

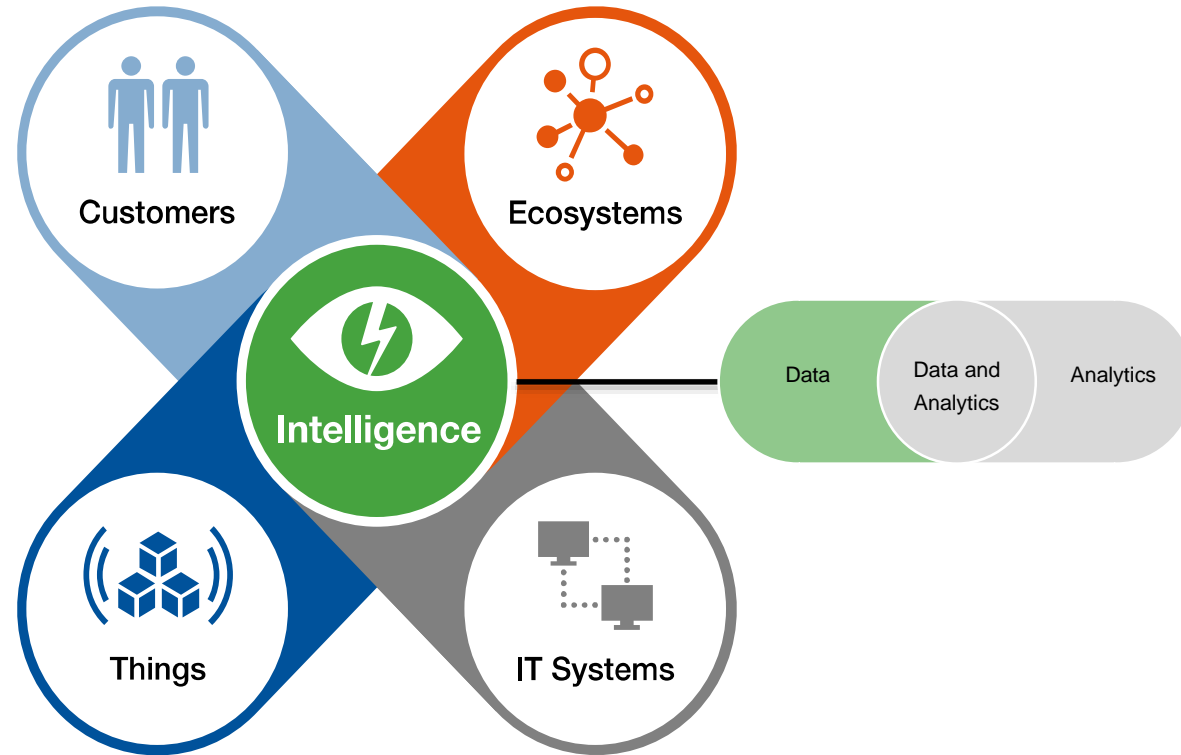
State of Data Management: Balancing Collecting Data and Connecting to Data Is the Future

Adam M. Ronthal
@ARonthal



Gartner®

Data Fuels the Digital Business Platform



Data is at the **center** of the **architecture** for a digital business.

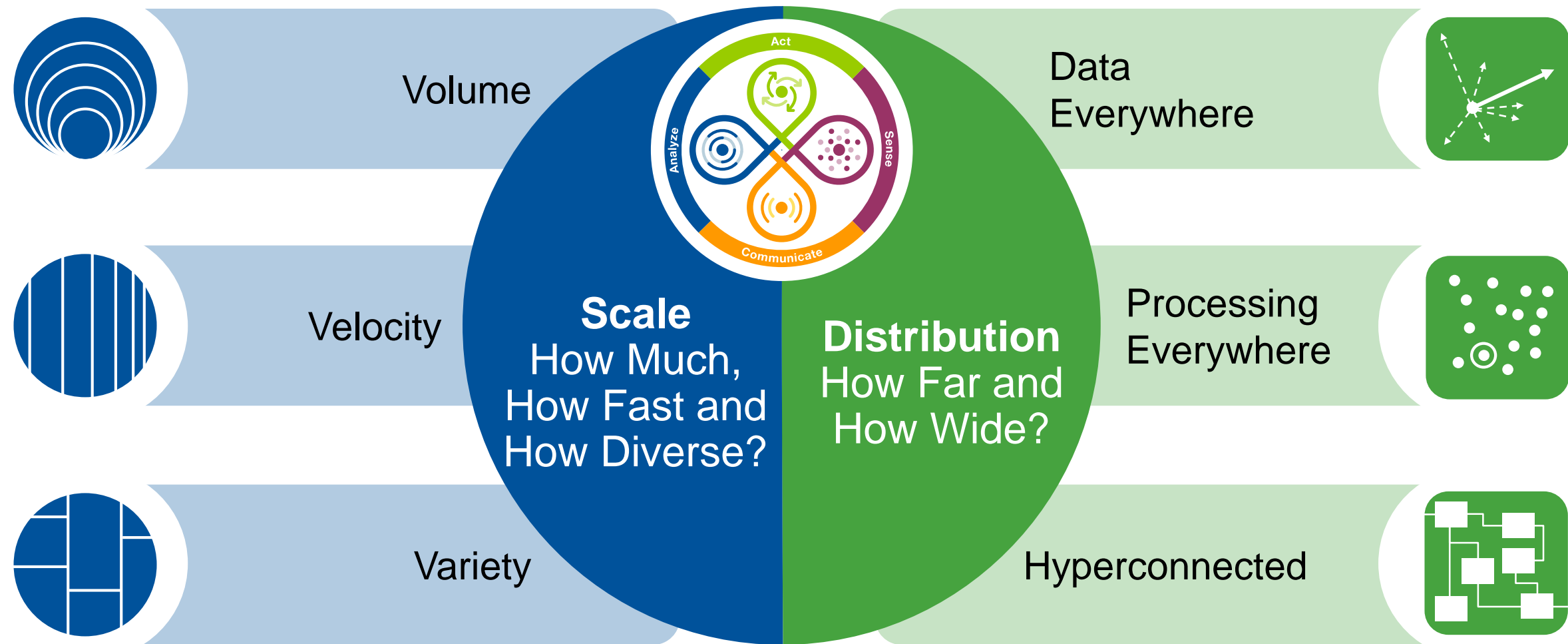
Key Issues

1. What data management challenges are organizations facing?
2. How should organizations adapt their data management strategy?
3. Where should balancing, connecting and collecting of data be applied?

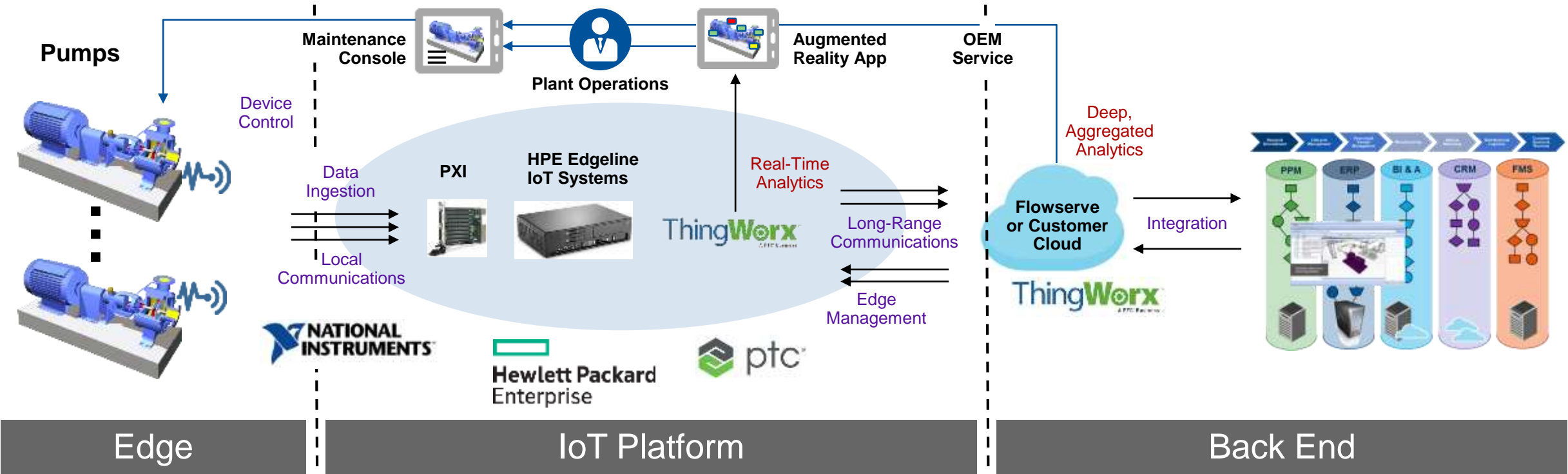
Key Issues

1. What data management challenges are organizations facing?
2. How should organizations adapt their data management strategy?
3. Where should balancing, connecting and collecting of data be applied?

New Demands for Speed and Scale



IoT Data Is Distributed



Although distributed, **data** remains at the **center** of an **IoT** platform, as it is in all **digital business platforms**.

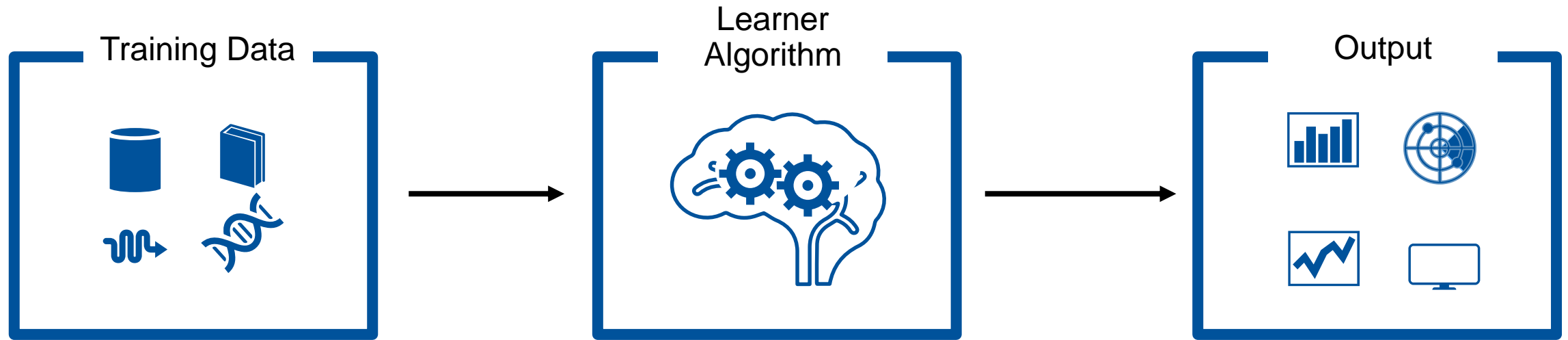


15%

Centralized

Distributed

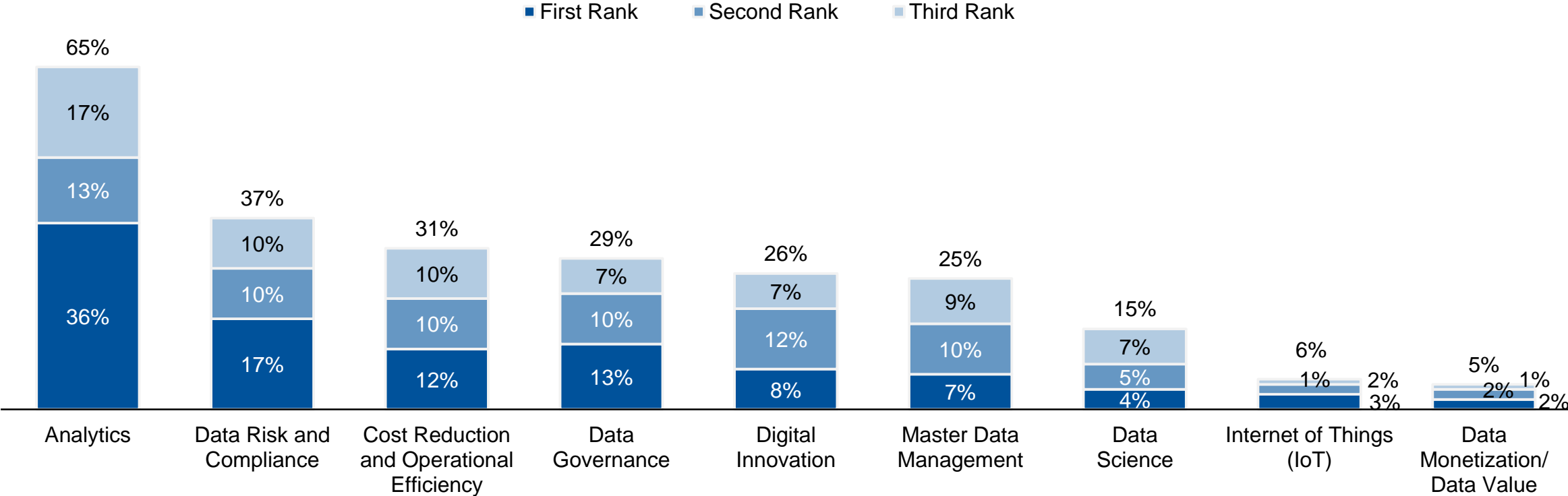
Machine Learning Starts With Data: It Can Be Any Data From Anywhere



Data for machine learning needs to be **diverse** in origin and type. Data science starts with **data**.

Analytics, Data Risk and Compliance Force New Approaches to Data Management

Importance of Current Data Management Initiatives
Top three most important (ranked)



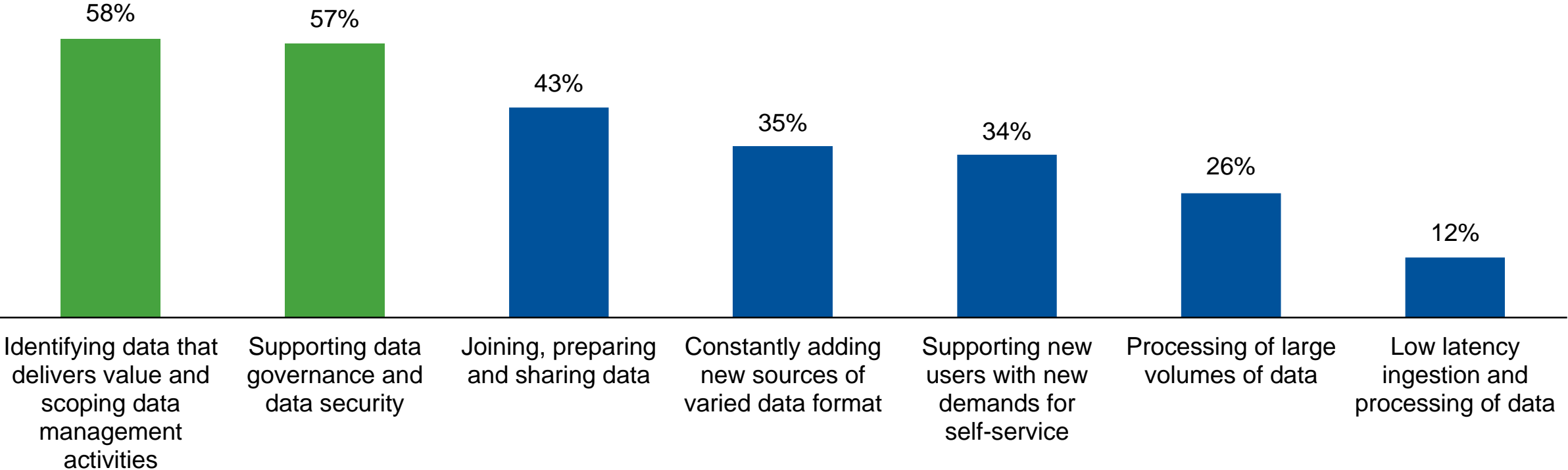
Base: n = 104 Gartner Research Circle Members/Only Asked of Initiatives 'Have Invested in' at Q/Excludes 'Not Sure'
Q. Which of these current initiatives are most important to your organization's data management strategy today? Please click to rank your top 3 in order of importance.

Key Issues

1. What data management challenges are organizations facing?
2. How should organizations adapt their data management strategy?
3. Where should balancing, connecting and collecting of data be applied?

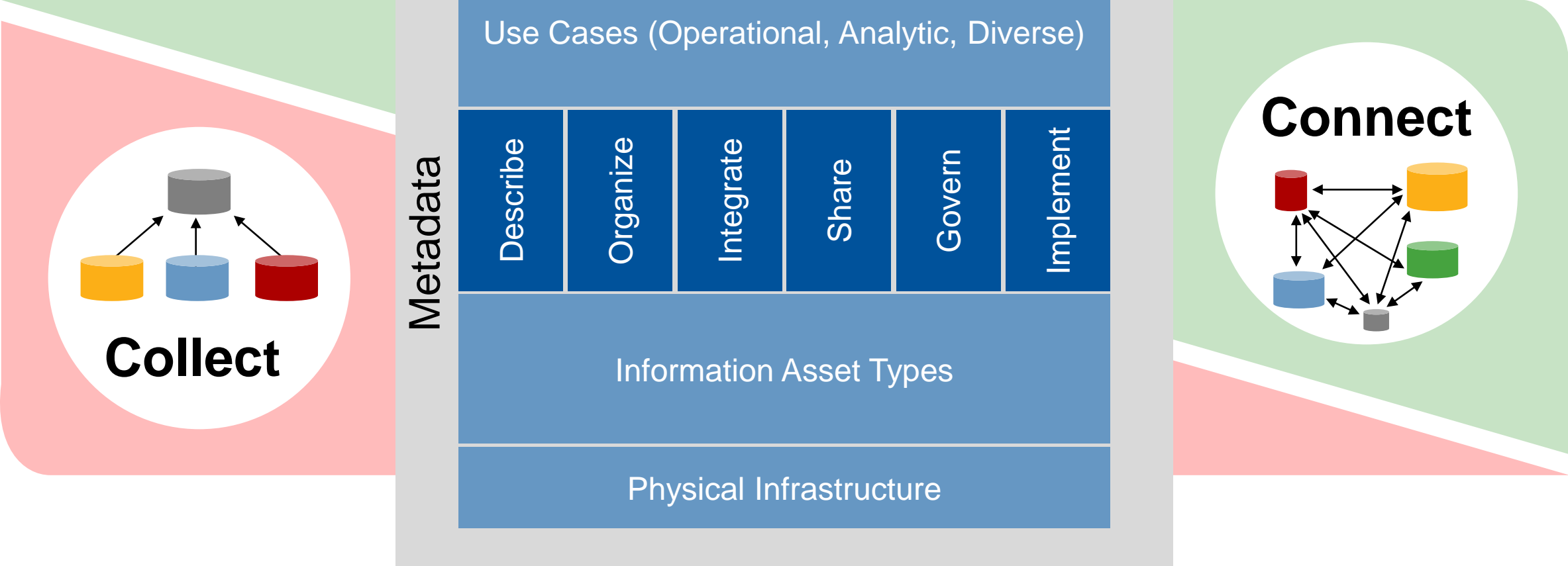
But Really What Data Should Be Managed?

Biggest Challenges for Data Management Practice
(Multiple Responses Allowed)



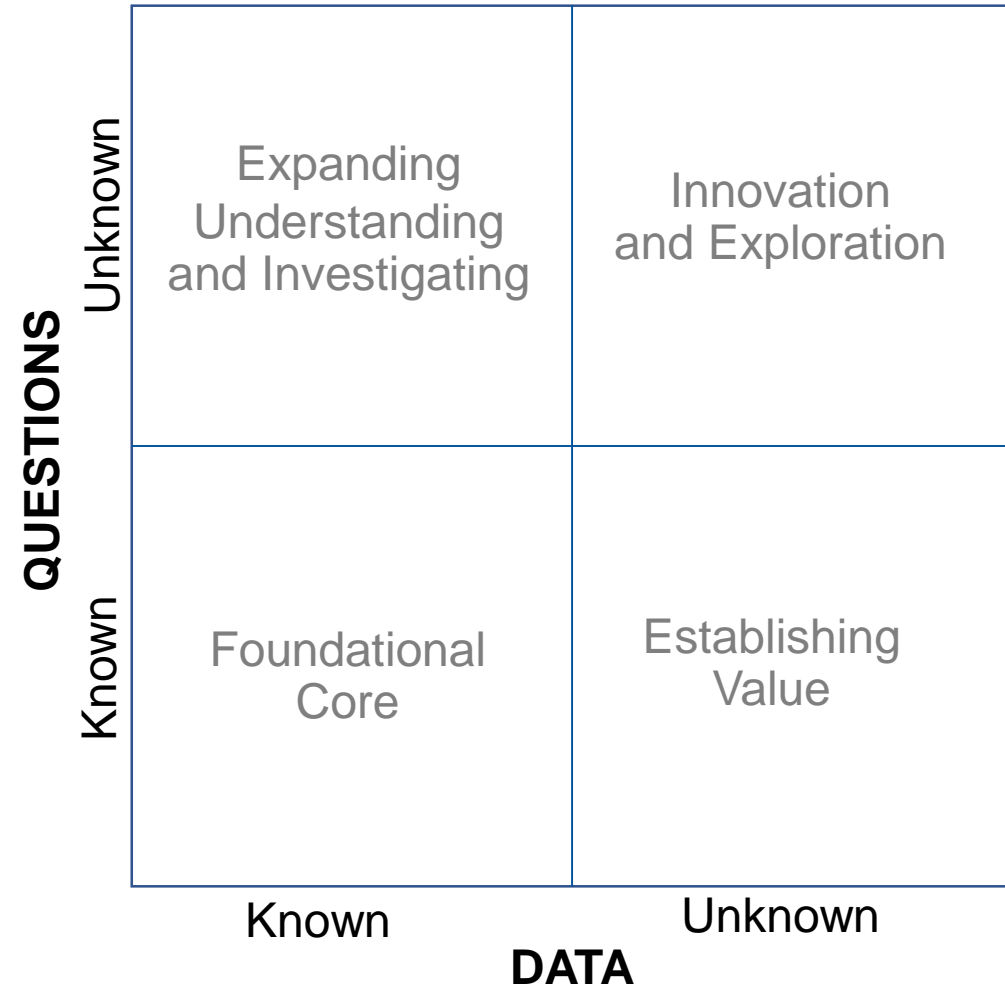
Base: n = 113 Gartner Research Circle Members.
Q. New use cases drive the complexity of data management. What factors do you consider to be the most challenging to your data management practice? Please select up to three.

Components of a Data Management Infrastructure for Flexible Deployment



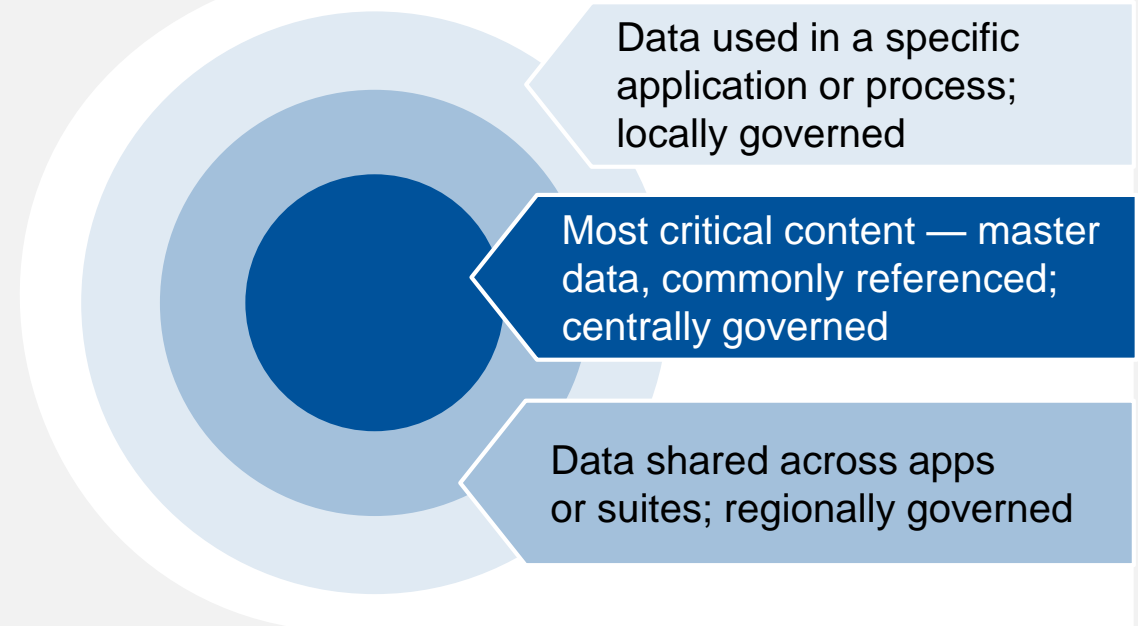
Adapt Your Data Management Strategy to Your Organization Strategy

Diversity of your data management technology landscape needs to adapt to your **strategy**. It is not standards-based only!



Information Governance Is No Longer Top-Down and One-Size-Fits-All

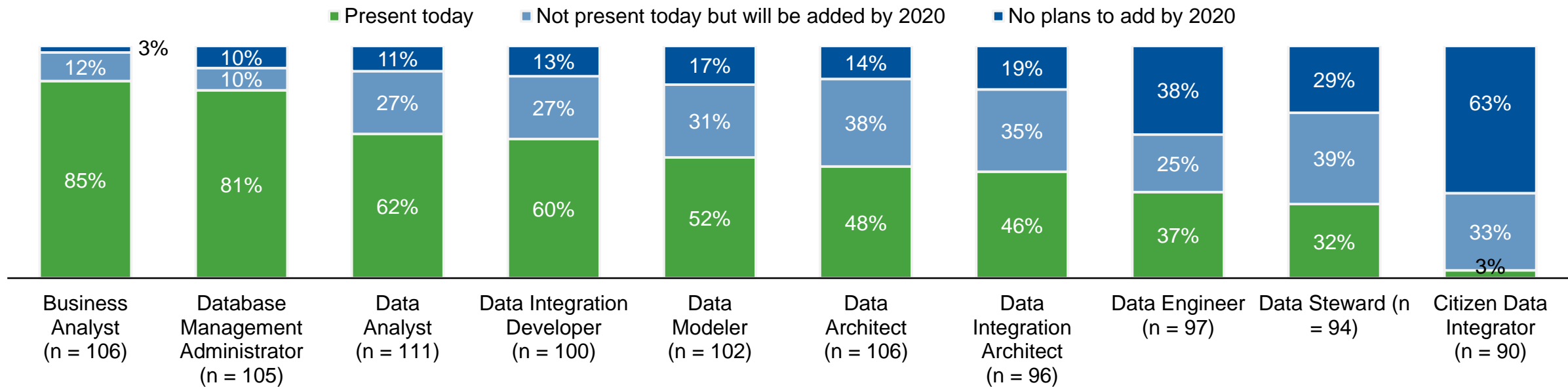
- Lightweight, reflecting higher levels of devolved autonomy.
- Account for multidisciplinary teams with broad levels of input.
- Focus efforts on metadata management.
- Context is everything:
 - How is data being used?
 - Greater scrutiny on data crossing process, department or enterprise boundaries.



Governance-related technology capabilities must support situational application of policies and rules.

Engage Diverse Roles in Data Management Demands

Data Management Roles: Currently Present/To Be Added by 2020

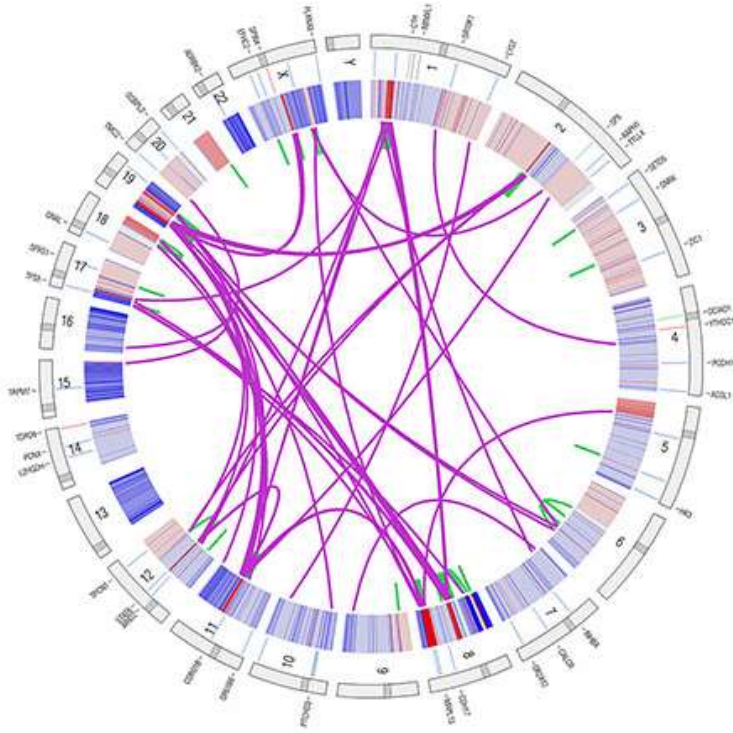


Base: n = Varies Gartner Research Circle/Excludes 'Not Sure'.

Q. Which roles are currently present in your organization's data management team and which new roles do you expect to add by 2020?

Different **skills** are required depending on the **strategy** and **outcome** desired.

Navigating Data Becomes Crucial: Metadata as a Core Competency



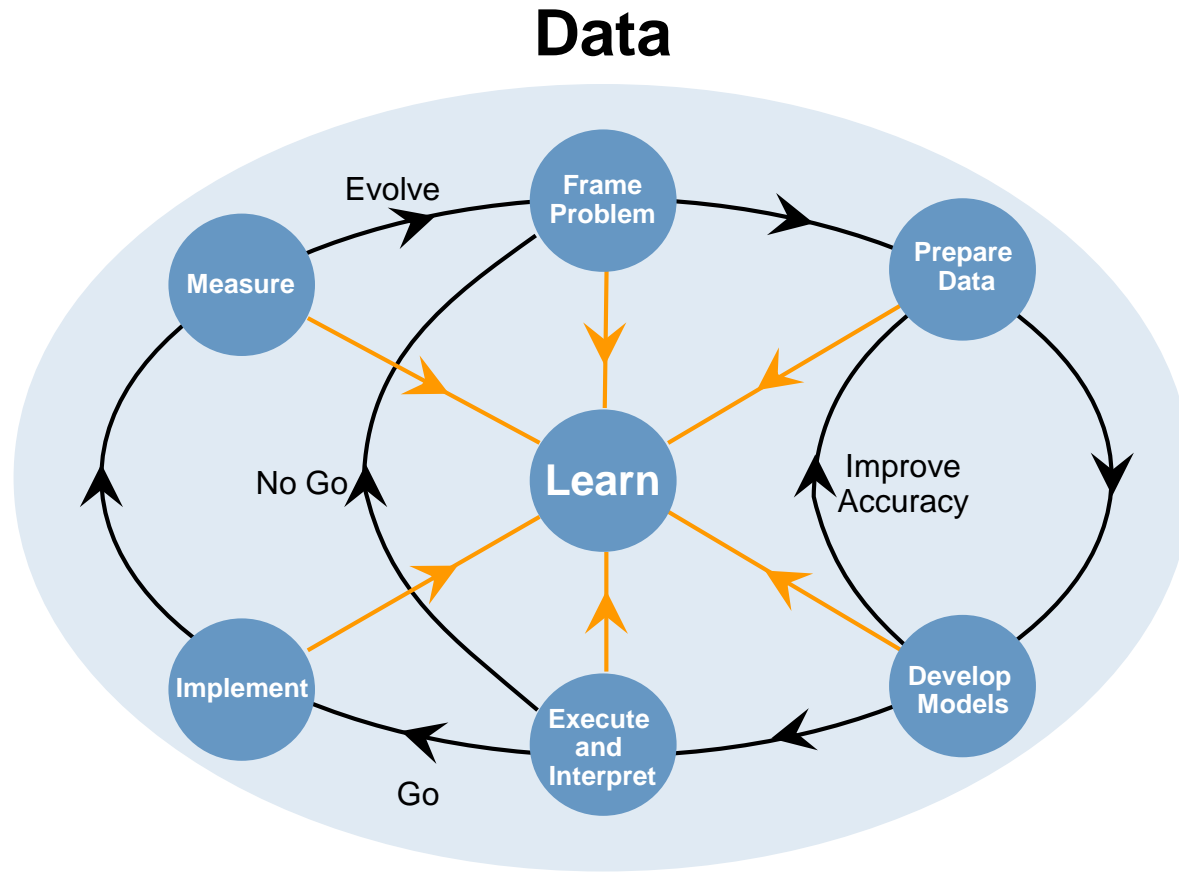
- Where it resides and through which channels it arrived
- What it means and how it should be interpreted
- How it relates to the rest of the ecosystem
- What it's worth and how its value can be expressed
- Whom it's accessed and consumed by
- Which business processes it fuels
- Which governance policies it's expected to satisfy

Without effective metadata management, connecting **data** becomes **brittle, chaotic and siloed**.

Key Issues

1. What data management challenges are organizations facing?
2. How should organizations adapt their data management strategy?
3. Where should balancing, connecting and collecting of data be applied?

Data Fuels the Data Science Process End-to-End



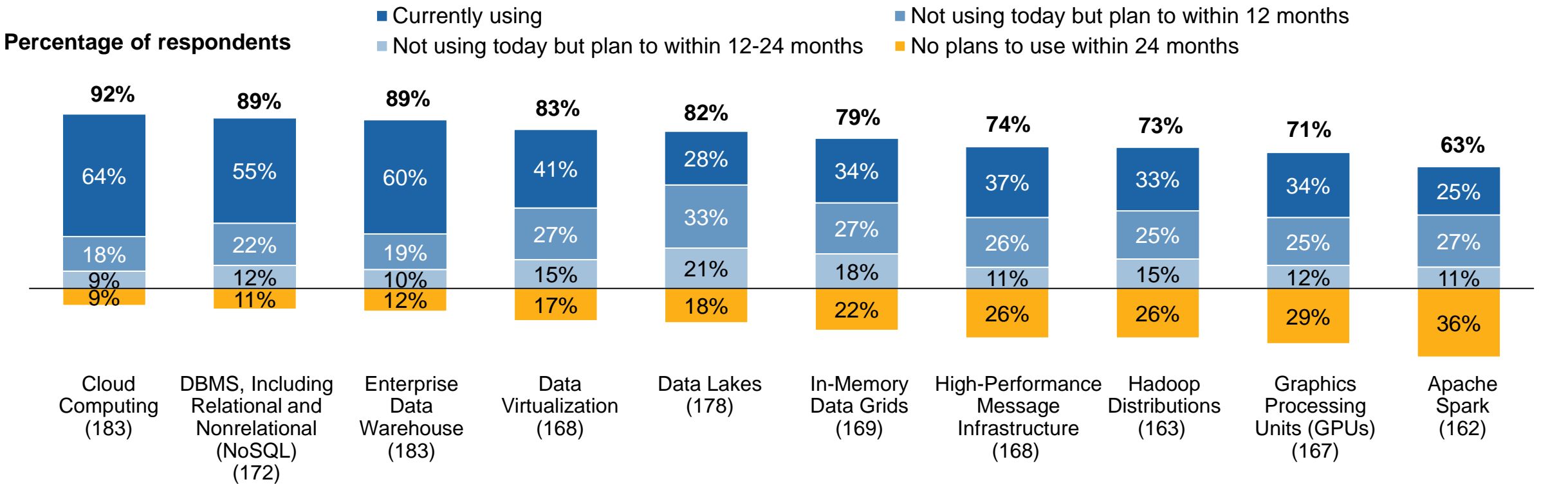
- Business problems should have enough supporting data.
- Data should be good for predictions.
- Ensure a good understanding of the input data.
- You should have a clear idea how trustworthy the data is.
- Plan for validation and testing as part of your data collection.
- Monitor results.

Fight algorithmic bias through data **diversity**.

Combine Connecting to Data and Collecting Data: Meet Cost Optimization, Flexibility and Agility; Combine Technologies and Deployment Options

Which information infrastructure technologies is your organization using or planning to use in its data and analytics efforts?

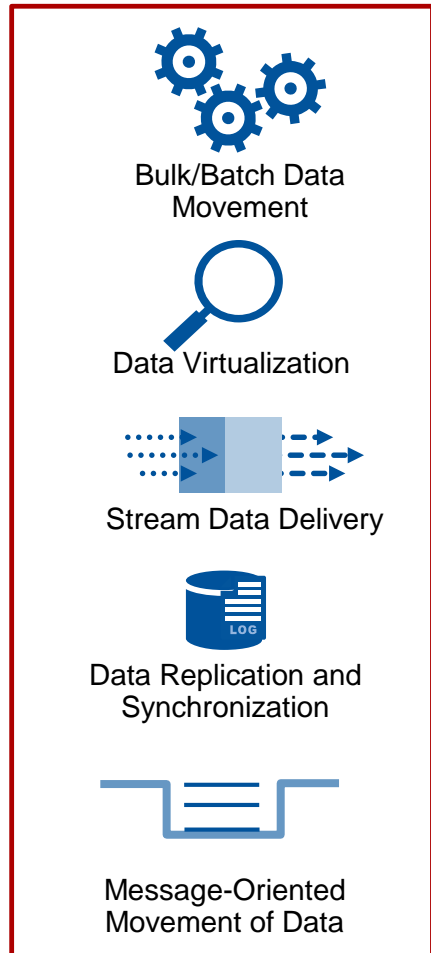
% currently using/planning to use



Base: n = Varies Gartner Research Circle Members/External Sample. Excludes "Not Sure"
DA. Which information infrastructure technologies is your organization using or planning to use in its data and analytics efforts?

Addressing Data Distribution Using Multiple Integration Styles

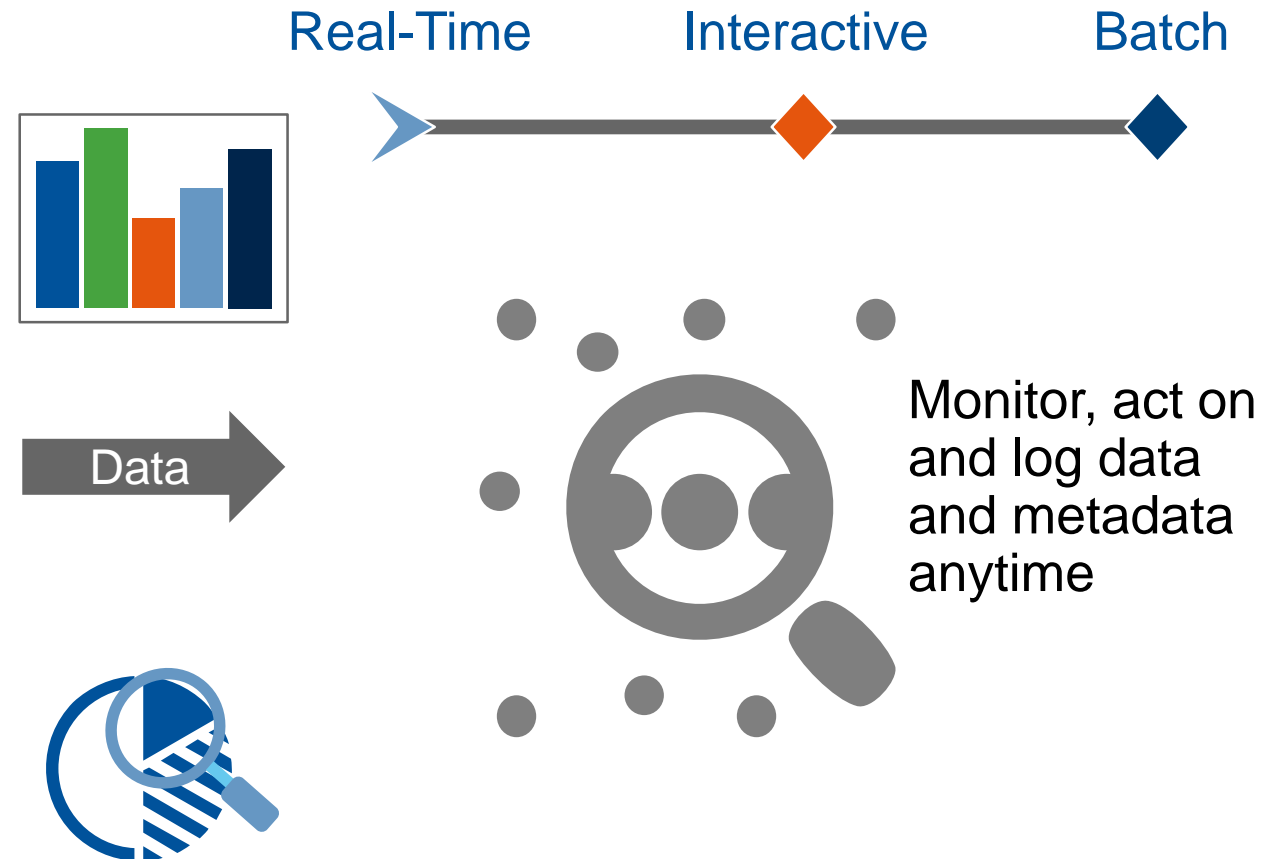
Distributed data integration requires a combination of multiple data delivery styles



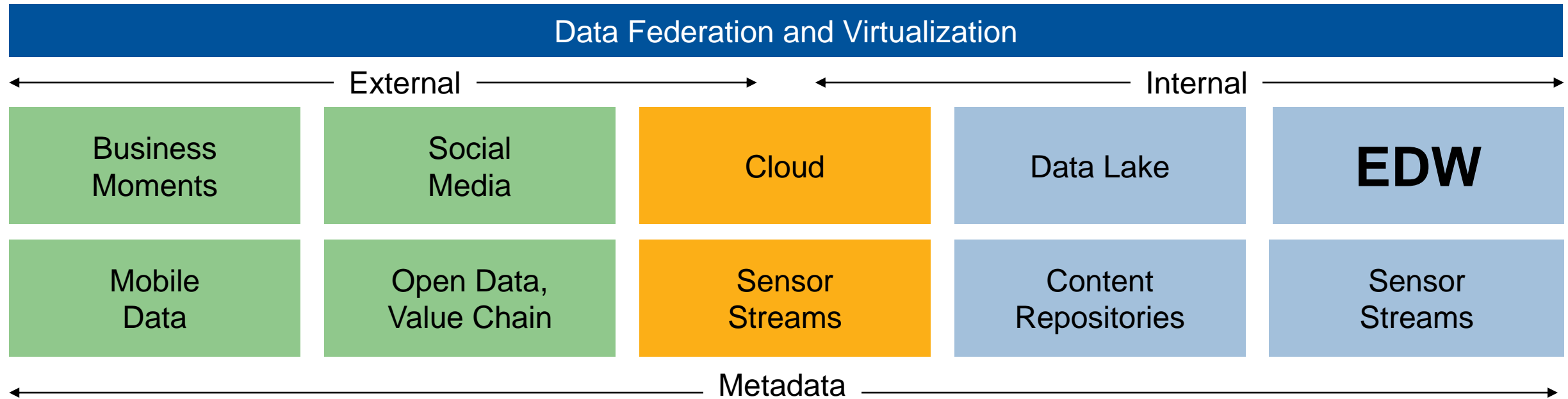
Data sourcing across streaming/complex-event processing pipeline

Distribution of data transformation processing to any location of data (Apache Hadoop, cloud, IoT ecosystems, etc.)

"Smart" processing to dynamically introspect metadata — to determine when data needs to be moved for optimal processing



Support a Wide Range of Analytical Use Cases With the Logical Data Warehouse



- Distributed architecture composed of multiple repositories
- Any and all information types — supported by optimized storage and processing
- Inside and outside (cloud, external) the enterprise
- Pulled together as and where needed by federated and virtual capabilities

Summary

1. Connecting and collecting data is inevitable.
2. Organizations need to adapt their data management strategies to meet these new demands.
3. Apply connecting and collecting data in four key practices.

Recommendations

- ✓ Use data management capabilities to adapt to changing demands
- ✓ Align your data management strategy to your organization's strategy
- ✓ Engage diverse roles in data management and adapt to their needs
- ✓ Add a portfolio approach in evolving your technology landscape
- ✓ Leverage balancing, connecting and collecting data across four key practices

Recommended Gartner Research

- ▶ [Modern Data Management Requires a Balance Between Collecting Data and Connecting to Data](#)
Roxane Edjlali and Ted Friedman (G00334541)
- ▶ [Data Management Strategies: Navigating Diverse Roles, Use Cases and Markets](#)
Ted Friedman and Roxane Edjlali (G00325874)
- ▶ [Solve Your Data Challenges With the Data Management Infrastructure Model](#)
Adam M. Ronthal and Nick Heudecker (G00336474)
- ▶ [Four Data Management Best Practices for AI](#)
Roxane Edjlali and Svetlana Sicular (G00328322)
- ▶ [Building the Modern Data Management Infrastructure: Gartner Excellence Awards Lessons](#)
Adam M. Ronthal and Mark A. Beyer (G00331691)

For information, please contact your Gartner representative.