

UBC'S LONG & WINDING ROAD TO DATA GOVERNANCE

High quality and accessible data to advance UBC's purpose and vision, delivered by integrated data management and principled governance.

NOV 2022





DAMA

November 25, 2022



Deloitte.

Territorial land acknowledgement

We like to acknowledge that the land on which we have gathered is the unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaɬ (Tsleil-Waututh) Nations

Housekeeping





DAMA-Vancouver BC

Marcela Hernandez

- Started at UBC in 2013 in Planning and Institutional Research
- UBC's first ever Chief Data Officer in 2017
- Key member of the Senior Leadership Team reporting to the Office of the CIO
- Responsible for UBC's enterprise data and information strategy
- Her work includes developing a data governance framework, and collaborating with institutional data stewards representing academic and administrative areas across campus



Deloitte.

 Alation

The Alation logo, featuring an orange stylized 'X' or infinity symbol icon followed by the word "Alation" in a grey, lowercase, sans-serif font.



DAMA-Vancouver BC

2023

- **Jan 27th**, 9-11:00 am AGM and Alation on Data Mesh
- **Feb 24th**, 9-11:00 am TBD
- **Mar 24th**, 9-11:00 am TBD
- **Apr 28th**, 9-11:00 am TBD



Deloitte.



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UBC AT A GLANCE

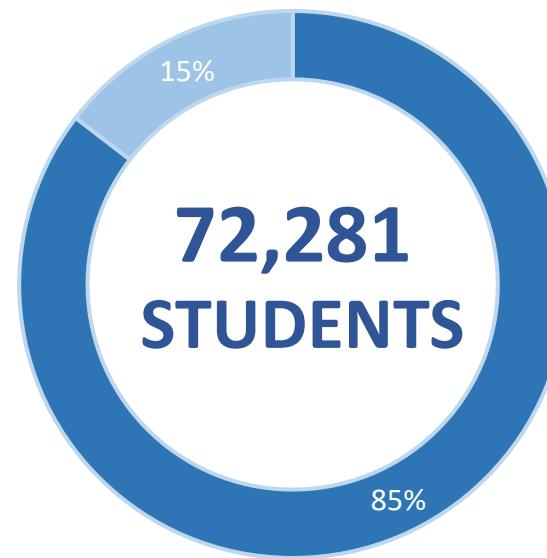


UBC AT A GLANCE (2021/22)

UBC is home to:



- **16** faculties
- **18** schools
- **2** colleges



- Undergraduate ■ Graduate
- 60,292 undergraduate
- 11,989 graduate

Over 350,000 ALUMNI

living in 148 countries



- Faculty ■ Staff
- 7,084 faculty
- 12,023 staff



GEOGRAPHIC REPRESENTATION



- • UBC's two main campuses are in Vancouver and Kelowna. Other sites include UBC Robson Square, UBC Learning Exchange, UBC's Centre for Digital Media.
 - UBC also provides clinical education to Faculty of Medicine students at more than 80 training sites across BC.
 - UBC's Asia Pacific Regional Office in Hong Kong and Liaison Office in New Delhi, India facilitate teaching and research partnerships and support alumni engagement.



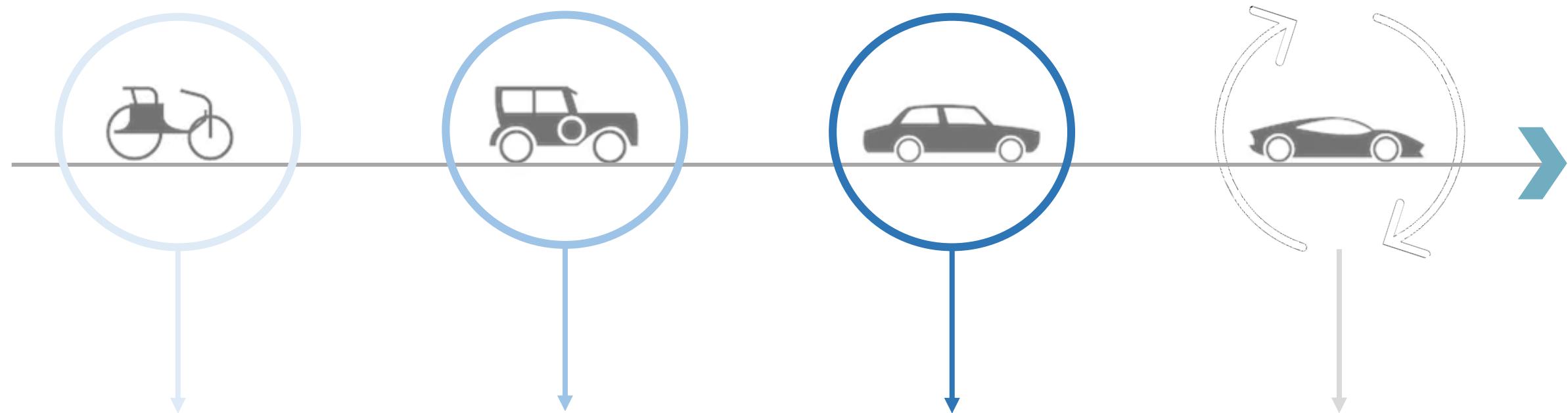
RESEARCH FUNDING

UBC attracts more than \$670M in research funding from government, industry, and not-for-profit partners across the globe



- > **\$670 M** total research funding
- > **9,000** projects
- > **1,200** research projects with industry partners
- > **1,400** industry projects

OUR DATA GOVERNANCE JOURNEY



1. Inception - Getting Started. (Fall 2017)

Obtained executive support in the fall of 2017 to develop a data governance strategy & create the role of the Chief Data Officer.

2. The Foundation – The Basics

The governance infrastructure was developed, the strategy was socialized with campus stakeholders, and current state assessment completed to better understand the University's complex application and data ecosystem.

3. Implementation – Making it Happen

Working with the Data Governance Steering Committee (DGSC) and working groups, started development on data definitions and standards, data quality framework, reference data management, and the University Data Model.

4. Sustainment & Growth – EDG as Usual

Ongoing improvement and expansion on the program strategy, and development and implementation of supporting processes, programs and frameworks.



RATIONALE FOR DATA GOVERNANCE

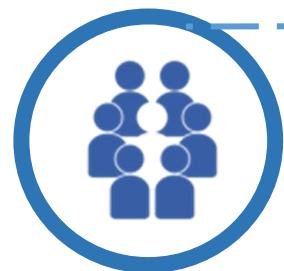


THE NEED FOR DATA GOVERNANCE



UBC's Data Landscape

Data was inconsistently defined, managed and governed



Integrated Renewal Program

The need to renew UBC systems through the Integrated Renewal Program (IRP).



Operational Uncertainty

Lack of consistent processes, reporting, and system integrations.



Data Security & Privacy

The need to create proactive measures to guard against misuse.

Governing UBC's Data

Discovery for Implementation of Workday

Integrations and Reporting

Governing Internal Access to Data



SETTING THE FOUNDATION – THE BASICS



DATA DISCOVERY – UBC'S DATA LANDSCAPE

...Why do we need data governance?

Do we
Understand
& Find
Our data



How do we Share
and give access to
our Data



Do we Trust
Our Data

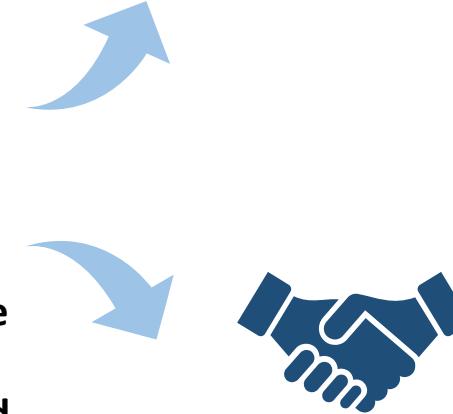


Govern Your Data

GOVERNING
DATA AS A
COMMUNITY



Understand
what data we
collect and
how it is used



Prevent

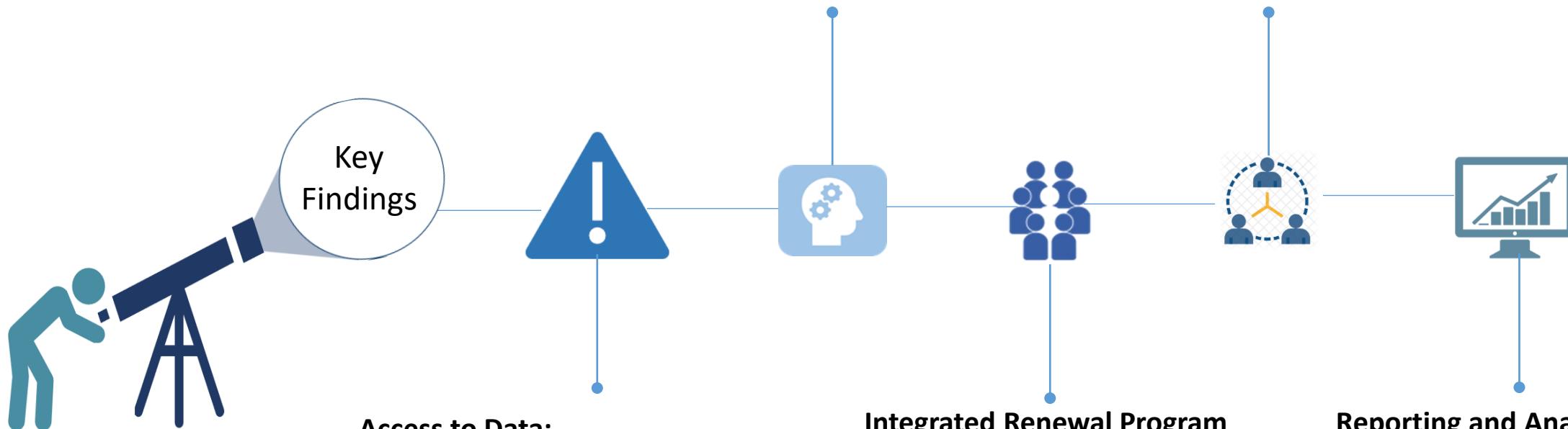
- Risk
- Non-compliance



Create

- Value
- Business Opportunity
- Improved Efficiency through integrations
- Enable Reporting & Analytics

DATA DISCOVERY – WHAT WERE OUR FINDINGS



Access to Data:
Access to data was not governed
and very informal processes for
sharing data within the community.

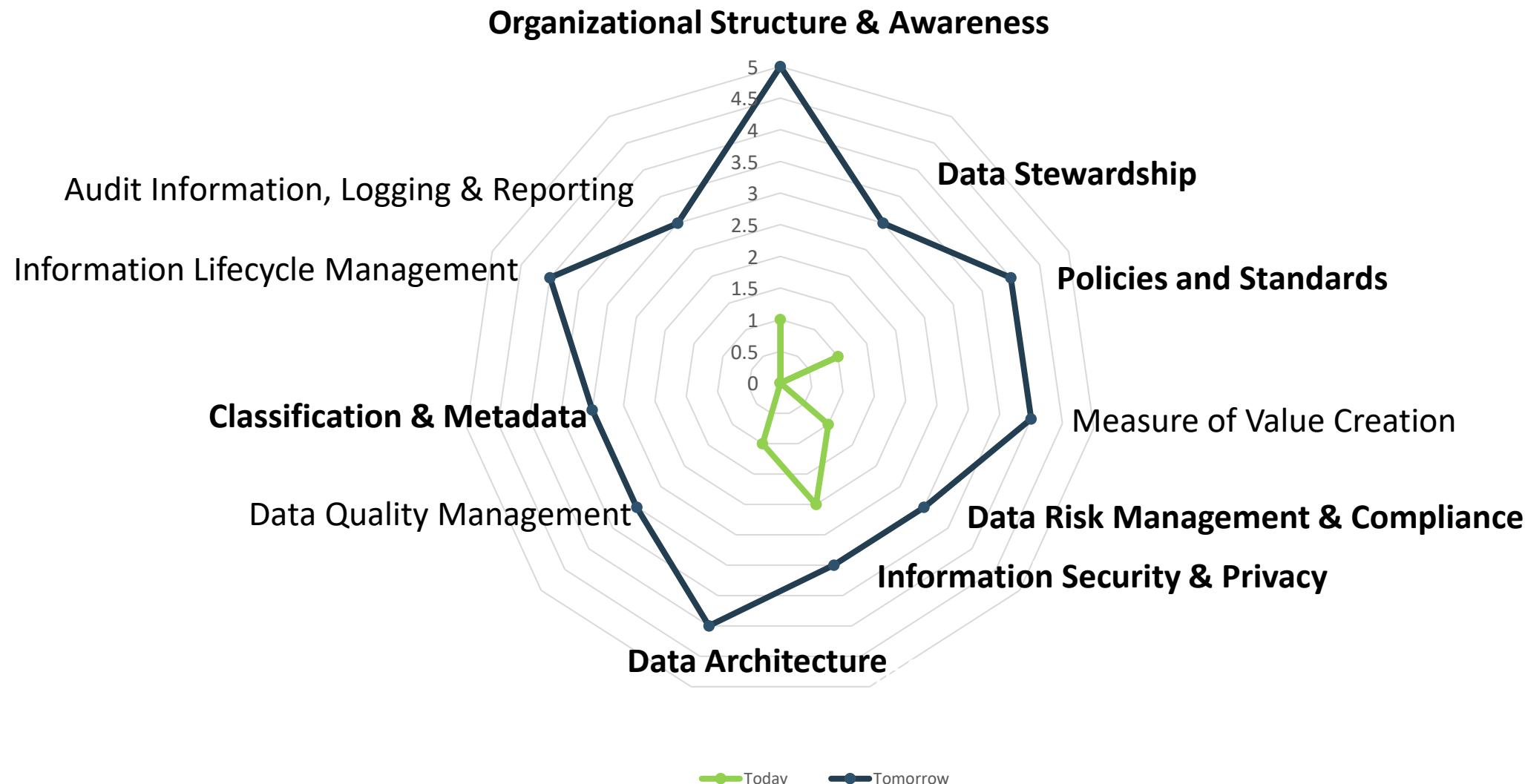
IT Capital Projects:
Data was not front and center when
building budgets and schedules for
IT implementations.

Integrated Renewal Program (IRP) Implementation:
IRP became a driver for data
governance.

Integrations:
UBC needed a common, consistent,
secure and governed business and
technical framework for exchanging
data across UBC.

Reporting and Analytics:
Analysis and recommendations
were different depending on which
department was preparing reports

HOW FAR DO WE WANT TO GO?





BUILDING UBC'S DATA MANAGEMENT STRATEGY



RATIONALE FOR CREATING A STRATEGY



Communication Tool

- Stakeholders understand the expected outcomes of data management for UBC
- Clarifies vision for the Institution
- Understanding of objectives and measurable goals
- Consistent message
- Helps build data literacy
- Clear principles
- Increased participation of stakeholders. Helps them understand how they can be involved.

Sets Direction

- Creates an understanding of the current state
- Enables the community to visualize the future state
- Articulates the future state
- Articulates the initiatives that will help us move the strategy forward
- Defines operating model for the CDO portfolio
- Defines how CDO operates within the data and analytics landscape.

Defines Scope

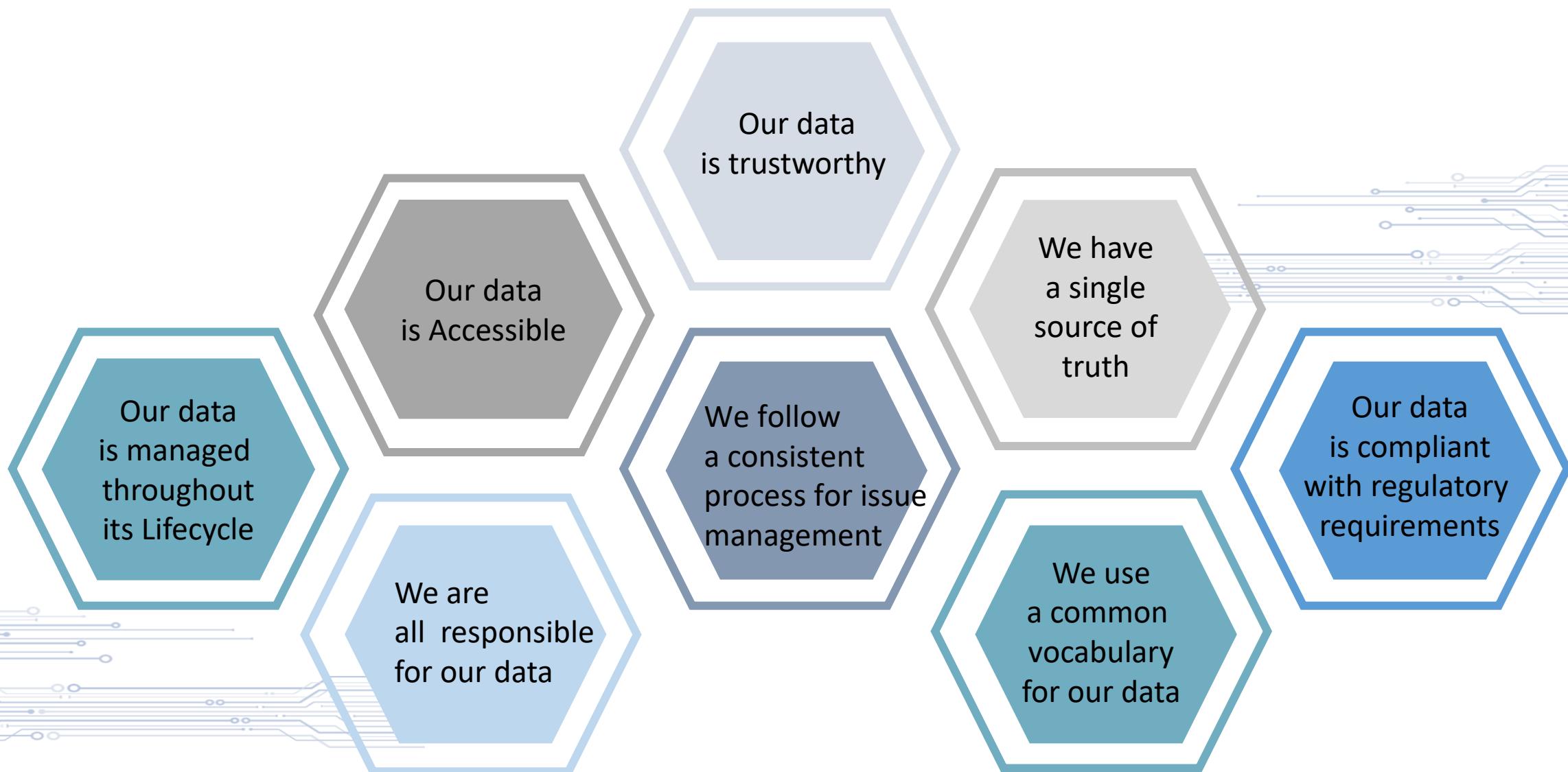
- Define mission, vision, objectives
- Define frameworks and communication tools for the community
- Define roles and responsibilities
- Define communities of practice
- Define operating model (How are we going to operate once we implement the different components of the strategy)

OUR VISION

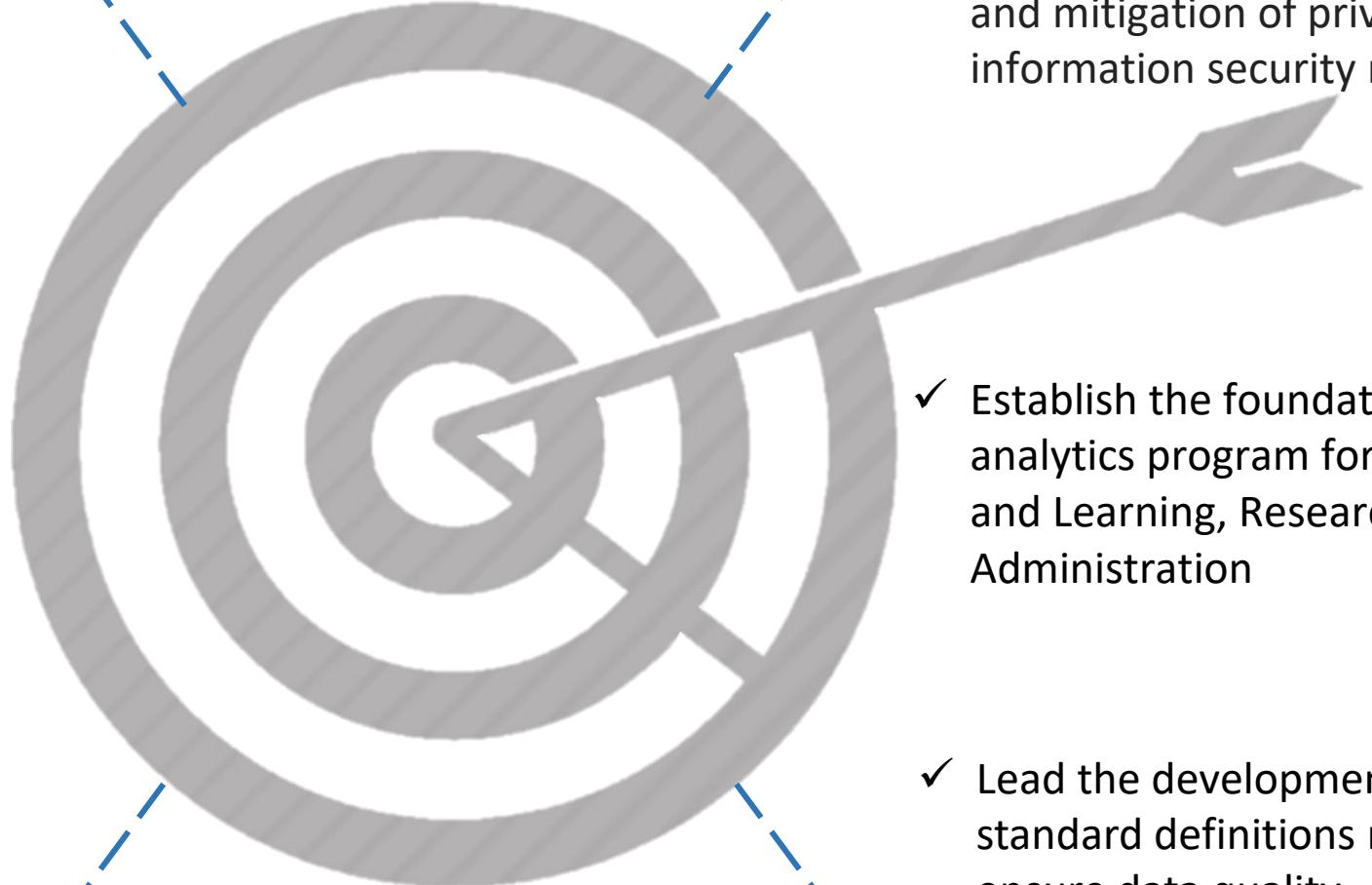
Enterprise Data Governance



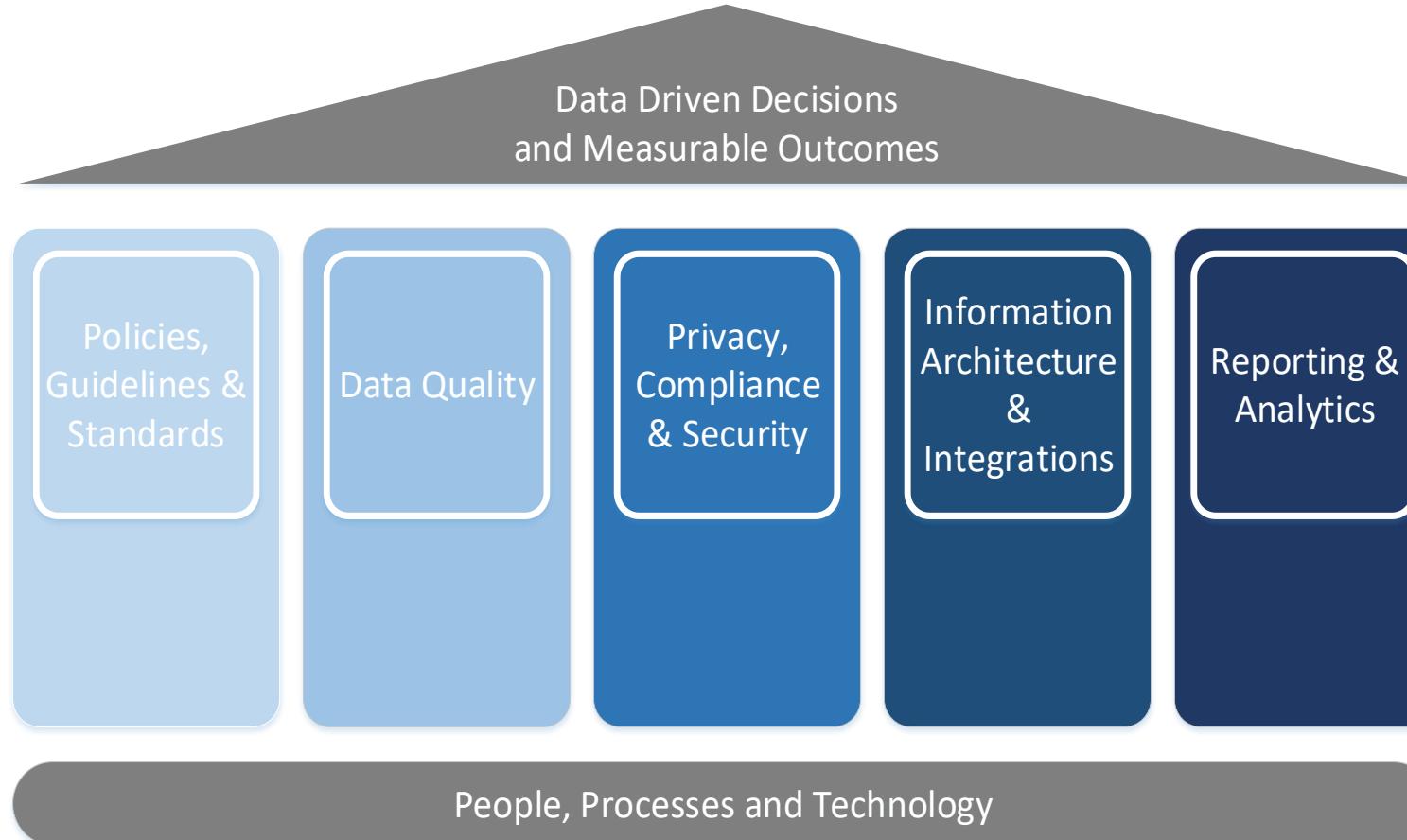
OUR PRINCIPLES



OUR OBJECTIVES

- 
- ✓ Develop and implement data management policies
 - ✓ Develop a culture of sharing data and a common understanding of the value of data
 - ✓ Educate the community on the use of data for decision-making
 - ✓ Foster automation of business processes by ensuring trustworthy and usable data is available
 - ✓ Support proactive monitoring and mitigation of privacy and information security risks
 - ✓ Establish the foundation for an analytics program for Teaching and Learning, Research and Administration
 - ✓ Lead the development of standard definitions needed to ensure data quality

OUR STRATEGIC DATA GOVERNANCE FRAMEWORK



Policies, Guidelines & Standards

Control behavior over the definition, production, organization and use of information.

Data Quality Framework

Enable UBC Community to partner and collaborate in order to obtain true value and achieve the benefits of good quality data.

Privacy, Compliance & Security

Developing risk management strategies and ensuring compliance with record retention policies for different record types.

Information Architecture & Integrations

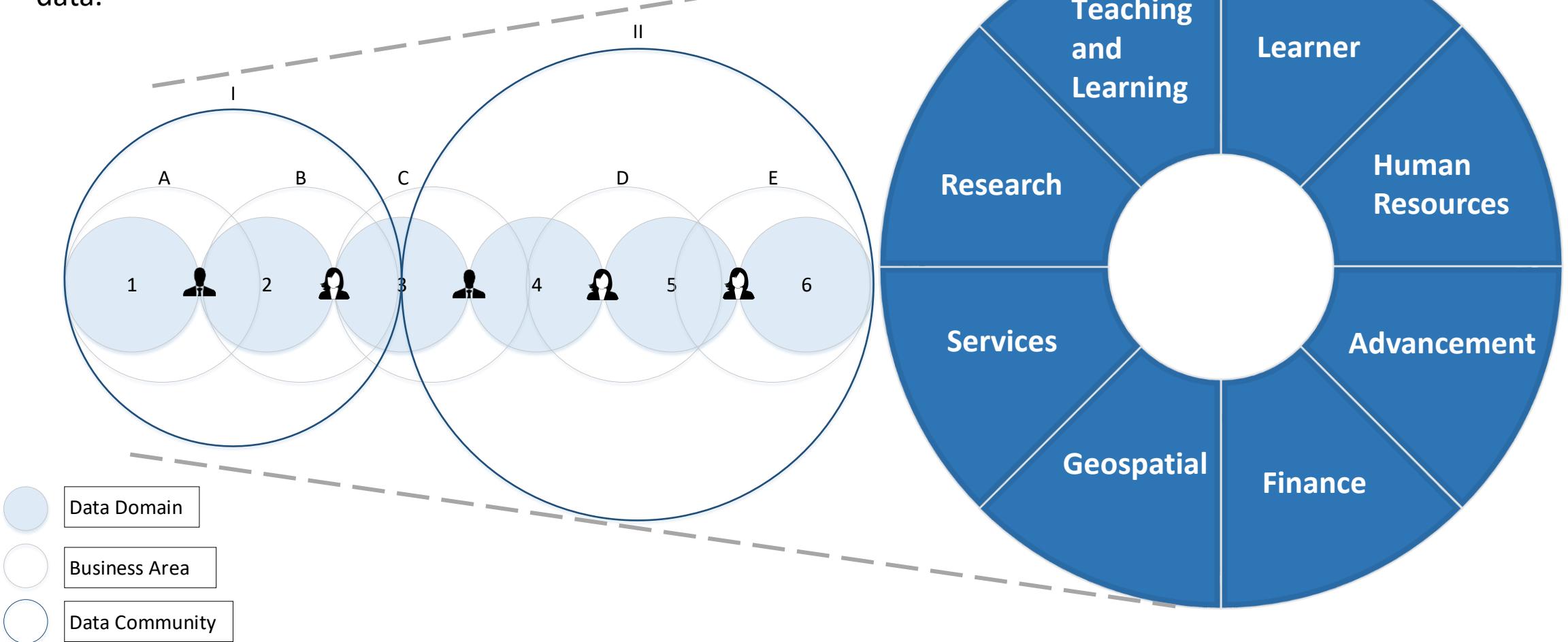
Ensuring that there are common data definitions and that those definitions are made available across multiple platforms is essential to enabling informed decision making.

Reporting & Analytics

Ensuring the university has the analytic tools, and reliable and consistent information to guide informed decisions

DATA COMMUNITIES & STEWARDSHIP

Data Communities are classified by specific high-level **functional areas** for the purpose of assigning accountability and responsibilities over data.



ROLES & RESPONSIBILITIES

~ 5 % of decision making

- Decisions escalated from the Data Governance Steering Committee

5-10
Executives

~ 10 - 20% of decision making

- Significant impact on the activities of data stewards
- Significant impact on technology, business processes, or reporting
- Escalated by Data Stewards through CDO

16
Data
Trustees

~ 70 – 80% of decision making

Cross functional decisions within the same data domain

- Data elements required for decision-making, reporting and analytics

Escalation Process

Decision-Making Input

Data Governance
Steering Committee

Policy Decisions
Requirements Definitions

Data Stewards

Feedback and Acceptance testing

Students, Faculty, Staff (Data entry, report consumers, analysts, decision-makers)

- Working sessions with SMEs from various business areas
- Decision-making has been delegated to subject matter experts by the data stewards

~250
Data
Stewards

125
Working
Group
Members

Data Governors

Data Trustees

Data Stewards

Data Producers
Data Custodians
Data Brokers
Data Consumers



INVOLVING THE COMMUNITY



2018 - DATA GOVERNANCE STEERING COMMITTEE

The Data Governance Steering Committee (DGSC) is a working level, inter-disciplinary group tasked with the responsibility of overarching organizational data governance, including changes to existing data processes, policies and standards, resolution of any data issues and change management.

The DGSC is responsible for the following:

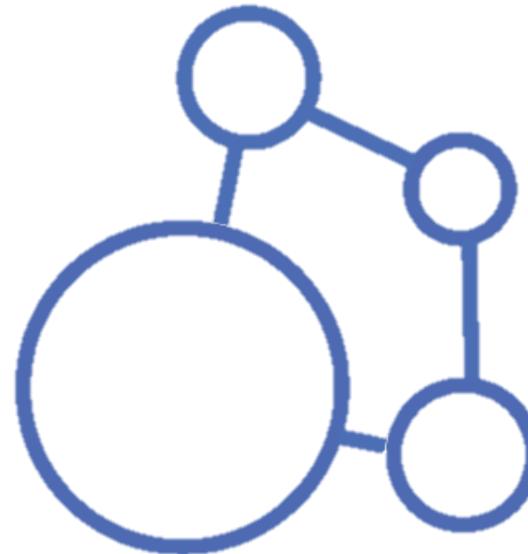
- Approving policies, procedures and guidelines
- Creating a formal decision-making structure for data standardization
- Providing a two-way mechanism for communicating (e.g. a reporting structure and/or communication plan) about data initiatives across the University
- Creating formal procedures for liaising with data consumers and technical groups for data governance projects
- Promoting best practices around data standardization

Data Governance Steering Committee membership:

- **Data Trustees:** A person responsible for fulfilling the vision, upholding the principles and ensuring that objectives of the Data Governance Initiative are achieved.
- **Faculty Members:** Faculty representation is instrumental for the success of data governance at UBC

2018 - BUILDING THE UNIVERSITY DATA MODEL (UDM)

The University Data Model (UDM) is a logical representation of UBC's information domains, starting at the highest-level (person, curriculum, locations, assessments etc.) and representing data and information required by UBC to support its processes, develop reports and have a common understanding of the meaning of University data.



UBC's official information blueprint for how data elements are structured and relate to one another.

Data Communities participate in the creation of the UDM for their corresponding data domains.

An **essential tool** to support the creation of trustworthy, consistent and quality data.

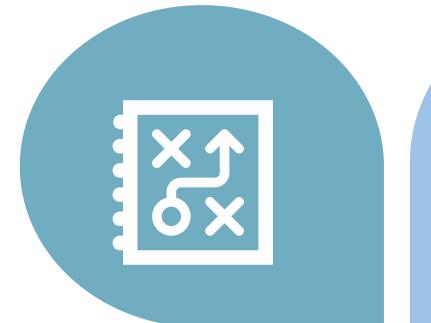
Cultivate Data literacy by creating the space for discussions with stakeholders who share common information needs.

The technical manifestation of policies and standards developed through the Enterprise Governance Program.

OUTCOMES & BENEFITS OF THE UDM

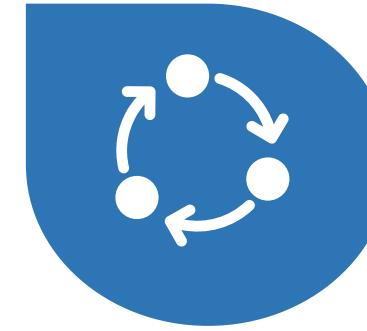
Increased Support for Decision Making

Enabling leaders to analyze trends, develop models to support predictive analysis, evaluate options, and make informed decisions.



Regulatory Compliance

Enabling data security and privacy requirements in accordance to legislation and other self-regulating mandates.



Establishing a Common Vocabulary – University Glossary

Enabling the University to understand data and use a common, consistent vocabulary that is shared and used across the community.

Data Integration

Enabling data to be accessed, extracted, moved, validated, cleansed, standardized, transformed, and loaded; thus allowing for seamless integration and automation.

Key Outcomes

Stronger Insights

Compliance

Defined Data

Agility

EXAMPLE - INSIDE A WORKING GROUP

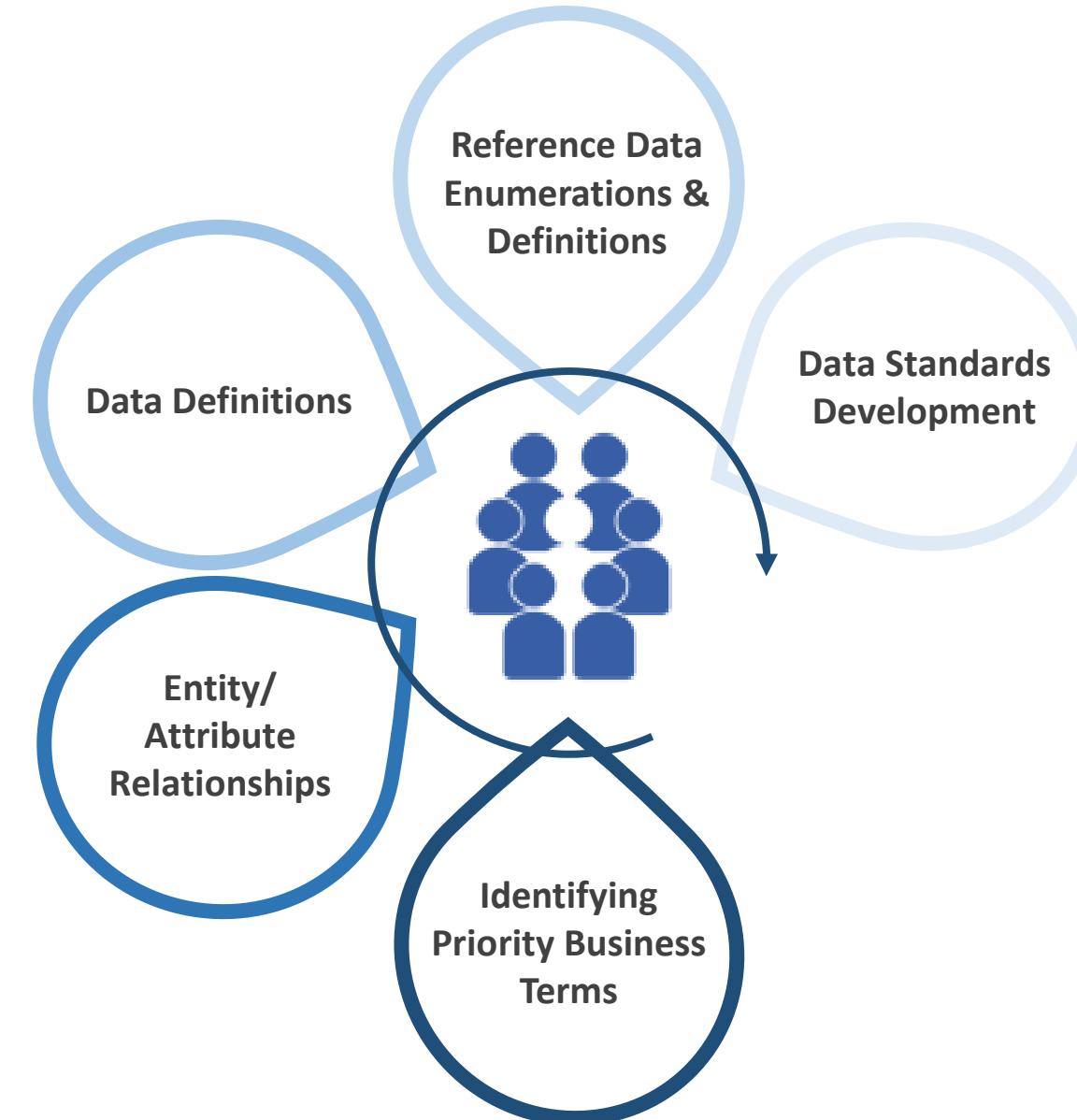
Academic Model

Number of members: 36

Terms of Reference:

The Academic Model Working Group has the responsibility of **developing a common vocabulary and data definitions to operationalize the Academic Model Framework.**

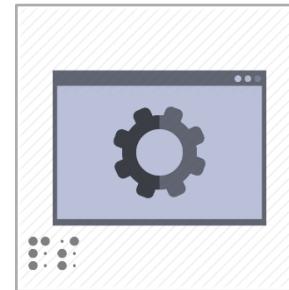
The final product will be used to ensure all applications integrating to **UBC central systems** (Workday) use a common vocabulary, common definition and reference data to represent UBC Curriculum.



CROSS CAMPUS WORKING GROUPS - EXAMPLES



Academic Model



Technology Asset Naming



Data Access



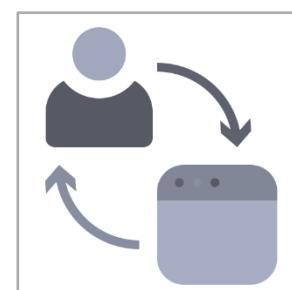
Full Time Equivalents



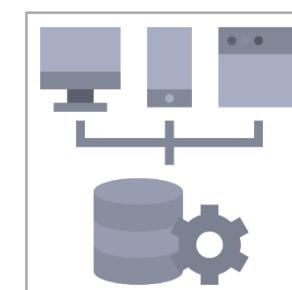
Finance



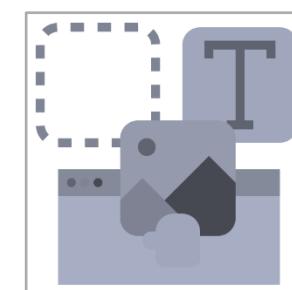
Geospatial



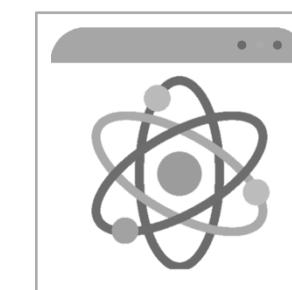
Human Resources



Integrated Renewal Program - Location



Sustainability



Student Data Quality

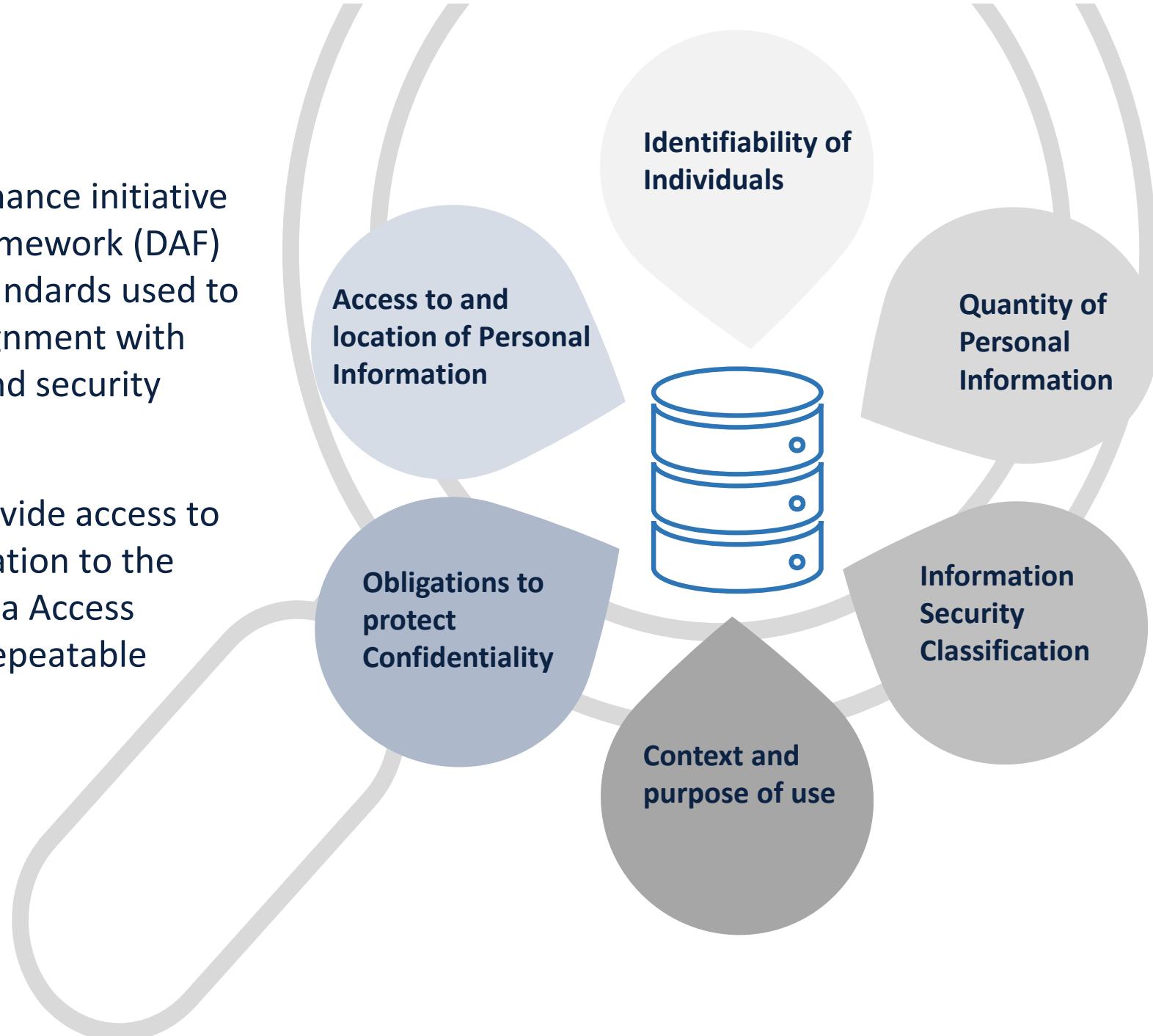
DATA ACCESS FRAMEWORK



BACKGROUND

Established as a Data Governance initiative in 2019, the Data Access Framework (DAF) consists of processes and standards used to govern access to data, in alignment with UBC's information privacy and security policies.

The purpose of DAF is to provide access to data and APIs with consideration to the risks associated with the Data Access Request (DAR) by having a repeatable process which examines:



DATA ACCESS FRAMEWORK



Developed in partnership with PRISM, the governed data access process enables efficient, timely, and secure access to data and reports.



Access can be requested for:

- APIs – real time, case level data that is required for integration with another application or system
- UBC Data - suitable for access to data that will be used for quality assurance, administrative functions, and reporting or/and analytical purposes



Benefits

- Data access are registered and reportable
- Data is protected in motion and at rest
- Efficient and secure method to access data via API(s)
- Compliance with information privacy regulations
- Metrics based risk model for data access



Data Stewards can have a two-fold relationship with the framework



Designate Data Stewards will be responsible for reviewing and approving requests to access data or reports



Conversely, you or your team may need to request access to data or reports.

DATA ACCESS FRAMEWORK

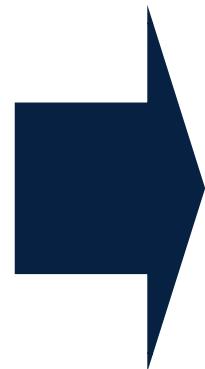


Data requestor

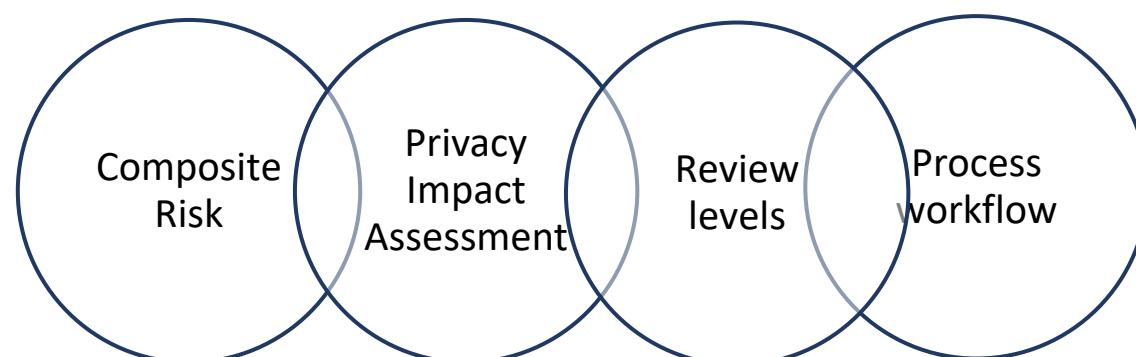
1. Authentication

2. Questionnaire

3. Attribute matrix



- Data Governance Steering Committee
- Data Access Committee
- Data stewards
- Integration Enablement Centre



- Data Governance
- Data Architecture
- Data requestor

Release Agreement

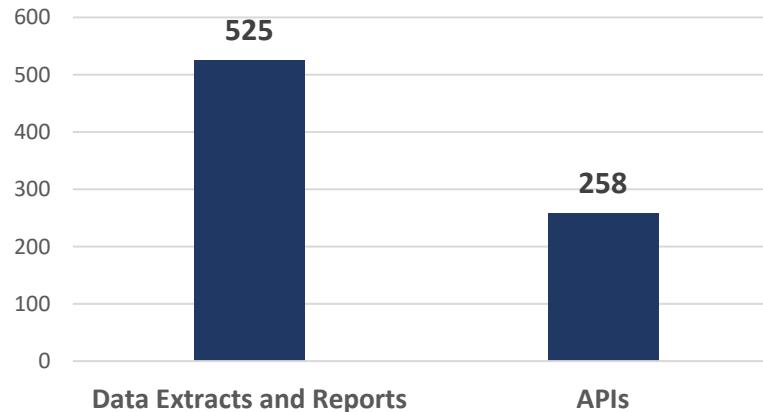
Data access decision

Registry of data access

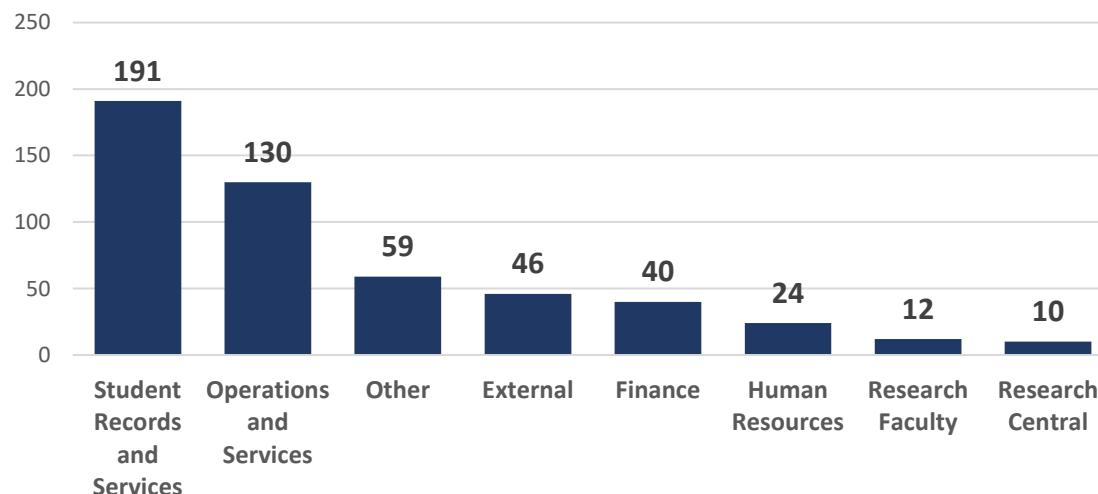
Registry of data consumers

DATA ACCESS FRAMEWORK

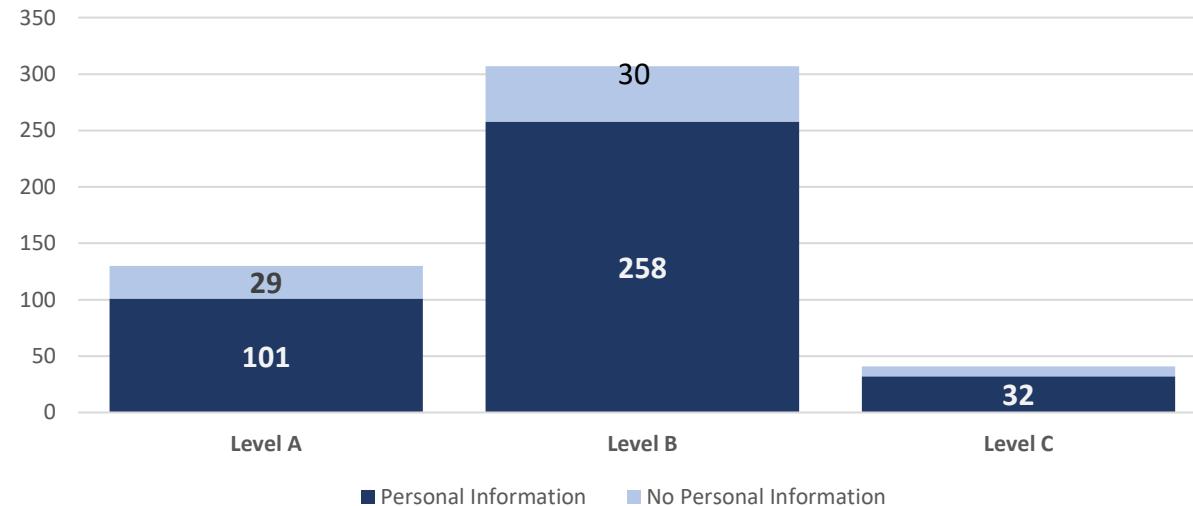
Data Access Requests – July 2022



Data Access Requests - By Requesting Function
(Data Extracts and Reports)



Requests by Approval Level (Risk Magnitude)



Data Access Framework Statistics:

- Metrics enable an understanding of the data needs of the community.
- Metrics allow for revisions to the thresholds for risk magnitudes and therefore risk levels.



Data Access Statistics: <https://cio.ubc.ca/data-governance/data-governance-processes/access-ubc-data/data-access-reporting/data-access-request>



IT CAPITAL PLANNING



DATA MANAGEMENT STRATEGY IN A PROJECT SCOPE

...Why do we need one?



Effective data management in a project setting, involves a set of interrelated processes that enables an organization leverage the investment to enable the use of data to achieve the strategic goals of the project. An effective data management strategy, ensures the project implementation meets business needs, and supports data informed decision making.



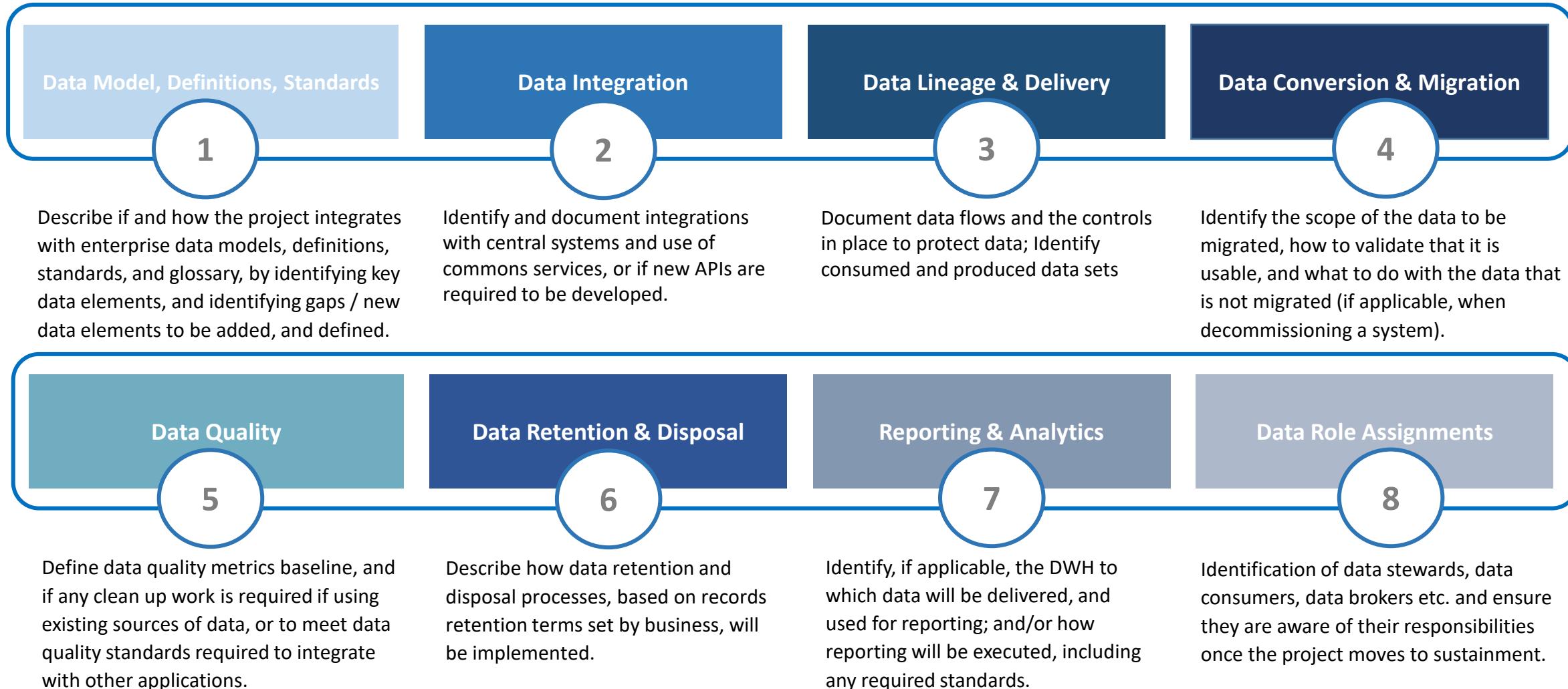
Well-managed data is managed strategically, with a vision of how the data will be used. Implementing a new application provides an opportunity to improve data quality in support of business operations. However, the realization of these improvements is only possible when a defined strategy and plan is implemented and applied from the start.



A data management strategy not only defines data requirements, but also how to manage that data. Additionally, proactive planning and consideration is required from the planning stages to adequately resource the project and its sustainment post implementation.

DATA MANAGEMENT PRIORITIES FOR PROJECTS

8 Components



PROJECT IMPACTS TO DOCUMENT & ACTION



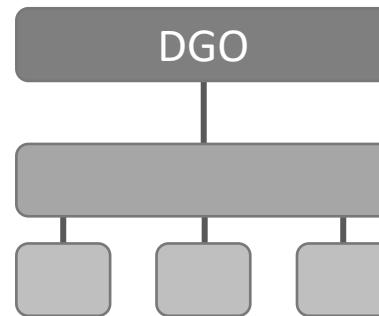
DATA STEWARDSHIP



GOVERNANCE OPERATING MODELS

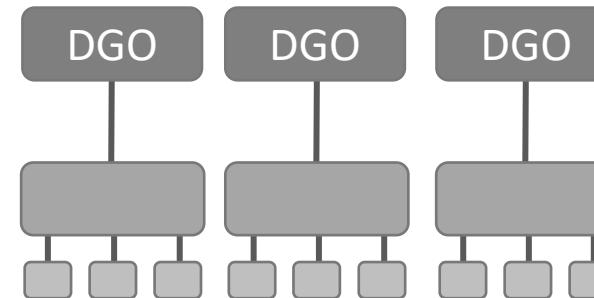
A governance operating model defines structures, roles and responsibilities, and decision making processes, by describing the relationship between people and functions and how they will collaborate. Generally, there are 3 common models to choose from, based on what works best for an organization:

Centralized



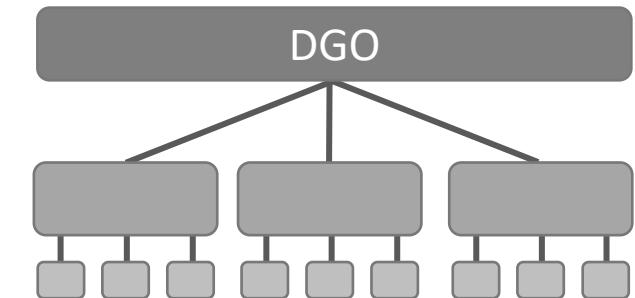
In a centralized model, one Data Governance Office (DGO) oversees all activities in all subject areas or functions. Everything is owned by a DGO.

Replicated / Decentralized



In a replicated or decentralized model, data management responsibilities are distributed across lines of business. There is no single owner, and collaboration is committee-based.

Hybrid/Federated



In a federated model, the DGO coordinates with multiple Business Units to maintain consistent definitions and standards. It provides a centralized strategy with decentralized execution.

WHAT IS DATA STEWARDSHIP?

Data Stewards are university business officials that have **direct operational-level responsibility** for the management of one or more types of Institutional Data.

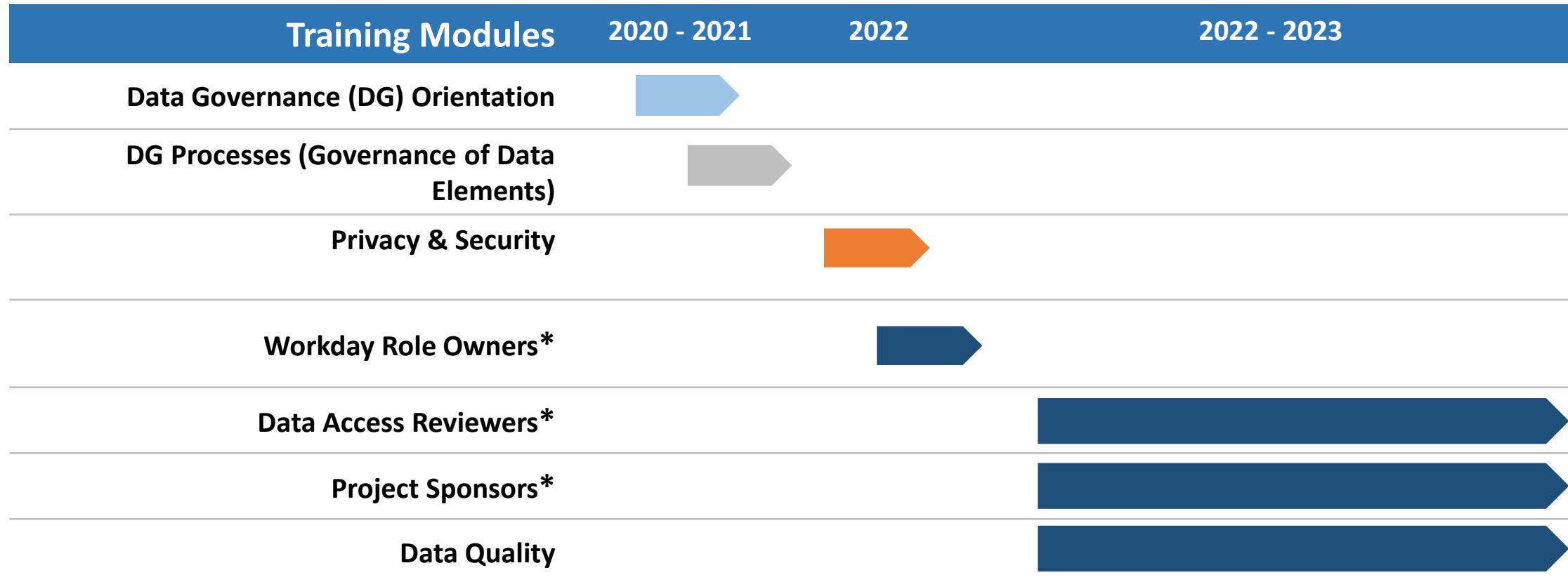
230 Data
Stewards have
received
introductory
training



TYPES OF STEWARDSHIP AT UBC

Data Roles	Definition	Sub Roles & Responsibilities
Data Trustees	Data Trustees are institutional officers who have authority over policies and procedures regarding business definitions of data and the access and usage of that data within their delegations of authority.	
Data Steward	Data Stewards are University business officials having direct operational-level responsibility for the management of one or more types of Institutional data and have authority to make decisions, but where required, they will escalate decisions to the Data Governance Committee.	<ul style="list-style-type: none">• Data Access Reviewers• Workday Security Role Owners• Application Business Owners• API Business Owners• Data Quality
Data Custodians	Data Custodians are system administrators responsible for the operation and management of systems and servers that collect, manage and provide access to Institutional data.	<ul style="list-style-type: none">• Application Technical Owner• Application Technical Responsible• Report Technical Owner• API Technical Owner• API Technical Responsible
Data Brokers	Data Brokers are analytics experts who interpret and understand needs of various institutional units for data and supply those needs in custom-requested formats.	<ul style="list-style-type: none">• Report Business Owner

2021 TRAINING PLAN & SCHEDULE

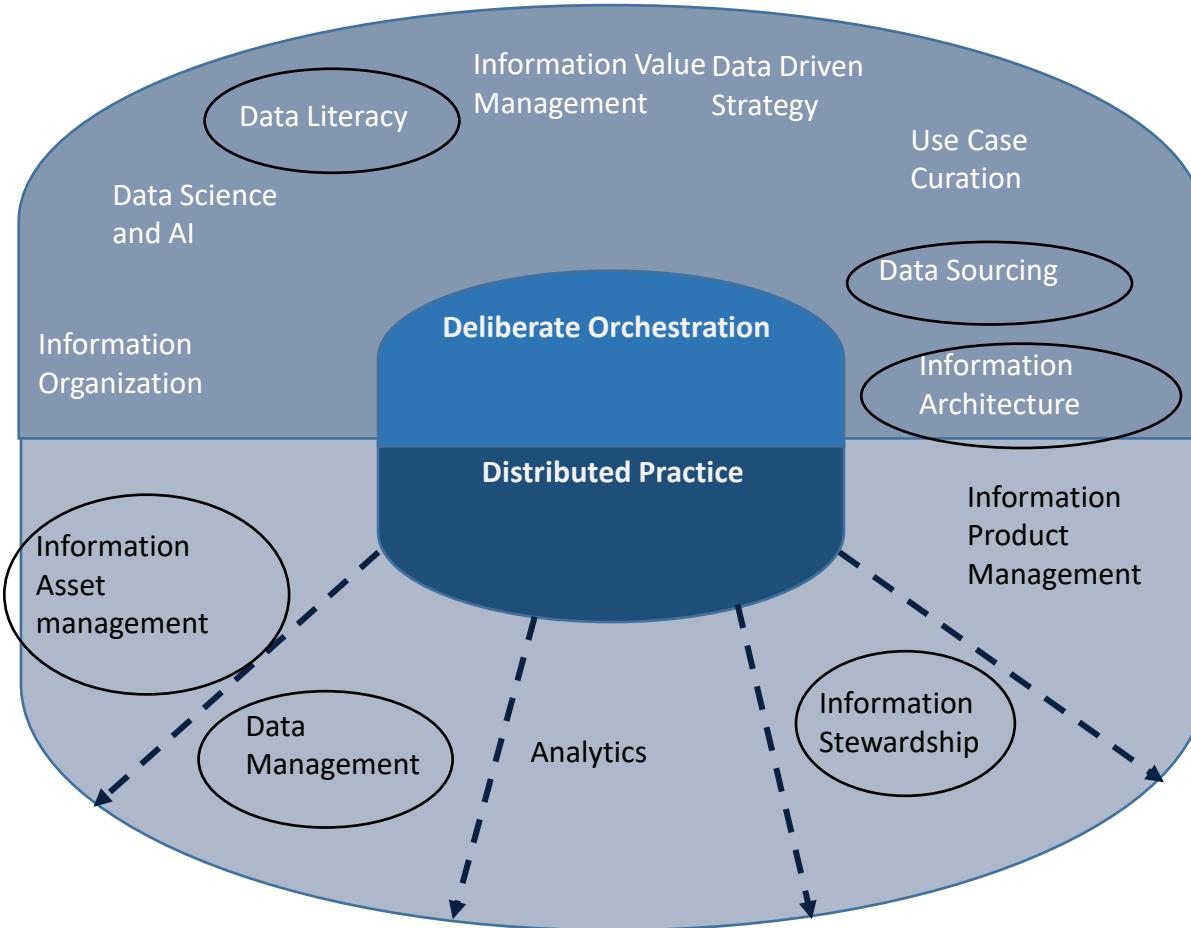


* Role Specific Training Topics – Not required for all Data Stewards

REPORTING



DEVELOPING COMPETENCIES FOR A DATA DRIVEN ORG



Through Data Governance:

Develop a reporting strategy with a commitment to enable both centralized and decentralized work while creating a center of gravity for critical competencies, consistency and collaboration.

By Increasing Data Literacy:

Develop the skills for people in the UBC community to read and communicate data in context:

- An understanding of data sources and constructs
- The analytical methods and techniques applied
- The ability to describe the use-case application and resulting value.

REPORTING – BUILDING COMMUNITIES OF PRACTICE



Increased community capabilities to read, understand, analyze and manipulate data will increase users' confidence and enable stakeholders to develop reports in the tools that best serves their needs.



Start small by leveraging existing tools to support operational needs.

Workday Reporting

- ▶ Build a Workday Community of Practice
- ▶ Data literacy foundation through Data Governance
- ▶ Community of reporting & analytics at UBC

- ▶ Leveraging data as a key source of operational insight
- ▶ Continuing to strengthen the UBC's data literacy
- ▶ Building university wide reporting capabilities
- ▶ Establishing enterprise – Reporting Policies and Procedures

Self-Service Reporting

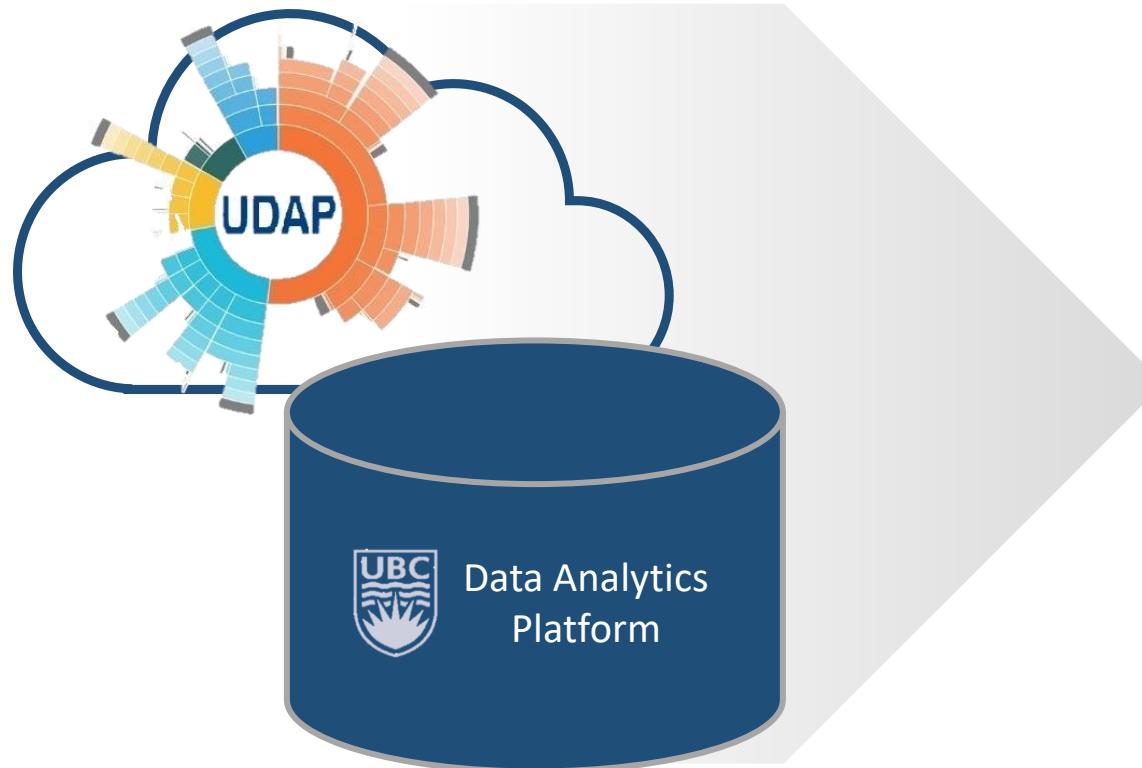
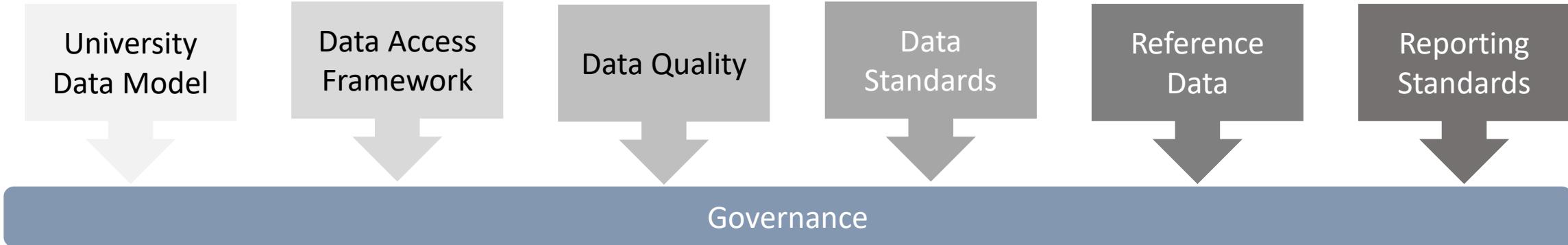
- ▶ Creating a culture that continuously iterates and improves their operational reports
- ▶ Moving with operational agility
- ▶ Utilizing emerging technologies to improve reporting capabilities
- ▶ Self-serve reporting as the norm
- ▶ Establishing enterprise-wide report writing capabilities

Capability pockets

Create Awareness

Embed Governance in Daily Processes

UNIVERSITY DATA PLATFORM



A **data platform** is a solution that provides governed, trusted, integrated historical data, that enables analysis and decision making for **strategic and regulatory** purposes.



MOVING FORWARD



WHERE ARE WE HEADED – OUR STRATEGIC INITIATIVES



Continuous and iterative program improvement and application to new & existing cultivated data communities; capital projects

Maturing EDG processes and community engagement - Socializing Data Access Framework; expanding the University Glossary

IRP Student – cultivating communities of practice, onboarding and training new Data Stewards



Reporting enablement through Workday reports and University Data Platform (UDaP) for historical reporting. Establishing reporting governance and standards.

Workday Student implementation – We will be working with key stakeholders to define data, rules, and apply EDG data standards



THE UNIVERSITY OF BRITISH COLUMBIA

QUESTIONS?