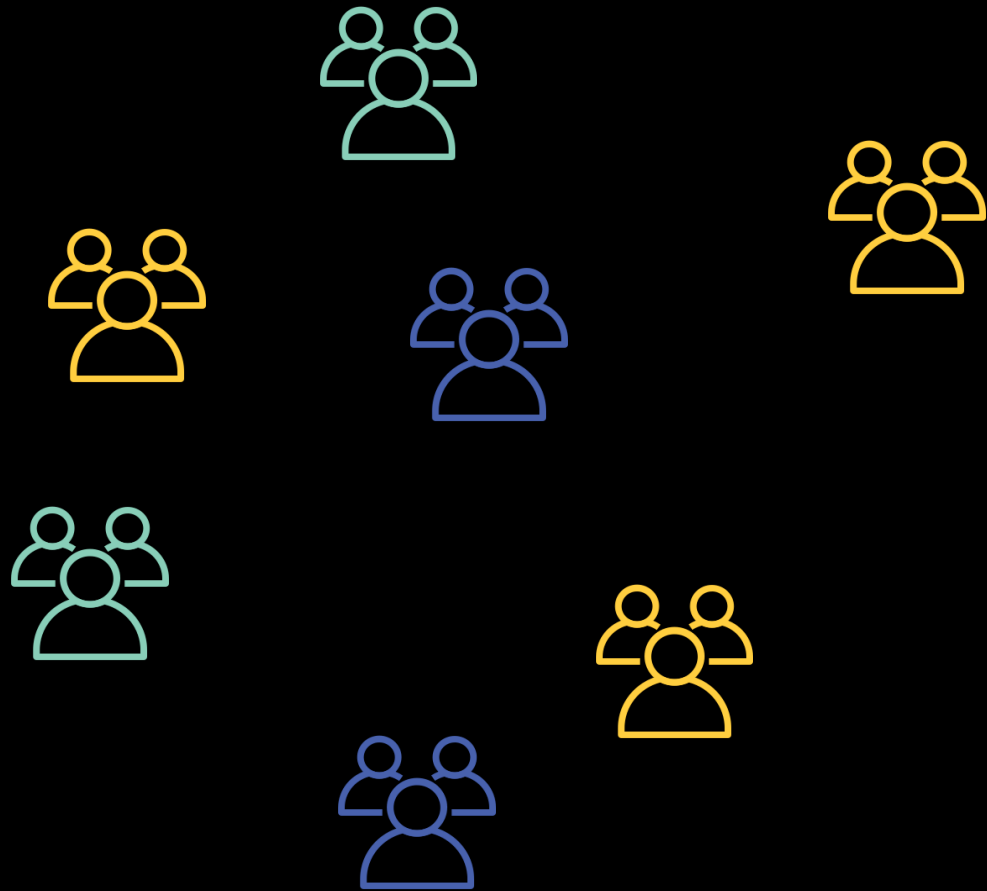
Transformation roadmap through modernization

Question 2: “How can organizations avoid the stall?”

Mission: transform the way the world buys, sells, owns, and uses cars



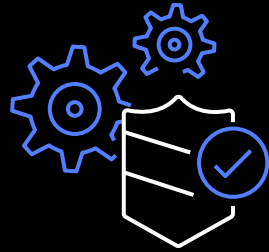
From team chaos to commonality



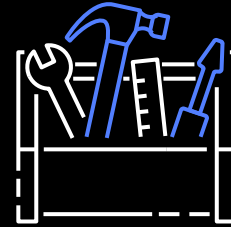
Our enablement framework



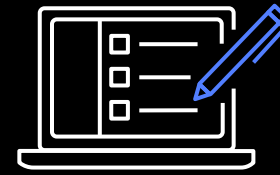
Internal
tools



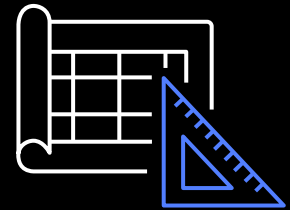
DevSec
Ops



Off-the-
shelf tools



AWS
account
managem
ent



Engineer
ing
BizOps

Focus on: value

When they meet the needs of our application-specific use cases, AWS managed infrastructure services provide a higher value than self-managed options



Amazon
Route 53



Amazon
SageMaker



AWS
CodeBuild



Amazon
Personalize



AWS
CloudFormation



Amazon ECS



AWS Lambda



Amazon SQS



Amazon
DynamoDB



Amazon
Aurora



Amazon
API Gateway



Amazon
S3



Amazon
CloudFront



AWS Well-
Architected Tool

Refactoring existing **infrastructure, architecture, and organization** in small increments,
delivering **business value** quickly and continuously



Aligned to discrete business outcomes and value



Accelerating time from idea to production code



Freeing up developers to focus on business value



ARCHITECTURE EVOLUTION

Enabling rapid composition for innovation



Making intelligence assets easily consumable

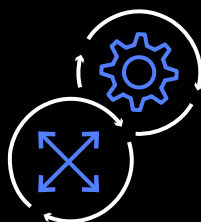
Value-driven approach



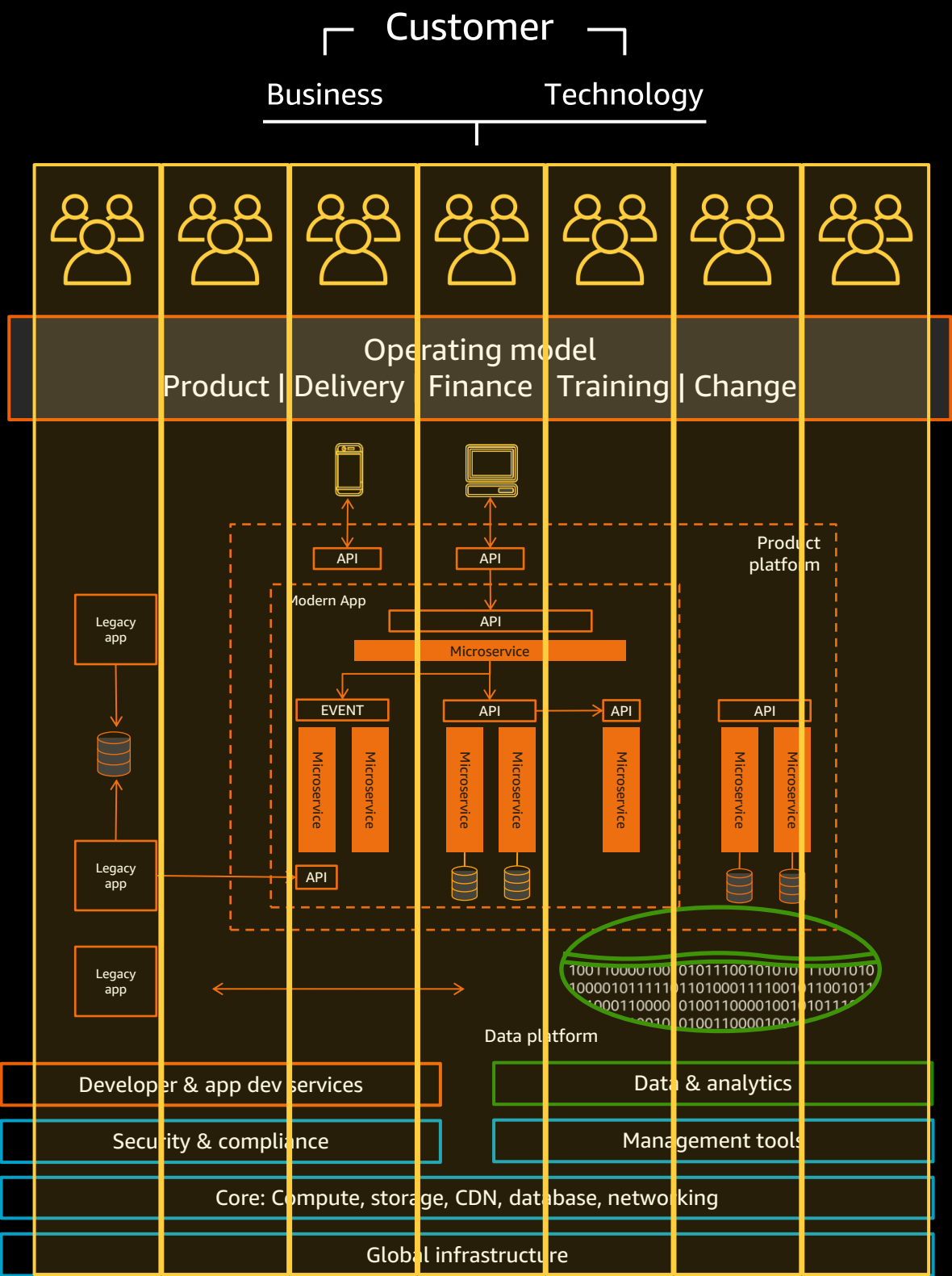
Joint sponsorship by tech and business
Setting the tone for a value-driven partnership



Start small and deliver initial MVP
To gain momentum by driving business results early

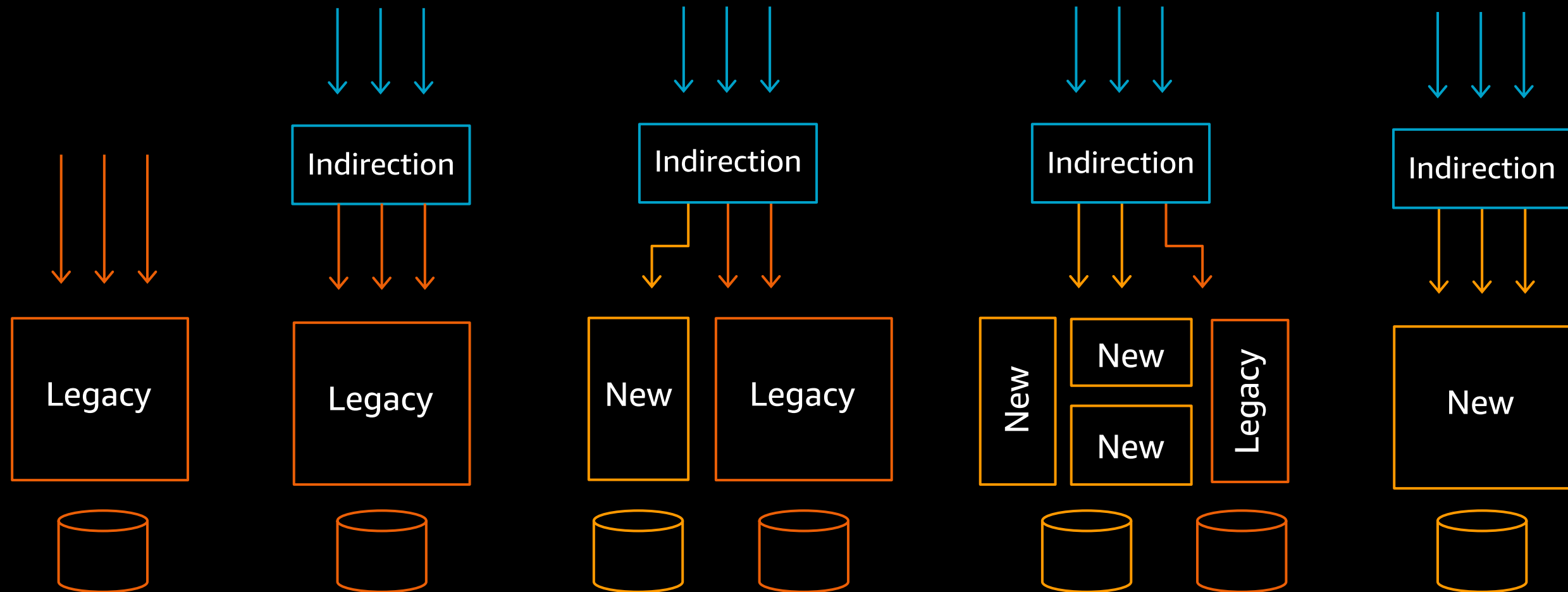


Split and seed to-scale
Enabling innovation across all lines of business

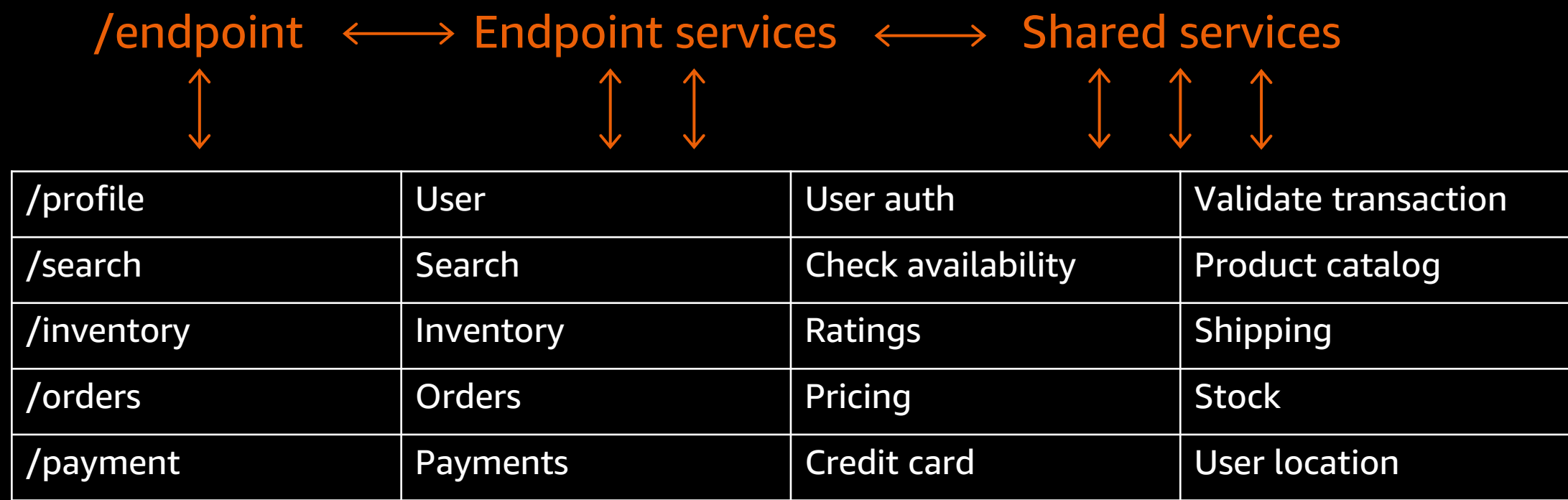


Question 3: "Where do you start?"

Strangling out a service from legacy workload



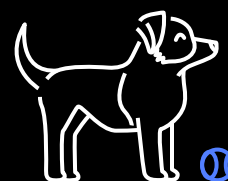
Slicing a monolith



Security



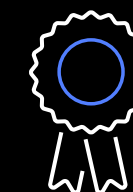
Reliability



Performance



Cost



Operational
excellence

Slicing a monolith

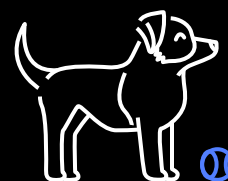
/endpoint	Endpoint services		Shared services	
/profile	User	User auth	Validate transaction	
/search	Search	Check availability	Product catalog	
/inventory	Inventory	Ratings	Shipping	
/orders	Orders	Pricing	Stock	
/payment	Payments	Credit card	User location	



Security



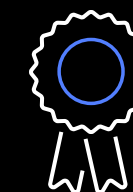
Reliability



Performance

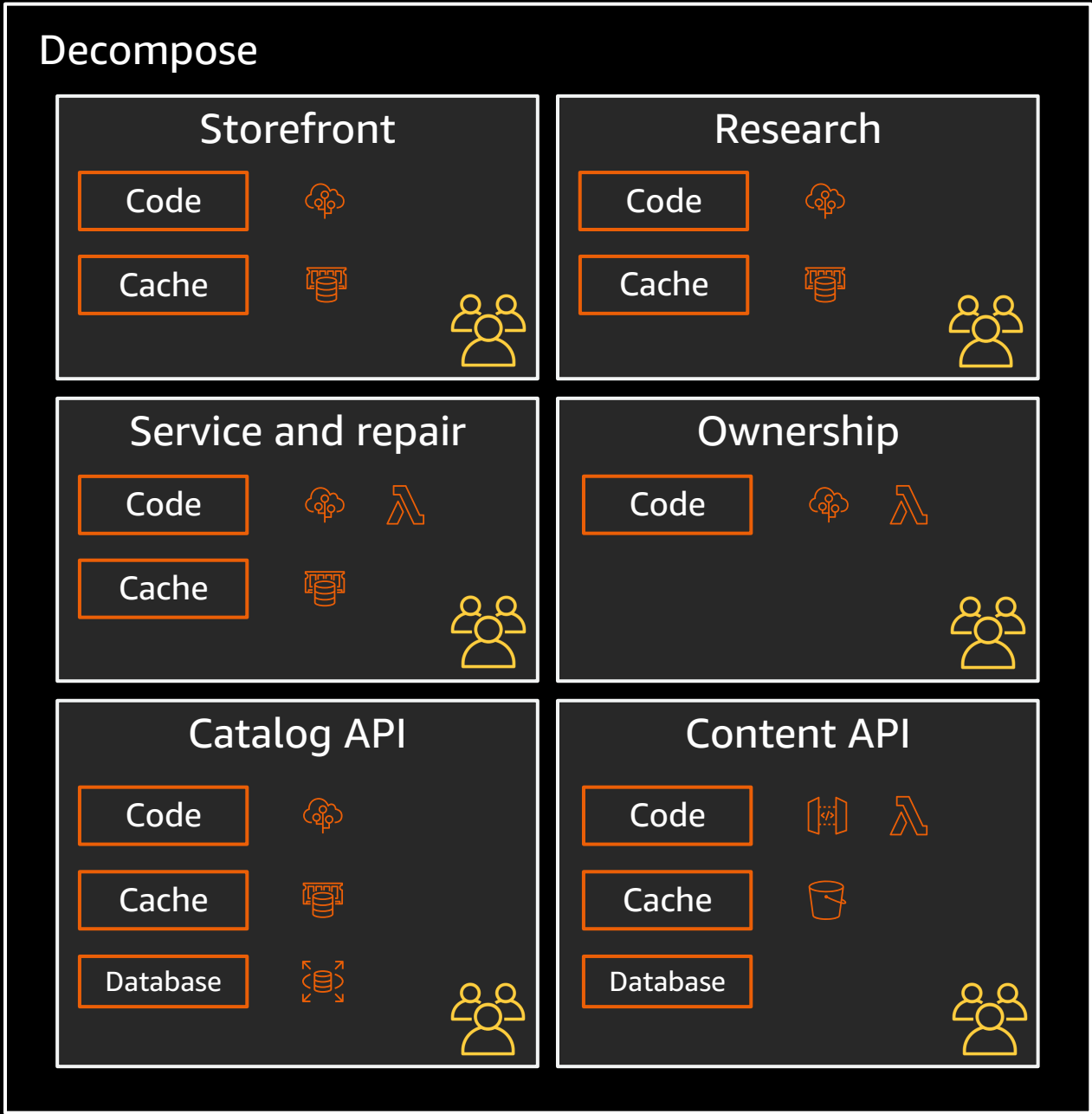
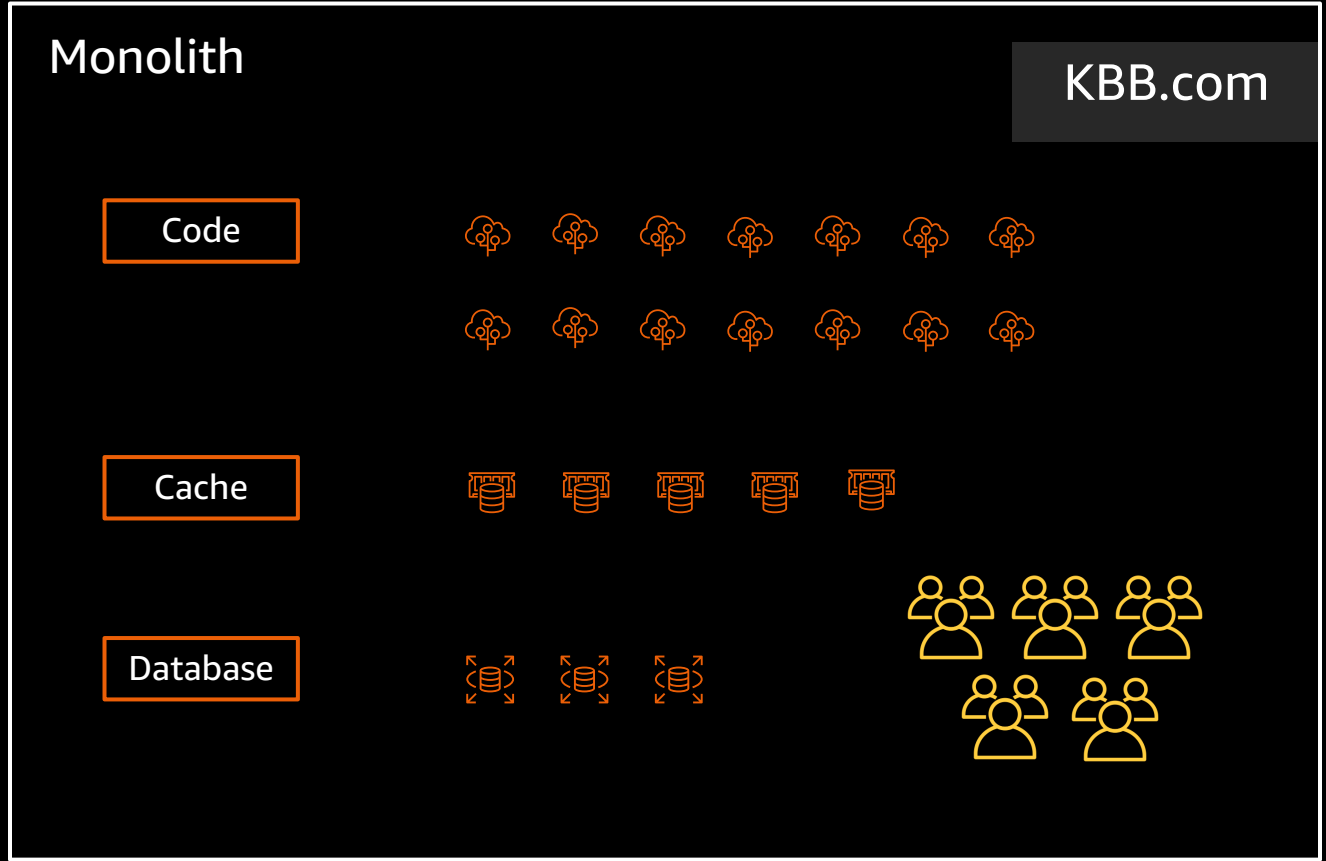


Cost

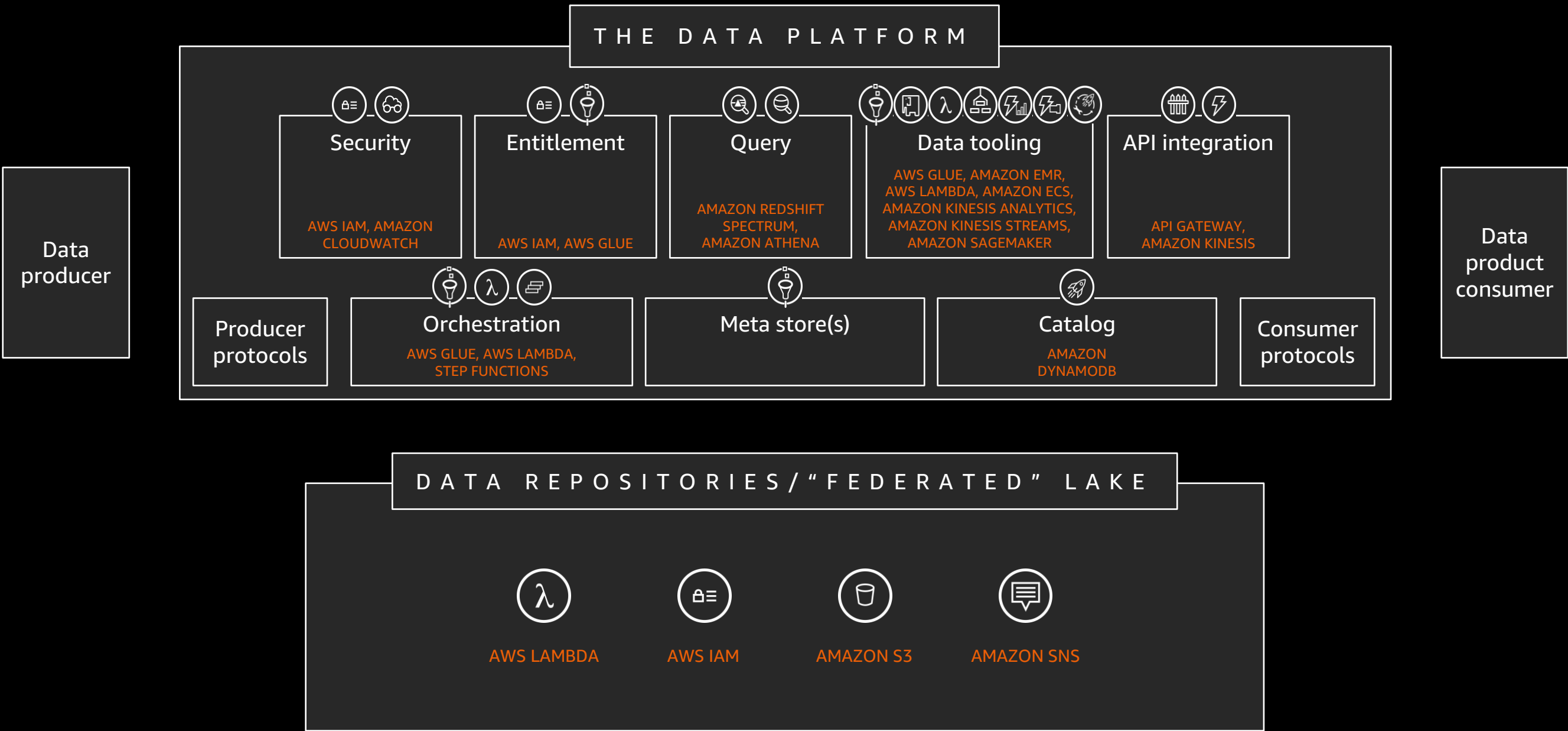


Operational
excellence

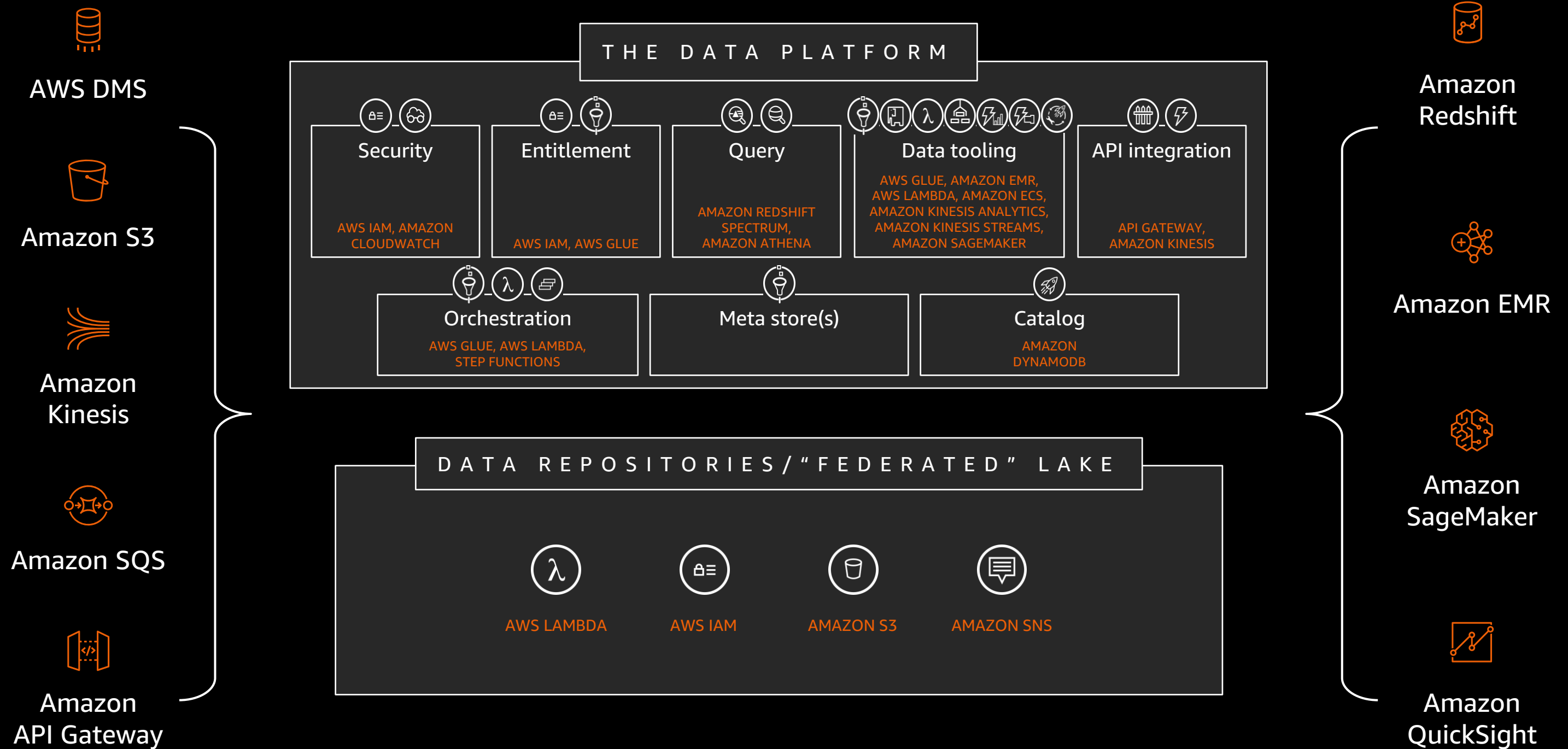
Kelley Blue Book (KBB): monolith decomposition



Data platform



Data platform



Real-time bidding (RTB) modernization

RTB system participating in over 500,000 auctions per second



Bid transaction cache subsystem

- 76 instances across two data centers
- Proprietary Java application
- CPU inefficient
- Infeasible to evolve

\$95,000/year on m4.xlarge



Amazon ElastiCache

- Increased reliability
- Increased availability
- Reduced operational maintenance
- Schema evolution

\$2,500/year on r4.large

RESULTS

44% Reduction in response time

13% Decrease in bidding instances required

13% Run cost reduction

Actions to get started

- 1 Identify high-business-value workloads

- 2 Identify capability to harness modernization

- 3 Strategies rehost, replatform, rearchitecture

- 4 Enrich your modernization journey
and learning path with AWS Training
and Certification

- 5 Ask for expert help from AWS Professional
Services, AWS Partner Network (APN)

AWS Training and Certification for the enterprise

Resources to help your organization build cloud skills and achieve business objectives



Cost savings
(TCO)



Staff
productivity

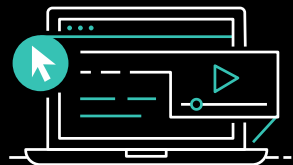


Operational
resilience

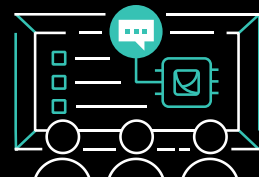


Business
agility

Comprehensive skill development plan for broad cloud fluency



Digital training



Classroom training



AWS Certification



Enterprise resources



Talent pipeline

Visit aws.amazon.com/training/enterprise

Question 4: "How to start the journey?"

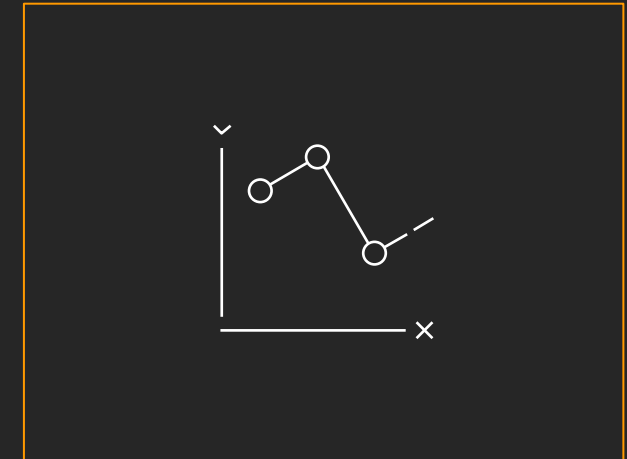
What are your business goals?



Grow new
revenue streams

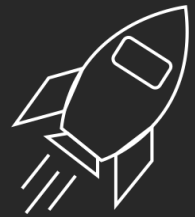


Improve operational
and financial
efficiency

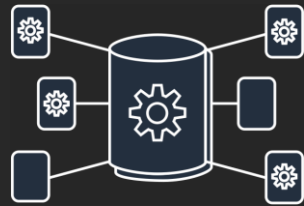


Lower business risk

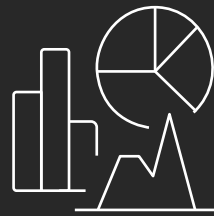
How to reach your business goals with AWS



Migrate and
free up
resources



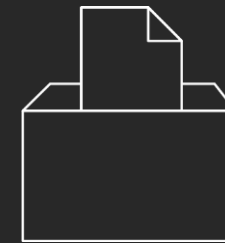
Adopt modern
application
development
practices



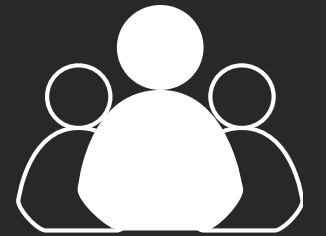
Gain faster,
deeper insights
with
analytics



Ensure security,
compliance, and
resiliency



Organize for
speed and
agility



Bridge skills and
experience gaps
rapidly

Start with strategy

GOAL

why to
make things different

ACTOR

stakeholders to
support

IMPACT

how to change
BAUs

DELIVER

ABLE

Tasks to do

The cloud market
leader by revenue

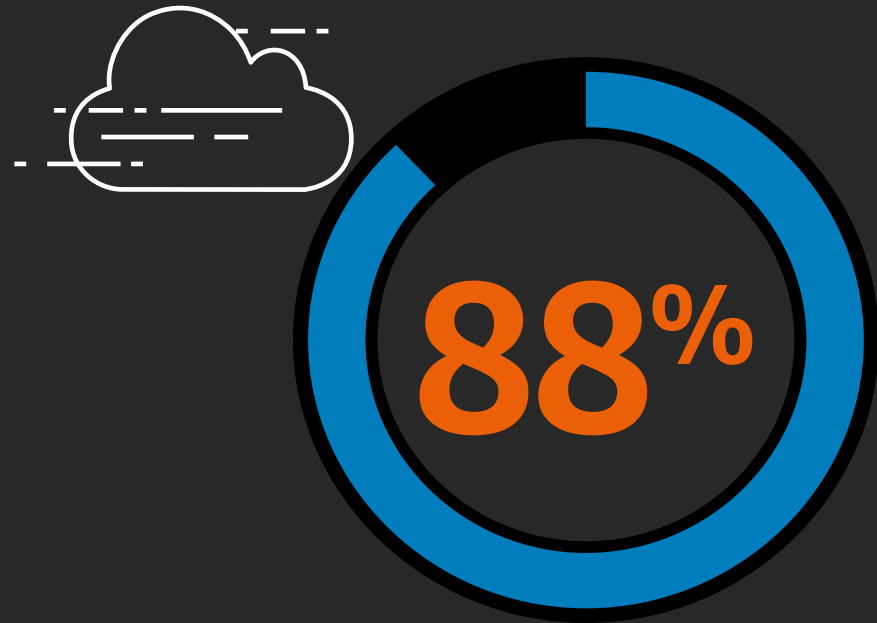
The cloud leader
by segment

Make things happen

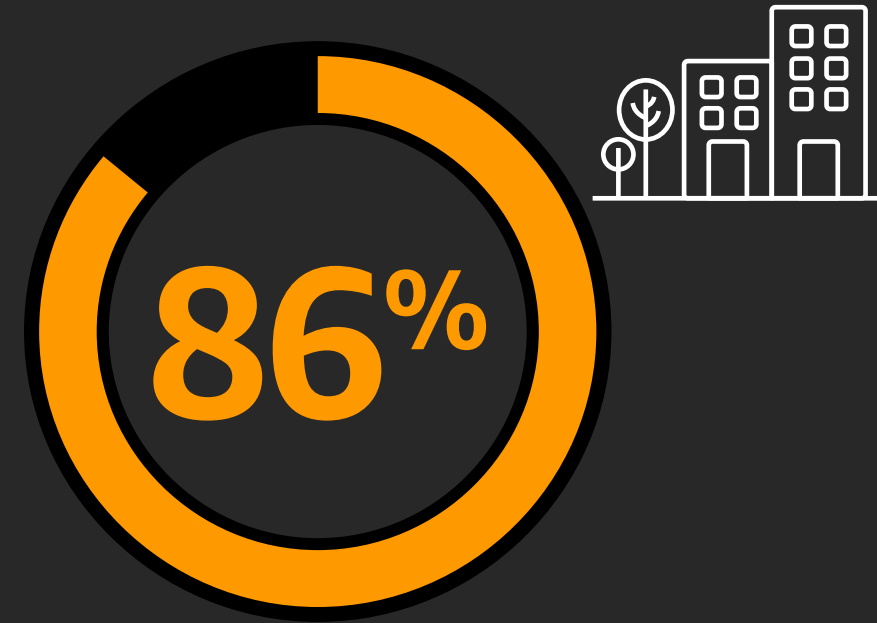
Software features
Organizational activities

AWS Customer Enablement: Bridge skills and experience gaps

Enterprise business transformation challenge



Enterprises have a
cloud-first strategy



Infrastructure expenditure
is still on premises

“The **biggest inhibitor** to cloud adoption is **lack of skills**.
Enterprises can’t hire and train fast enough.”

— **Gartner** 2019

AWS Customer Enablement

Bridging cloud-skills gaps to accelerate business outcomes

AWS customer enablement benefits



The strongest
AWS technical skills



The deepest
enterprise experience



Building culture and
process, not just tech



Experiential
learning for your teams



Work side-by-side
with partners and ISVs



Faster
business transformation

Thank you!

Kim Kao

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