

Making Leaders Successful Every Day



Demystifying Big Data and Hadoop for BI Pros

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Vice President, Principal Analyst

Information is the next competitive differentiator

“Information derived from a financial transaction will be more valuable than the execution of the transaction itself.”

“Information about money will become almost as important as money itself.”

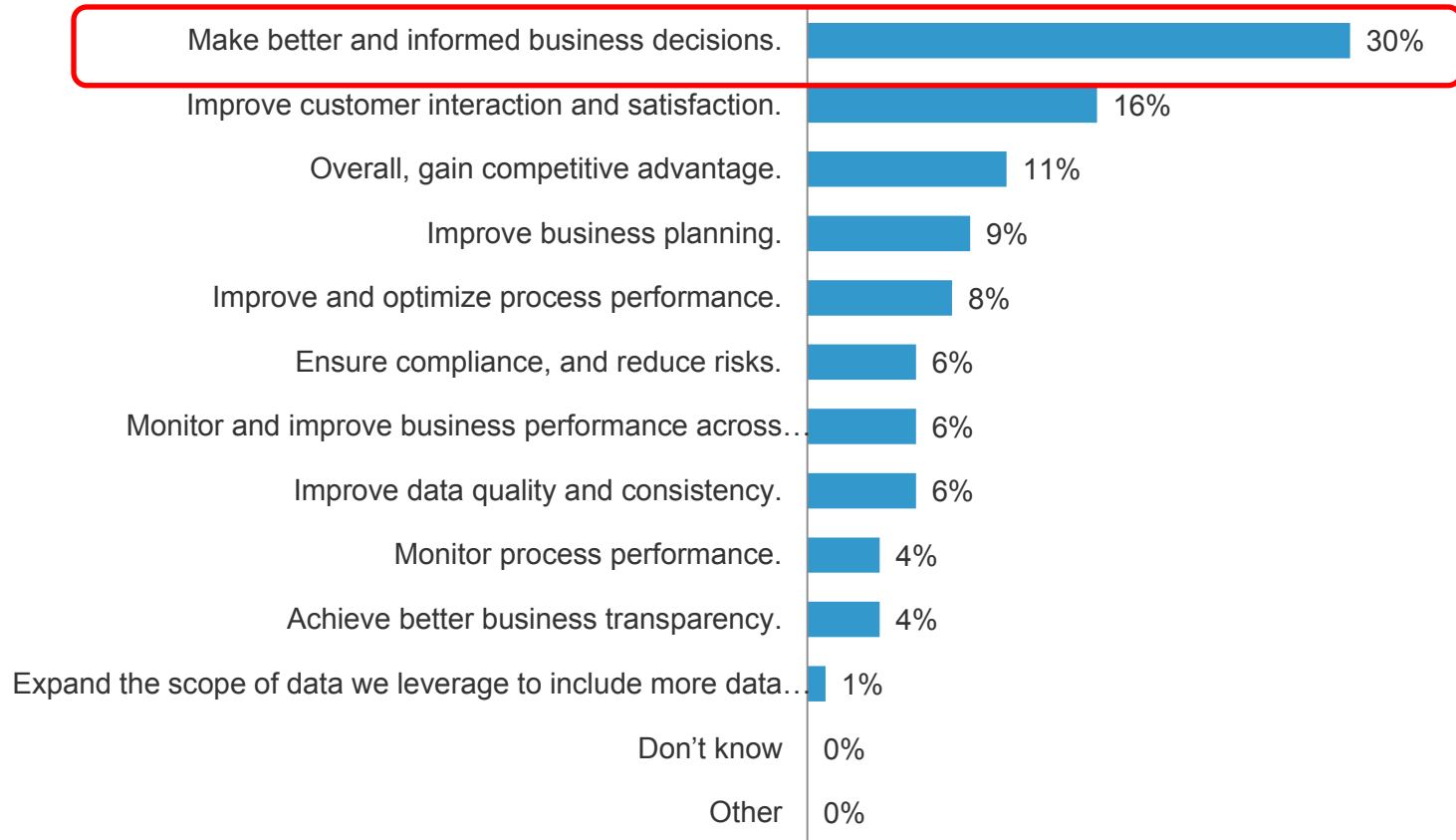
Walter Wriston

CEO (1967 to 1984)

Citibank/Citicorp

BI to enable better business decisions is at the top of everyone's agenda

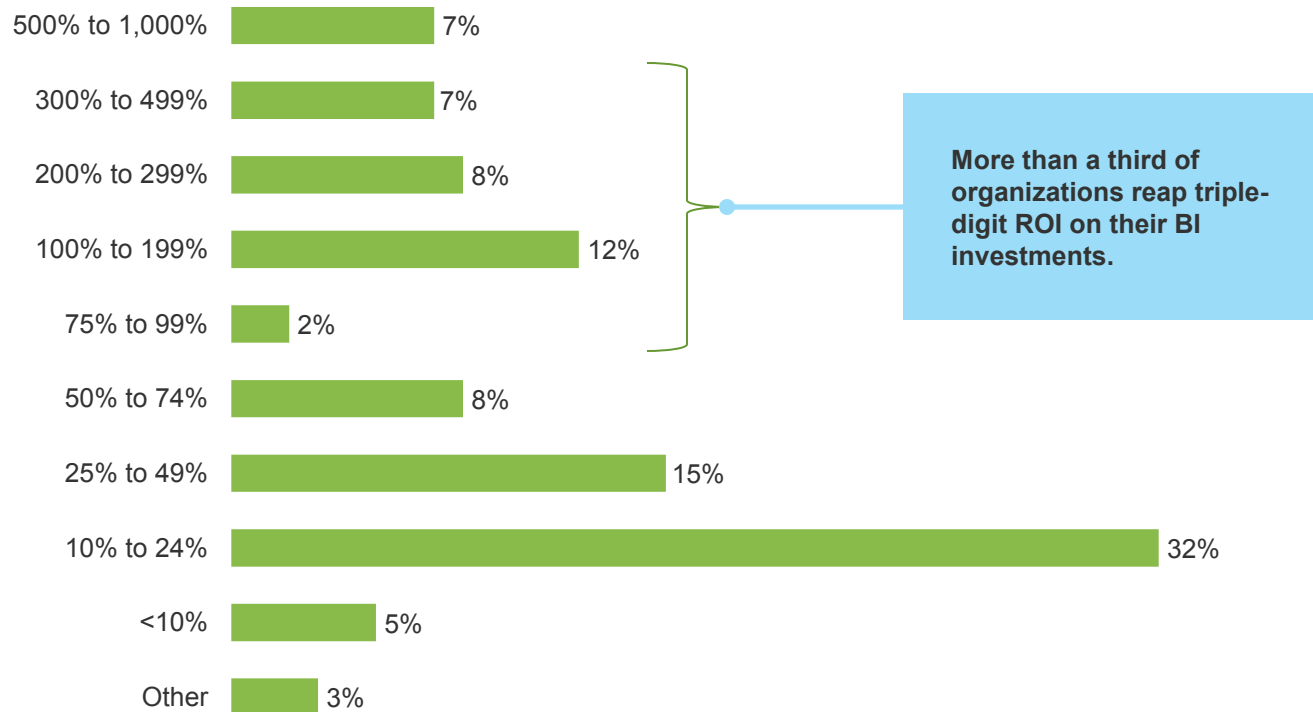
“What are the most important goals/drivers your organization considers when planning/orchestrating your business intelligence strategy?”



Base: 634 business intelligence users and planners; Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012

Those who invest wisely in BI reap major benefits — majority show ROI of <99%, but many also boast triple-digit returns

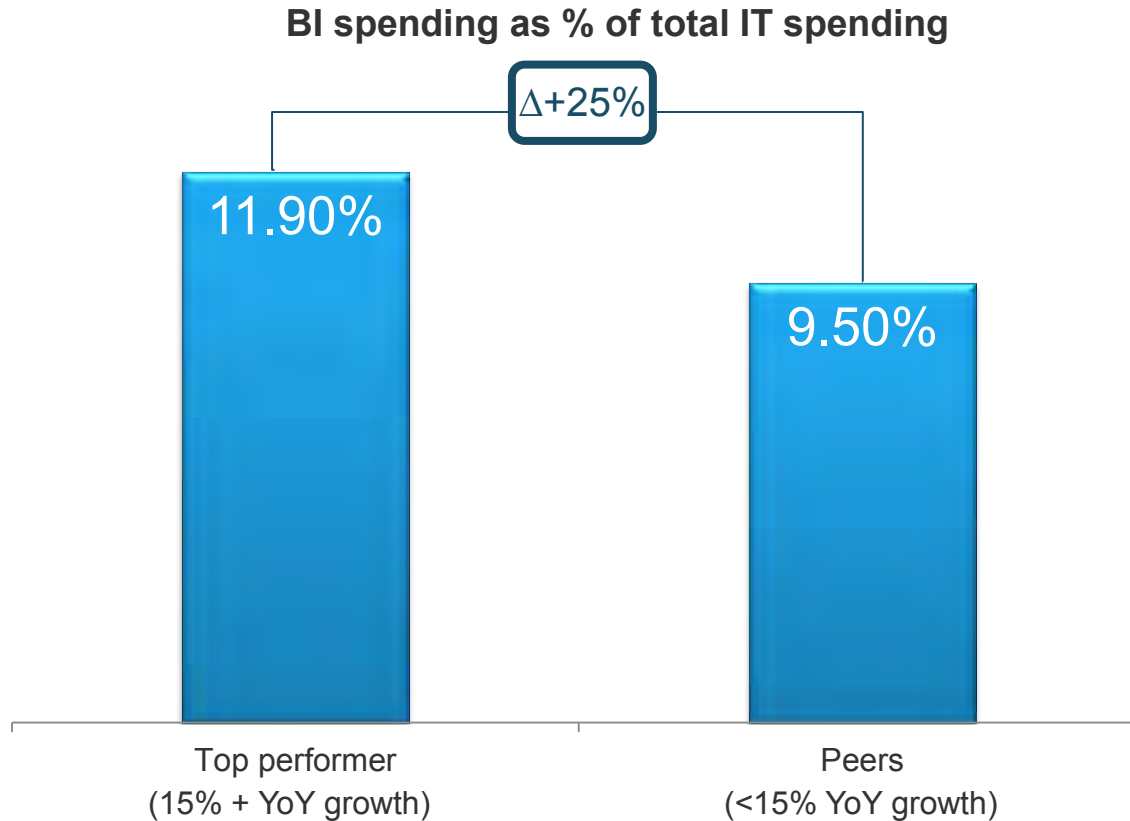
—What is the estimated ROI on your BI investment?”



Base: 59 BI decision-makers currently handling BI business cases within their organizations; Source: Q1 2013 Global Business Intelligence Business Case Online Survey

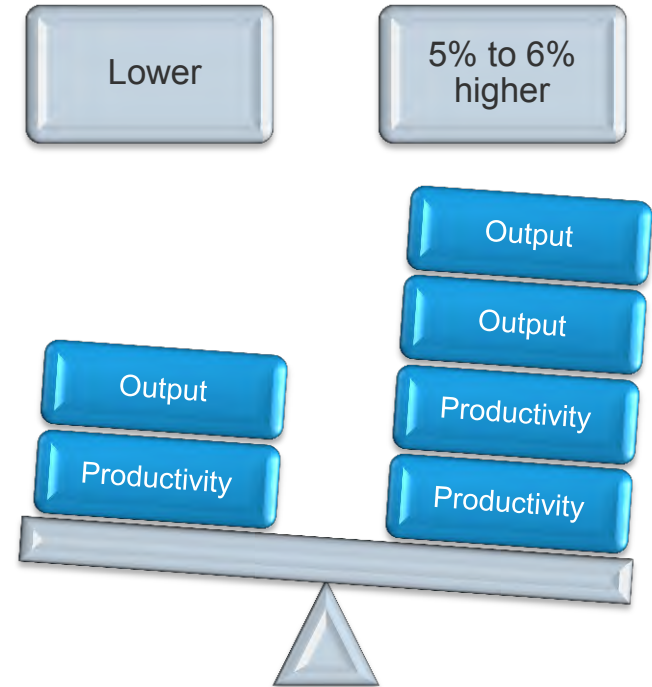
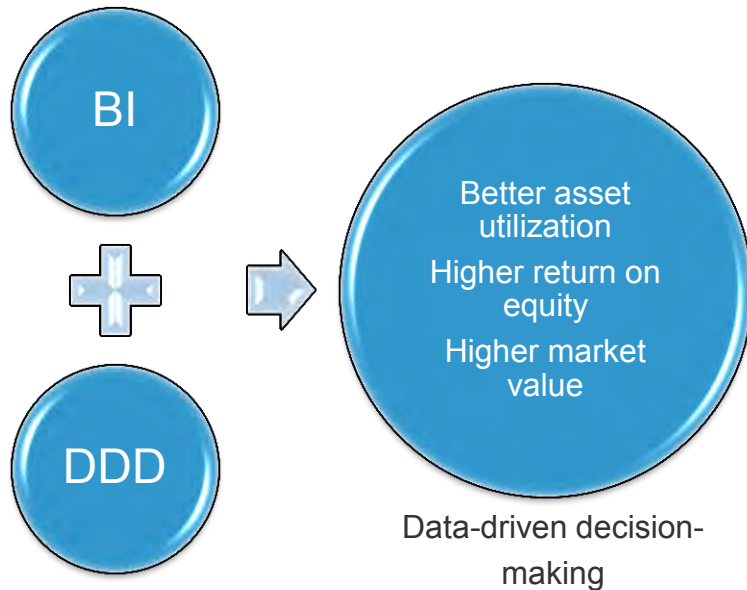
Top performers spend more on BI

“In 2012, approximately what percentage of your firm’s IT budget will go to BI-related purchases, initiatives, and projects?”



Base: 460 business intelligence users; Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012

Monetizing BI: Top performers have implemented —data-driven” decision-making



Base: 179 large publicly traded firms with information technology investments; Source: survey data on the business practices and information technology investments of 179 large publicly traded firms from “Strength in Numbers: How Does Data-Driven Decisionmaking Affect Firm Performance?” Social Science Electronic Publishing, April 22, 2011 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1819486)

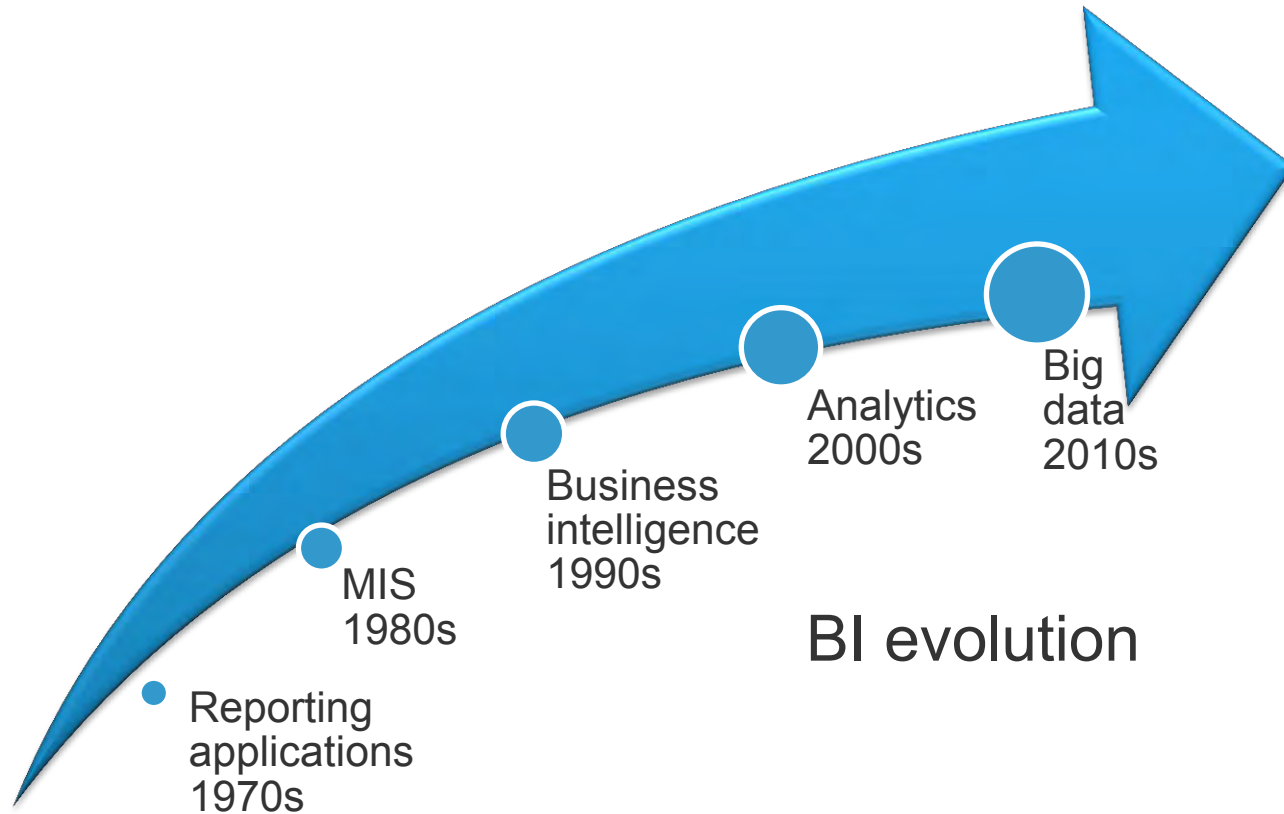


“Yes, we had the data . . . but we did not have the information.”

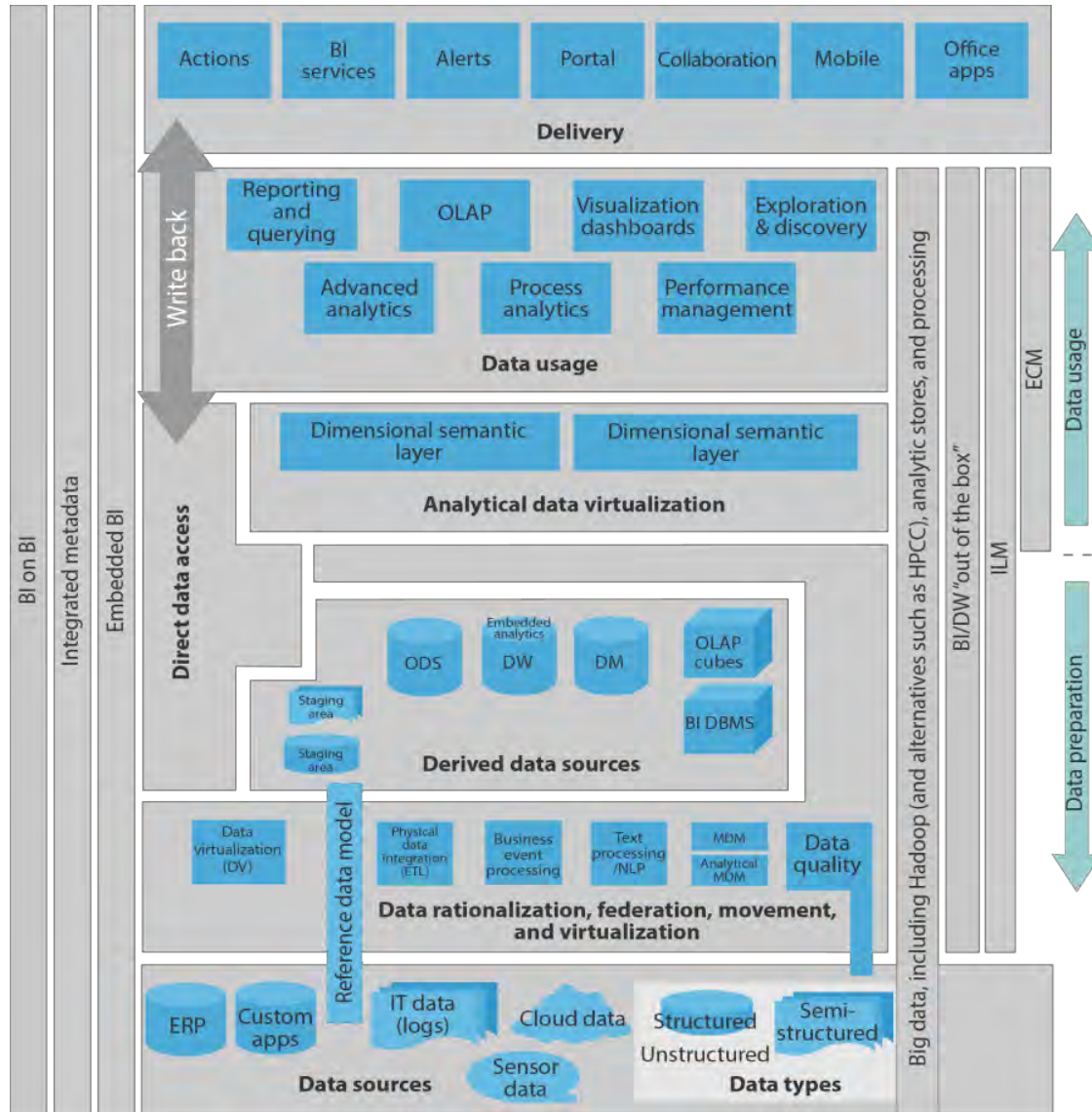
CIO of a European bank

Source: August 25, 2009, “The Business Case For BI: Now More Critical Than Ever” Forrester report

What is business intelligence? The name is not important



BI is still very complex



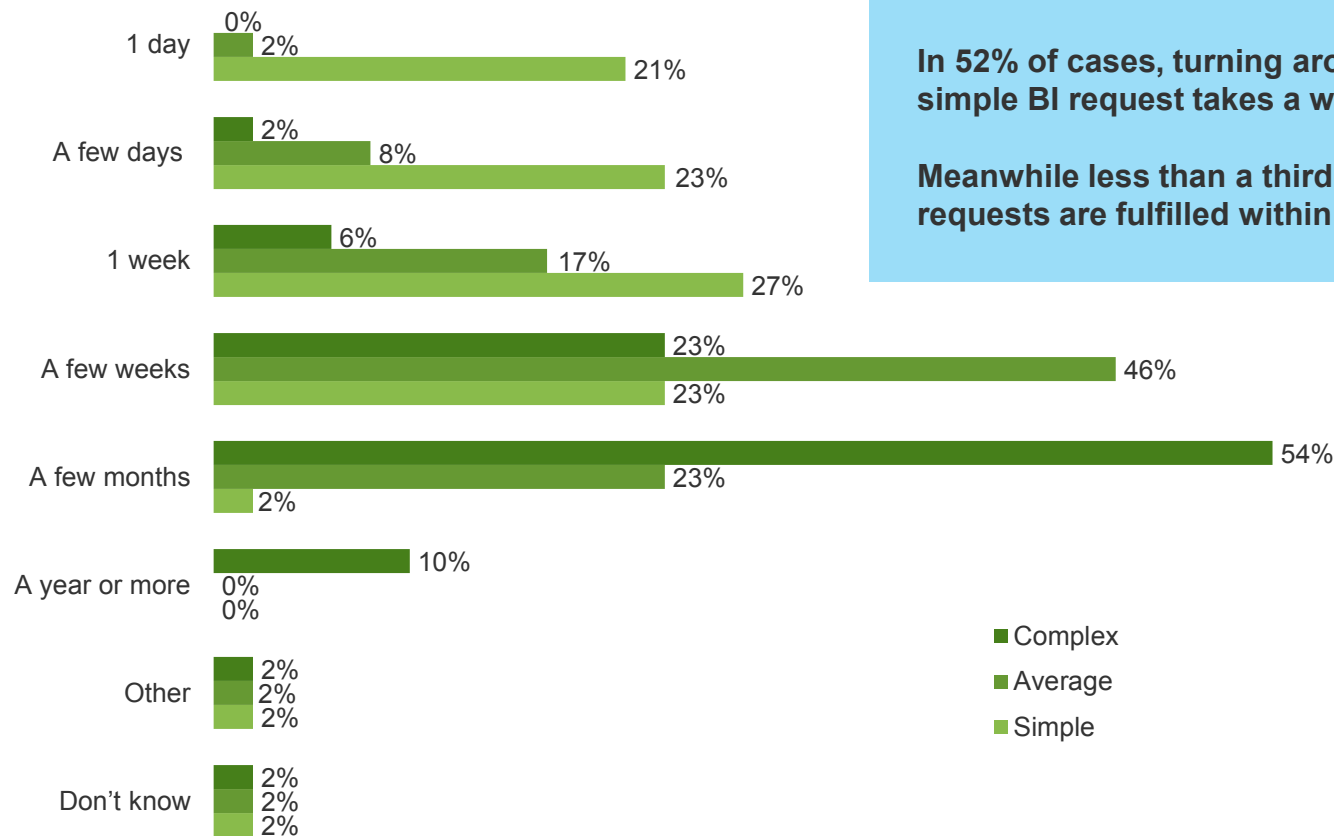
Source: November 1, 2012, "Craft Your Future State BI Reference Architecture" Forrester report

IT and business are not well-aligned when it comes to BI



Taking a week or more to turn around even a simple BI request is simply unacceptable in the modern world

—“What is the average turnaround time for fulfilling new BI requests?”

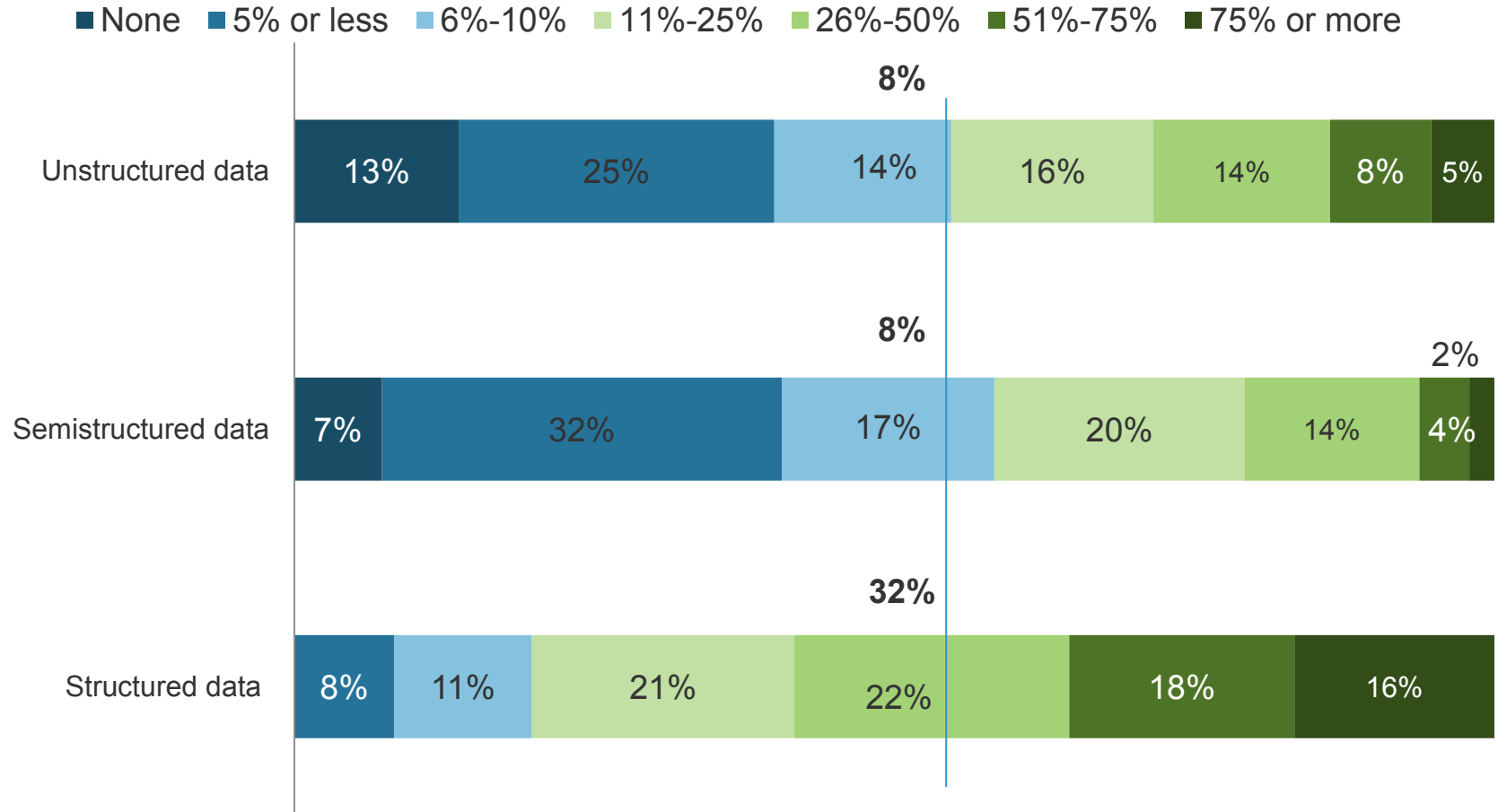


In 52% of cases, turning around even a simple BI request takes a week or more. Meanwhile less than a third of complex requests are fulfilled within a month.

Base: 48 surveyed Forrester clients with interest in business intelligence; Source: Q2 2013 Global BI Benchmarks Online Survey

Companies use only 12.5% of their data for BI

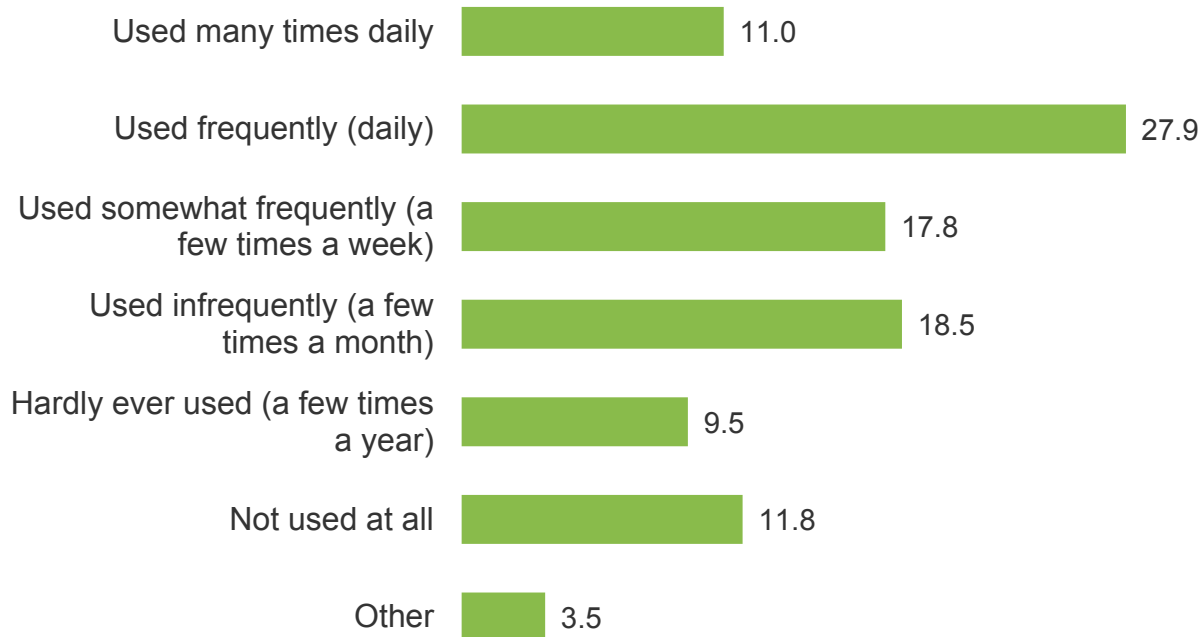
—Please estimate what percentage of the total size/volume of data within your company is currently used for BI.”



Base: 418 to 533 business intelligence users using each typology; Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012

Use BI on BI to clean up to 20% of all BI content that is hardly ever being used

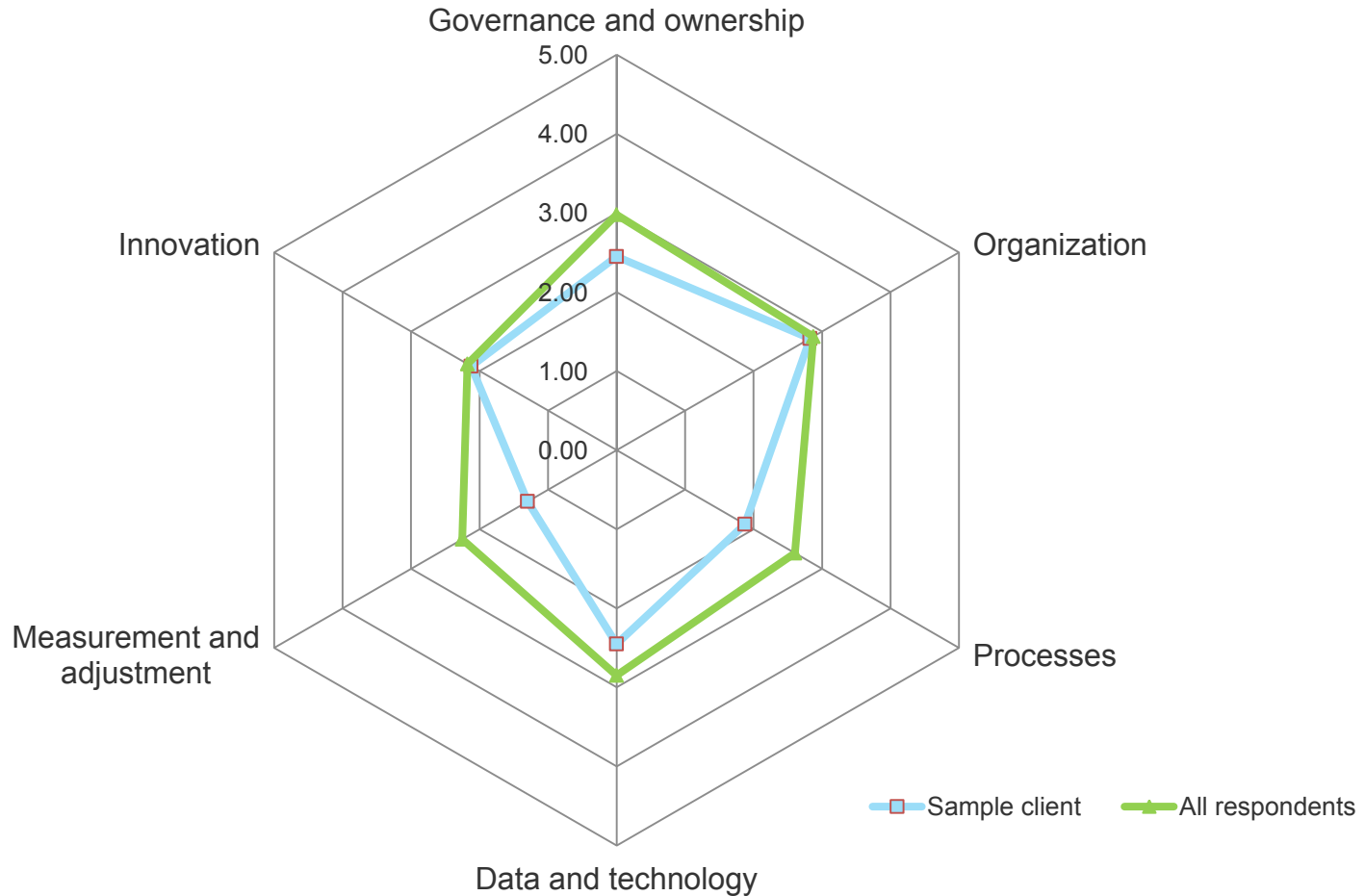
“How is BI content being used?”
(Average response, by percentage)



A significant amount of BI content is hardly used, and only 40% is used at least daily.

Base: 48 surveyed Forrester clients with interest in business intelligence; Source: Q2 2013 Global BI Benchmarks Online Survey

As a result, BI maturities are still quite low

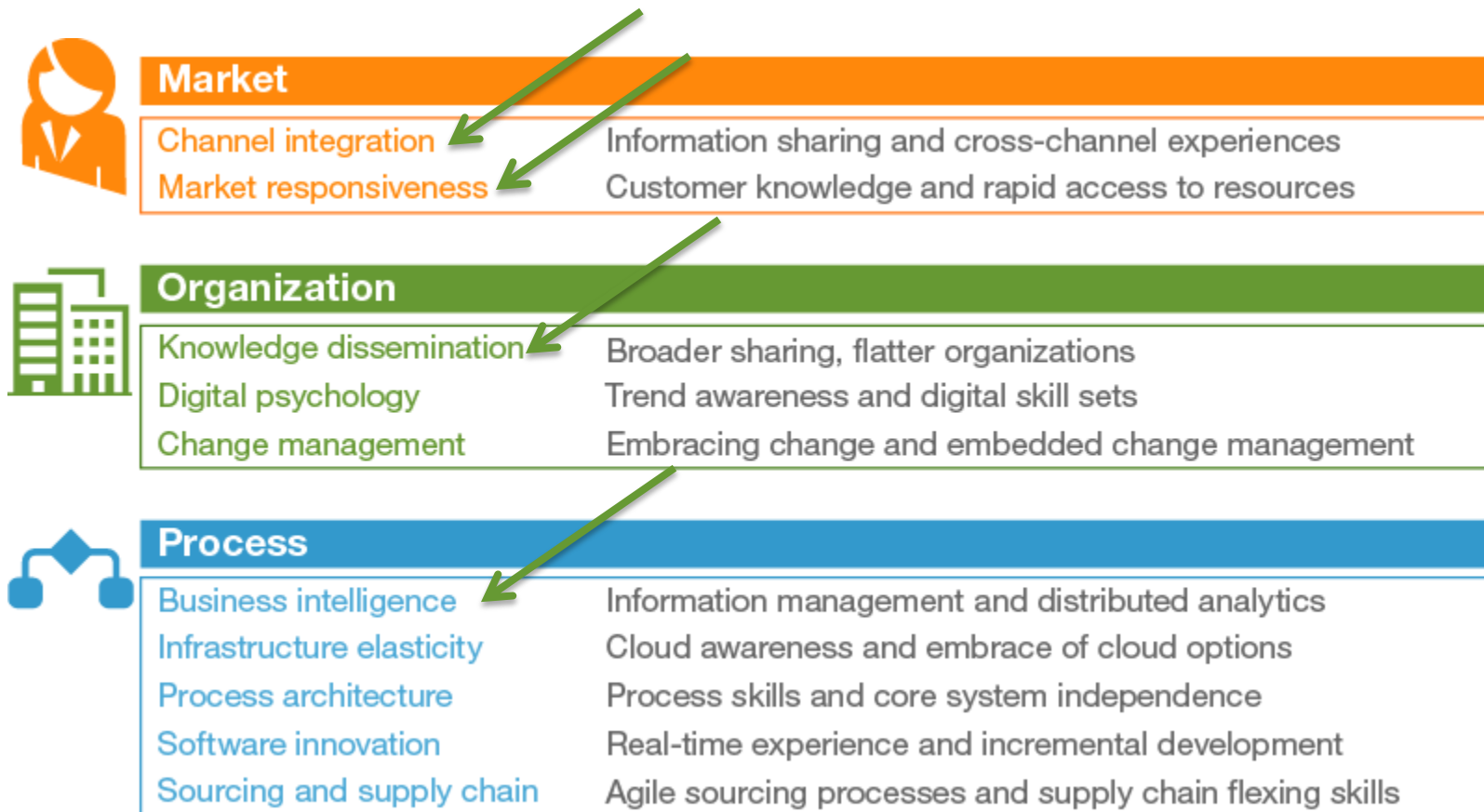


Source: a recent Forrester consulting engagement and August 7, 2012, "BI Maturity In The Enterprise: 2012 Update" Forrester report

The 10 Dimensions That Define The Agile Enterprise

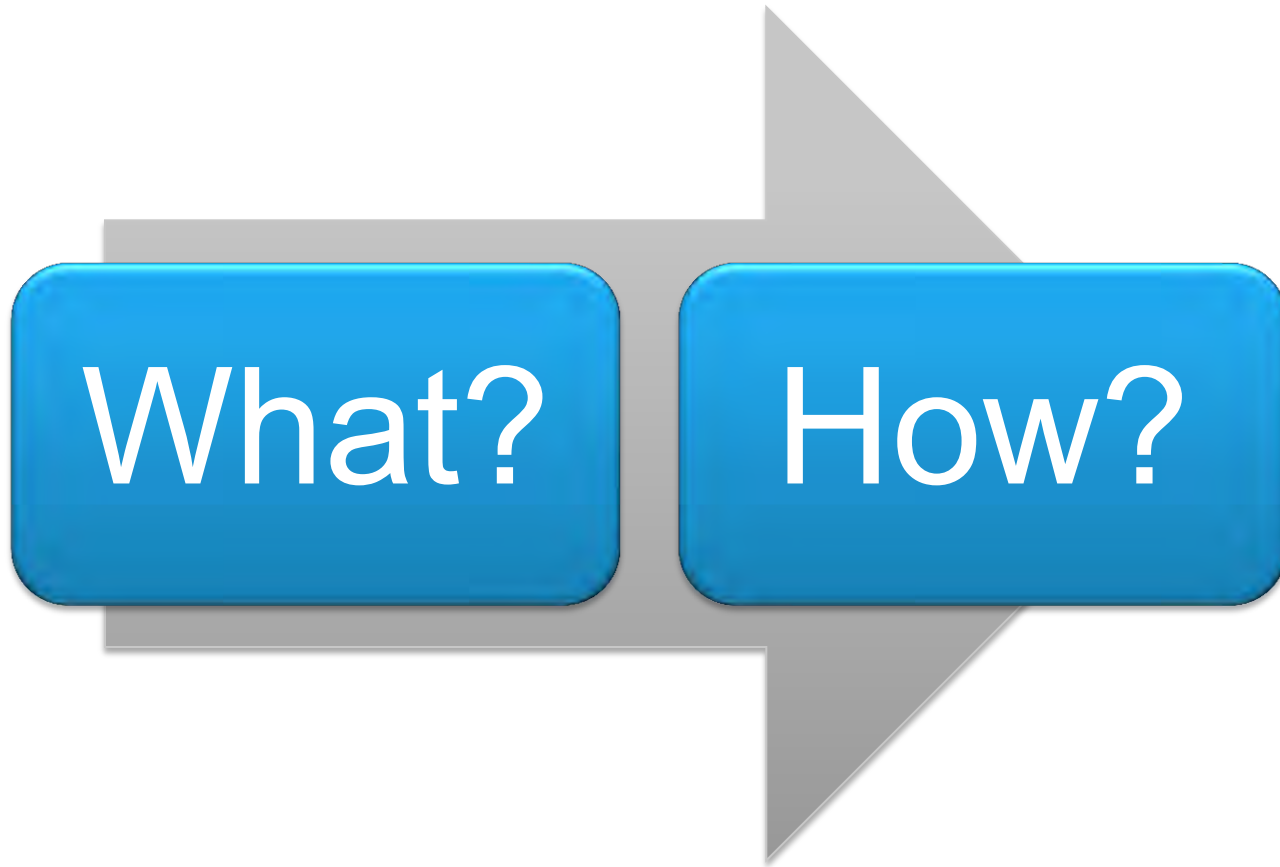
FORRESTER

August 2013 –The 10 Dimensions Of Business Agility”



4 dimensions are BI related!

Recommendation: how to get started and succeed



Performance Management – start by defining key measures and metrics (you can't analyze what you can't measure)

1. Define your business goals and objectives

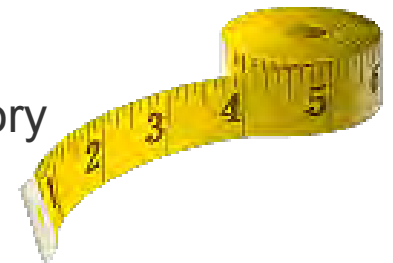
- Increase margin by ...
- Decrease churn by ...

2. Link to tangible measureable metrics

- Customer churn
- Customer profitability
- Customer lifetime value

3. ... and relevant attributes

- Product
- Region
- Time
- Sales territory



Why agility is critical for effective BI applications

- Initial estimates are always low.
- BI requirements change faster than IT can keep up with.
- Conventional SDLC approaches are poorly suited for BI.
- Deployment efforts don't often take into account:
 - Growing and ever-changing requirements.
 - Growing user base.
 - Growing breadth, depth, volume, and complexity.

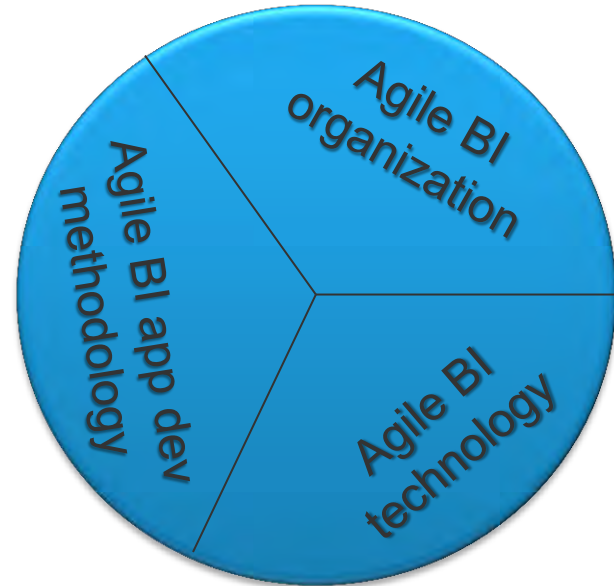


Forrester's Agile BI

An approach

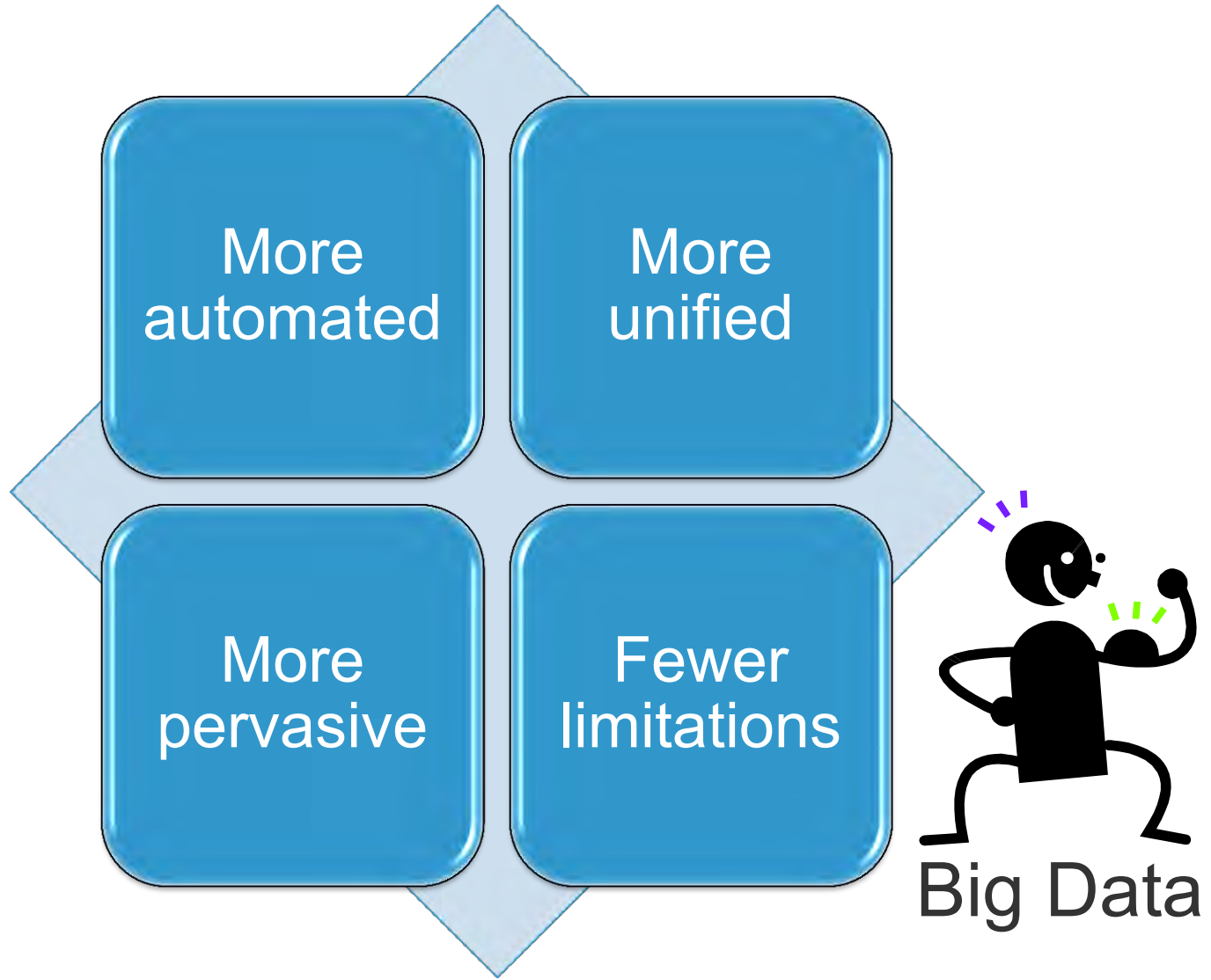
that combines **processes, methodologies, organizational structure, tools, and technologies**

that enable **strategic, tactical, and operational decision-makers** to be **more flexible** and **more responsive** to the fast pace of business and regulatory requirement changes



Source: March 31, 2011, "Trends 2011 And Beyond: Business Intelligence" Forrester report

Agile BI technologies



Forrester's 12 Dimensions of Big Data

All the data

**Complexity,
Sparsity**

Cost

**Exploration /
Discovery**

Governance

**Linear
Scalability**

Messines

Variability

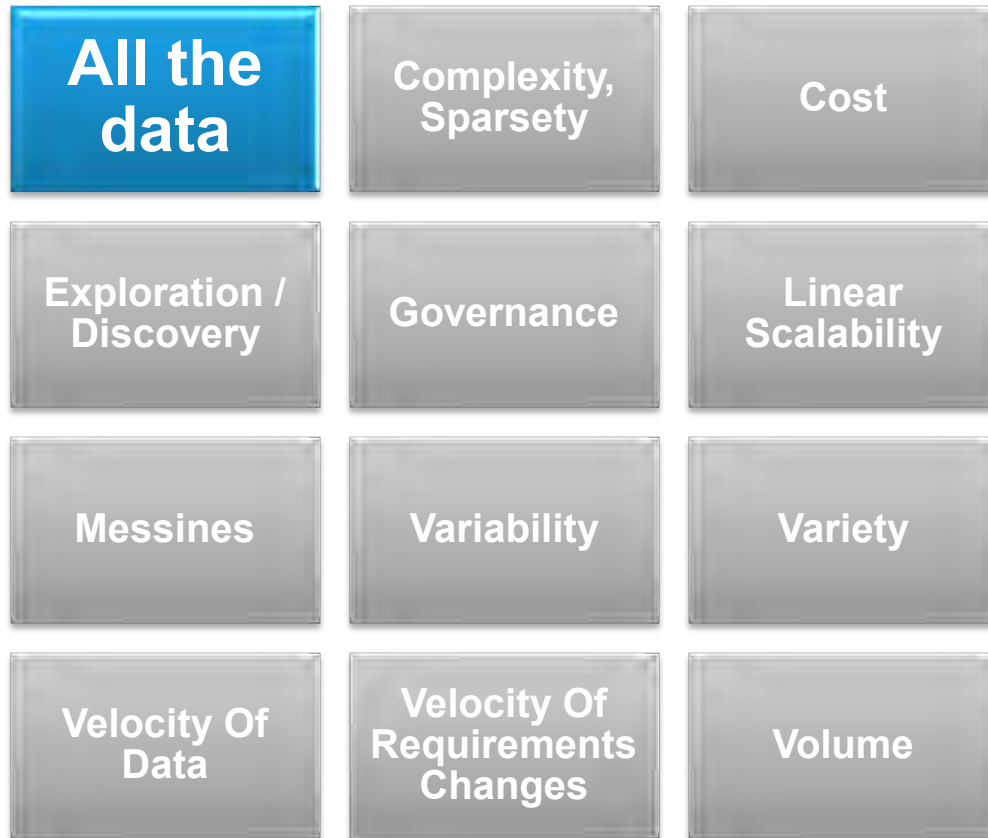
Variety

**Velocity Of
Data**

**Velocity Of
Requirements
Changes**

Volume

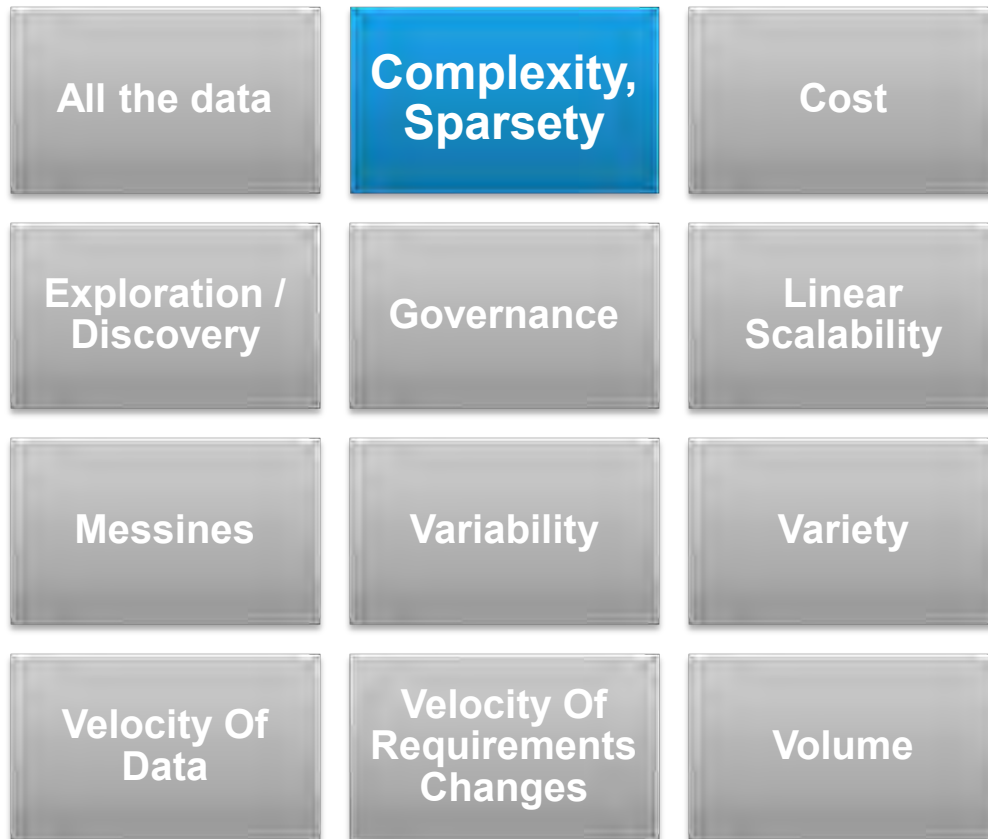
Forrester's 12 Dimensions of Big Data



Organizations only utilize 12.5% of their data for decision making.

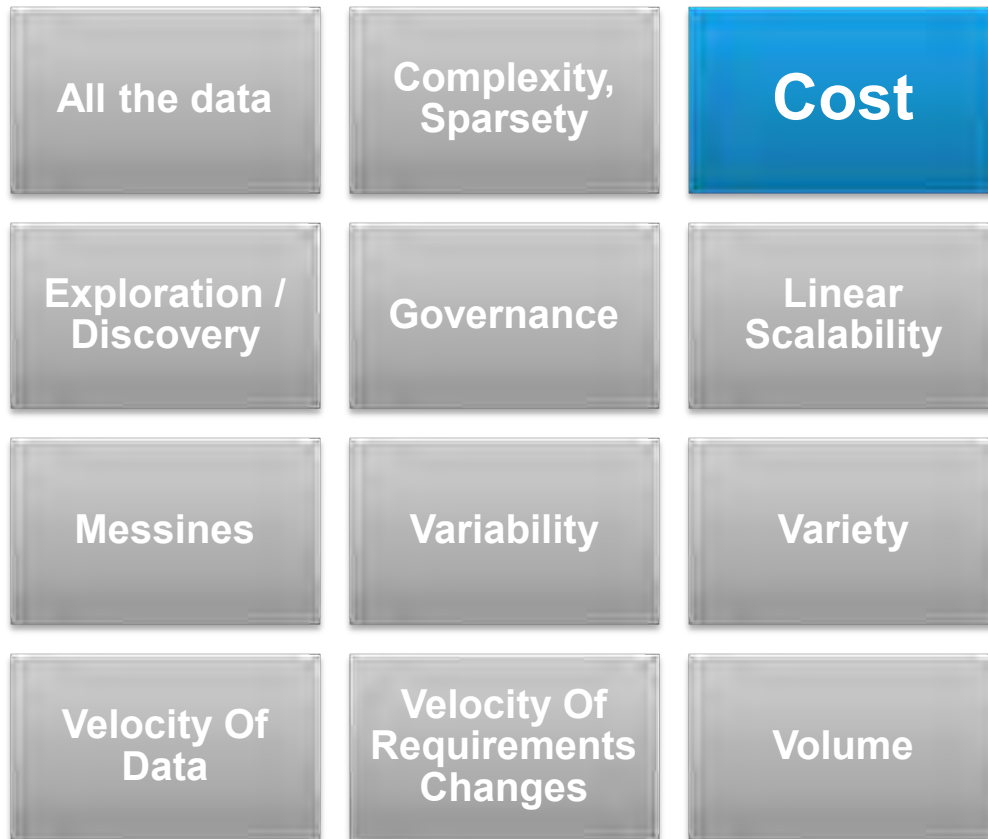
What are your requirements and capabilities to leverage MOST or ALL of your data for BI?

Forrester's 12 Dimensions of Big Data



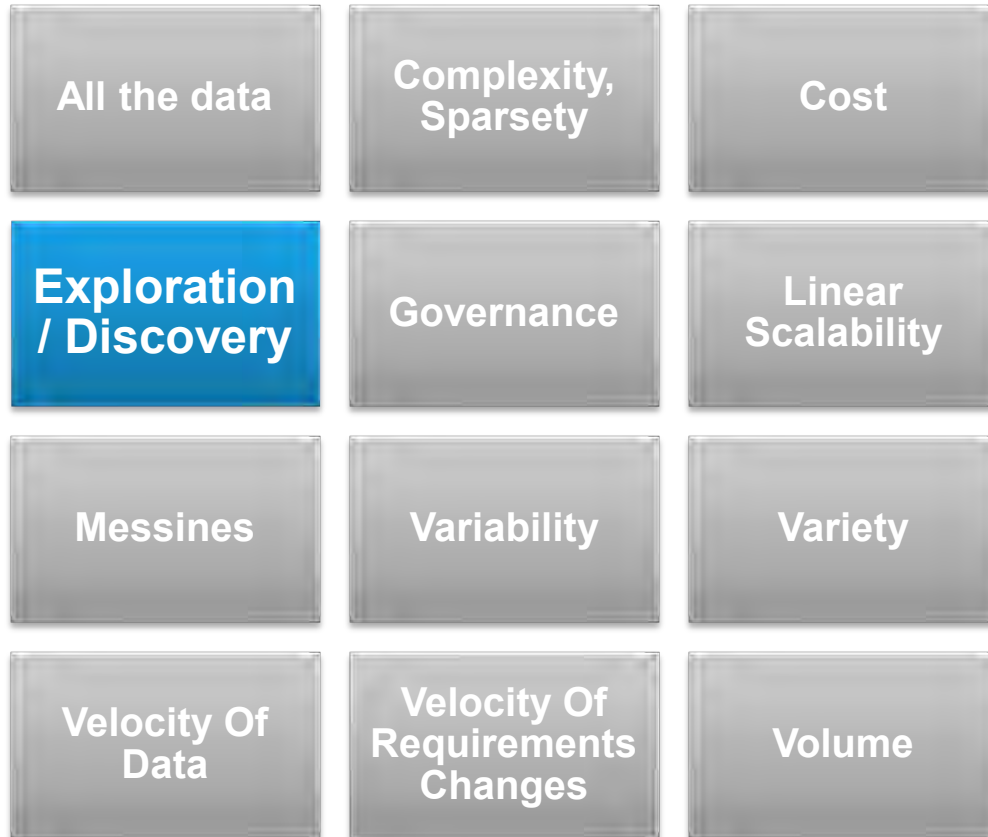
What are your requirements to handle complex and sparse data sets that may not be expressed in relational formats such as complex ragged unbalanced product hierarchies?

Forrester's 12 Dimensions of Big Data



What are your requirements and capabilities for non linear cost increases (for example doubling capacity should not double the cost) potentially using commodity hardware, open source software, cloud deployments?

Forrester's 12 Dimensions of Big Data



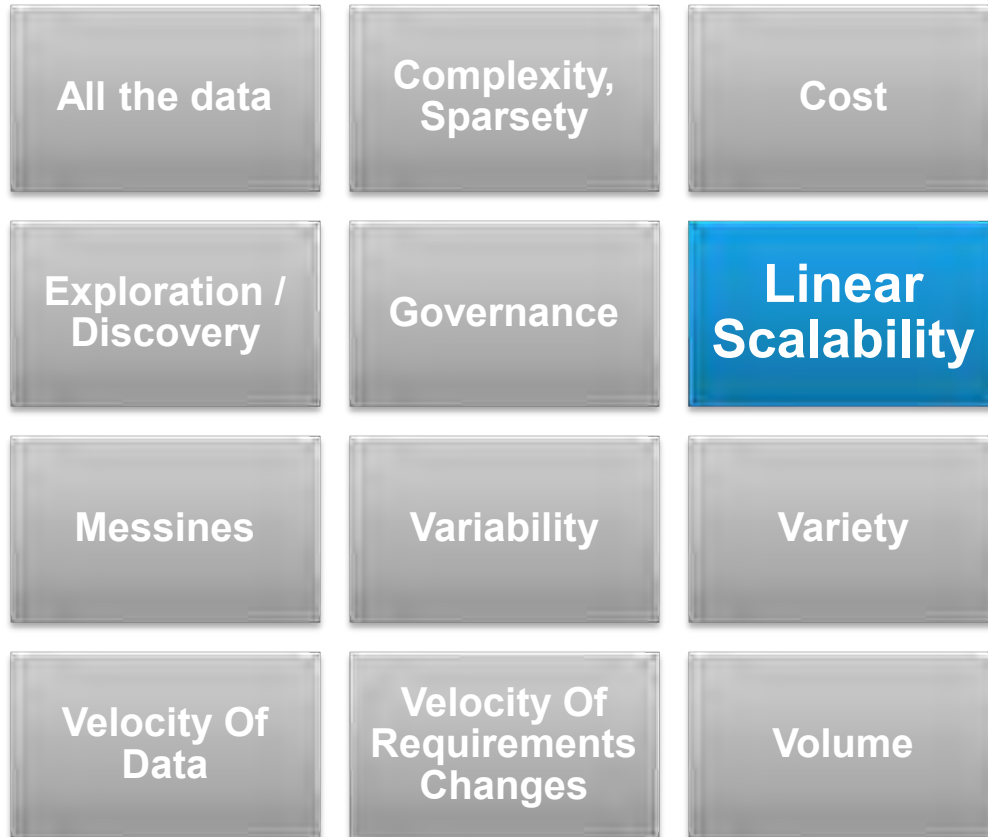
What are your requirements and capabilities to explore data without a model, then discover patterns in data and turn your findings into repeatable models / applications?

Forrester's 12 Dimensions of Big Data



What are your requirements and capabilities to govern data that has not been modeled yet? Data that you are still exploring?

Forrester's 12 Dimensions of Big Data



What are your requirements and capabilities to scale your BI environment linearly? Why do you need MPP architecture?

Forrester's 12 Dimensions of Big Data



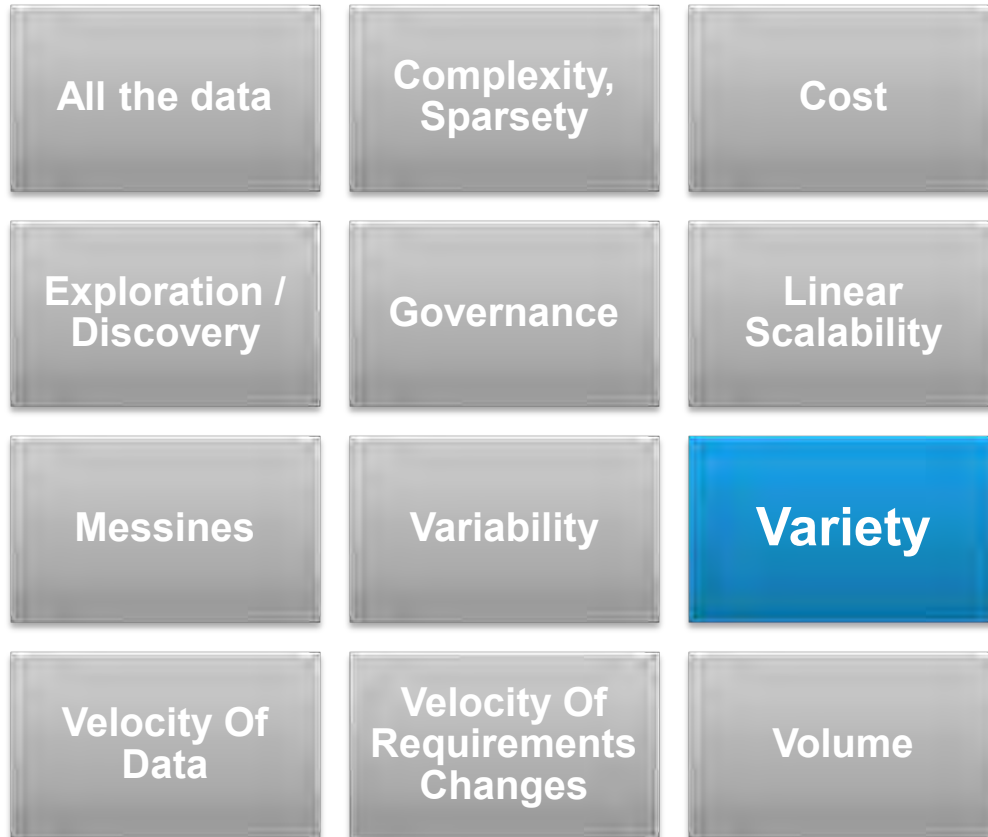
What are your requirements and capabilities to deal with "messy" data? This is not the same as data quality or MDM. Data is inherently messy. The bigger the enterprise the messier is the data. Do you accept that your data will always be messy, but still needs to be utilized for decision making?

Forrester's 12 Dimensions of Big Data



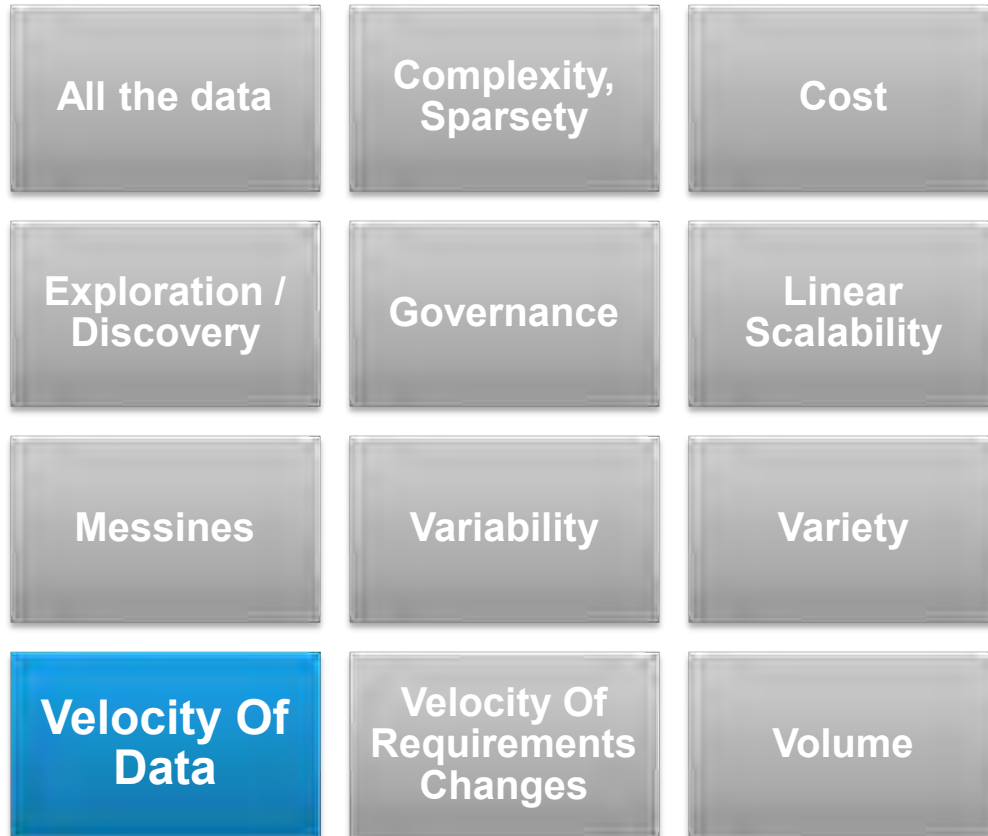
What are your requirements and capabilities to handle multiple meanings of information (for example, customer profitability may be calculated differently from finance vs. marketing points of view)?

Forrester's 12 Dimensions of Big Data



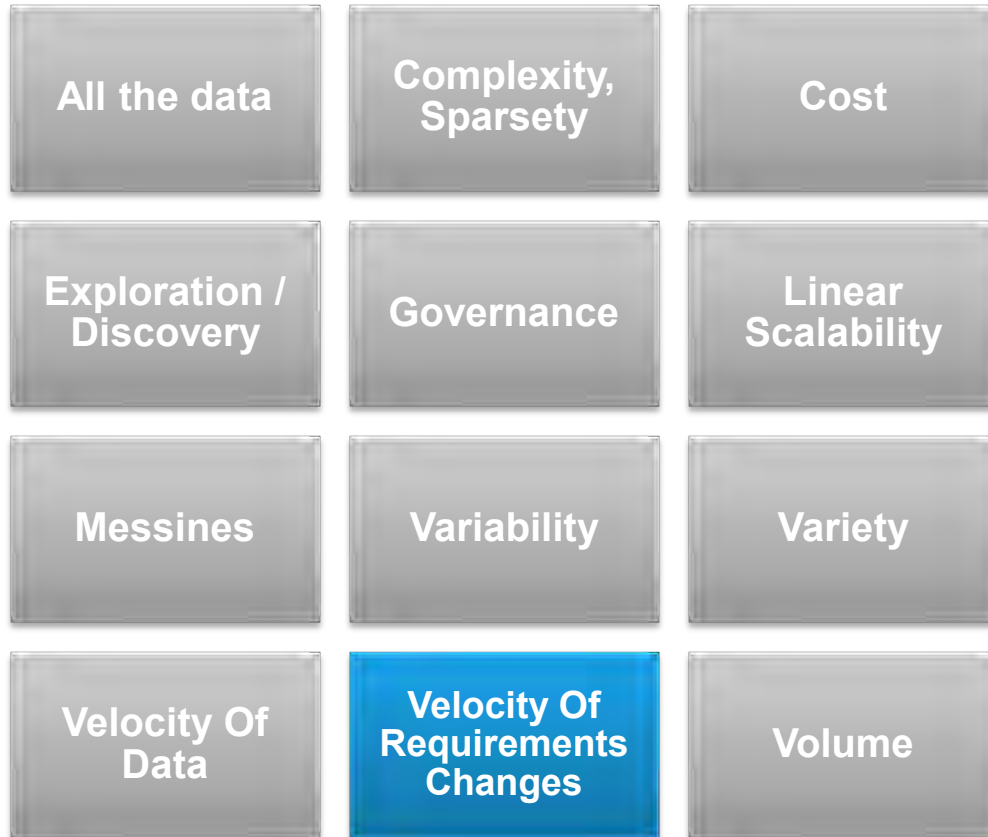
What are your requirements and capabilities to handle variety of data formats such as structured, unstructured and semi-structured?

Forrester's 12 Dimensions of Big Data



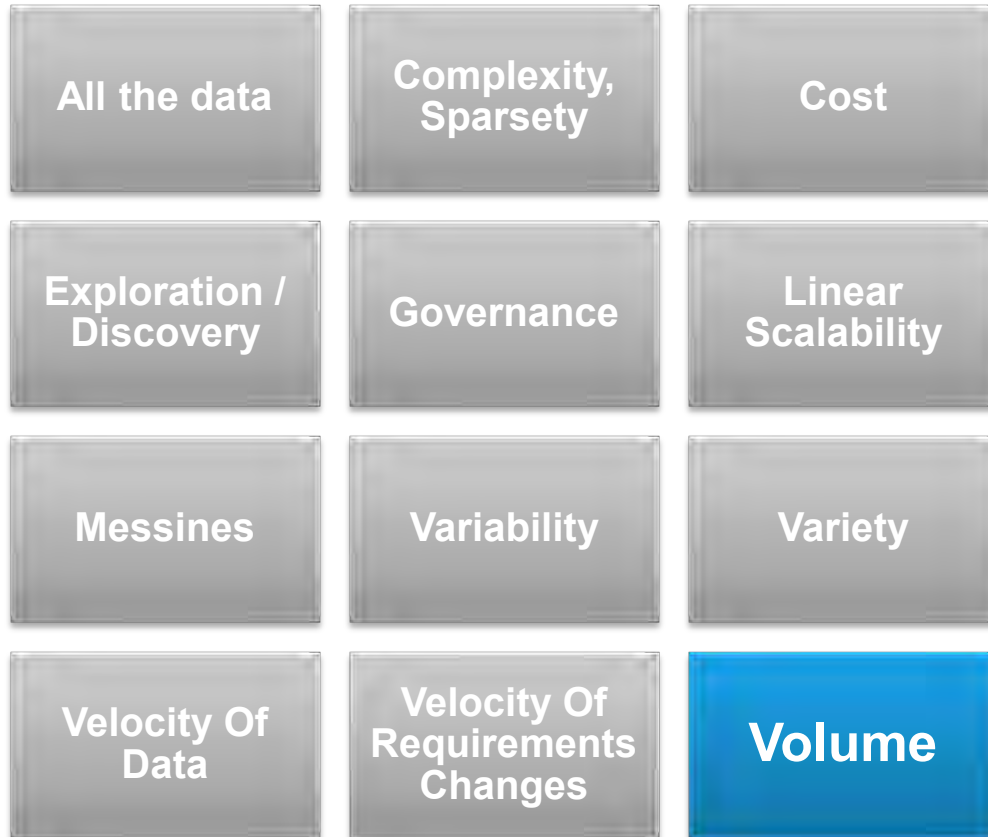
What are your requirements and capabilities to handle large volumes of rapidly streaming data with extremely low latency?

Forrester's 12 Dimensions of Big Data



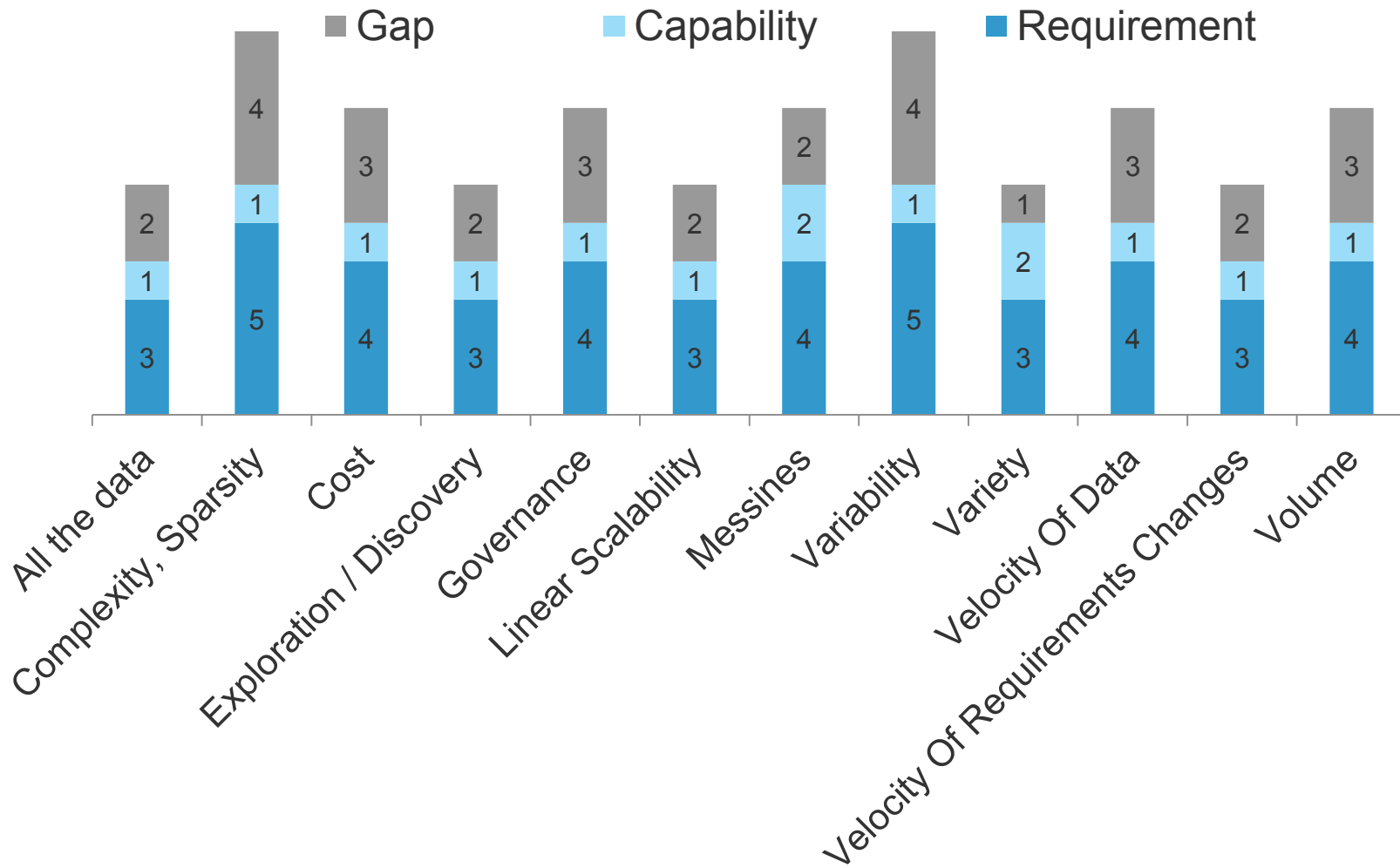
What are your requirements and capabilities to handle rapidly changing business requirements?

Forrester's 12 Dimensions of Big Data

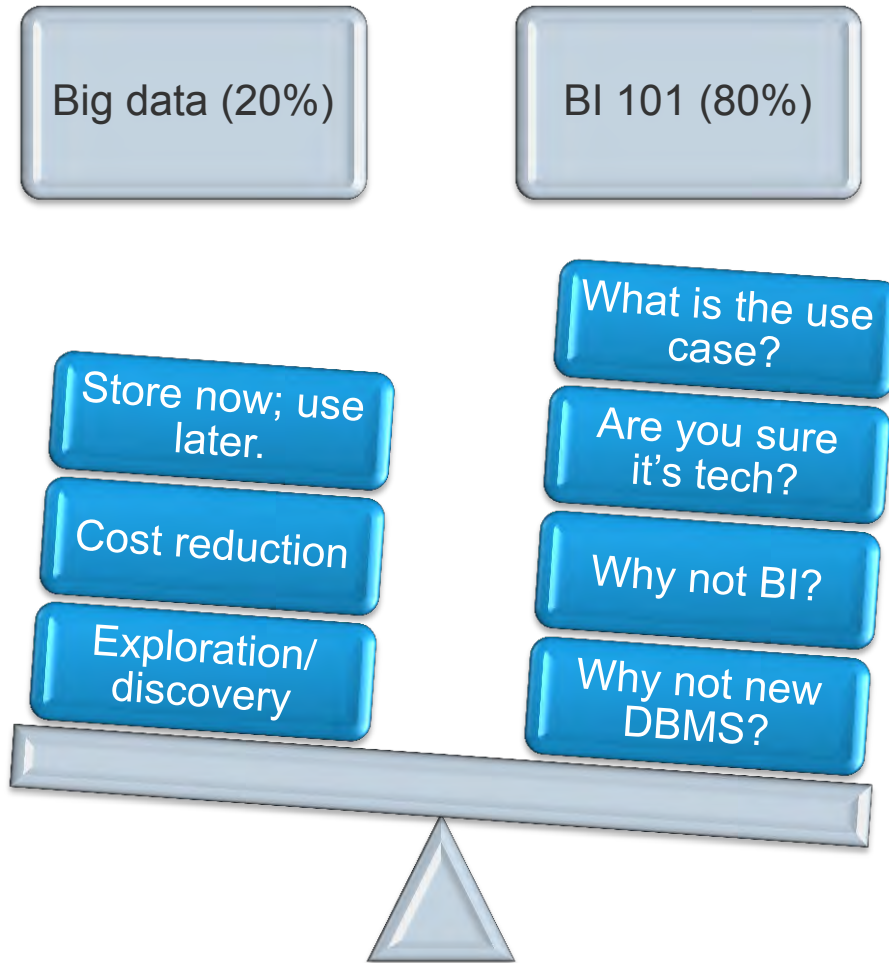


What are your requirements and capabilities to handle large volumes of data?

Forrester's 12 dimensions of Big Data



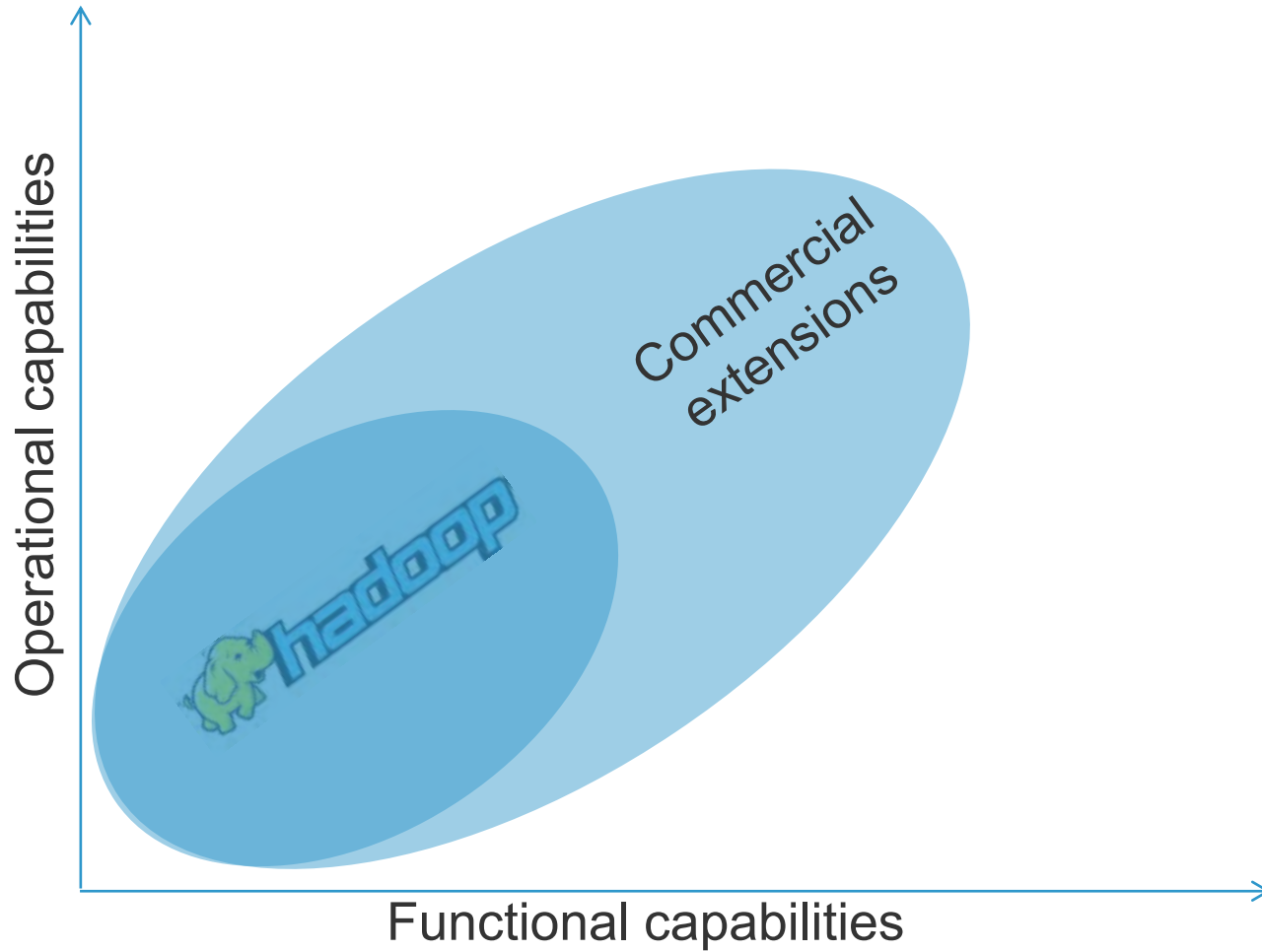
BI/big data inquiry trends



Hadoop Business Intelligence Ecosystem



Hadoop Business Intelligence Ecosystem (cont.)

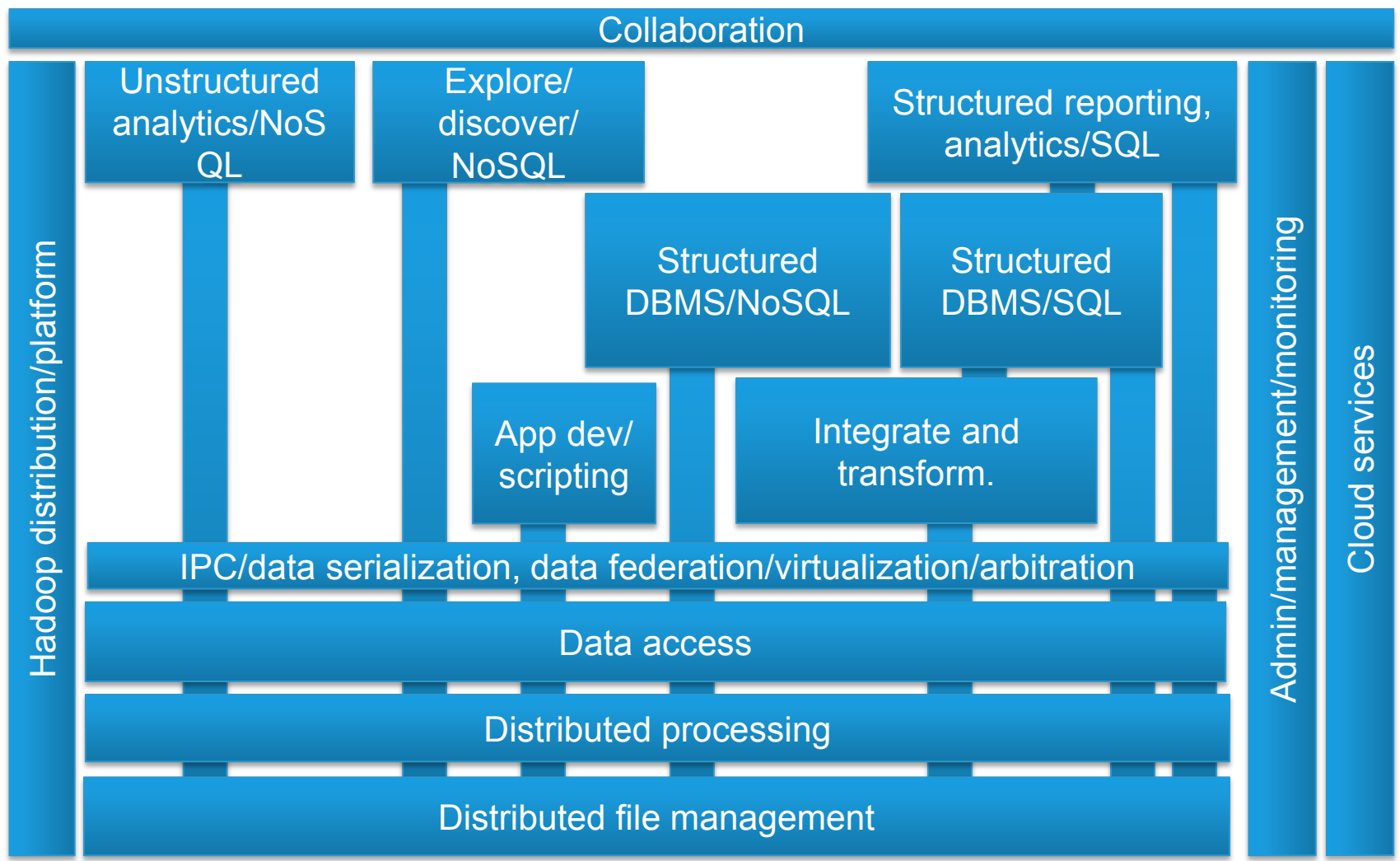




view on



Business Intelligence Ecosystem



How do BI, big data, and Hadoop fit together?

Projects

- Which specific Hadoop subprojects do you integrate with?

Distribution

- Are you using a community or a specific commercial edition?
- Has the vendor certified your implementation?

Query versus ingest

- Are you querying HDFS data directly or first ingesting into an RDBMS?

SQL

- How do you translate HiveQL to SQL?
- Who provides transactional controls?

NoSQL

- Can you perform exploration/discovery without any data models?

Metadata

- Are you leveraging Hadoop HCatalog?

Data virtualization

- Can you join Hadoop and non-Hadoop data in a heterogeneous query/join?

Leverage Forrester BI Playbook For Your Strategic BI Initiatives

DISCOVER	PLAN	ACT	OPTIMIZE
Vision	Assessment	Organization	Performance Management
Landscape	Strategic Plan	Processes	Benchmarks
Business Case	Road Map	Tools And Technology	Continuous Improvement

Thank you



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