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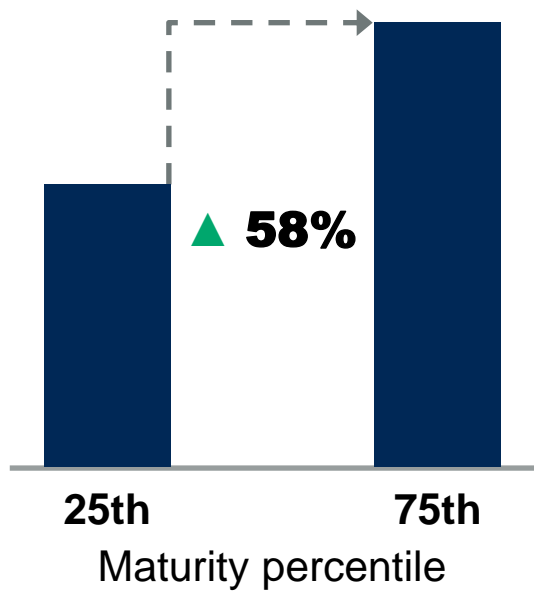# 5 Things That Keep Data Management Leaders Up at Night
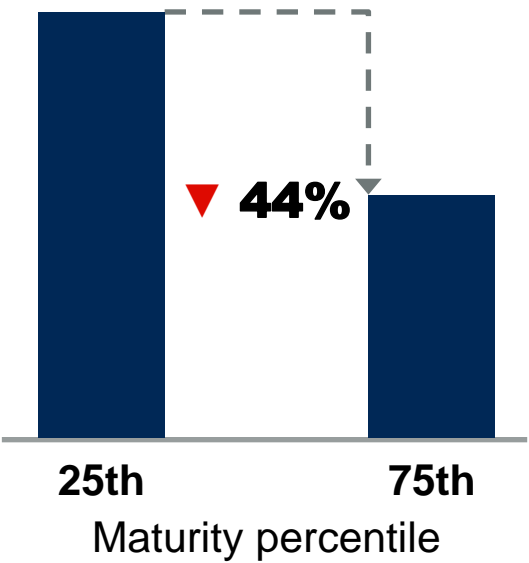
Thomas Oestreich

Managing Vice President

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Execution Over Strategy

Impact on firm performance*

■ Firm financial performance as measured on total revenue

▲ 58%

25th   75th

Maturity percentile

Improves with investments
in functional activities

▼ 44%

25th   75th

Maturity percentile

… But decreases with
investments in strategic activities

* This result holds for the overall sample (n = 310)

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5 Things That Keep You Up at Night
... and Prevent You From Improving Maturity

How can we cope with and scale to address the increasing demand in my team? → Drive operational excellence

How can we turn "shadow IT" data management into successful cooperation? → The new deal with business

How do we build the foundation for scaling and leverage the market dynamics and changes? → Build a future-proof architecture and infrastructure

How do we make sure that data management practices are safe, trustworthy and reusable? → Establish adaptive governance

Everybody talks about GenAI. What does this mean for my team and practice? → The impact of GenAI

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1. **Drive operational excellence**

2. Make the new deal with business

3. Build a future-proof architecture and infrastructure

4. Establish adaptive governance

5. The impact of GenAI

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DataOps Drives Efficiency

To drive data engineering productivity through data pipeline automation.

By 2025, a data engineering team guided by DataOps practices and tools will be 10 times more productive than teams that do not use DataOps.
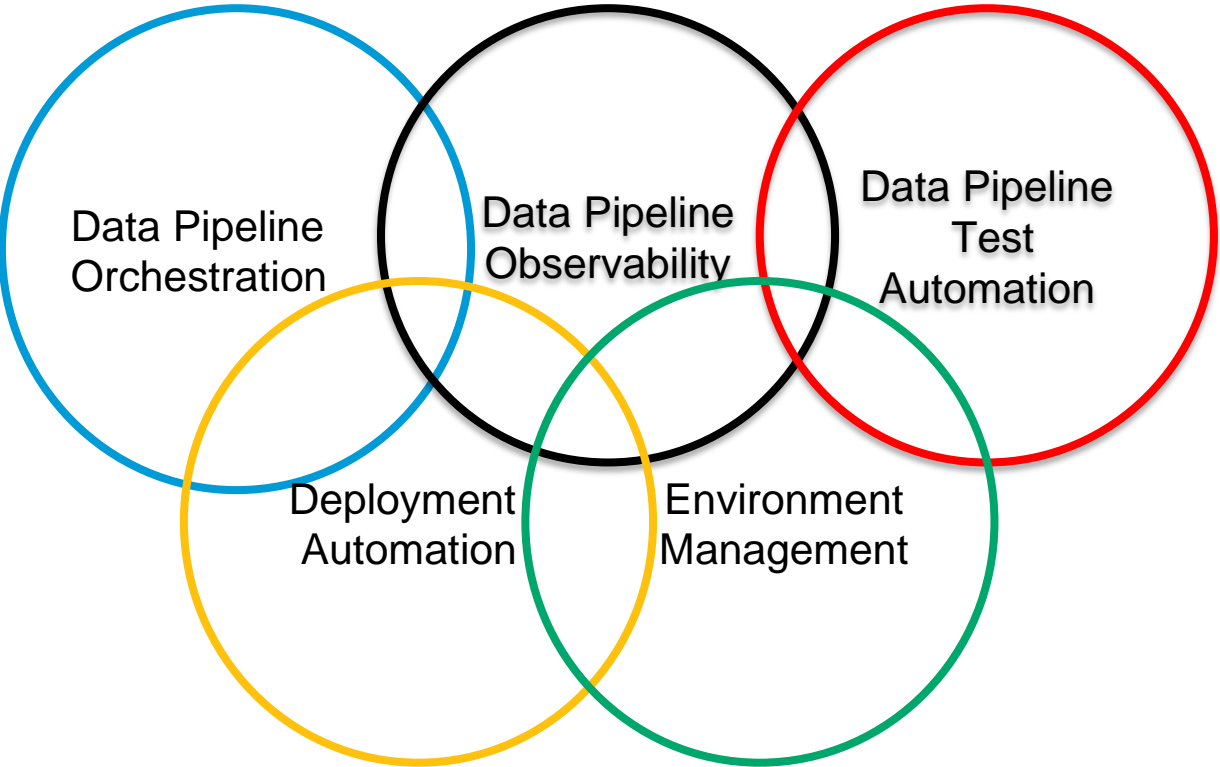
Roche — One release every three months ➡ 120 releases a month

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Invest in DataOps Tools to drive
Data Delivery Operational Excellence

Data Pipeline Orchestration

Data Pipeline Observability

Data Pipeline Test Automation

Deployment Automation

Environment Management

Benefit Rating	High
Tech Maturity	Adolescent
Market Penetration	5-20% of Target Audience
Time to Mainstream	2 to 5 Years

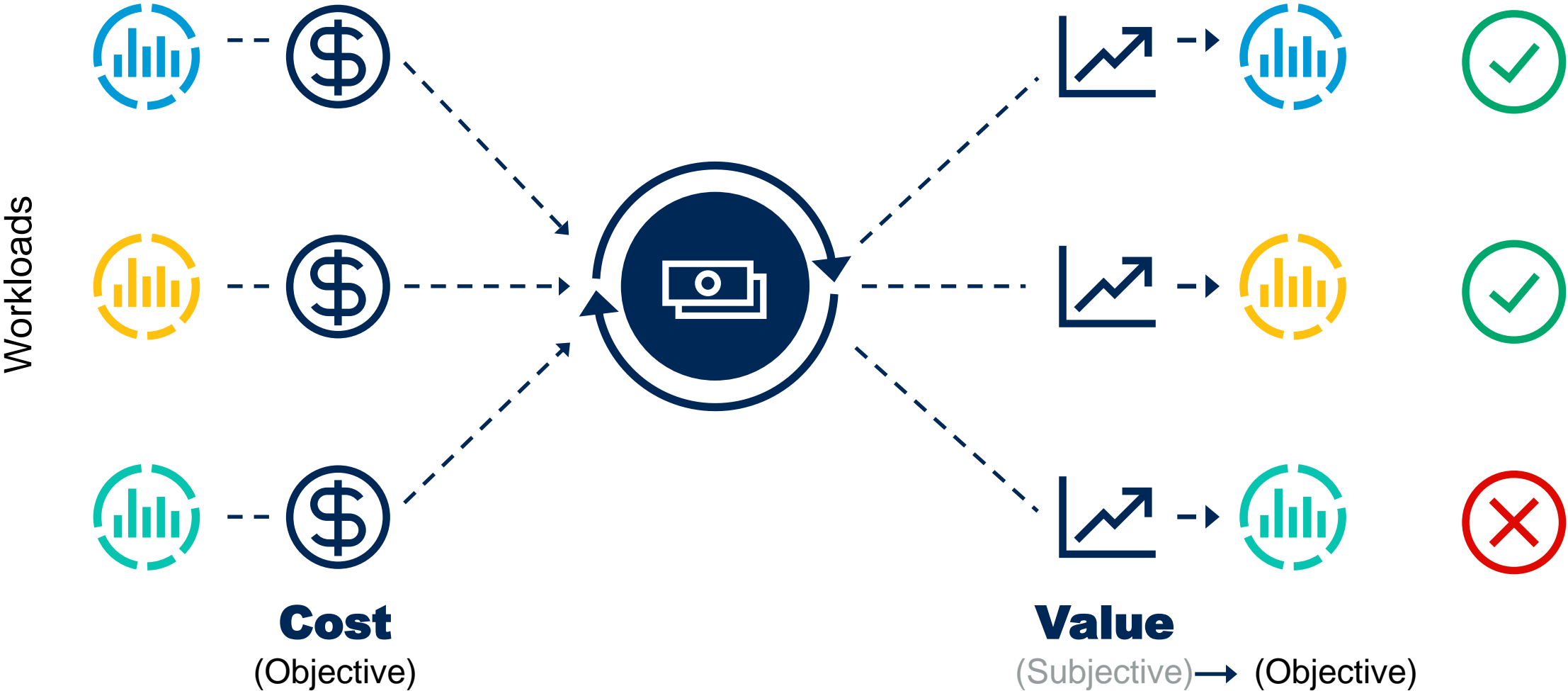As of July 2023

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Data PlatformOps Reduces Complexity

D&A infrastructure is complex with several potential breaking points.

Code drift	← **Application plane** →	Configuration drift
Data drift	← **Data plane** →	Data quality drift
Metadata drift	← **Control plane** →	Schema drift
Technology drift	← **Infrastructure plane** →	Infrastructure drift
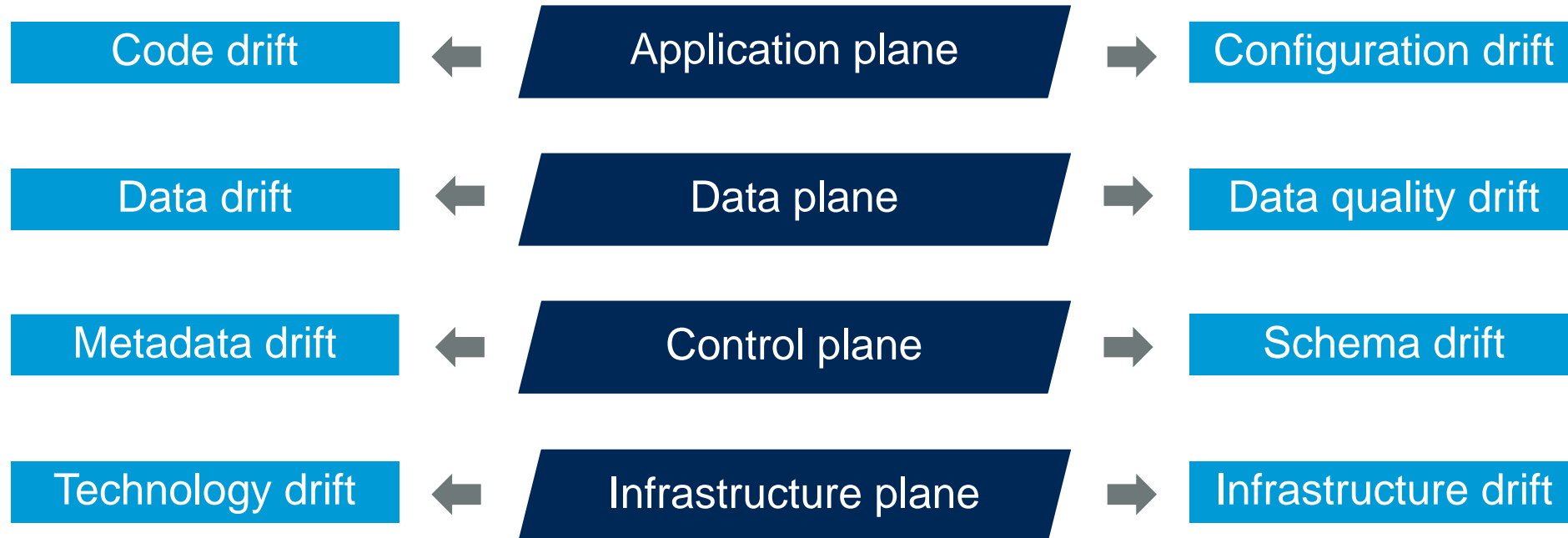
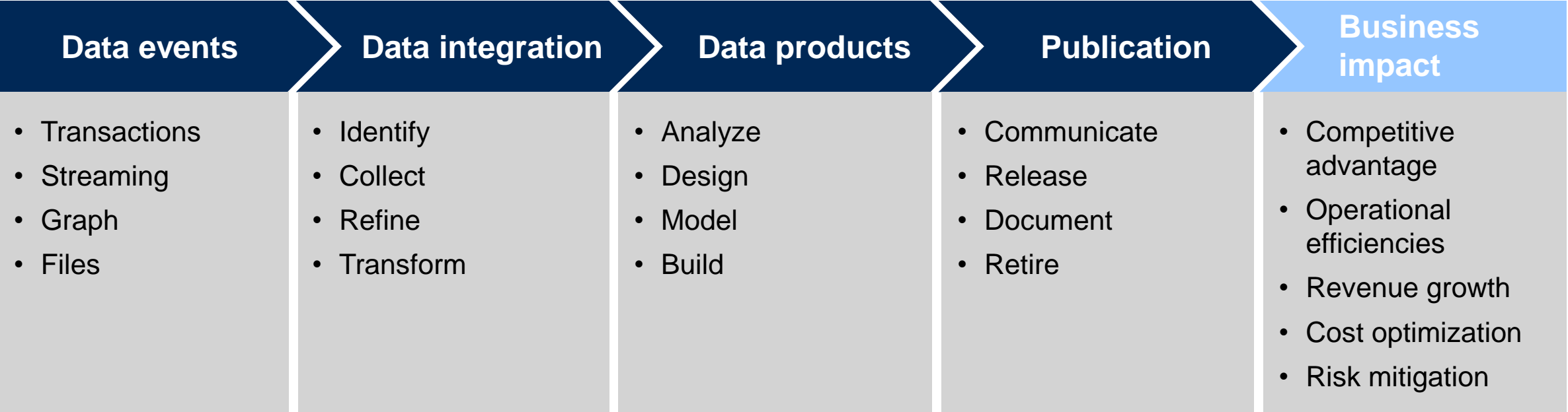Best practice: Separate data operations from data platform operations.

Think of your data platform as a Data Operations-as-a-service for your data engineering community.

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The FinOps Equation: Connect Cost With Value

Workloads

Cost
(Objective)

Value
(Subjective) → (Objective)

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Data Management Value Chain

If you do not start measuring this, how can you align to that?

Value from data management production - "raw" data to data products	Value from Use

Data events	Data integration	Data products	Publication	Business impact
• Transactions • Streaming • Graph • Files	• Identify • Collect • Refine • Transform	• Analyze • Design • Model • Build	• Communicate • Release • Document • Retire	• Competitive advantage • Operational efficiencies • Revenue growth • Cost optimization • Risk mitigation

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Measure Your Data Delivery Processes

Sample progress (or execution) metrics:

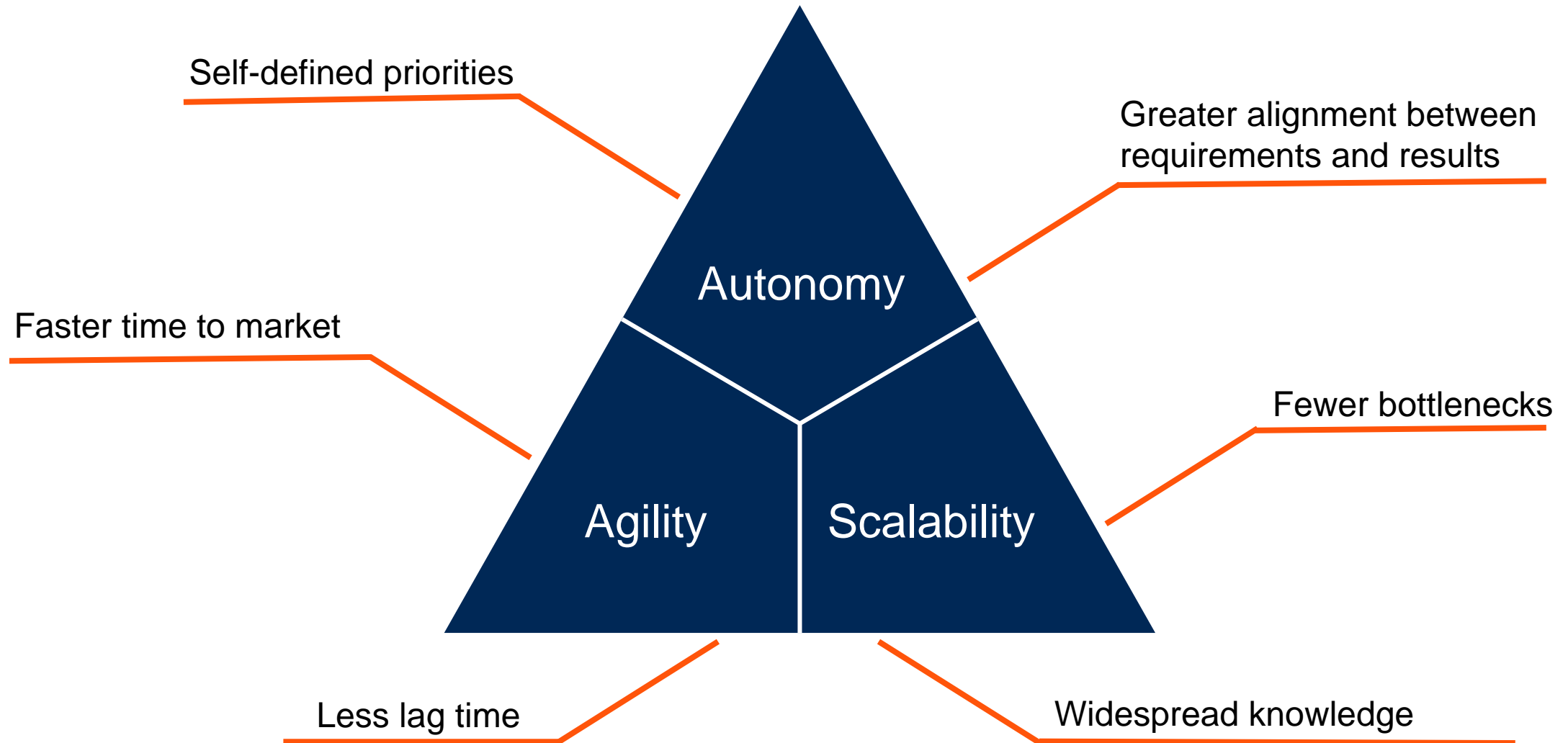| How you build	How you run	How you grow
• On budget • On time • On requirement • % data sources addressed • % systems aligned with MDM • % data quality	• User survey results • % data used, reused, shared • Running cost of platform • Uptime, SLA metrics • % users on right data literacy level	• Average time to add a data source • Average time to build and implement a use case • No. of active D&A users added • Improved cycle time and lead time

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Key Issue Take-Away:

Streamline, automate and augment your data pipeline and platform operations, leveraging technology to reach a new efficiency frontier.
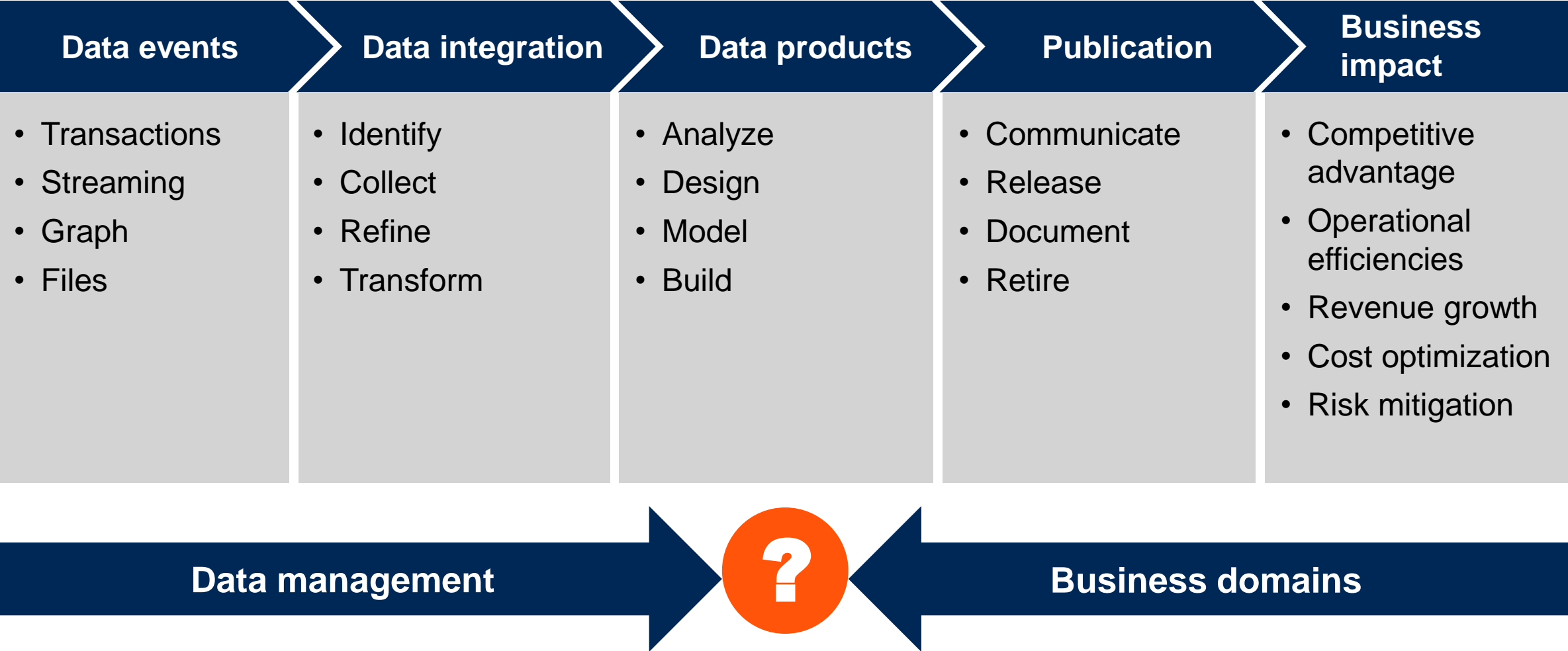
Measure the actual cost of your data workloads. Align them to the value created from using the data.

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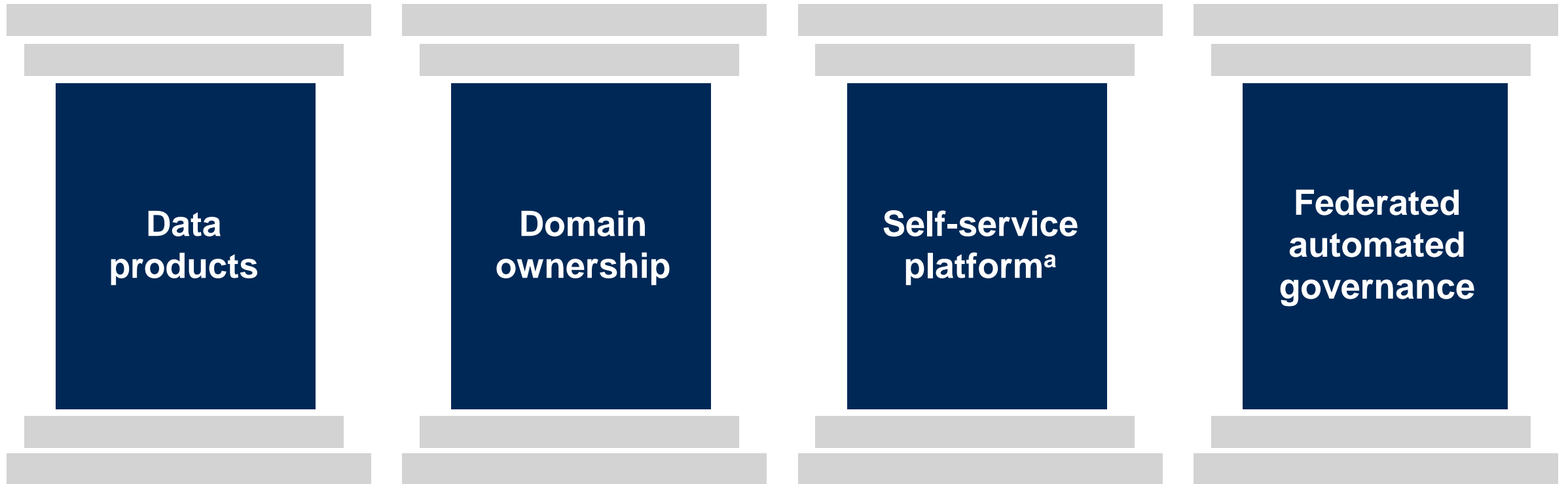
4. Establish adaptive governance

5. The impact of GenAI

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The Benefits

Self-defined priorities

Greater alignment between requirements and results

Faster time to market

Fewer bottlenecks

Autonomy

Agility

Scalability

Less lag time

Widespread knowledge

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How Far Can Business Take Over?

Data events	Data integration	Data products	Publication	Business impact
• Transactions • Streaming • Graph • Files	• Identify • Collect • Refine • Transform	• Analyze • Design • Model • Build	• Communicate • Release • Document • Retire	• Competitive advantage • Operational efficiencies • Revenue growth • Cost optimization • Risk mitigation

Data management → **?** ← **Business domains**

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Getting From Self-Service to Self-Sufficient

Data products

Domain ownership

Self-service platform[a]

Federated automated governance

[a] To enable self-service provisioning of shared services.

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Model Domain Teams as Fusion Teams

Domain Team

Data Persona
- Data Engineer
- Data Architect
- DataOps Expert
- Data Steward

Technology Persona
- Software Engineer
- DevOps Expert
- Automation Engineer
- Test Engineer

Skills and Knowledge Exchange

Business Persona
- Business Analyst
- Domain Expert
- End-User Representative
- Citizen Roles

Product Owner/Manager

+ **Business Stakeholders**
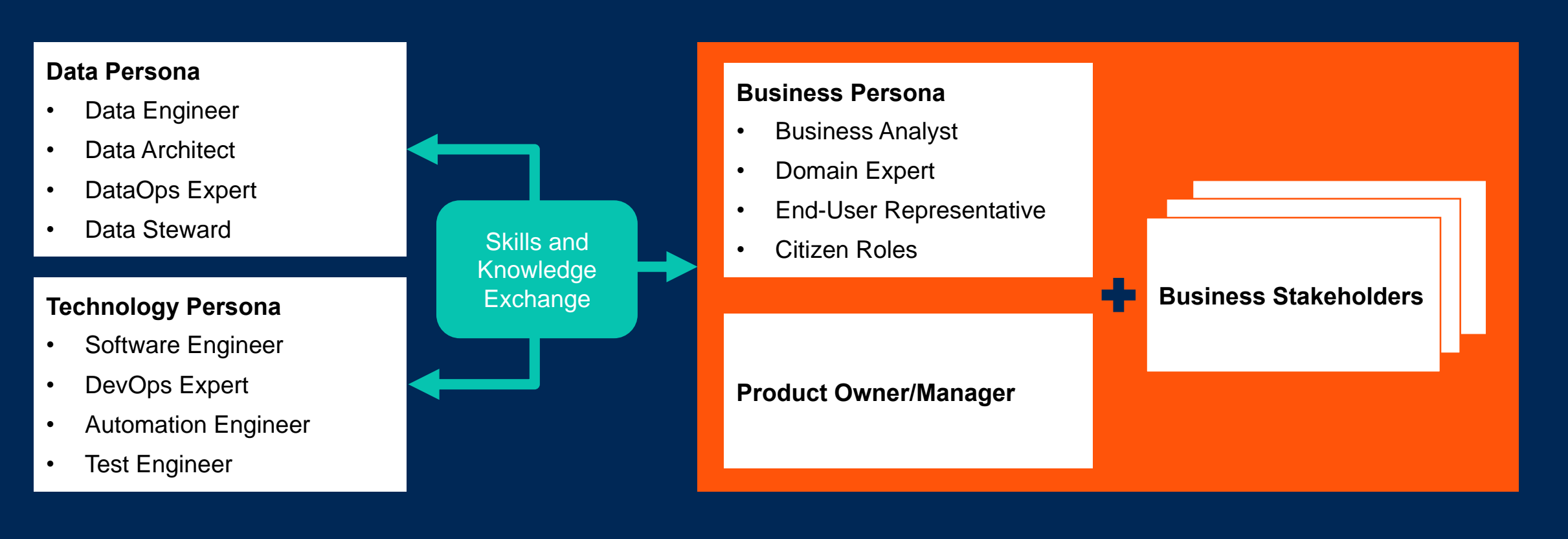
Note: "Persona" characterizes the type of certain roles; it's not a specific skill or job title.

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Key Issue Take-Away:

The key to "enable" business domains is by clarifying roles and responsibilities and ensuring knowledge and skills are in place.

A successful path requires the business domains to invest and be included from the beginning.

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Data Fabrics Need to Be Designed — With Composable Technology Parts

Data consumers

Data integration

Data and AI orchestration

Data preparation and data delivery

Recommendation engines

Metadata activation

Knowledge graph

Augmented data catalog

Data sources

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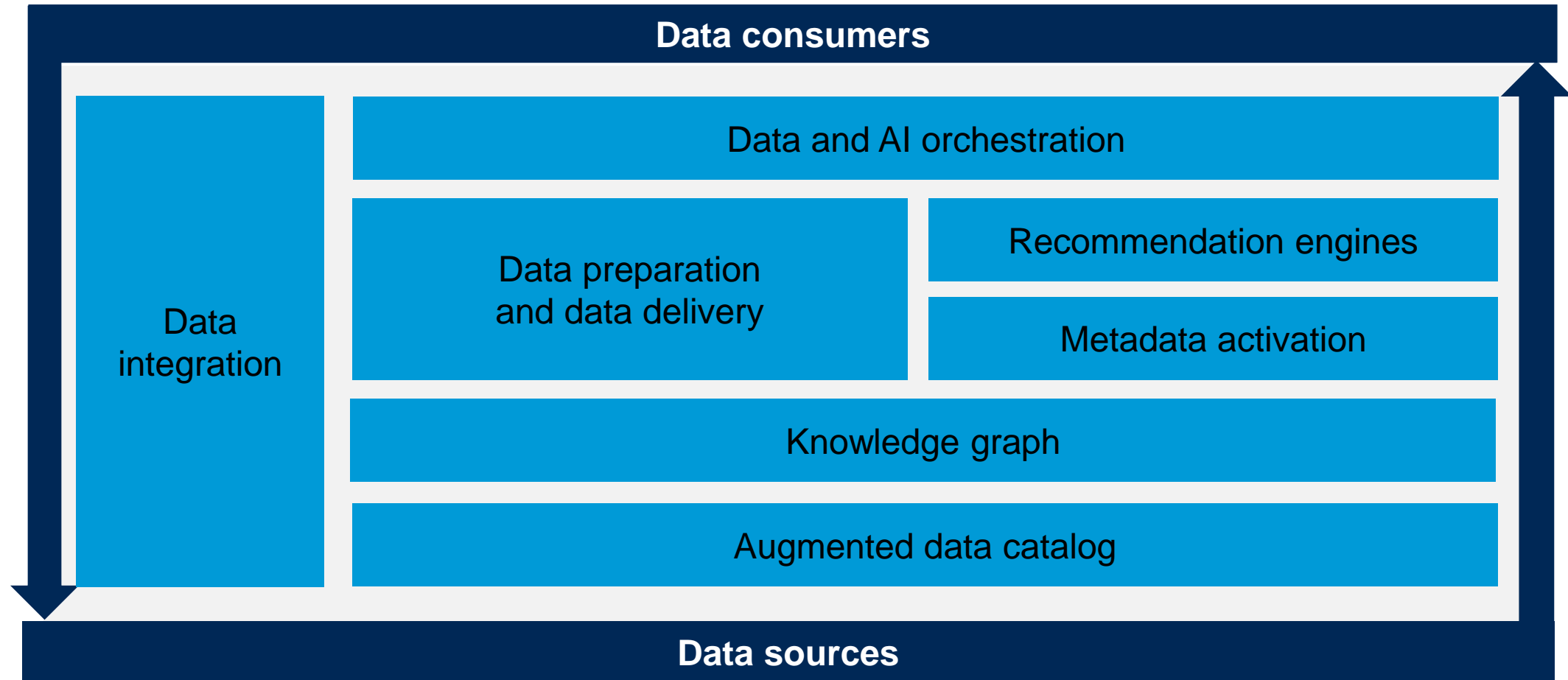
Convergence Around Data Fabric Design

Data fabric capabilities converge to provide better integration, semantics and organization

Analytics & BI platform	D&A governance platform	App integration platform	Data science & ML platform	Ops tools
Data integration	Data quality	Metadata management	Master data management	Database management
Data virtualization	Data profiling	Data catalog	Product mastering	Data warehouse
Replication and synchronization	Data validation	Data lineage	Customer mastering	Data lake
Data preparation		Active metadata management	Augmented MDM	Graph stores
Reverse ETL	Data observability		Multidomain MDM	Document database
Streaming	Data governance (execution)			Time series

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By 2028,
the data management markets
will converge into "a single market"
around data ecosystems
enabled by data fabric and GenAI
reducing technology complexity.

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Data Ecosystems: Driven by Commoditization

- High commoditization shifts focus away from individual components.

- Data ecosystem adopters interact only with the outer business practices layer.

- Competitive landscape shifts to orchestration and optimization, not individual puzzle pieces.

Commoditization index

High

Low

PlatformOps

Data fabric

Observability

Active metadata

Passive metadata

Data science, AI/ML

Event processing

Analytics

Data

Edge computing

Applications

Integration

Augmentation

Marketplaces and exchanges

Governance

FinOps

DataOps

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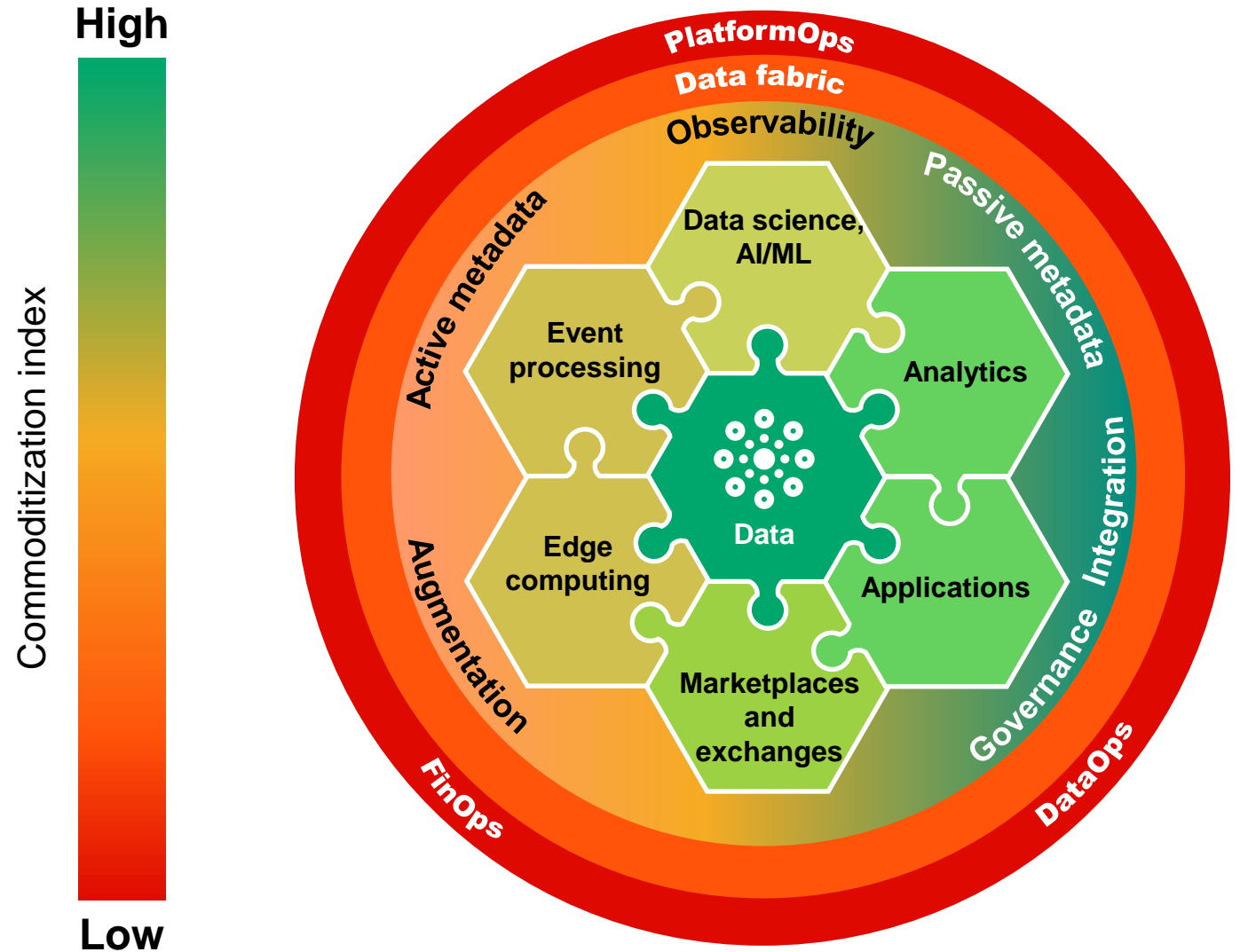
Key Issue Take-Away:

Data fabric design is the future-proof architecture.

Data ecosystems will lead to your future infrastructure.

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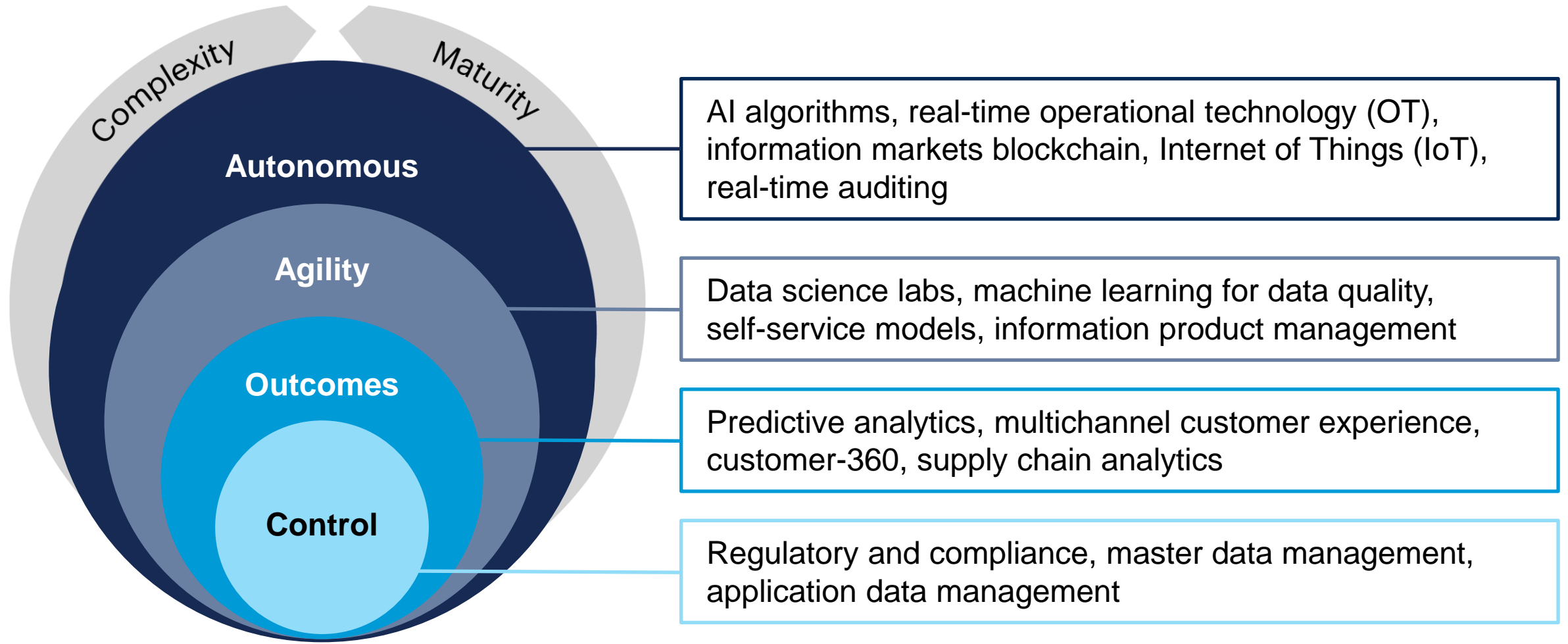
5. The impact of GenAI
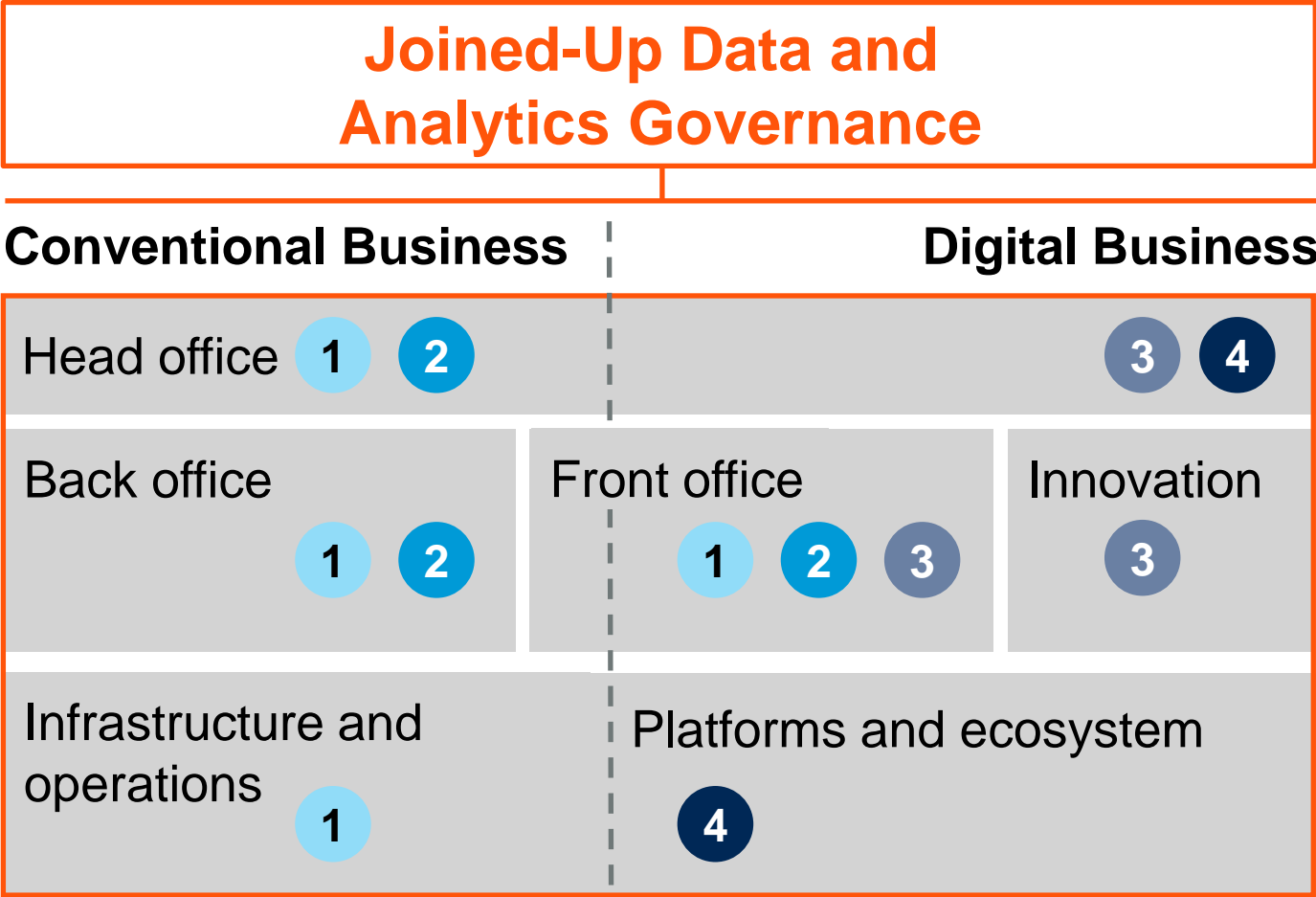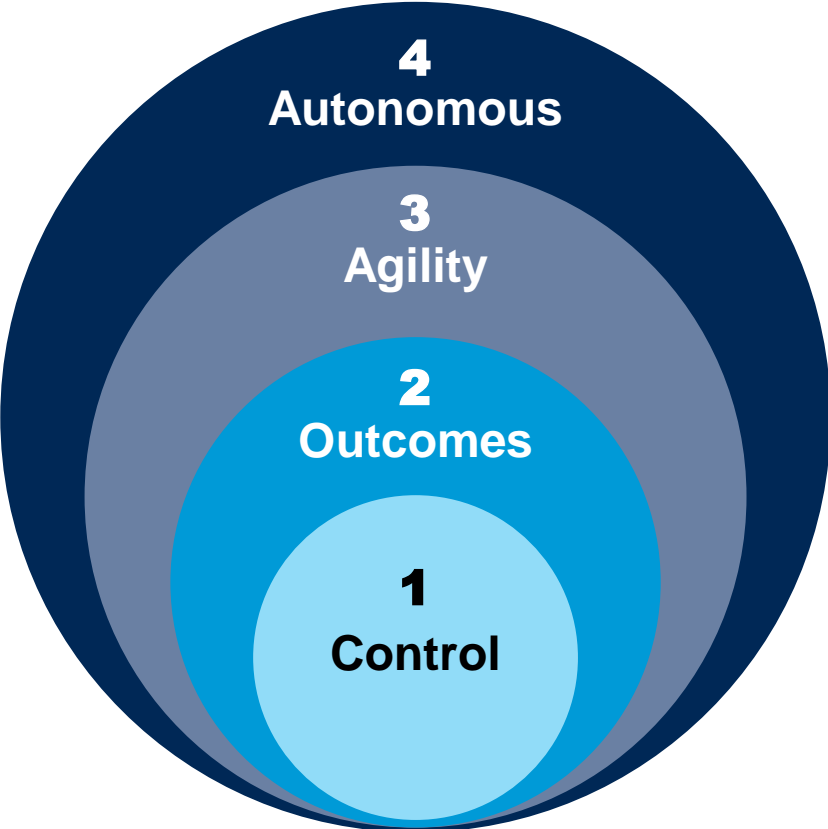
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Move From Control to Collaborate

Is our governance initiative perceived as a bureaucratic directive, or is it seen as enabling and collaborative — improving information culture and encouraging innovation?
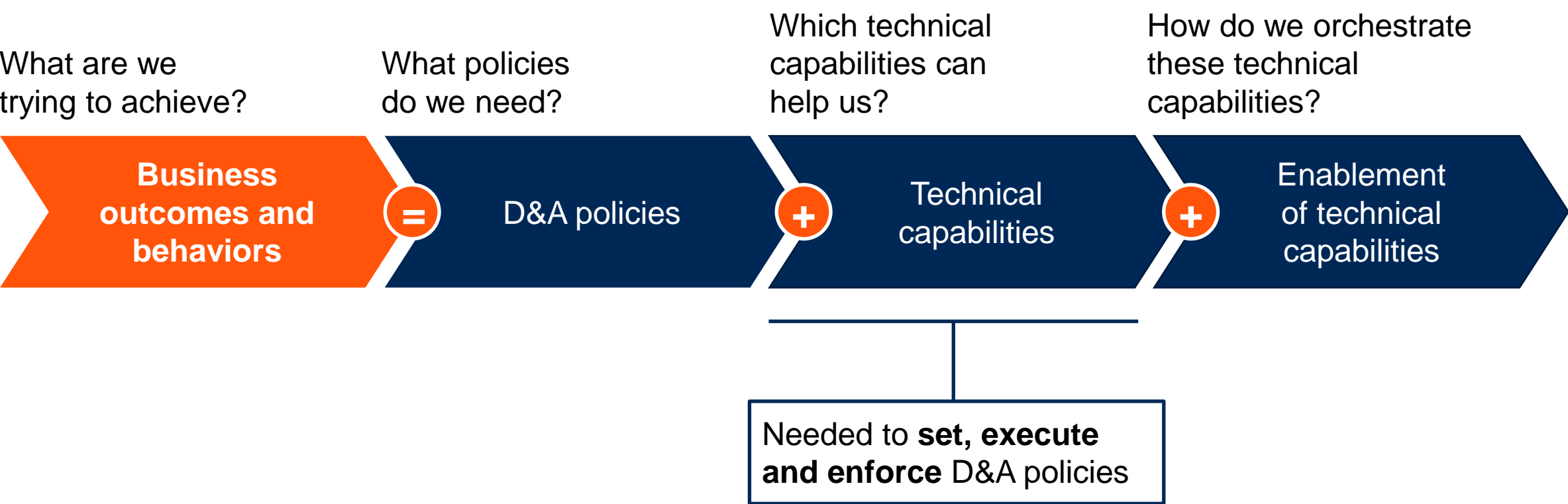
Organization culture

Office of CDAO	Central D&A team	Data science lab
Finance analytics ERP data, CPM data	**Customer and sales** Analytics CRM data	**Marketing analytics** CRM data, open data
HR analytics HCM data, ERP data	**Supply chain analytics** SCM data, PLM data	**Security analytics** Web data, log data

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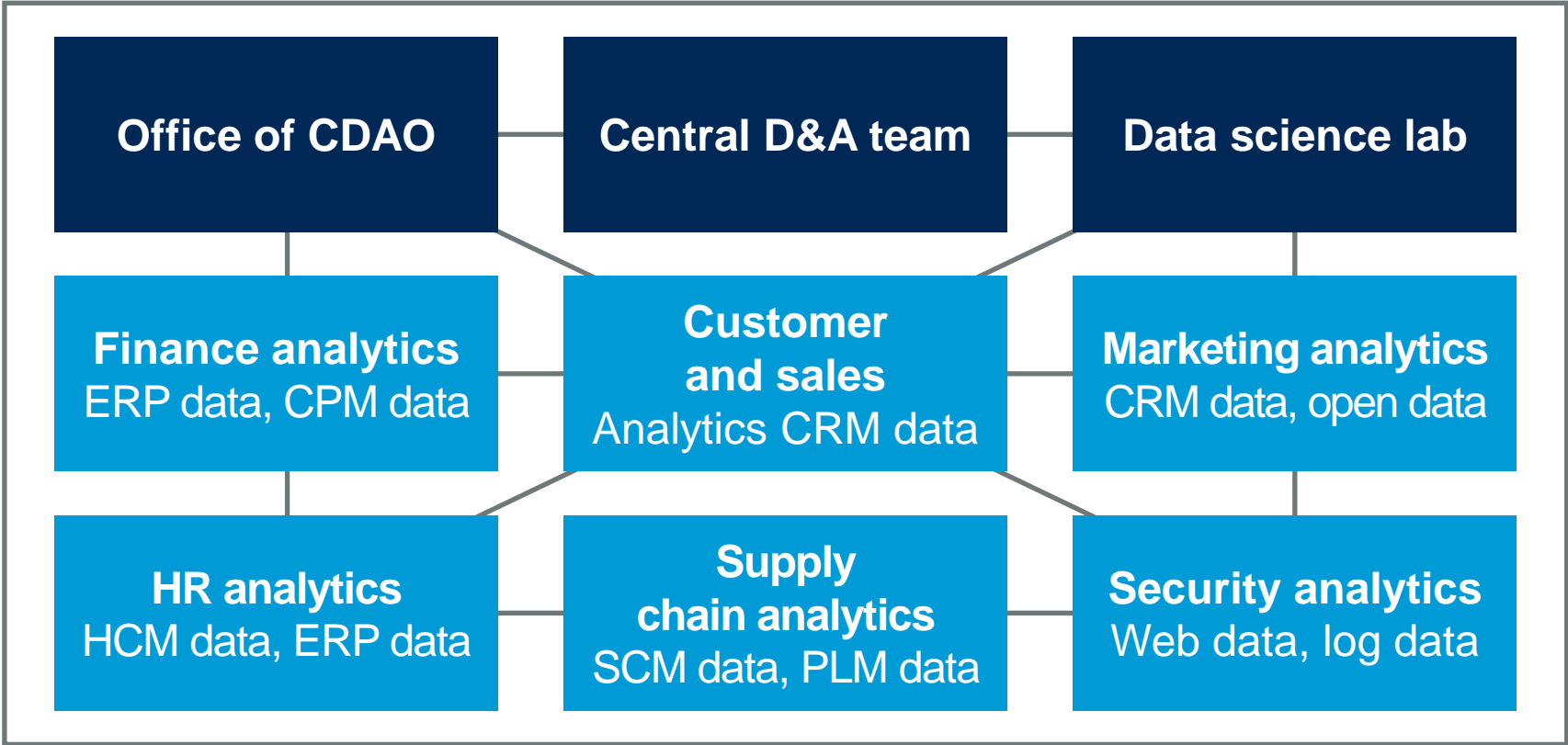
Use Adaptive D&A Governance in Your Target Operating Model

Complexity

Maturity

Autonomous

Agility

Outcomes

Control

AI algorithms, real-time operational technology (OT), information markets blockchain, Internet of Things (IoT), real-time auditing

Data science labs, machine learning for data quality, self-service models, information product management

Predictive analytics, multichannel customer experience, customer-360, supply chain analytics

Regulatory and compliance, master data management, application data management

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Use Adaptive Data and Analytics Governance in Your Target Operating Model

Joined-Up Data and Analytics Governance

	Conventional Business		Digital Business
Head office	1 2		3 4
Back office	1 2	**Front office** 1 2 3	**Innovation** 3
Infrastructure and operations	1	**Platforms and ecosystem** 4	

Left circles (nested):
- **4 Autonomous**
- **3 Agility**
- **2 Outcomes**
- **1 Control**

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Leverage Data and Analytics Governance Platform

What are we
trying to achieve?

What policies
do we need?

Which technical
capabilities can
help us?

How do we orchestrate
these technical
capabilities?

Business outcomes and behaviors = D&A policies + Technical capabilities + Enablement of technical capabilities

Needed to **set, execute and enforce** D&A policies

Federated governance models need technology to automate execution and enforcement of policies.

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Key Issue Take-Away:

Governance needs to follow your new operating models and federation — adapt.

D&A Governance platforms will support your governance practice in an increasingly federated approach.

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5. **The impact of GenAI**

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Through 2026,
GenAI will reduce manually intensive data management costs by up to 20% each year while enabling four times as many new use cases.

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Business Benefits of AI-Enabled Data Management

Data management convergence

Data ecosystem + **Data fabric** + **Generative AI**

Future data infrastructure | Future data architecture | Future data language

- Simplified user experience, creating the "Citizen Data Engineer"

- Flexibility of data access

- Central (active) metadata and governance, federated to many

- Cost savings and productivity gains

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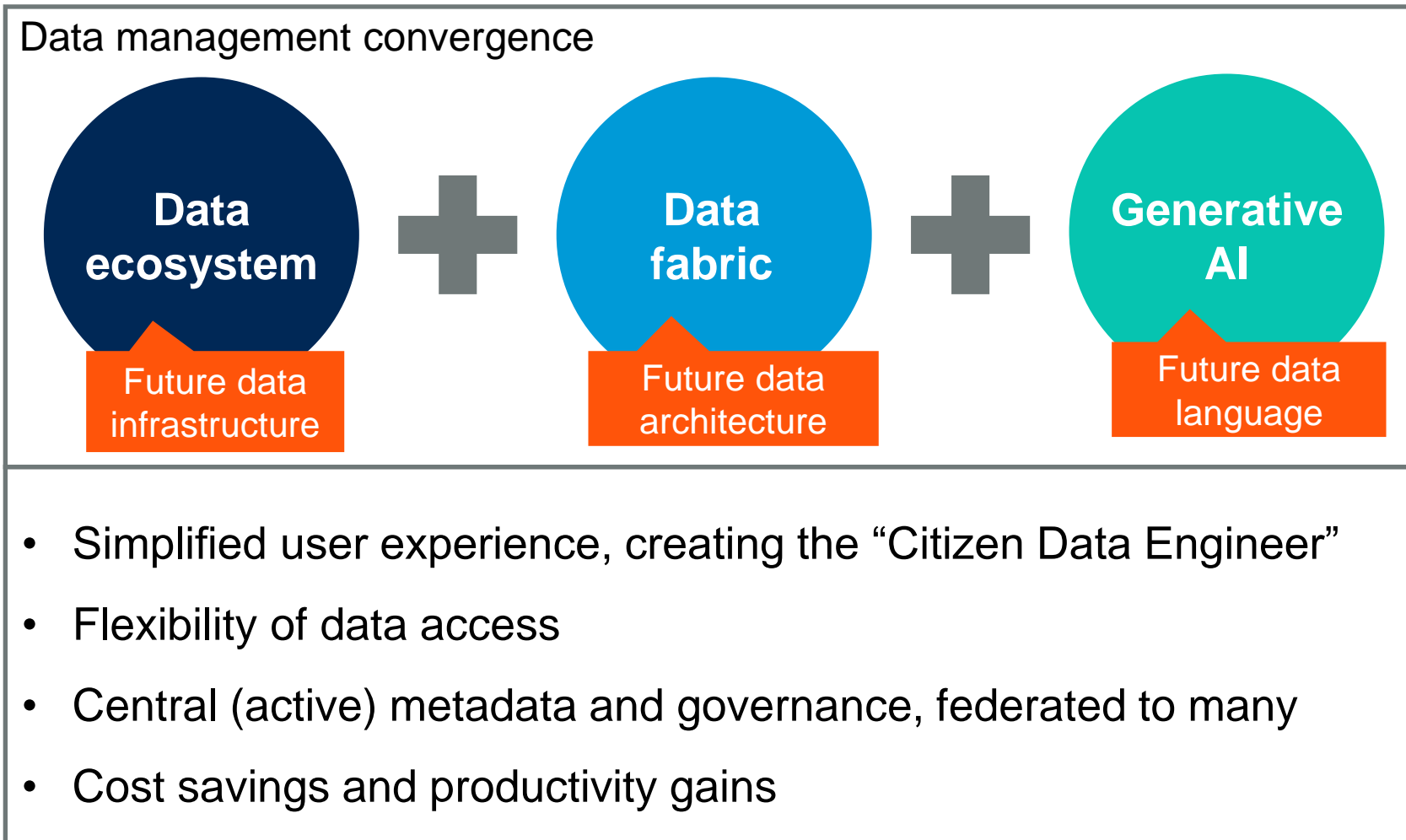
Data Management Must Expand to Meet AI Needs

AI-ready

Make your data ready for AI
Make your AI ready for data

Traditional data management ▶

- Governance policies
- Data cataloging
- Data quality
- Business-driven workflow
- Data engineering
- Data product
- Scalability, performance
- Visualization
- Lineage
- AI data labelling
- AI synthetic data
- AI data enrichment
- AI data bias mitigation
- Chunking vector embedding
- Semantics
- Prompt engineering

◀ **AI-ready data**

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AI-Ready Data – Fitness for the Use Case

Align data

Govern contextually

Qualify continuously

AI-ready data
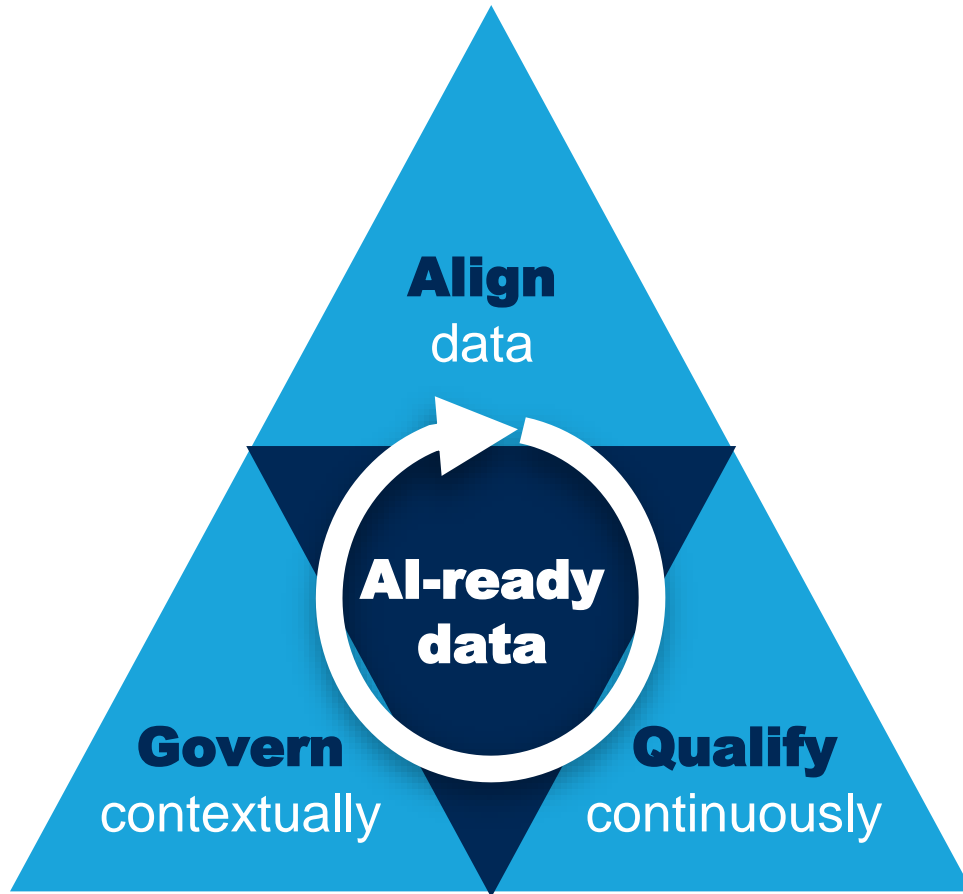
Alignment	Qualification	Governance
• Quantification	• Consistency assessment	• Data stewardship
• Semantics	• Validation and verification	• Inference and derivation
• Quality	• Operational SLAs	• Regulatory and compliance
• Trust and fairness	• Versioning	• AI standards support
• Diversity	• Continuous regression testing	• Data sharing
• Lineage	• Observability metrics	

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Key Issue Take-Away:

GenAI-enabled capabilities will positively impact your whole data management value chain. Check with your vendors on their roadmap.

You are in the driver's seat for AI-ready data. It doesn't replace "traditional" data management tasks, it adds to it.

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Recommendations

☑ Get your team together and assess your maturity for each issue. Addressing them is not a project — it is a journey.

☑ Improving your maturity means to address all five key issues. Pacing and priorities depend on your organization's current state.

☑ Involve your CDAO, CIO and business stakeholders early. An increasingly federated data management practice requires coordination and buy-in.

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Ask the speaker
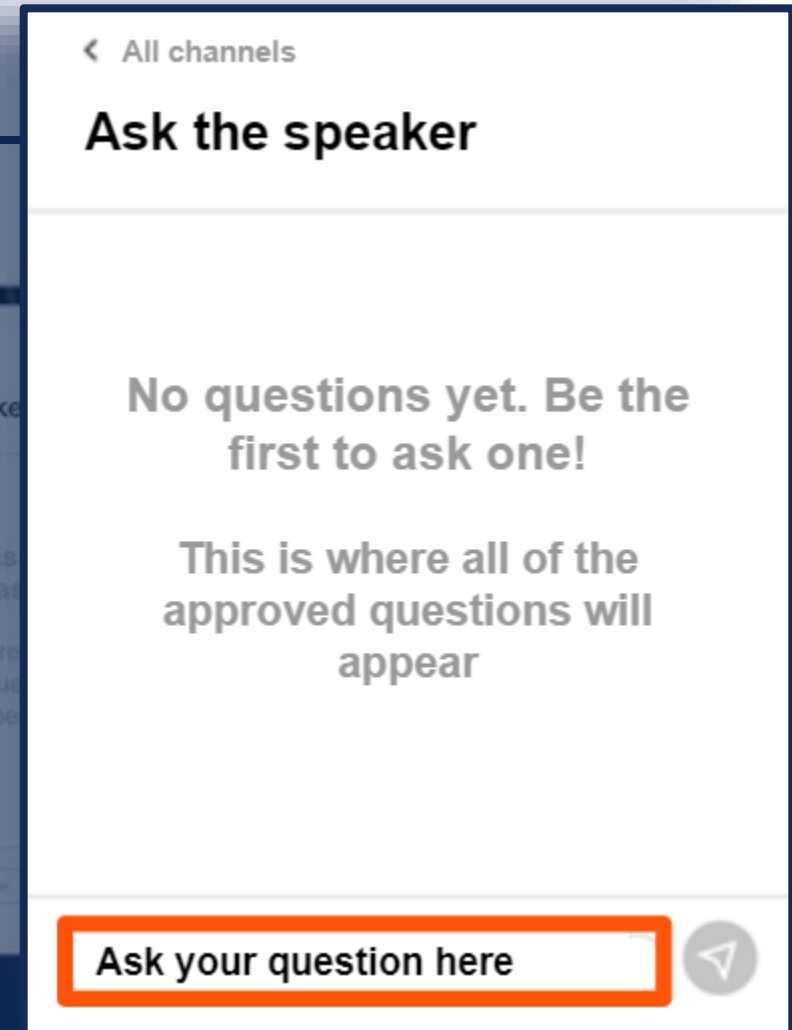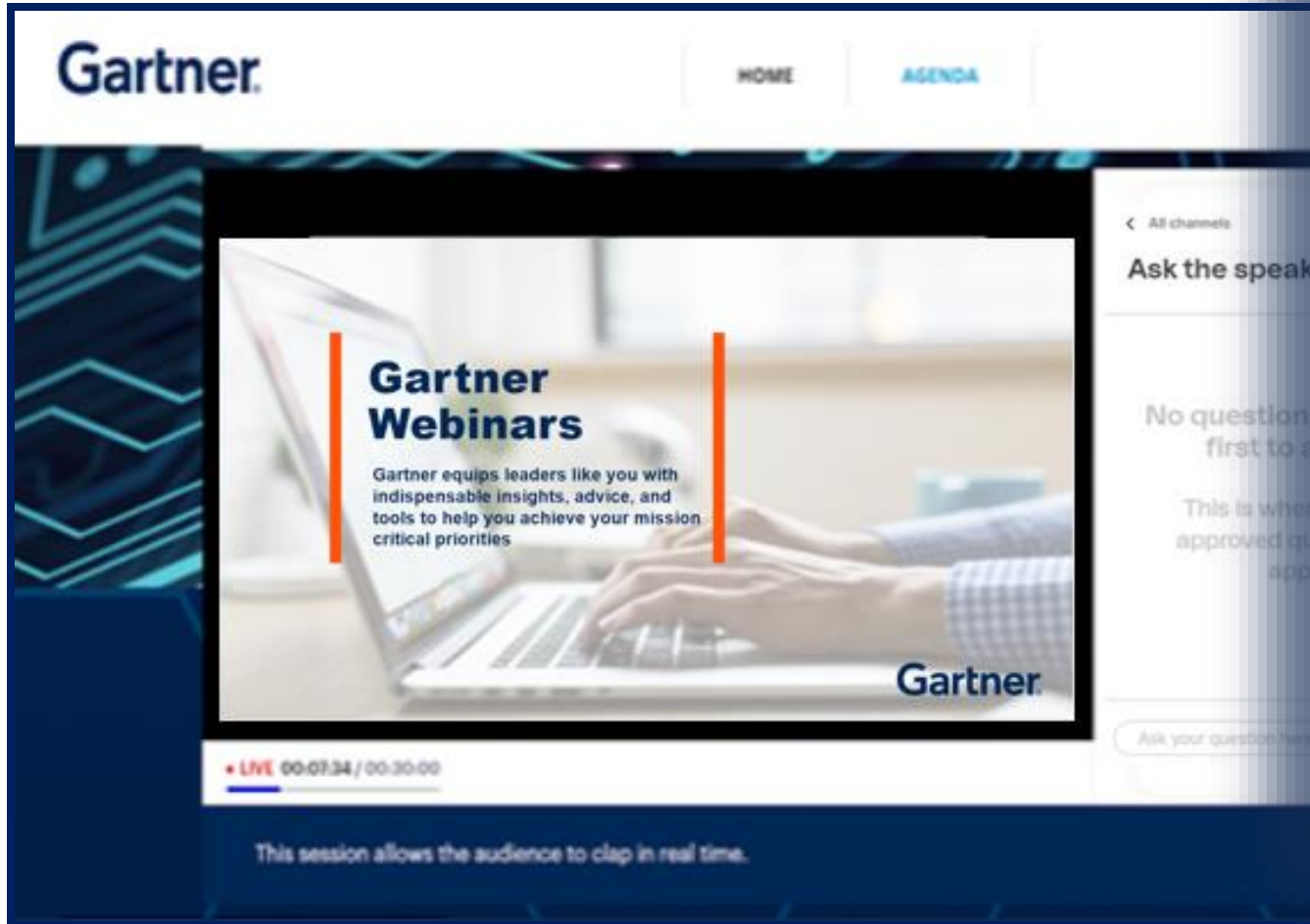
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Gartner Data & Analytics Summit

3 – 5 March 2025 | Orlando, FL

28 – 29 April 2025 | São Paulo, Brazil

12 – 14 May 2025 | London, U.K.

20 – 22 May 2025 | Tokyo, Japan

2 – 3 June 2025 | Mumbai, India

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Harness the **growing power of AI** effectively and responsibly for decision augmentation, process optimization and even autonomous operations.

Scale your purpose beyond organizational silos, across value chains and ecosystems to foster societal perseverance.

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Data Management: Modernize to Increase Value and Reduce Costs

Contemporary data management ensures data can be reused seamlessly and as needed to equip the business.

Learn More

Delivering a Comprehensive 5-Year Data Strategy at University of Canberra

*"I've heard many CFOs and CDOs say **don't Google it, Gartner it!** It has become my go-to now. I love taking snippets of Gartner and taking it up to senior management, it shows that you've not just done the digging and the research, you've validated it with somebody from industry that know what they're talking about."*

University of Canberra Delivers a Comprehensive Yet Agile Data Strategy

Client Story

Rajvi Shah | Acting Data & Analytics Director

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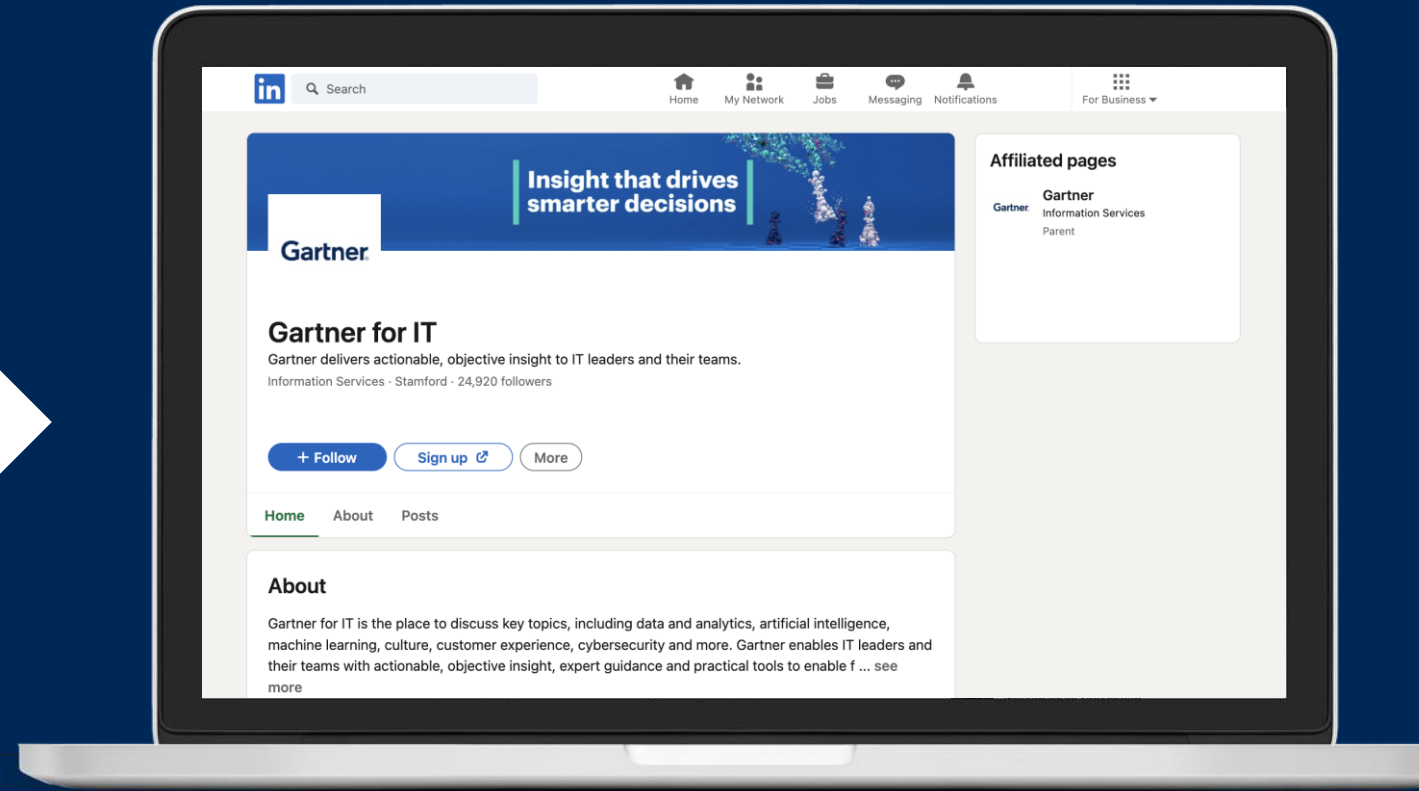
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