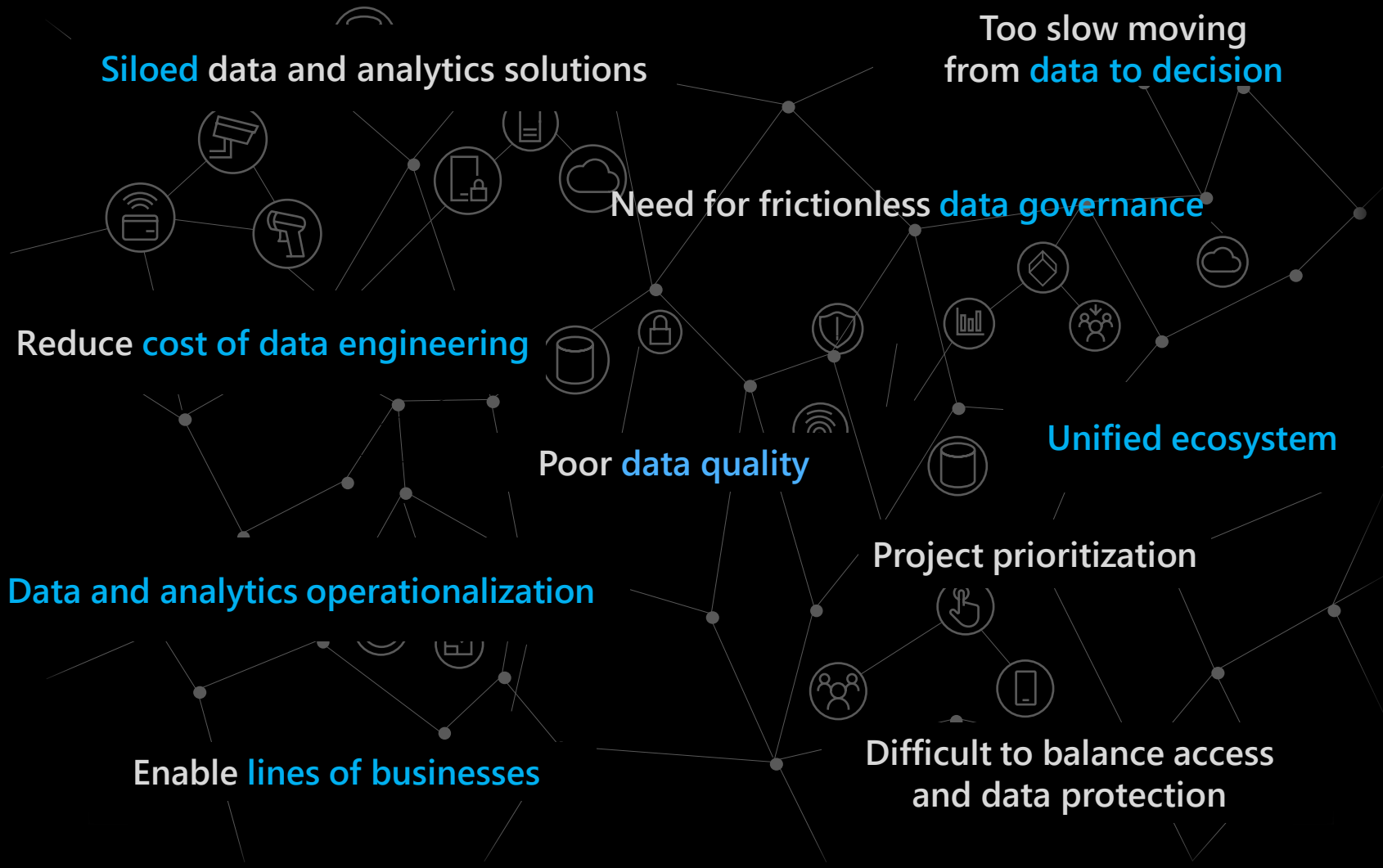
From Silos to Success: Modernizing Analytics with Data Governance and GenAI

Shane Risk
Microsoft
Principal Manager – Microsoft Fabric

Microsoft Azure


How to Develop a Modern Analytics and Governance Strategy
Microsoft Azure

What we've heard



Barriers to achieve business outcomes

Ideally, organizations want to have.....

- Platform to actionable Insights to the business
- Robust data governance
- Ability to increase the value of hidden data
- To spend less time preparing data
- Improve operational efficiency

Why do organizations struggle with data?

MIT Technology Review Insights Survey

92%
Culture, people, process

8%
Technology

What does good look like?

Reduced duplication	**47%**
Ease of data access	38%
Data engineering	36%
Data quality	31%

What holds companies back?

Lack of data management	**44%**
Slow data processing	39%
Lack of collaboration on analytics	29%
High data duplication	22%

* *Building a high-performance data and AI organization | MIT Technology Review*

Modern Analytics and Governance at Scale (MAG)

Empowering business units without compromising enterprise requirements

Microsoft Digital Implementation

- Culture Transformation
- Data Foundation and Operations
- Responsible Mesh
- Services and Capabilities
- Conceptual and Physical Architecture
- Learnings (what worked\didn't work)

Cloud Adoption Framework

- Management and Landing Zones
- Conceptual and Physical Architecture

Modern Analytics and Governance at Scale (MAG)

Customer Engagements

- CTO, CISO, CDO Engagements
- Learnings (what worked\didn't work)

Azure Roadmap

- Aligning current implementations to future capabilities (roadmap)

Data Community

- Data Mesh
- Data Fabric
- Data Hub

[Modern Analytics and Governance | Microsoft Azure]

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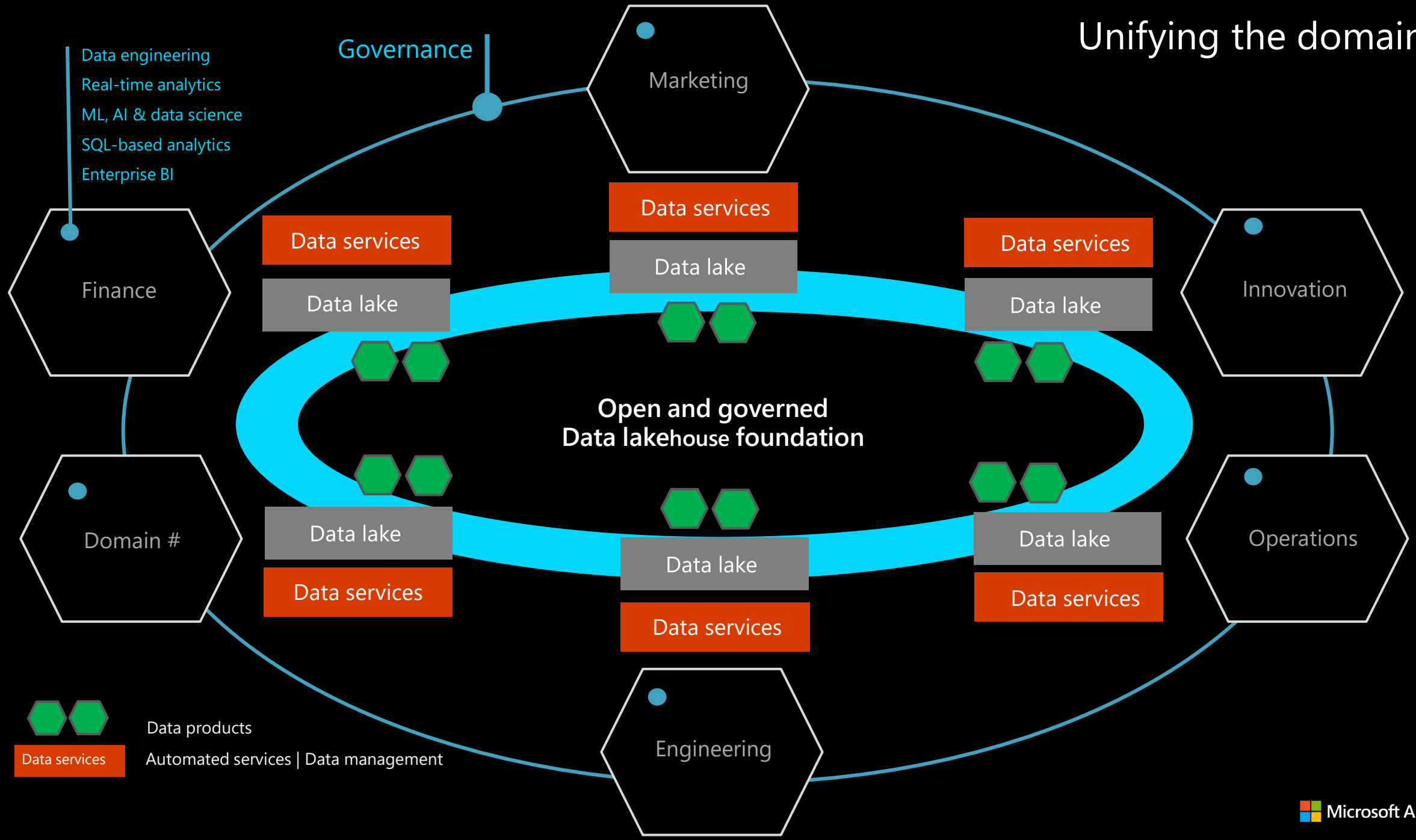
Unifying the domains



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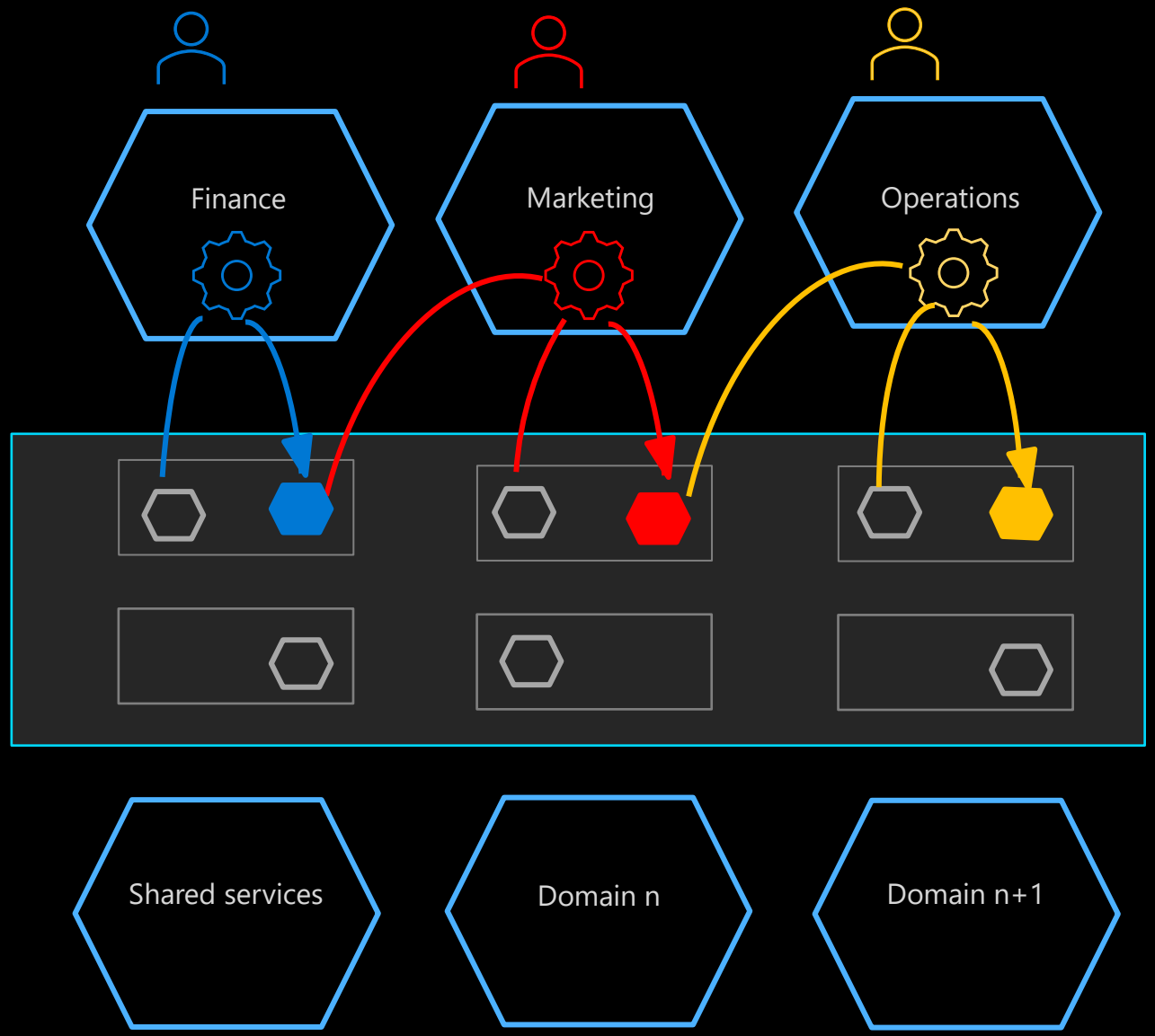
Enable Lines of businesses



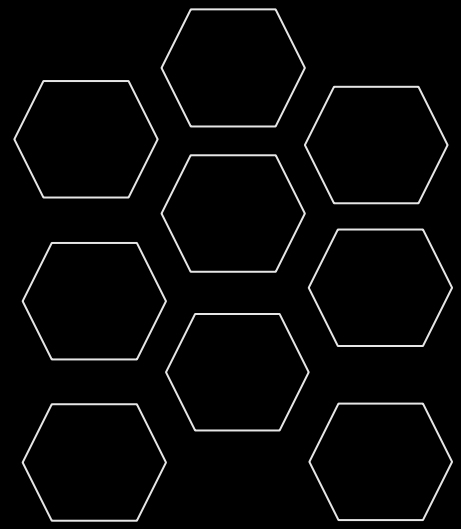
- Self-serve analytics
  - Empower LOBs to implement their own analytics projects
  - Democratize data and analytics across LOBs
- Accelerate cross-business unit collaboration
- Leverage LOB SMEs for business analytics
- Re-use Data products across domains
  - Reduce data engineering
  - Improve data agility

Enterprise data governance

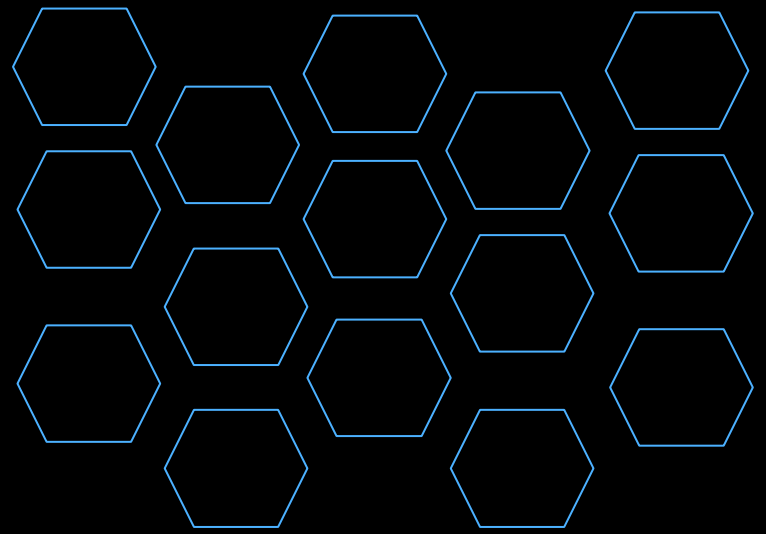
Automated capabilities to implement frictionless governance

Data catalog | Data classification | Data lineage | Master data | Data use governance | Data policy | Data quality | Data sharing

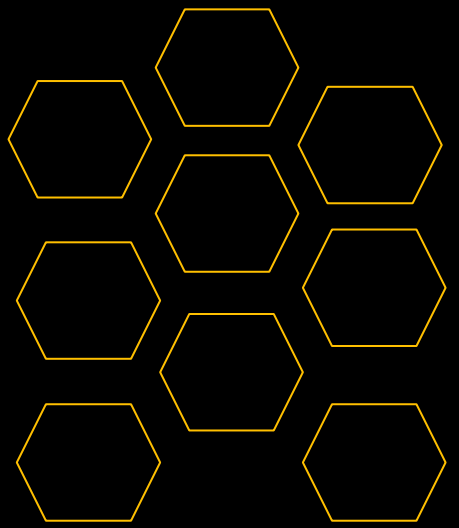
On-premise



Azure



Other cloud



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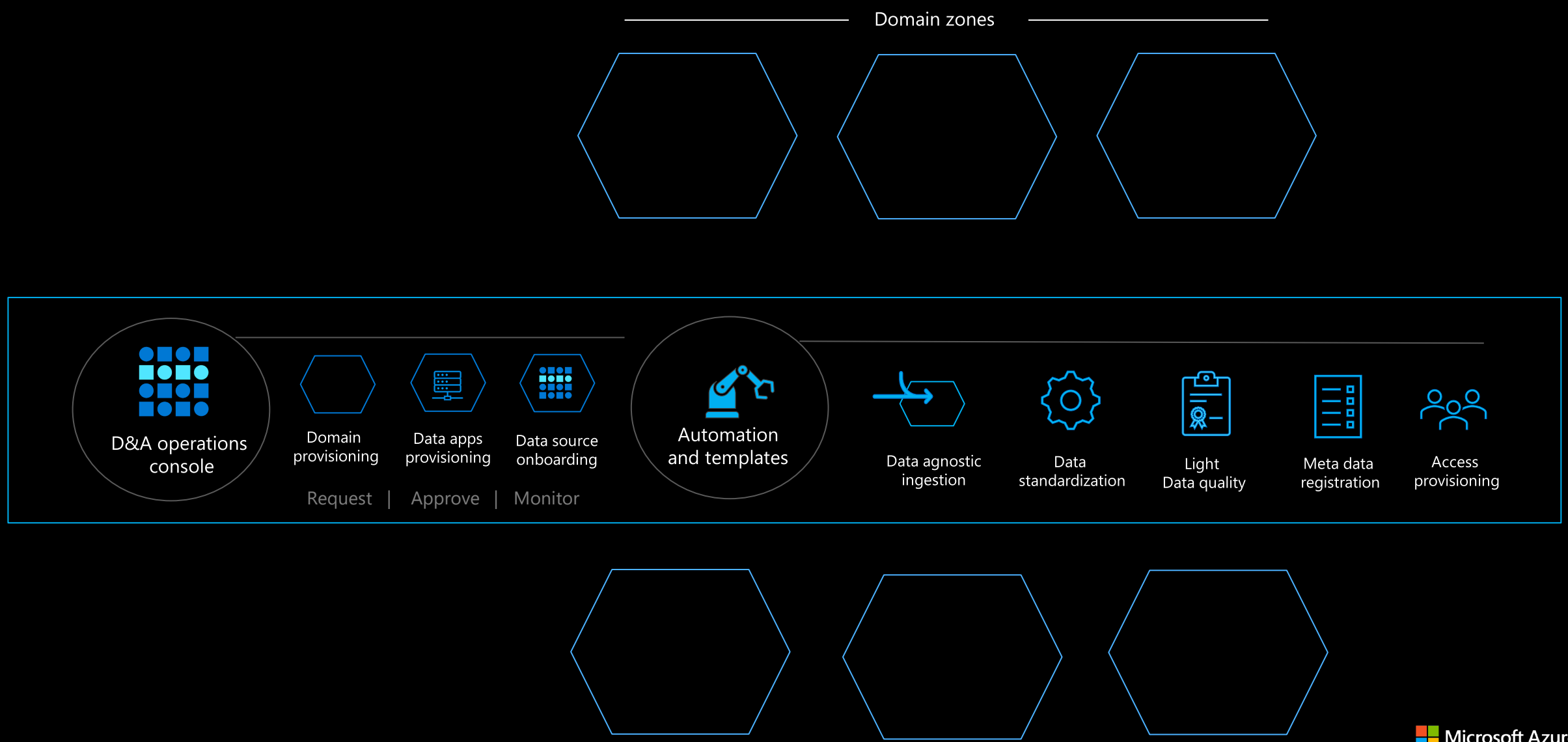
Automated data services



Analytics patterns and practices per domain

Aligning business use-cases and analytics patterns

Type 0 Ingestion and curation	Type 1 Discovery/onboarding	Type 2 Descriptive analytics	Type 3 Predictive analytics	Type 4 Data exchange
• Ingesting data from data sources • Data engineering	• Project onboarding • Data exploration, Inventory and profiling • Ad-hoc queries	• Data products creation • Reliable and trusted data for business analysis • Reporting and dashboarding • Ad-hoc quires	• Data products creation • AI/ML labs to build, train and deploy models • Data wrangling	• Exchange trusted data to and from vendor and partners • Data exchange between domains

Note: These are top analytics patterns prioritize by organizations, but implementations are not limited to this list.

MAG Implementation stages

Planning

Current state vs Future State

- Current State
  - Architecture
  - Services
  - Deployment
  - New use-cases\projects
- Evolution to Future State
  - Leverage MS and Partner Ips\Accelerators
- Recommendations
  - MVPs and prioritization
  - Roadmap alignment

Phase 1

Deploy the open and governed foundation services including data operations zone and domain, and onboarding one data product to the platform.

- Foundation
  - Domain zones (template)
  - Data lake
  - Template creation
- Data governance:
  - Data definition, glossary, and Catalog (Purview)
  - PII detection (Purview GA)
  - PII governance
- Data discovery: data access management (Purview, in private preview)
- Ingestion:
  - Metadata-driven ingestion framework
  - Data standardization
- Data provisioning
  - Host data to server use-cases

Phase 2

Onboarding more data products, optimize UI and operation to be ready for full production.

- Data governance:
  - Attribute-based control (ADLS Gen2, SQL, Purview Policy)
- Data discovery:
  - Shared with me (customer build)
  - Custom attributes (customer build)
  - Catalog extension to other UIs (Purview Q2 CY22)

Phase 3

Enhancements

- Data governance
  - Data standardization
  - Standardized data models
  - Master reference data for data cleansing
  - Programmable data quality rules
- Discovery
  - Data exploration with data profile:
  - Ingestion tags
  - Data usage dashboard
- Ingestion
  - Micro batch/streaming (customer build)
- Data management
  - Metadata management
  - Master data management
- **Artificial Intelligence**

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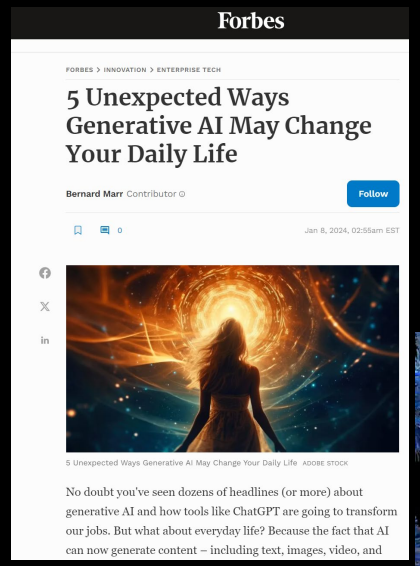
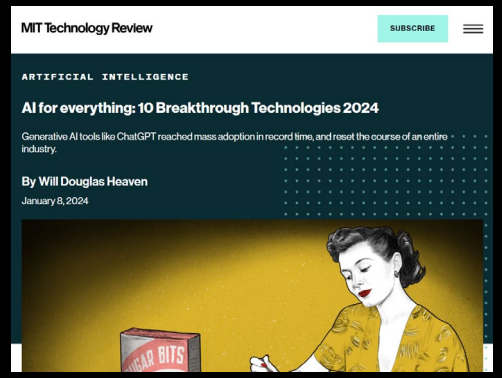
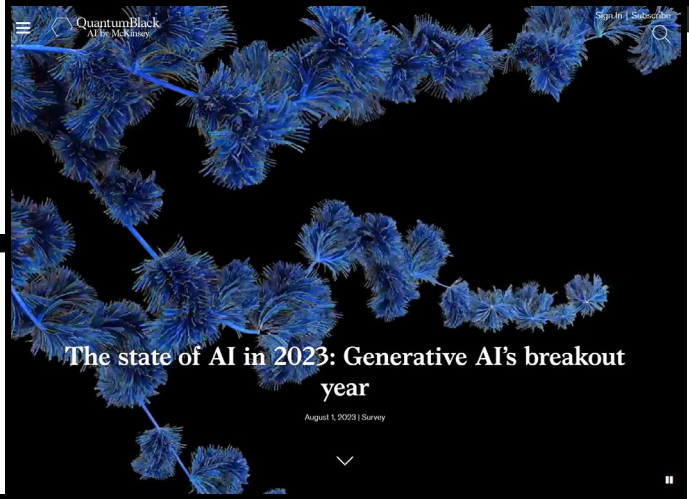
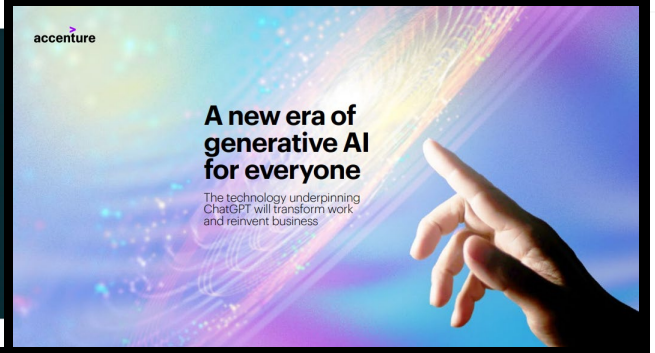
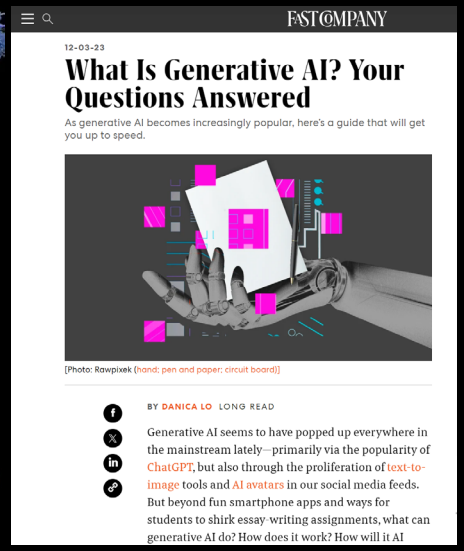
Data & AI: Starting Your
Generative AI Journey

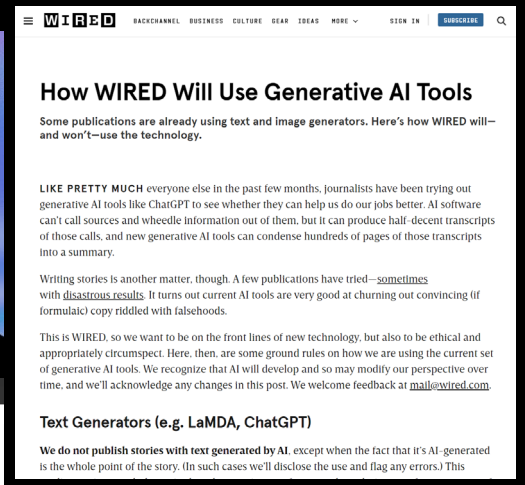


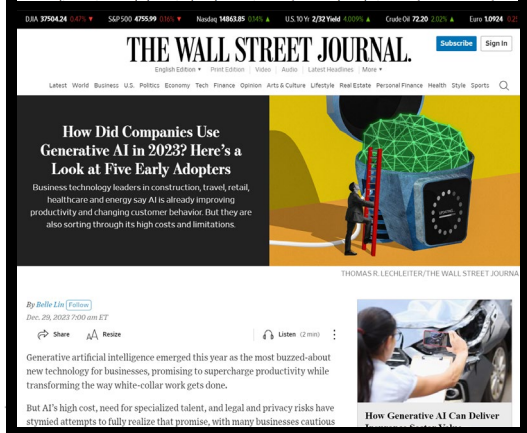












Generative AI is a game changer
… now it's all about implementation!

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To maximize value, consider use cases that serve unmet user needs

LEARNING
Transform internal and external search functions into **human-centered insight hubs** for collaboration and marketing

1 Chat with your data

TRAINING
Empower customer service with insight and encouragement that **helps customers** while supporting talent

Intelligent call centers 2

What are your employee and customer pain points?

CREATIVITY
Bring generative assistance **into your custom app** workflows with your data for any user

3 Your own copilots

REASONING
Aggregate and reason over multiple data sources to **enrich decisions** and customer interactions

4 Information discovery

TAILORING
Create recommendation engines that **enhance products and services** or launch new offerings

Hyper-personalization 5

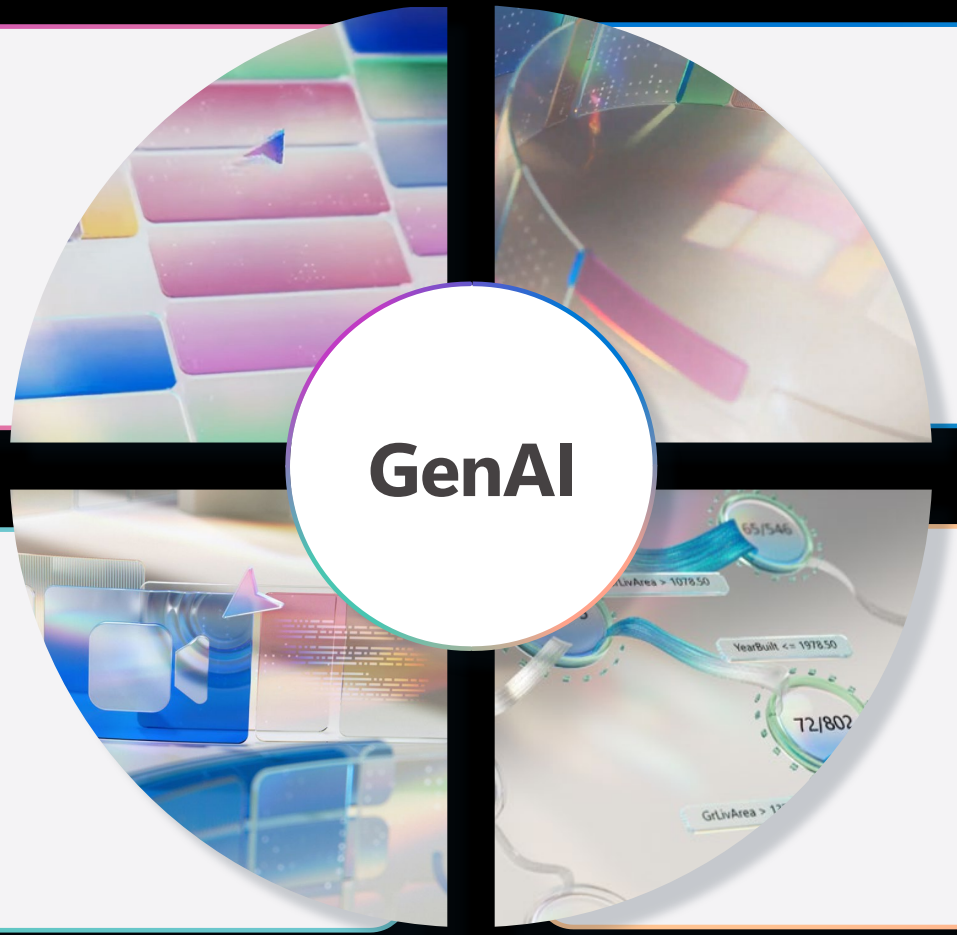
The core dimensions of implementing generative AI effectively

Model choice

Select the right models **for your use case**, benchmark and test them with your data

Total trust

Innovate confidently on top of data privacy, security, compliance, and critical **content safeguards**



Experience quality

Build high-quality LLM-based applications with **information retrieval** and prompt engineering

Streamlined lifecycles

Operationalize and scale the **management** of your GenAI apps as they evolve over time

Microsoft Azure

Chat with your data 1

"Through the incorporation of a lease report generator into our fleet AI system…we have revolutionized a time-consuming task that previously took 4 hours, reducing it to just 5 minutes."

大成 DENTONS

Sam Chen, Dentons
Legal AI Adoption Manager

THE CHALLENGE

Expedite summarization of legal contracts and documentation for the **largest global law firm in the world**

THE INNOVATION

fleetAI, an internal chatbot that helps lawyers conduct research, generate content and identify arguments fast

THE TECHNOLOGY

- Azure OpenAI Service GPT-4
- Meta Llama 2

Approaching your optimal model selection

Content Generation

Empower your users with AI-generated content based on natural prompt commands

Summarization
Text generation
Image generation
Natural language to code

+

Multimodality

Increase **user engagement** with rich interactions that integrate vision, speech, and text

Chat
Image to text
Text to image
Video to text

+

Fine-tuning

Enhance model performance **using your own data** and adapt nimbly to feedback

Question answering
Text classification
Token classification
Zero-shot image classification

Build Capabilities Across Model Families


Microsoft Research Model Family


Azure OpenAI Model Family


Meta Llama 2 Model Family

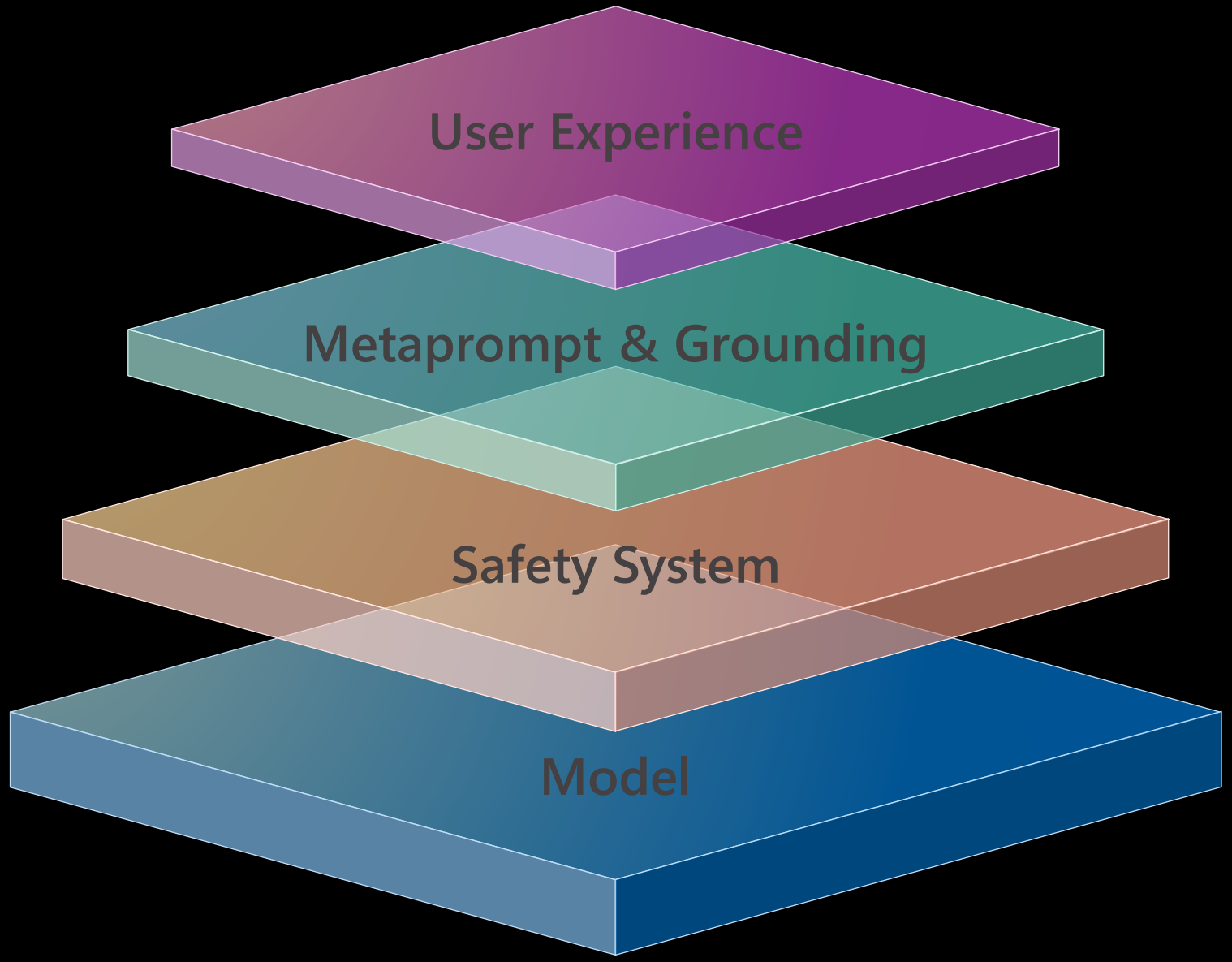

Hugging Face Model Family


Mistral AI Model Family

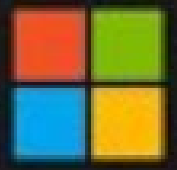

NVIDIA Model Family


Deci AI Model Family

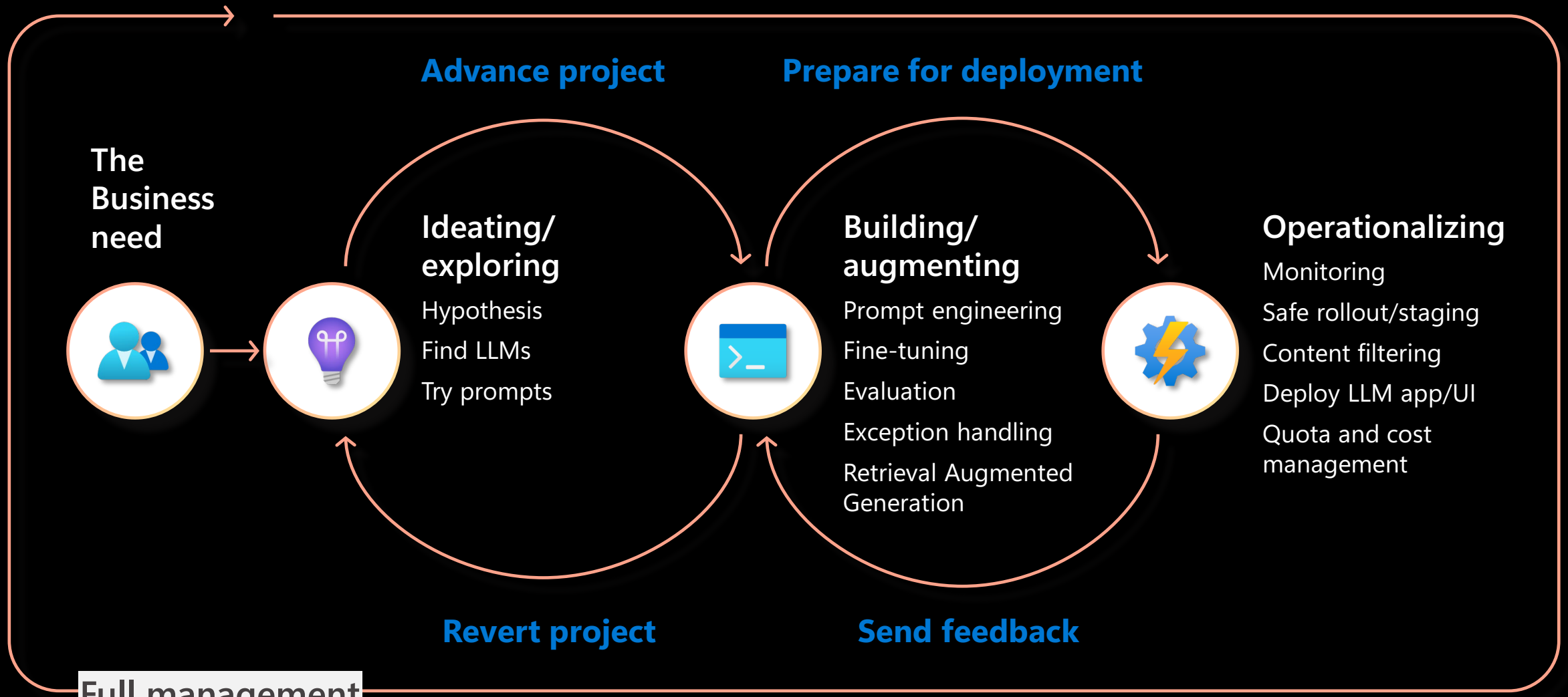
Mitigation layers

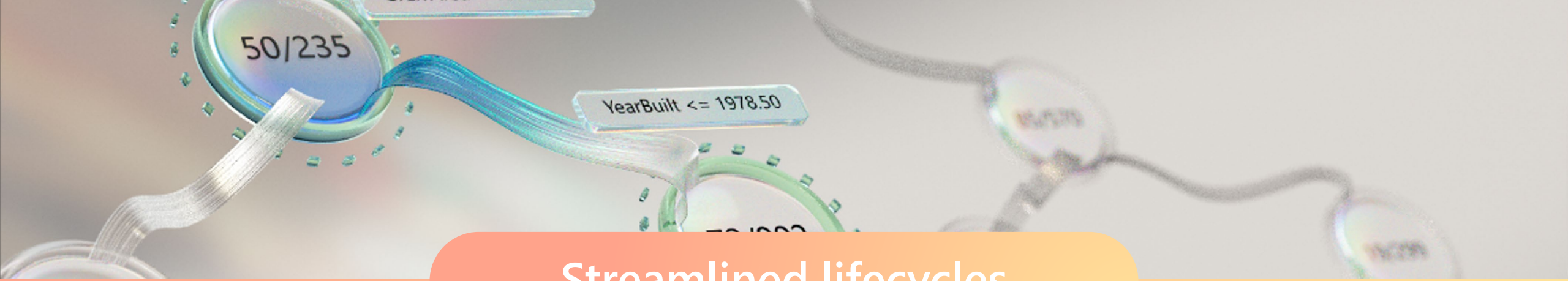


Responsible AI



An LLM lifecycle in the real world





Streamlined lifecycles

Unlock repeatable value and operationalize AI

Streamline the entire development process with intuitive **prompt flows** for iteration and collaboration

Continue to refine your LLM apps with flexible **prompt engineering** that helps you adapt to human feedback

Apply **responsible AI** throughout the lifecycle to build fair, explainable, and highly performant apps

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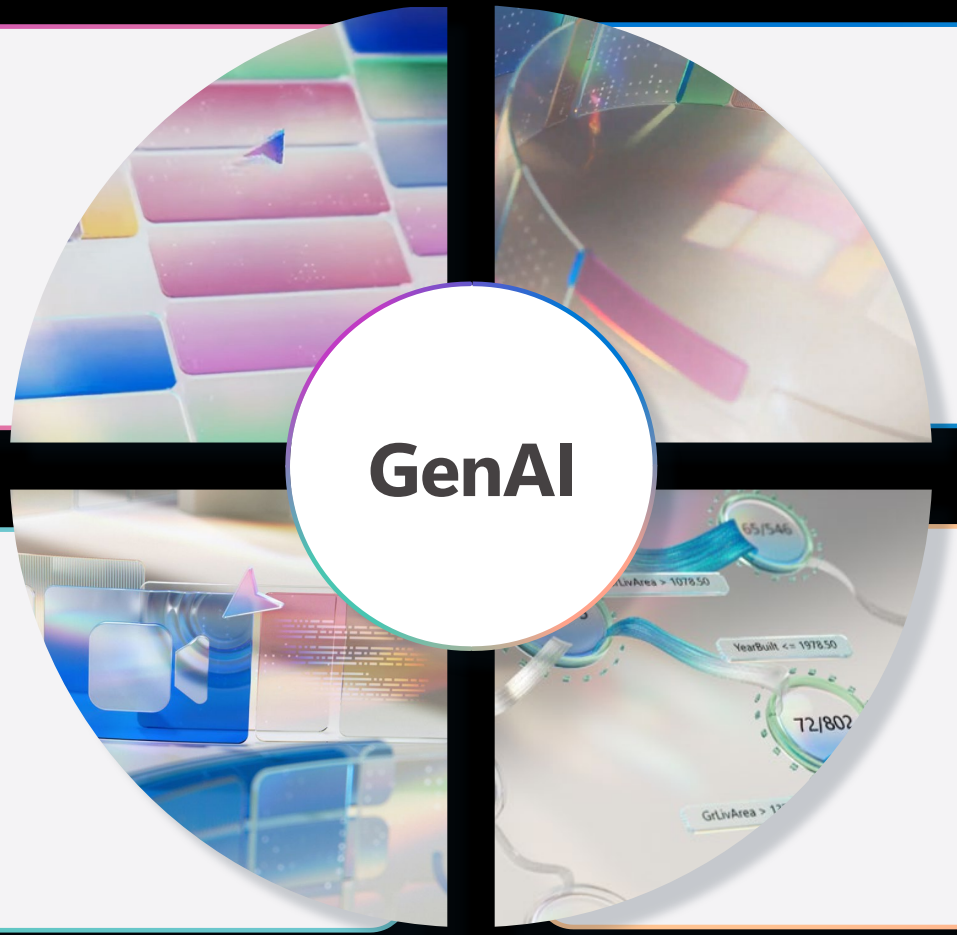

Experience quality

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Streamlined lifecycles

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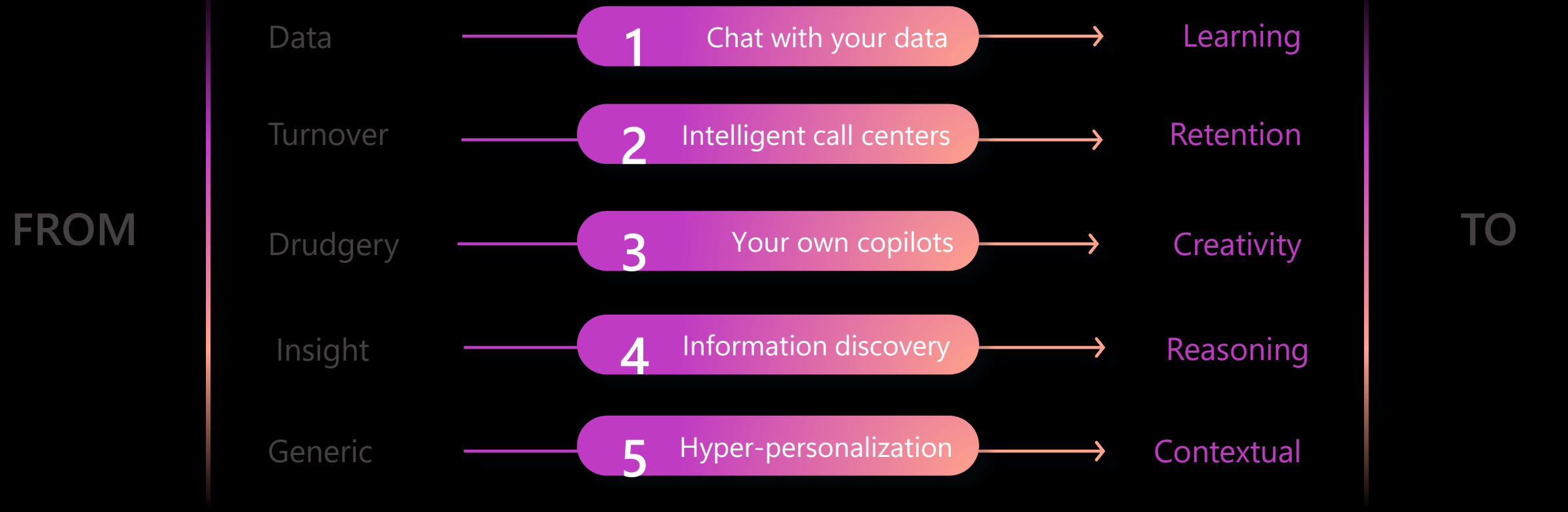
Generative AI-based experiences will elevate all aspects of digital life




Copilot

Thank You!

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