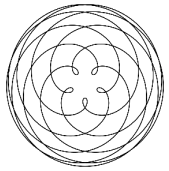
Breaking dysfunction in Metadata

An application of Design Thinking to Data Governance

Tom Hirata

People
Postgres
Data



Postgres Philly
July 19, 2019

Overview

Data and analytics has increased the complexity of organizations—for both technology and the business

The scale and complexity of the data environment makes it harder to ensure meaningfulness of data

Design thinking is a people-centered approach to creative problem solving; it can improve metadata by changing practices in data governance and technology development

Metadata Management sounds like a problematic relationship

"We can't live without it"

- Meaningful data are the driver of business value
- Metadata are the "keys" to meaning across an organization

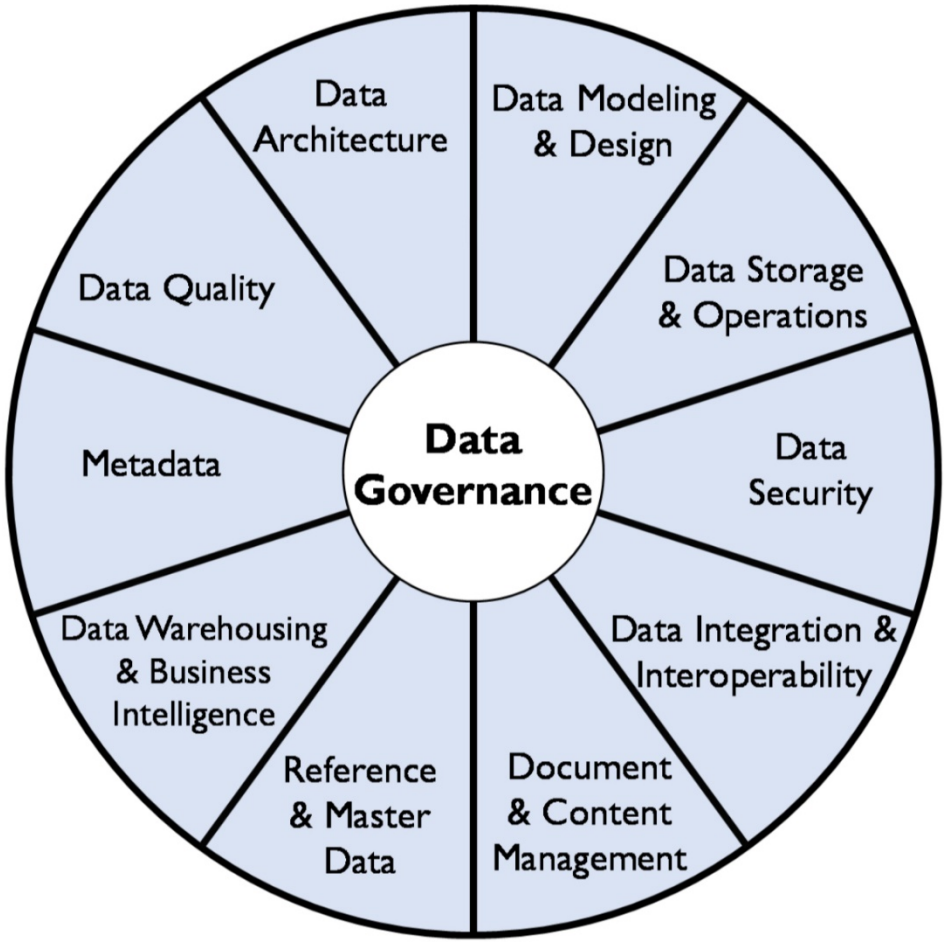
"It's complicated"

- It's time-intensive
- It requires subject-matter knowledge in the business and technology
- Solutions (repositories, processes) require business-technology partnership

Why Data Governance?

In today's complex environment, Data Governance is needed to manage data as a strategic asset

Data management functions need cross-functional support from technology, analytics, and business teams



Source: DAMA International
Data Management Body of Knowledge, 2nd Ed.

What is Design Thinking?

Design thinking is a process for creative problem solving.

> "When you sit down to create a solution for a business need, the first question should always be what's the human need behind it?"

> "You're pulling together what's desirable from a human point of view with what is technologically feasible and economically viable."

Source: Ideo
https://www.ideou.com/blogs/inspiration/what-is-design-thinking

What is Design Thinking?

Captures the mindsets and needs of the people you're creating for.

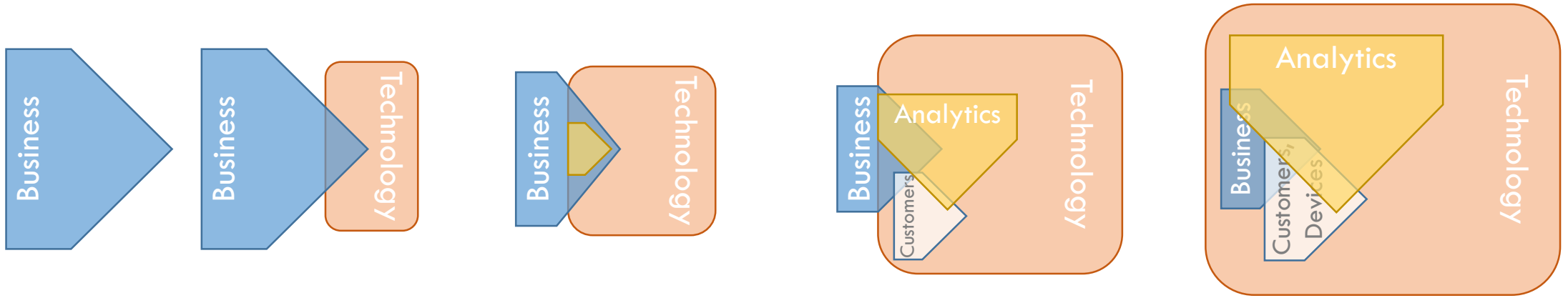
Paints a picture of the opportunities based on the needs of these people.

Leads you to innovative new solutions starting with quick, low-fidelity experiments that provide learning and gradually increase in fidelity.

Source: Ideo
https://www.ideou.com/blogs/inspiration/what-is-design-thinking

Technology has expanded complexity

Pre-Digital	**PC** (1980s)	**Pre-eCommerce** (1990s)	**Pre-Mobile** (Late-2000s)	**Big Data** (Current)
Minimal technology	Individual users leverage technology	Business expands analytic teams Data proliferate in the tech environment	Analytics teams create products and reporting Self-service expands on desktop and voice Analytics drives product	Mobile, IoT, etc. BI tools Business is more dependent upon analytics and technology functions Analytics <u>is</u> product

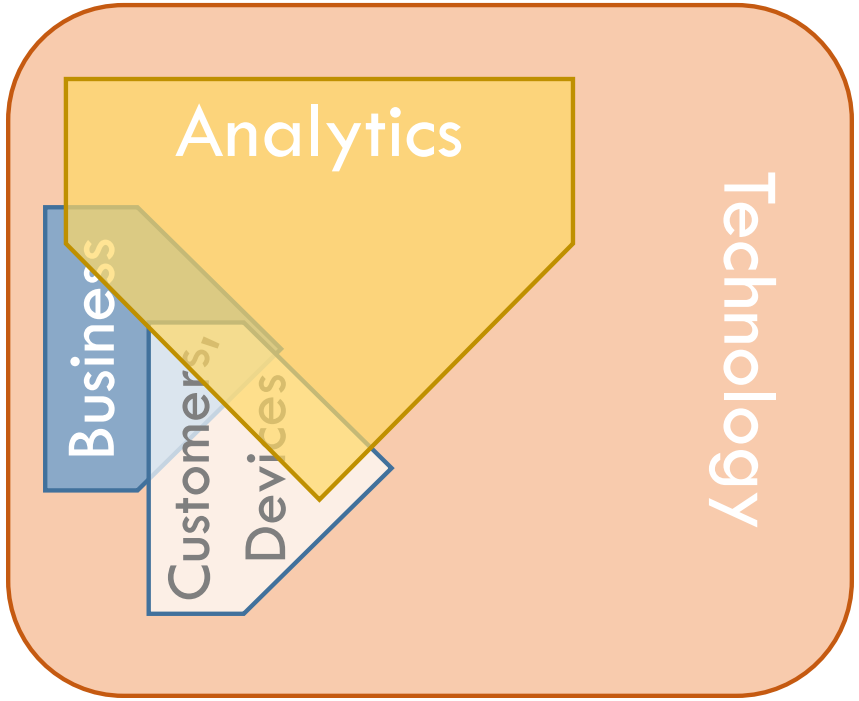


Complexity has isolated Business from data

Today, the business is highly dependent upon Analytics and Technology for data, and increasingly for product

Drivers:

- Volume and complexity of data
- Skills needed to access data
- Analytics mindset grounded in probability & statistics to understand deep learning tools

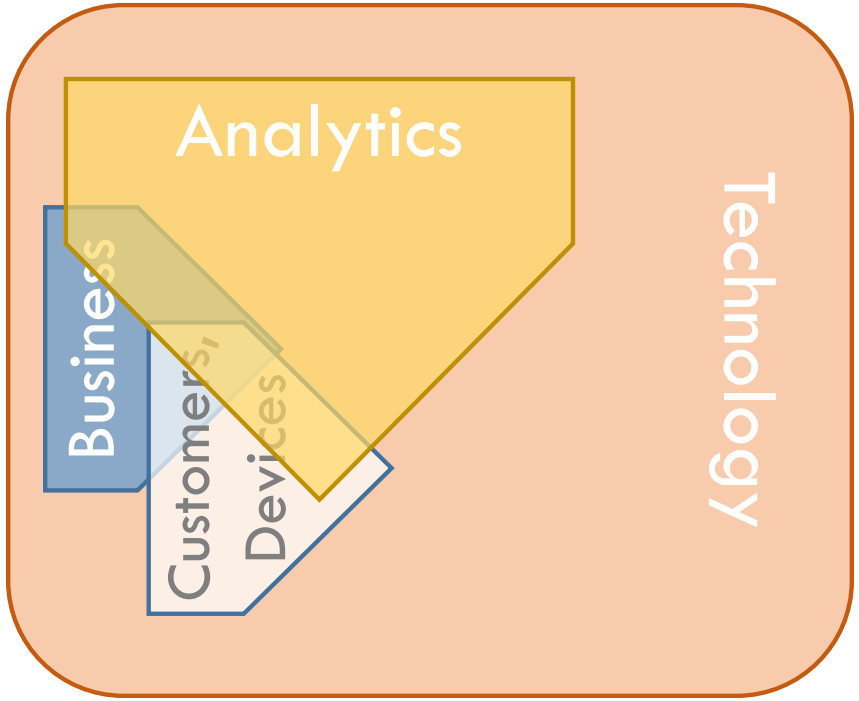


Meaningfulness gets lost in the complexity

Meaningfulness of data is owned by the business

Analytic reporting teams recombine and repackage data from multiple sources

Business metadata is critical to create meaning out of datastreams



Metadata is the key to meaningfulness

Metadata should provide meaning and context to individual records and derived reports and analytics:

- Business definitions
- Technical specifications
- Data lineage

Too often, Metadata are neglected

Descoped in development ("we'll get to it later" or "we can use the existing repository")

Repositories are insufficient (don't accommodate business metadata)

Ongoing maintenance is abandoned (improving definitions never happens; or new fields aren't included)

Design Thinking and Metadata Management

Metadata management should be integrated throughout the lifecycle:

- Design phase
- Production reports
- Quality monitoring
- Analytics
- Ongoing change management
- Issues management

Apply Design Thinking to integrate Metadata Management

The business requires support from cross-functional partners for execution and decision-making

A people-centered approach of design thinking shifts the process

- Discourages use of jargon
- Focuses on solution

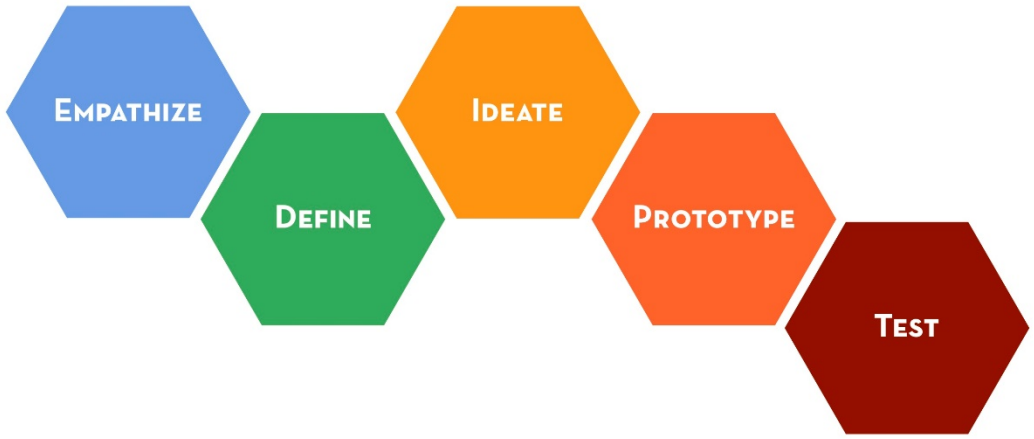


Diagram: Stanford d.School

Identify processes to redesign

Through Design Thinking ideation, the team can identify changes to improve metadata management

Examples:

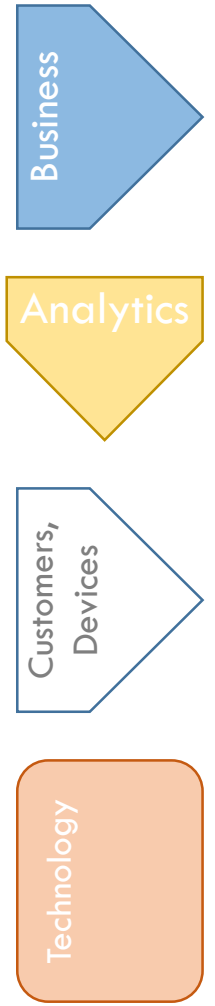
- Add critical project steps for business definition
- Review repositories for usability, utilization, etc.
- Include metadata in business quality review programs
- Adapt change management programs to ensure review of metadata

People-centered problems to solve

How do we make sure everyone agrees about what a data entity means?

How do we make sure everyone can find the definition of a data entity?

How do we make sure that that definition is updated when needed?

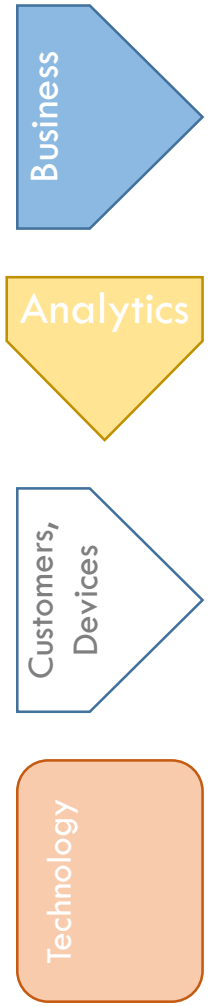


Questions about the data

What is the business meaning of this data entity?

What are its values? (allowed, expected, observed)

Where did the data originate?



Questions about the process

Where will we store metadata?

Who will access it?

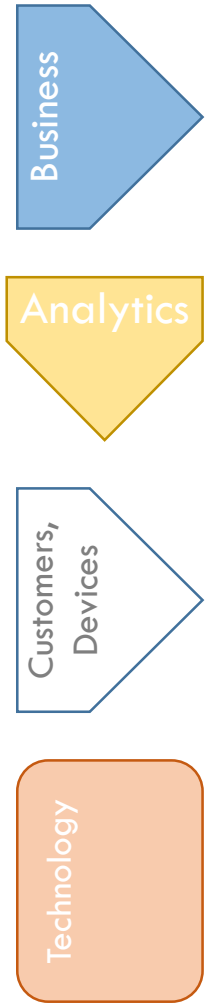
Who will maintain the metadata?

What is the change management process for metadata?

How will it be used? (e.g., analytics, quality, audit)

How can the business adapt to improve metadata?

How can the technology organization adapt to improve metadata?



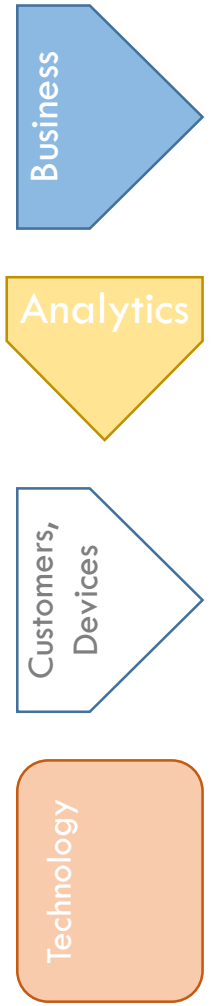
Questions about the repository

What tool(s) will be used?

How will access be managed? Who will manage it?

How will updates be received? (e.g., manual, automated)

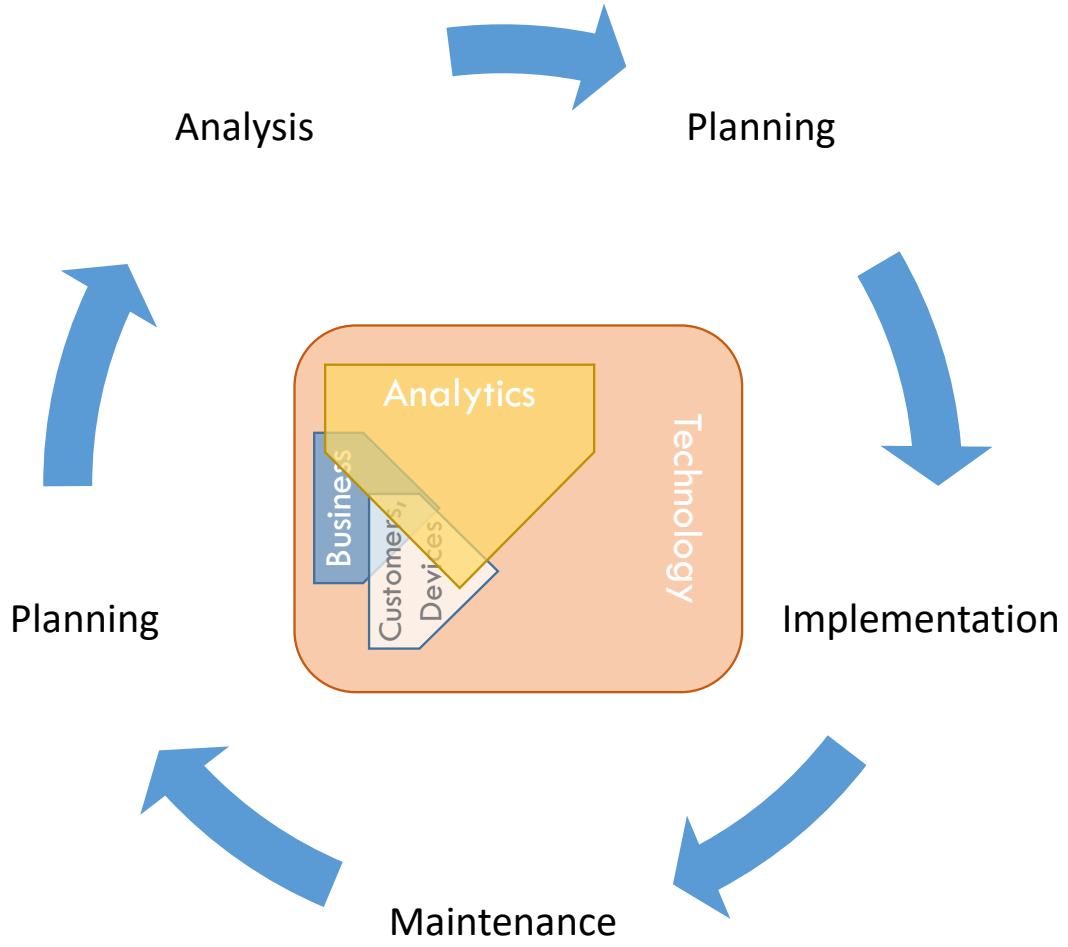
Who needs access to the repository?



Design thinking and the SDL

Design Thinking can inform iterative and long-term planning for improvements to Metadata Management

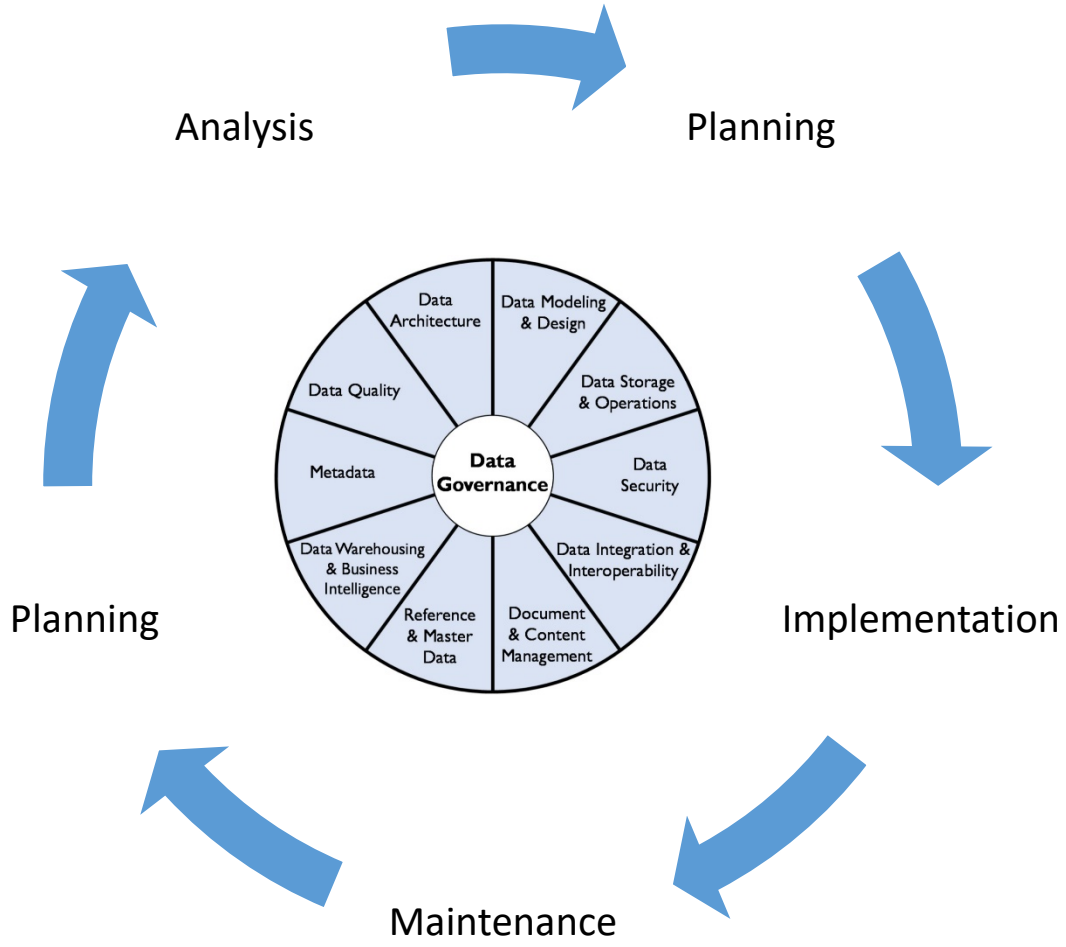
The people-centered, solution-focused method facilitates cross-functional partnership



Design Thinking and Data Governance

Design Thinking can be applied to Data Governance across the SDL

The Data Governance team can engage stakeholders and experts to participate in the design process

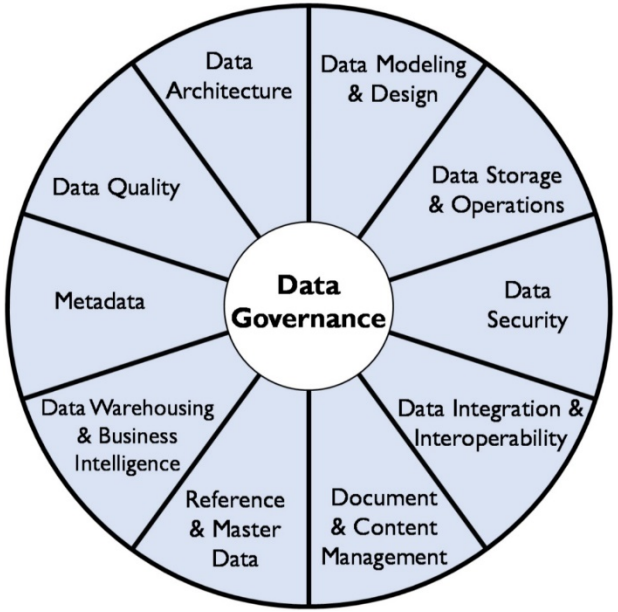


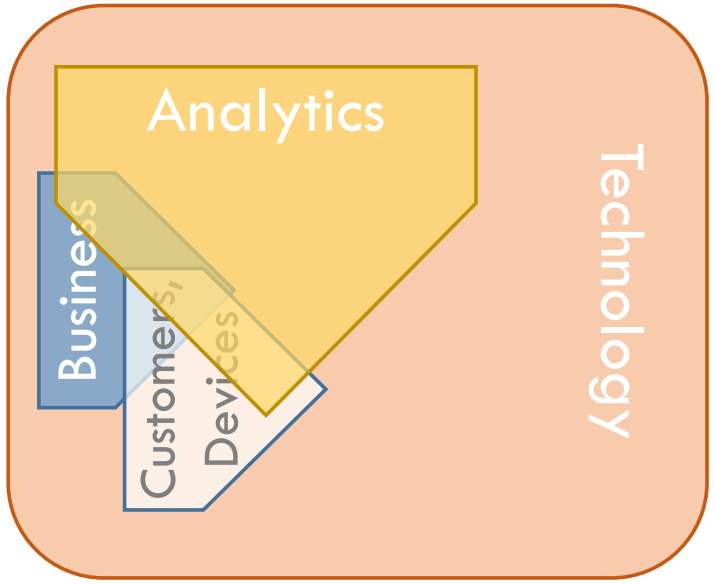
Summary

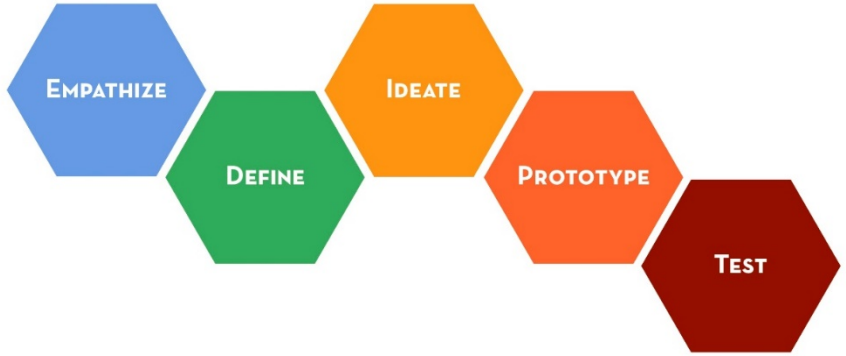
Complete and up-to-date metadata are essential for meaningfulness, and meaningfulness is the driver of business value

Design Thinking is an approach to evolve and mature Data Governance programs from “checklist” to “framework” and from “practice” to “in our DNA”

What questions do you have?







Thank you for your time and feedback today!

Contact: tom@datamandala.com