aws

ADC-08
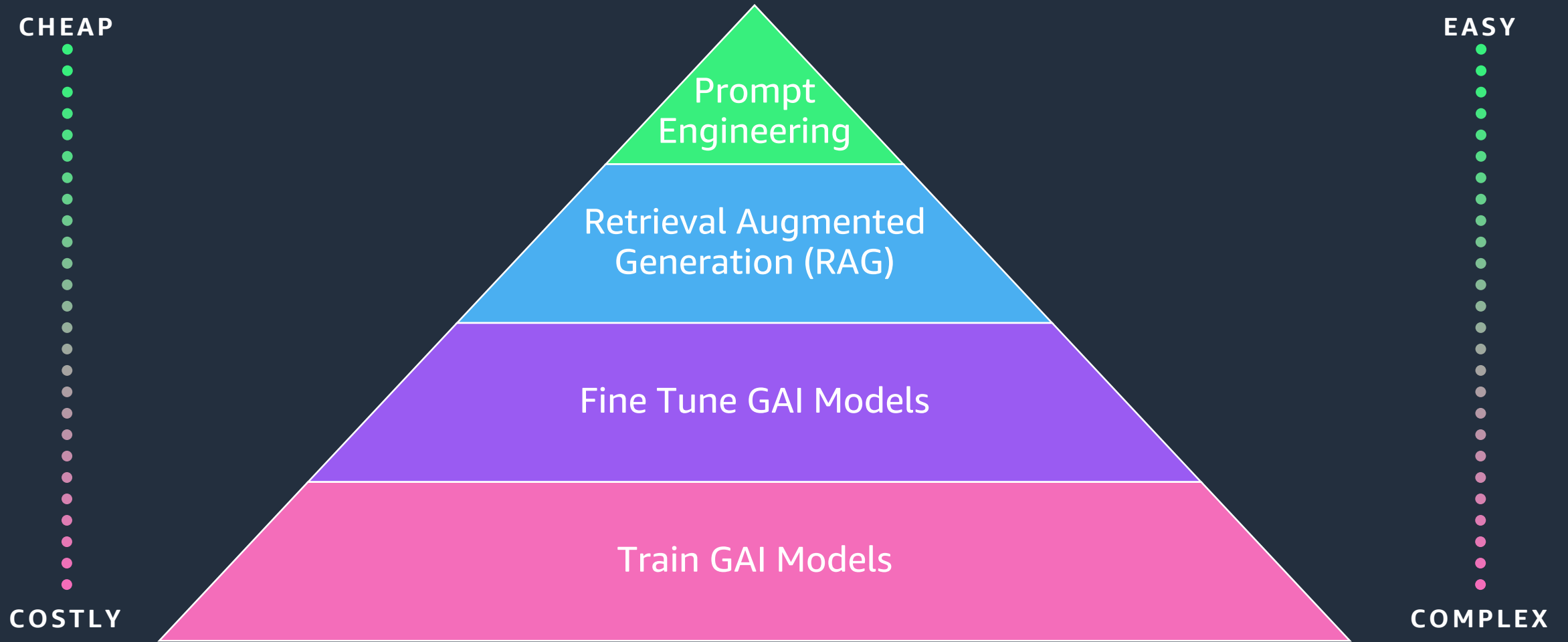
Building a modern data strategy for generative AI

Patrick Callaghan (he/him)

Principal Data Strategy Technologist
AWS

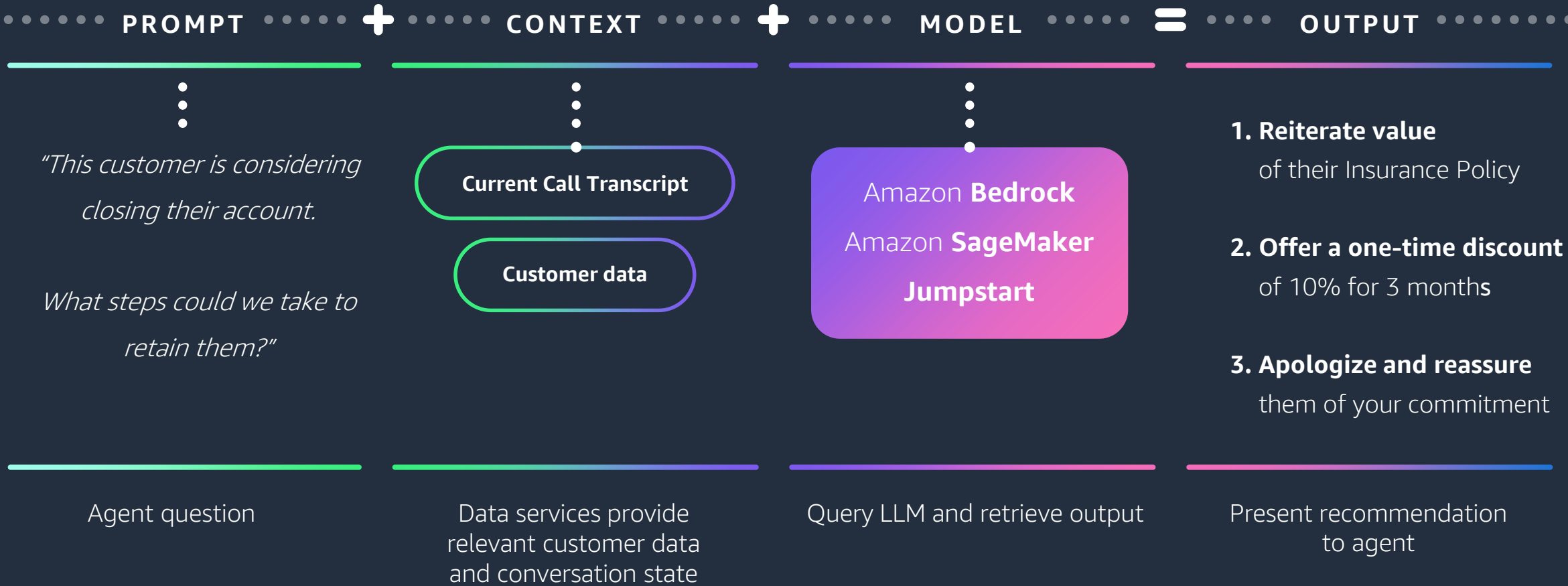# Emerging generative AI data patterns, cost, and complexity

CHEAP   EASY

Prompt Engineering

Retrieval Augmented Generation (RAG)

Fine Tune GAI Models

Train GAI Models

COSTLY   COMPLEX

Generative AI Applications

PROMPT **+** **CONTEXT** **+** **MODEL** **=** **OUTPUT**

Generative AI Applications

PROMPT + **CONTEXT** + **MODEL** = **OUTPUT**

"This customer is considering closing their account.

What steps could we take to retain them?"

Current Call Transcript

Customer data

Amazon **Bedrock**
Amazon **SageMaker**
Jumpstart

1. **Reiterate value**
   of their Insurance Policy

2. **Offer a one-time discount**
   of 10% for 3 months

3. **Apologize and reassure**
   them of your commitment

Agent question

Data services provide relevant customer data and conversation state

Query LLM and retrieve output

Present recommendation to agent

What does it take to build value at scale with GAI

● **Generative AI:** Business value

● **Technology:** Modern Data Foundations

● **Mindset:** Customer Obsessed, Experimental

● **People:** New Skills & Roles

● **Process:** Governance, Ethics, Alignment

Driving Value Creation Requires a
Modern Data Strategy

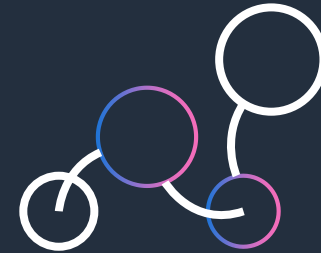|	Mindset		People & Process			Technology
Modern	Product centric	Customer focused	Cross functional	Autonomous	Federated and agile	Purpose built, flexible, scalable
Traditional	Platform centric	Solution first	Technology only	Monolithic departments	Centralized control	Monolithic platforms

3 Steps to a better data foundation

Modern Data
Community

Governance &
Accessibility

Importance of
Contextual Data

The Modern Data Community

Data-driven organizations enable agility by pushing responsibility to the edges, to the producers and consumers of data
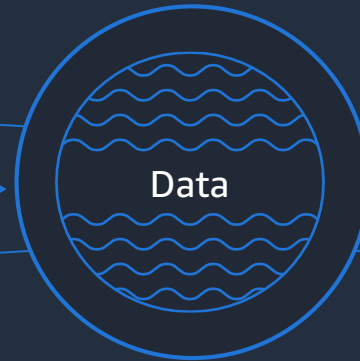
Producers
"Teams that want to share data"

Technology
"Team that runs the platform"

Consumers
"Teams that want to use data"

Data

- Domain expertise
- Data ownership and governance
- Data quality
- Metadata Management

- Build security controls
- Build and run the platform
- Simplify on-boarding
- Enterprise datasets
- Training and community

- Execute business priorities
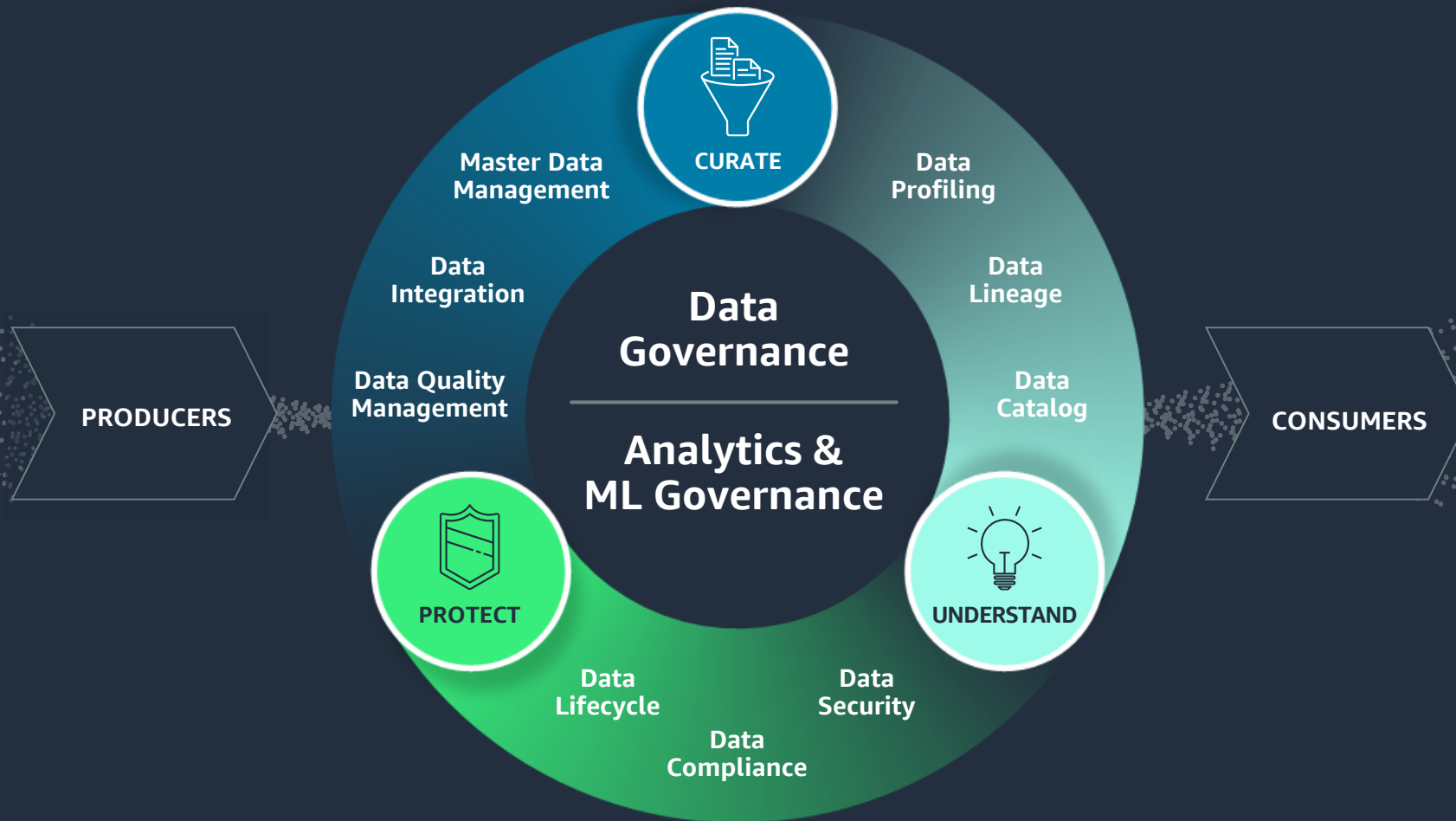- Business analytics development
- Data Discovery
- Data pipeline development
- Creation of new insights

Modern Data Governance & Accessibility

PRODUCERS

CURATE

Master Data Management

Data Integration

Data Quality Management

Data Profiling

Data Lineage

Data Catalog

Data Governance

Analytics & ML Governance

PROTECT

UNDERSTAND

Data Lifecycle

Data Compliance
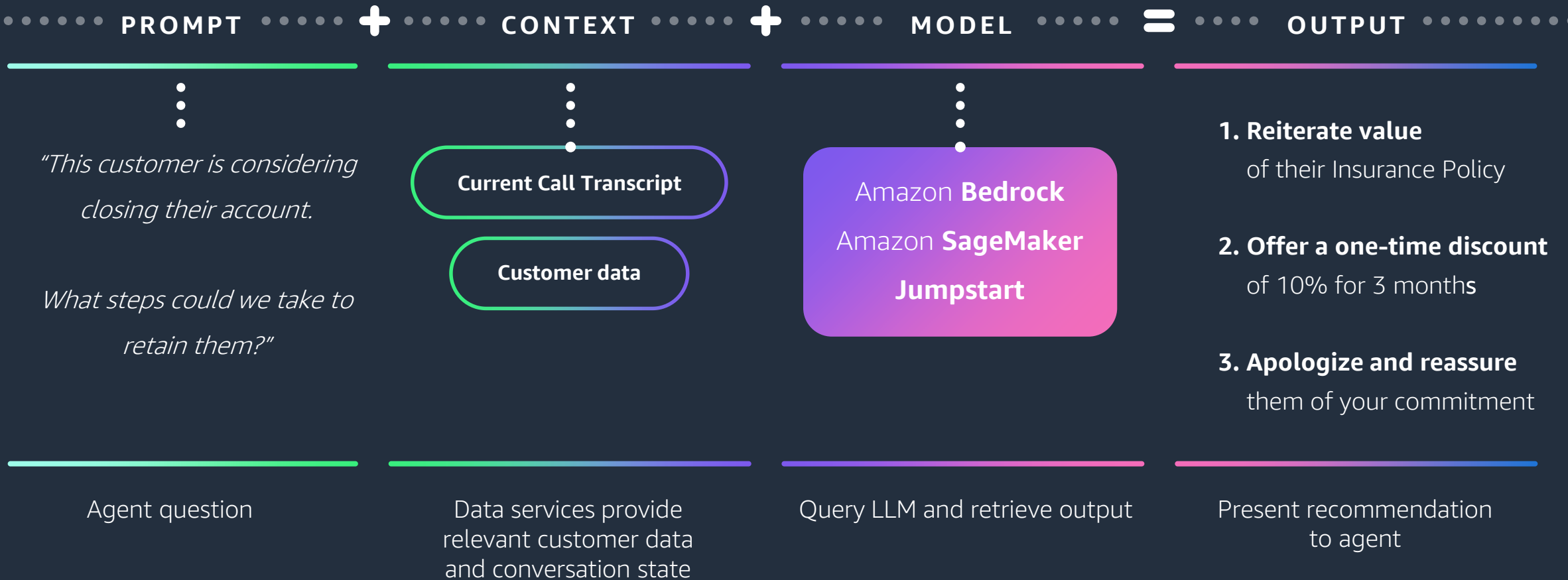
Data Security

CONSUMERS

- Architect data governance to support the wider data and AI strategy

- Implement incrementally based on business initiatives and use cases that drive the data strategy

- Evolve data governance capabilities over time

Generative AI Applications

PROMPT + **CONTEXT** + **MODEL** = **OUTPUT**

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Generative AI Applications

⋮

"This customer is considering closing their account.

What steps could we take to retain them?"

Third time in contact this week, the last two times were regarding a missed direct debit

Sentiment from last two chats where negative and "close my account" was mentioned

5Y Projected Customer lifetime value of 7K and credit score 754 (Excellent)
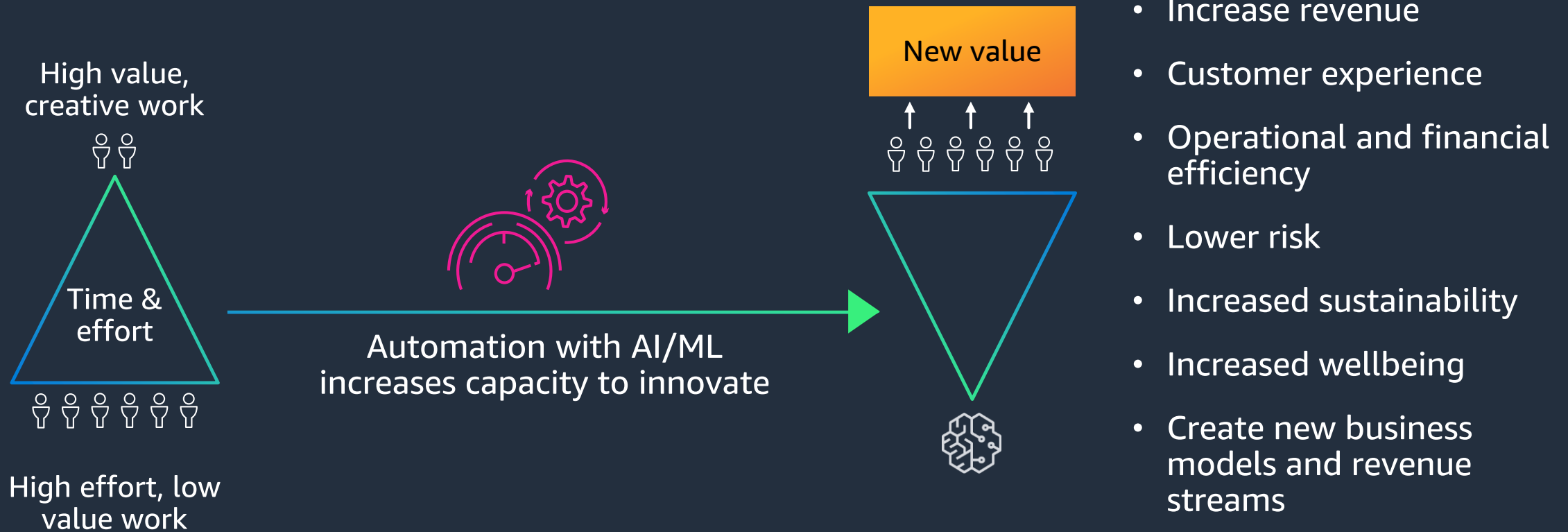
High Net Worth Individual with HVM of over 400K

Customer since 2009, has mortgage, car & house insurance and three children's accounts

Agent question

Data services provide relevant customer data and conversation state

Inverting the triangle – unleash creativity

High value,
creative work

Time &
effort

High effort, low
value work

Automation with AI/ML
increases capacity to innovate

New value

- Increase revenue

- Customer experience

- Operational and financial
  efficiency

- Lower risk

- Increased sustainability

- Increased wellbeing

- Create new business
  models and revenue
  streams

Creating data driven products at scale

Business and financial software company that sells financial, accounting, and tax software for small businesses, accountants, and individuals.

$1.2B+
in paycheck protection program loans secured for small businesses

$753M
in cumulative loans funded by QuickBooks Capital

48M
tax returns filed in the US with TurboTax last year

25M+
Mint users empowered to make smart money decisions

20,000+
financial institutions connected

14,688
active apps on the QuickBooks Online platform

- Transitioned to AWS in 2013
- Evolved to a SaaS company
- Vision to create an AI driven expert platform
- Currently runs 250 data and ML embedded products, 2,059 AI tasks, 600 ML patents filed

Example products:

- Personalised expert matching saved 25,000 hours on self help

- Auto recognition saved 1.3m hours on receipt processing

- 10k approved loans for SMBs with affordability predictors (65% considered un-lendable)

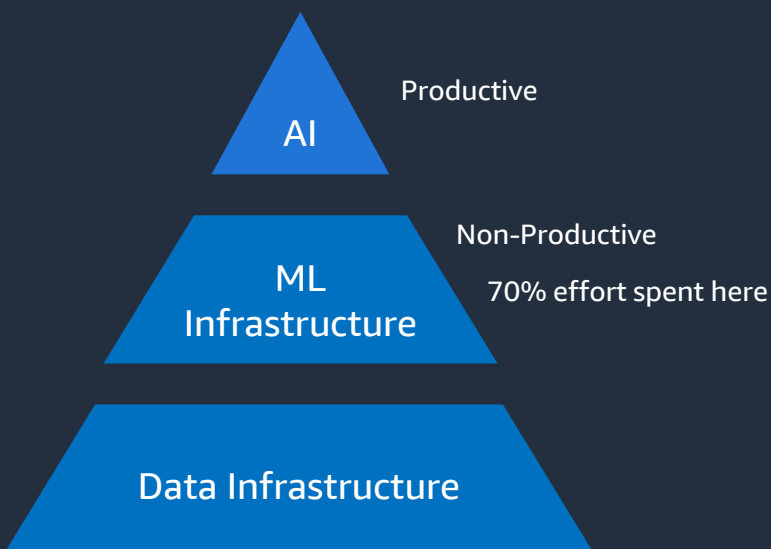- Predict cashflow for small business to make better financial decisions

Removing undifferentiated heavy lifting to accelerate AI deployment at scale
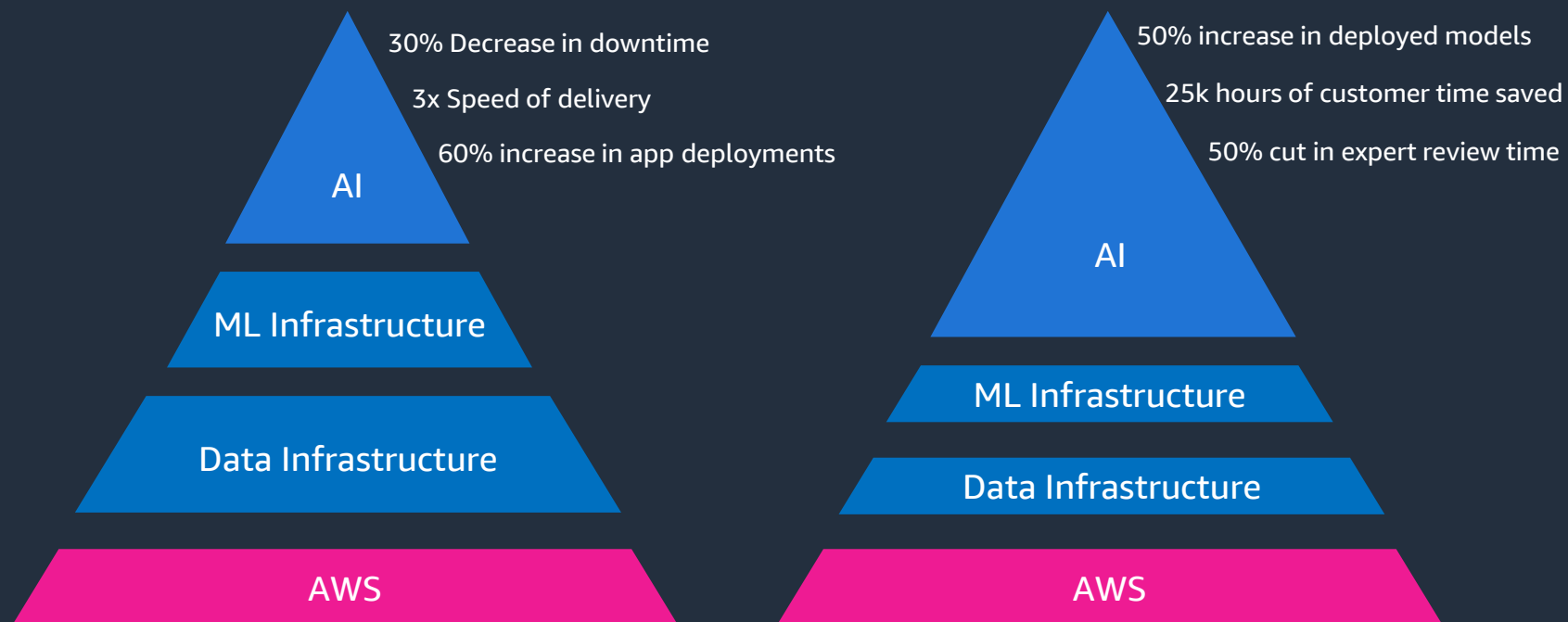
When Intuit migrated to AWS in 2013 they focused on:
- Modernizing their infrastructure and removed undifferentiated heavy lifting with automation
- Creating data as a product so AI engineers, and data scientists can obtain data quickly and efficiently whilst remaining autonomous
- Building a common ML platform for all feature building, model training, and deployment

On Premise in 2013 ———————→ Modernized with AWS ———————————————→

On Premise in 2013

AI — Productive

ML Infrastructure — Non-Productive
70% effort spent here

Data Infrastructure

Modernized with AWS

AI
ML Infrastructure
Data Infrastructure
AWS

30% Decrease in downtime
3x Speed of delivery
60% increase in app deployments

AI
ML Infrastructure
Data Infrastructure
AWS

50% increase in deployed models
25k hours of customer time saved
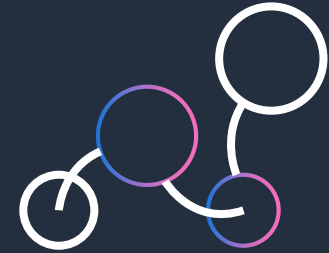50% cut in expert review time

3 Steps to a better data foundation

Modern Data
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Governance &
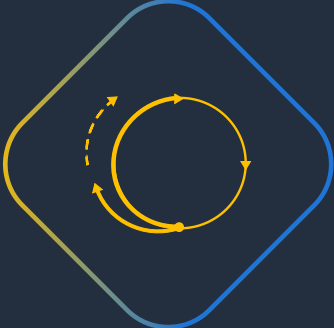Accessibility

Importance of
Contextual Data

How AWS can help ?

We are here to help

| Get executive guidance | Jump start your data flywheel | Modernize your data foundations | Build gen AI use cases | Self serve curated learning |

aws Data Strategy

aws Data Driven Everything

aws Re:Imagine data

aws Generative AI innovation centre

aws Pathfinder

Thank you!