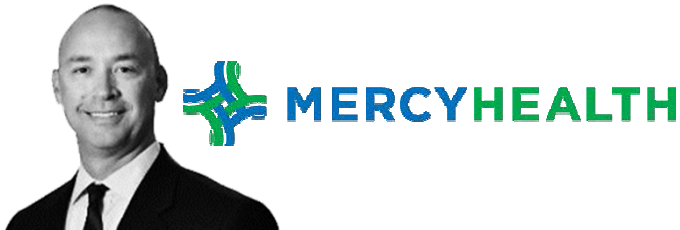




Extending Your Analytics Architecture into the Realm of Revenue Cycle

HiMSS
CENTRAL & SOUTHERN OHIO *Chapter*

About Our Speakers



CHRIS MATTINGLY

Corporate Director, Revenue Cycle Analytics and Improvement
Mercy Health
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Chris Mattingly is responsible for measurement and targeted improvement across the acute and physician revenue cycles at Mercy Health, with a focus on both cost reduction and revenue growth. He aims to get appropriate reimbursement for services delivered.

Mercy Health is a mission-based health system serving Ohio and Kentucky. With nearly 34,000 employees we are the fourth largest employer in Ohio, and served patients and the communities in which we live and work with over 5.9 million encounters last year.



JEFF KANEL

Director, National Data & Analytics Practice
Centric Consulting
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Jeff Kanel is an established leader in the field of Data & Analytics, having begun his career in data architecture, data warehousing and systems integration. Today, he helps clients overcome both technical and organizational barriers to realizing maximum benefit from their data.

Centric Consulting is a business and technology consulting firm dedicated to creating Unmatched Customer Experiences through exceptional delivery. Comprised of 750 seasoned consultants, we provide services in areas such as Healthcare, Data & Analytics, Process Improvement, Digital, Portal & Collaboration.

Would it be valuable if you could:

- 1. Understand impacts of changes coming down the road (e.g., Payor changes, opportunities with local employers, service providers in the market)**
- 2. Forecast the impact of value based payment and other advanced payment models**
- 3. Tailor / bundle service offerings to an increasingly educated consumer base**
- 4. Ensure capital investments are aligned with market demand**

Time to vote!



CSOHiMMS – Extending Your Analytics Architecture into the Realm of Revenue Cycle

What's questions are important for your organization?

<http://www.surveymonkey.com>

[/r/6Q56YTS](http://www.surveymonkey.com/r/6Q56YTS)

We're So Close!

- ✓ We have the **need**
- ✓ We have the **data**
- ✓ We have the **analysts**
- ✓ We have the **tools**
- ✓ We have the **subject matter experts**

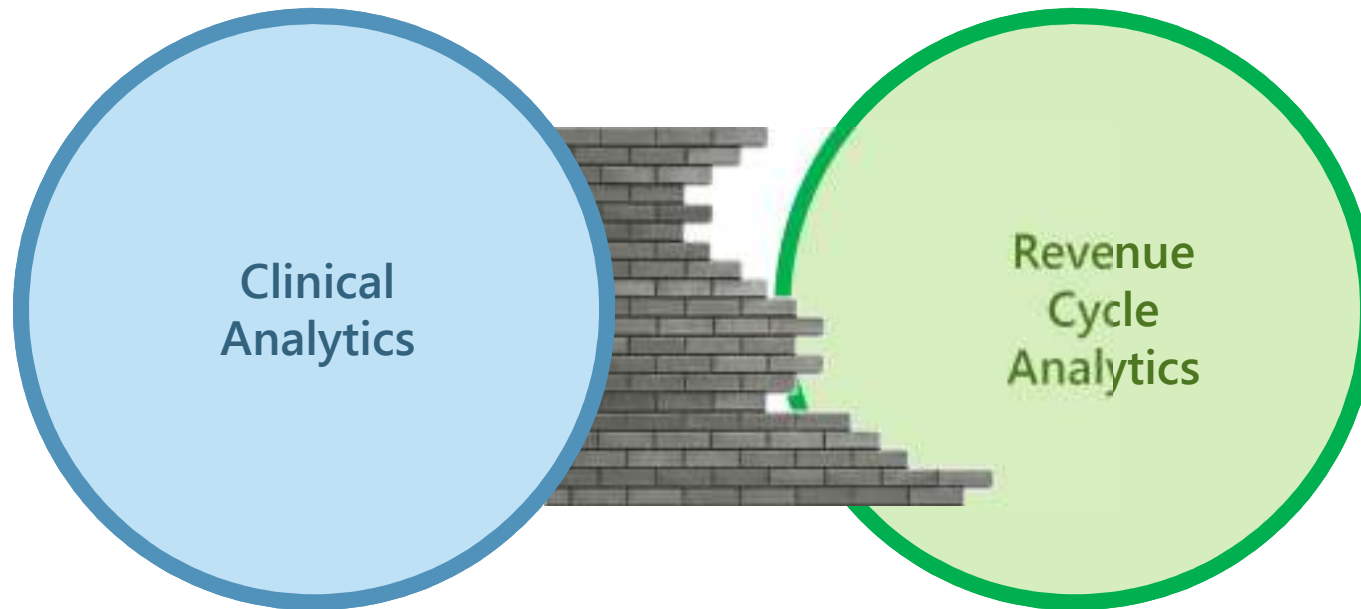
Why are the answers so elusive?

Analytics Architecture

Architecture: A comprehensive collection of capabilities, tools, and technologies used in performing analysis.

What is it we're really trying to accomplish?

Current Architecture



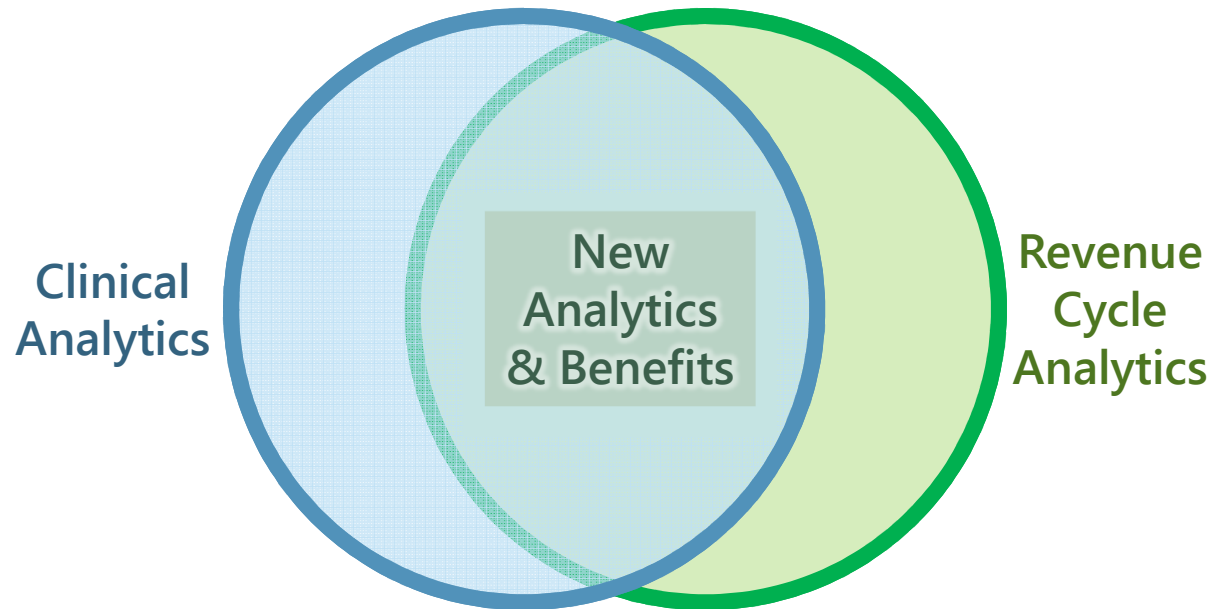
Analytics Investment

- Quality Program Requirements
- Contracting
- MSSP
- Joint Commission

Analysis In Silos

- Supply Chain
- Human Resources
- Finance
- Revenue Cycle

Breaking Down Architecture Walls



What's driving this change?

- Value-Based Payment Models
- Consumerism
- Patient Experience
- Health System Financial Results
- Capital Investment Scrutiny

What's Holding Up The Train?

Financial

No Margin Pressure

Clinical Investment

Acquisition

Focus On Competition

Data Governance Devalued

Market

Reimbursement Models

Consumerism

Educated Public



Breaking Down Barriers

We have created many barriers to value

- Discrete systems built for specific niche reasons
- Triggers for analysis do not coincide between clinical and revenue cycle
- Analytics silos were built to address tactical needs and cannot be leveraged by other groups

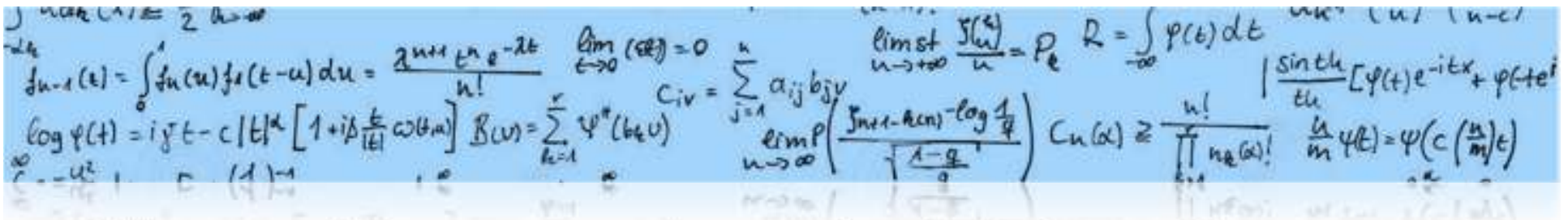
Silos hold exceptional value

- Driving cost out of the supply chain
- Staffing models
- Net Revenue calculations and associated reserve models
- Identifying underpayments or issues from Payors
- Denials root cause analysis

Breaking the Logjam

- **Architecture enables enterprise integration**
- **Data governance takes a front seat**
- **Strategically work to drive change rather reacting to change**
- **Build in agility in how we respond**

So, what are we trying to accomplish?



We need to answer important, interesting questions.

- Cross platform
- Cross subject area
- Requiring advanced analytics
- Requiring subject matter expertise

Levers for Change

	Initiatives	Tools
People	<ul style="list-style-type: none">• Governance Committees• Cross Discipline• Analysts Communities	<ul style="list-style-type: none">• Communication Tools
Processes	<ul style="list-style-type: none">• Data Governance• Org Change Management• Change Control	<ul style="list-style-type: none">• Data Governance Tool• Information Management• Tools
Technology	<ul style="list-style-type: none">• Collaboration• Analytics Environment	<ul style="list-style-type: none">• Portal & Doc Mgt• Role Big Data• Data Catalog• Visualization Tools• Data Analyst Tools

Replace text box with chapter logo

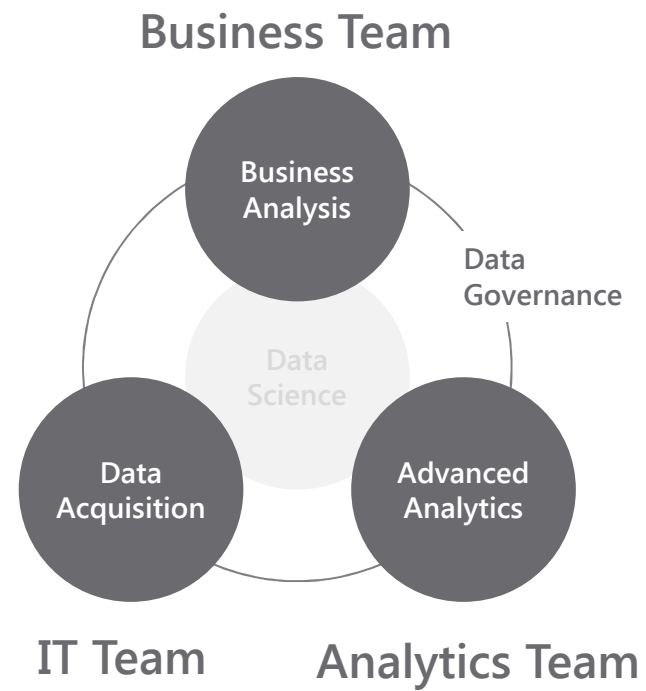


Achieving Data Science

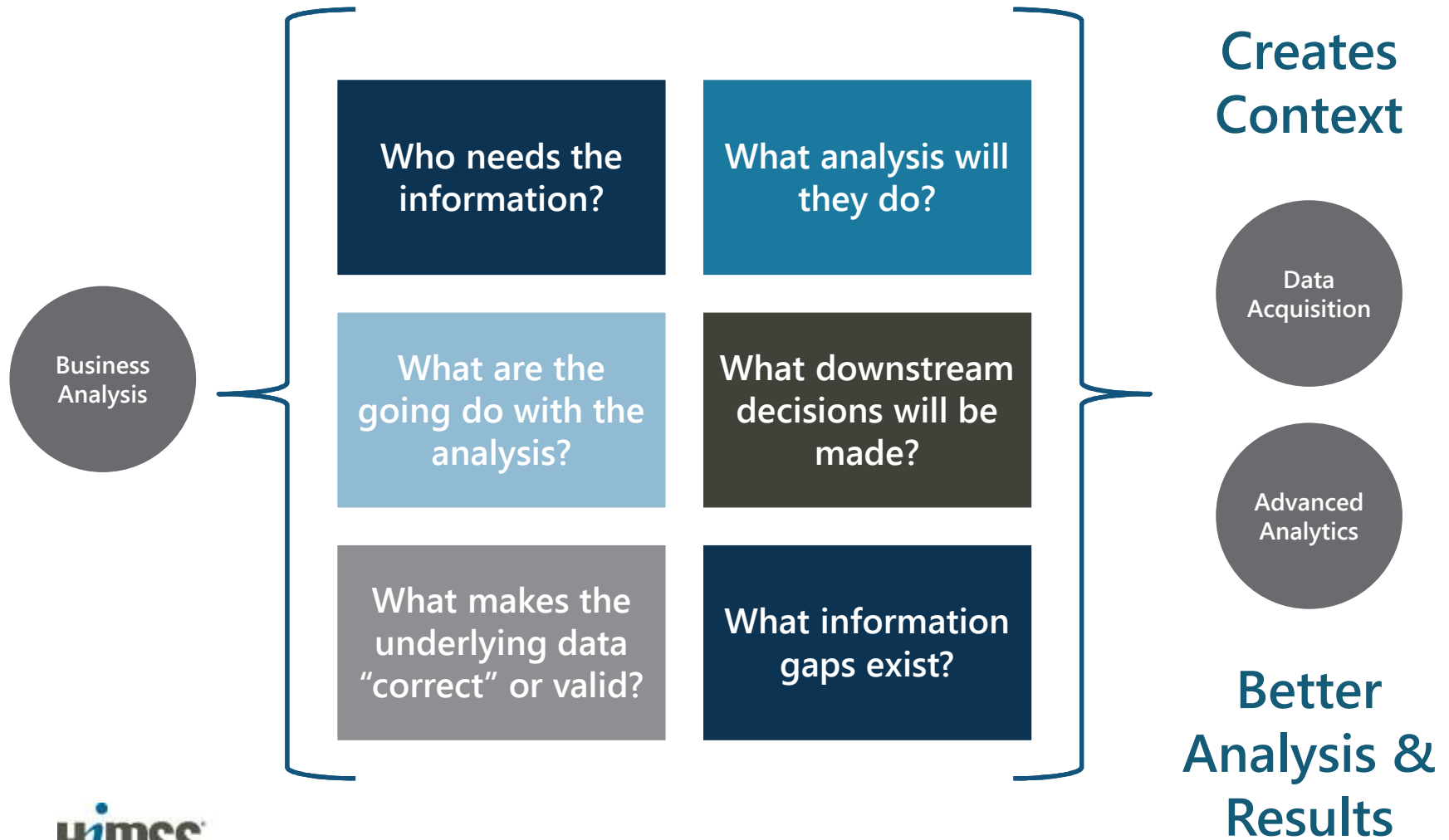
PRESENT



FUTURE



Partnership + Talent = Success





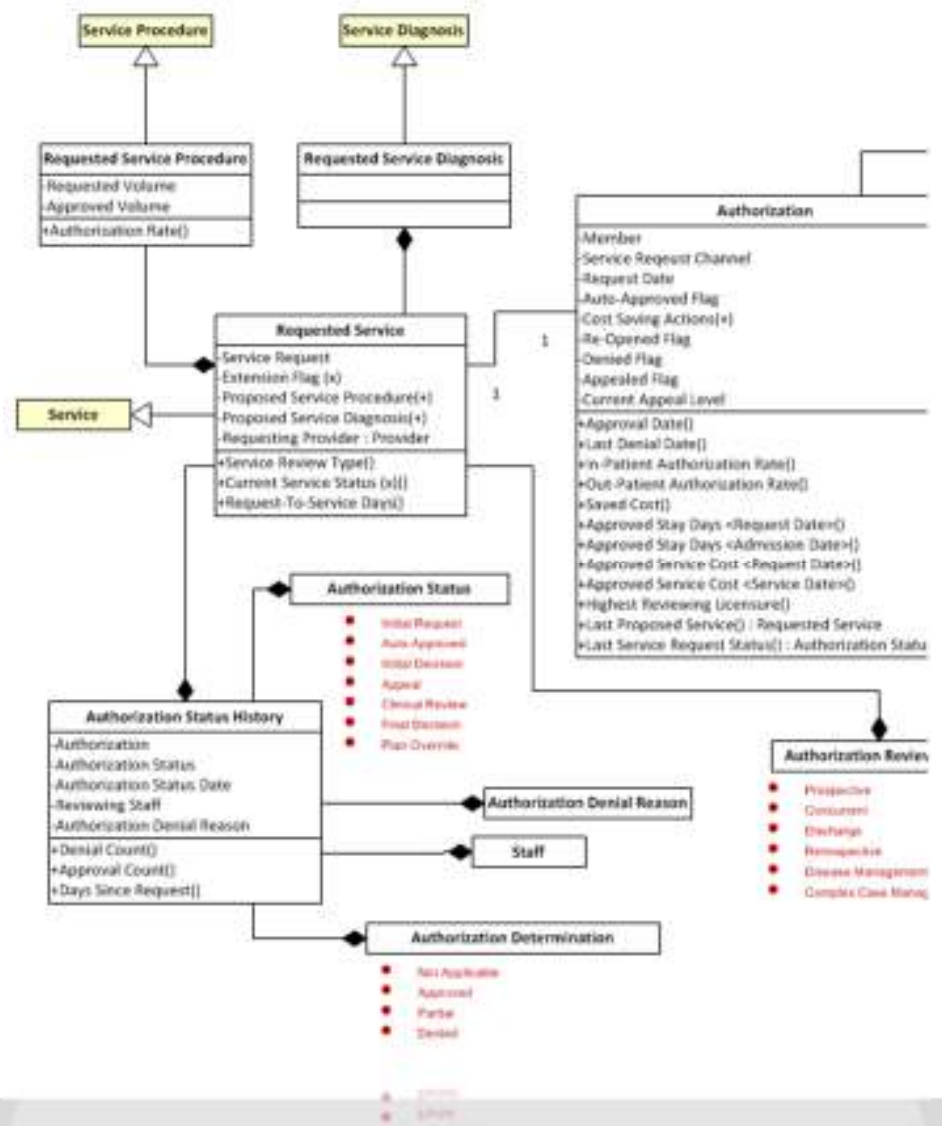
Information Management

Description

- Business perspective on information
- IT, technology and source system agnostic
- Business definitions, metric definitions, master data values.

Benefits

- Governs all data transformation, data labels and calculations.
- Makes sense to business stakeholders.
- Facilitates requirements discussion.
- Defines data quality and enables measurement.





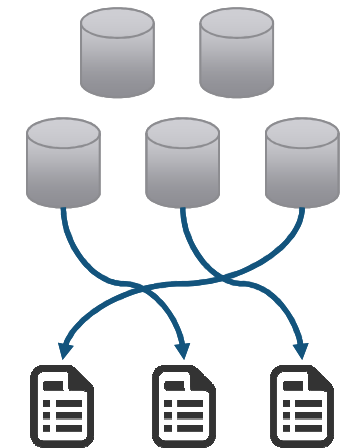
Data Catalog

Description

- Catalog of registered (validated) datasets and sources
- Controls information access based on security model
- Facilitates collaboration across the enterprise (annotations)

Benefits

- Reduces dependence on IT to produce reporting
- Controlled access to data without need a data warehouse
- Connects physical data to business glossary
- Enables self-service



Data Catalog





Data Catalog



The screenshot shows the Microsoft Azure Data Catalog interface. At the top, there is a search bar containing the word "inventory". To the right of the search bar are icons for search, view, and menu, along with "Results Per Page: 10" and a "Highlight" button. On the left side, there is a filter panel with the following sections:

- Filter:** A search term "inventory" is entered, with a "Clear All" button below it.
- Current Filters:** A search term "inventory" is displayed.
- Tags:** A list of checkboxes for "Sales (10)", "Product (6)", and "Tabular (5)".
- Object Type:** A list of checkboxes for "Table (6)" and "Measure (4)".
- Source Type:** A list of checkboxes for "SQL Server (5)", "SQL Server Analysis Services", and "Tabular (5)".
- Experts:** A checkbox for "MelissaCoates@company.com (10)".

The main area displays a grid of data items:

- Product Inventory:** A table with columns "Product", "Tabular", and "Sales". It is contained in the model "AWTabular" and is an "ANALYSIS SERVICES TABLE".
- Total Inventory Value:** A measure with columns "Tabular" and "Sales". It is contained in the model "AWTabular" and is an "ANALYSIS SERVICES MEASURE".
- Total Inventory Maximum...:** A measure with columns "Tabular" and "Sales". It is contained in the model "AWTabular" and is an "ANALYSIS SERVICES MEASURE".
- Total Inventory Optim...:** A measure with columns "Tabular" and "Sales". It is contained in the model "AWTabular" and is an "ANALYSIS SERVICES MEASURE".
- Total Inventory Value Pe...:** A measure with columns "Tabular" and "Sales". It is contained in the model "AWTabular" and is an "ANALYSIS SERVICES MEASURE".
- ProductInventory:** A table with columns "Product" and "Sales". It is contained in the database "AdventureWorks2012" and is an "SQL SERVER TABLE". A red box highlights a note: "Use this instead of Total Inventory Value for the quarterly reports." It has a blue notification badge with the number "2".

Example of Microsoft Azure Data Catalog

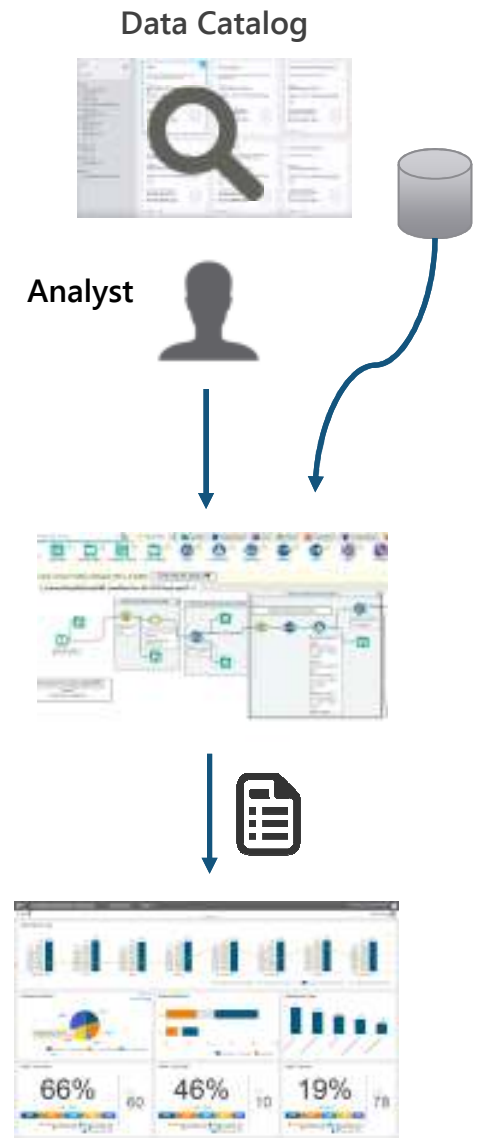
Data Analytics Tools

Description

- Drag and drop graphical UI to create workflow
- Sophisticated data analysis components included
- Ability to embed R, Python and other scripts
- Consume any type of data.

Benefits

- Advanced analytics capability on the desktop.
- Repeatable processing of data from multiple sources



Data Visualization Tools

Description

- Drag and drop data visualization
- On-the-fly metric definition
- Combine data sources for analysis
- Natural language query (some)

Benefits

- Self-Service. No dependence on IT
- Very shallow learning curve
- Drives greater collaboration and insight

Business Analysis

Data Visualization Tools



Example of Power BI

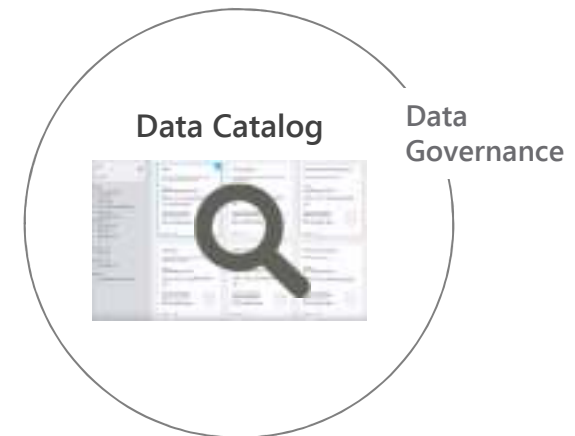
Data Governance Tools

Description

- Framework for data governance processes
- Management of quality, business rules, policies
- Library for business definitions

Benefits

- Bring structure to a difficult strategic initiative
- Drive common understanding across the enterprise
- Significantly increases usability of data artifacts





Data Governance Tools



Main ▼ 👑 🏠 🔍 The main dashboard

Browser Browse through communities and domains.

🔍 Filter on community or domain...

- 🏠 Bank
- 🏠 Classification Scheme Community
- 🏠 Customer Community
- 🏠 Data Governance Council
- 🏠 Government
- 🏠 Insurance

Search Find assets, domains, communities, users...

Search... 🔍

Text Display

No content
Hover over start address

Workflow List of buttons to start workflows.

- ➔ Propose Governance Asset
- ➔ Propose Technology Asset
- ➔ Propose Business Asset
- ➔ Propose Data Asset
- ⚠ Log Issue
- ➔ Propose Code Value
- ➔ Propose Business Term

To Do Get a list of tasks and issues assigned to you.

3 Tasks ||| Issues 0 Due Date ▼

Approval (Vehicle)	In 24 days
Approval (Vehicle on Wheels)	In 24 days

Role of Big Data

Not Just “Big” Data

- Enables centralization of vast enterprise data.
- Centralization means easier access for analysis.

Considerations

- Requires a dedicated team to build and support.
- Steep learning curve for development
- Analysts can consume data without knowing anything about Big Data (e.g. Data Catalog, Hive)



Conclusion

1. **Is your approach to responding to information requests making a real difference?**
2. **Can you answer the hard questions that span clinical and financial data? And with what level of confidence?**
3. **Is your architecture and enabler or an impediment?**