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University of Regina

# University of Regina

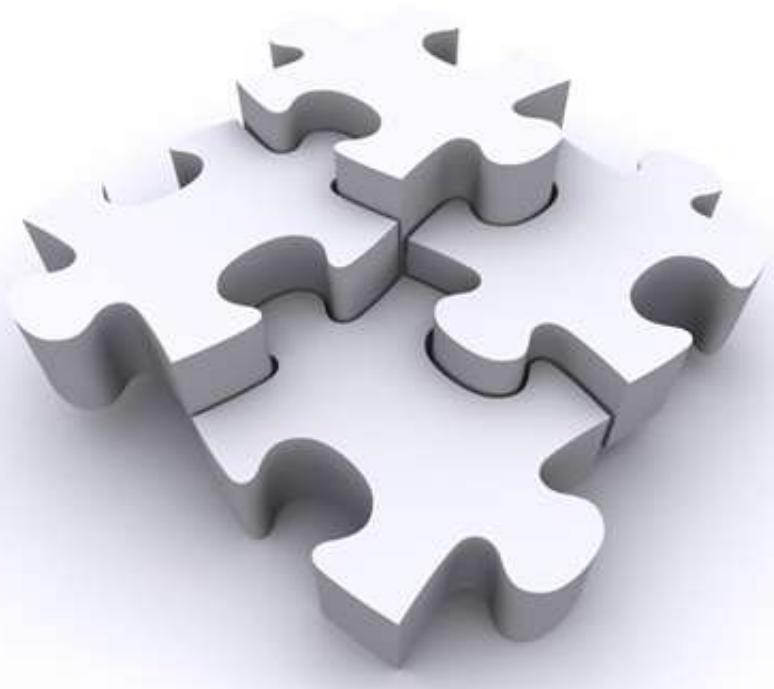
## Data Governance and Reporting Framework

## Phase 2

**Data Governance Council**

**Transition Document**

**June 2016**



# Contents

# Getting started

# Welcome



Welcome to the University of Regina's Data Governance Council. You have been selected to sit on this Council because you are aware of the impact that valuable data has on decision-making in the higher education field, and because you are a part of the solution for the University's current data challenges.

By participating on the Data Governance Council, you will have the opportunity to define and reinforce organization-wide data standards and definitions, engage University stakeholders in the establishment of data-driven decision-making, and set the overarching data strategy for your institution.

Thank you for your demonstrated commitment and enthusiasm for this initiative. You will play a vital role in achieving the vision for excellence in Data Governance for the University of Regina.

# Getting started

As the Data Governance Council (DGC), understanding the key components of the Data Governance practices will be critical to the success of this initiative. To get started, this document will guide you to:


Familiarize with the mandate, roles and responsibilities of the DGC

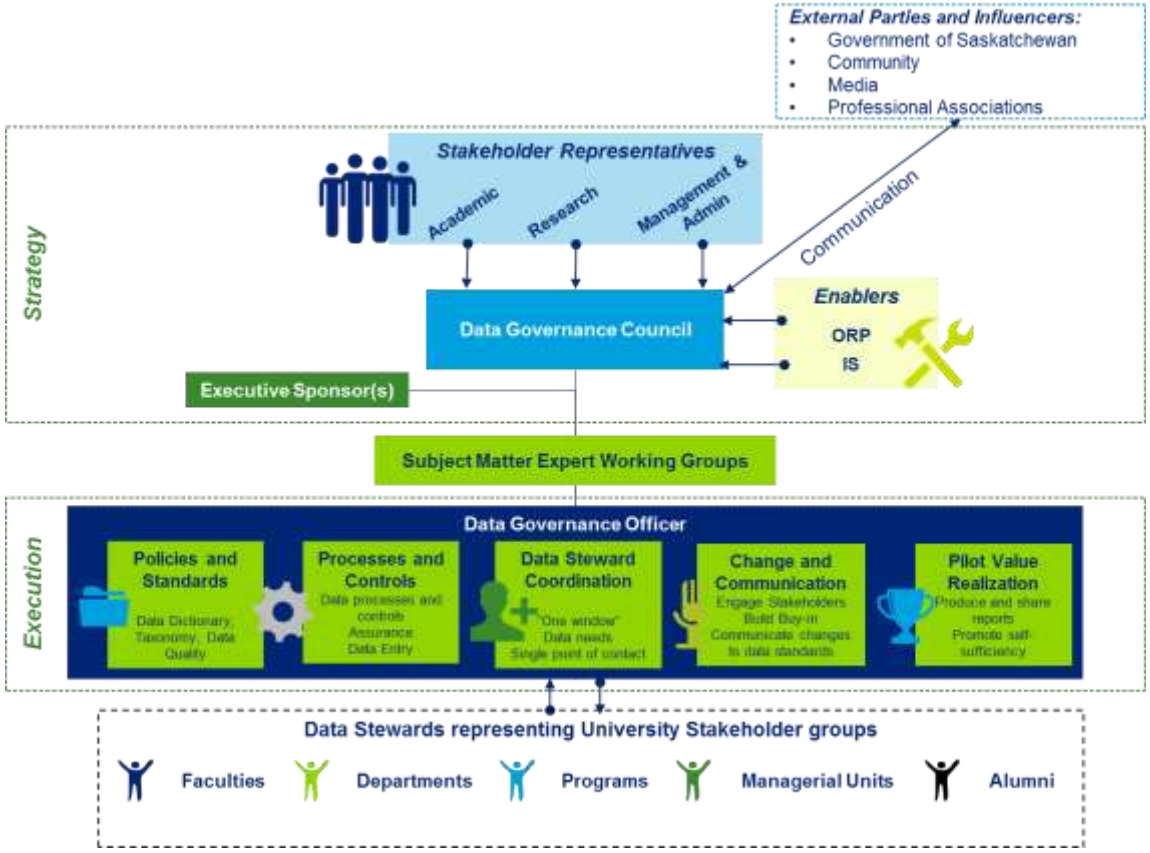

Familiarize with the Data Governance Officer (DGO)'s roles and responsibilities and the interaction between the DGO and the DGC


Understand the Data Governance Officer role


Familiarize with the guiding principles around data processes, data standards, and data architecture provided in this onboarding package

# Activities to date: Data Governance structure

During the February 3, 2016 Data Governance Council meeting, the DGC refined and finalized the University of Regina Data Governance structure to reflect the needs and constraints of the immediate term.




- Given University budgeting considerations, the DGC decided to amalgamate the roles and responsibilities of the Data Centre of Excellence into the responsibilities of the Data Governance Officer (DGO) in the immediate term.
- Once Data Governance at the University evolves and matures, the DGC will then consider adding additional roles to the execution of Data Governance, as deemed appropriate by the DGC and University Executive.
- The DGC proposes intermediary data working groups to provide direction and connection within defined functional areas. For example, the existing Academic Leadership Group (ALG), and similarly for Faculty Administrators. A working title of "Subject Matter Expert Working Groups (SMEWGS) has been proposed, drawing upon the well-defined concept of consulting with SMEs for data system designs.

# Activities to date: Dashboard Proof of Concept

To date, the interim Data Governance Council has been working closely with Information Services to launch a dashboard pilot for University stakeholders.

## Dashboard Pilot Project as a Proof of Concept

### Technology

1. Selected a vendor (Cognos) to develop a Proof of Concept for the pre-determined "Undergraduate Student Retention" dashboard
2. Developed an undergraduate student retention dashboard Proof of Concept – the Proof of Concept is currently being shared amongst University stakeholders to generate feedback for improvement.

### Data Governance

1. Developed and refined basic Data Governance processes (data definitions, data processing, data quality, data access, data storage, data collection) to aid the DGC in executing Data Governance at the University
2. Developed the first iterations of Data Governance policies
3. Conducted data quality checks as iterations of the dashboard concept were developed

This first dashboard has proven to provide value to the University, as discussed in the various forums where it was presented, and now the DGC can continue to take on other pilot projects with small subsets of data to define, store, clean, measure, and interpret to ensure continuous improvement using an agile method with quick iterations and small sprints.

# Transition checklist

This transition checklist identifies the actions needed to operationalize the Data Governance model at the University of Regina.

This Transition Document will support the University to take the following actions:

1. **Confirm the scope, roles, and responsibilities and membership of the DGC**
2. **Onboard the Data Governance Officer** using the DGO job description and terms of reference
3. **Communicate the Basic Data Governance processes** as agreed in the previous phase and hand them over to the DGO to guide the DGC to make decisions surrounding these processes
4. **Update and maintain Data Governance-specific policies** using the policy drafts provided
5. **Create DGC meeting agendas** for the next months, send invitations, and prepare material
6. **Customize the Communication strategy** draft provided and analyze the University's communication needs to tailor the draft communications
7. **Evaluate and prioritize the next dashboard pilot** using the project evaluation criteria and prioritization approach provided
8. **Review the Data model** for the Proof of Concept selected and review with the DGC
9. **Build a plan** for the present year using the Data Governance multi-year roadmap to manage the activities of the Data Governance team: DGC, DGO and supporting entities
10. **Meet every month with the DGC**, bringing in the Subject Matter Expert Working Groups and tackle one by one the data issues the Institution brings to the DGC

# Terms of reference

# Data Governance Council

## Mandate, roles and responsibilities, and terms of reference

# Mandate

The mandate below defines the nature and authority of the Data Governance Council (DGC). This mandate will evolve as the Council forms and matures.

**Act as the voice of the data**
The DGC will act as an institution-wide data champion and lead data improvement initiatives

**Measure and manage data risk**
The DGC will instill and develop capabilities amongst University stakeholders to measure and predict data-related risk and influence the institution-wide risk appetite at the University Executive table

**Influence organizational strategy**
The DGC will enable better analytics for decision-making and help develop and refine the University strategy around data in order to drive *student success, research impact, and commitment to communities*

**Impact the effectiveness of University Operations**
The DGC will focus on lowering the cost of data quality, improving compliance and increasing overall productivity levels through the timely availability of accurate data

**Influence student, faculty, and operational decision-making** that leads to improved student retention, increased academic programming, and increased revenue and institutional awareness

**Ensure data consistency**
The DGC will ensure the connectivity and consistent interpretation of data gathered and leveraged among stakeholder groups

**Embed innovation and foresight into the DGC**
DGC members will bring a non-conventional and innovative perspective to data management and oversight

# Scope of the Data Governance Council

To aid the successful implementation of the Data Governance initiative, the following Data Governance Council's scope has been identified:

The Data Governance Council is accountable to the University of Regina for the **effective oversight and control** over all data within the systems architecture, **producing specific proposed recommendations** on how Data Governance and data quality can be improved to meet the required standards to enable the achievement of the University's strategic goals.

Particular emphasis will be placed upon:

- The measurement of data quality, including error and defect management, and the remediation of data quality issues for all data elements
- The delivery of meaningful data for the University leadership and management, with activities driven by the criticality, scope, and impact of the data needed

# Roles and responsibilities

As a strategic, cross-functional decision-making entity, the Data Governance Council (DGC) will be responsible for the following:

### Vision and direction
Set the vision and direction for the future of the University as it pertains to Data Governance matters

### Strategic alignment
Champion and align the Data Governance Strategy with the University of Regina's 2020 Strategic Plan

### Oversight and decision-making
Act as a centralized hub, make decisions and provide oversight in relation to key Data Governance components, such a policies and processes, data standards, data stewardship, and University-wide change management

### Implementation
Be accountable for the implementation of the Data Governance Strategy and its initiatives

### Data compliance
Oversee the implementation of data compliance, enablement, and stewardship initiatives to support the execution of the University 2020 strategy and to meet regulatory requirements as necessary

### Culture
Instill and promote a culture of collaboration within the University to share information across Academic, Research and Administrative Units

*These are initial responsibilities for the DGC – these responsibilities will evolve as the DGC forms and matures*

# Data Governance Council membership



Representation on the Data Governance Council (DGC) needs to include the Academic, Research and Administrative sides of the University, covering key data categories such as student data, faculty / employee data, and financial data as well as incorporate key organizational enabling functions like Information Services (IS) and the Office of Resource Planning (ORP).

Concurrently, the DGC mandate needs to be compliant to and aligned with the University Records and Information Management and Governance frameworks.

As a result, the proposed composition of the DGC is as follows:

- *AVP Resource Planning,* **Brian Christie** (DGC Chair)
- *Executive Director, University Governance,* **Glenys Sylvestre**
- *AVP Academic and Research*, **Dena McMartin**
- *Registrar,* **Jim D'Arcy**
- *AVP Information Services,* **David Wilson**
- *Director, Customer Application Support,* **Shannon England**
- *Director, Institutional Research,* **Keith Fortowsky** (DGO)

Representation from Faculty Deans:

- *Dean, Faculty of Business Administration,* **Andrew Gaudes**
- *Dean, Faculty of Engineering & Applied Science,* **Esam Hussein**
- *Dean, Faculty of Graduate Studies and Research,* **Armin Eberlein**

# Attendance and participation

To aid the successful implementation of the Data Governance Council (DGC), the following references have been developed to outline expectations surrounding attendance and active participation:

**MEMBERSHIP SELECTION**

New DGC members will be selected by the DGC itself, with the exception of the Chair who is appointed by the UET.

**AD HOC ATTENDEES**

Ad hoc attendees may be requested in order to provide specialist input as required.

**QUORUM**

Quorum for the DGC is considered when, at a minimum, 50% of the DGC members PLUS the Chair is present. The Chair will ensure that the list of attendees is robustly maintained.

# Authority

To aid the successful implementation of the Data Governance Council (DGC), the following references have been developed to outline the DGC's collective authority.

The Data Governance Council derives its authority from the University of Regina with escalation and reporting on Data Governance matters referred to the appropriate working groups (e.g. Data Stewards, University Data Communities) through pre-determined communication channels.

Authority lies with the DGC itself, as a committee, and not with any specific individual. The Chair's role is to facilitate and manage the conversation of the DGC, to enable decision-making and to aid issue resolution.

# Frequency and nature of meetings

To aid the successful implementation of the Data Governance Council (DGC), the following references have been developed to outline the frequency that the DGC should meet.

**MONTHLY MEETINGS**
The Data Governance Council (DGC) will meet initially on a monthly basis for 1 hour and on an ad-hoc basis, as required.

**IN PERSON AND TELECONFERENCE**
Regularly scheduled meetings will be conducted in-person and by teleconference to ensure that all stakeholders have an opportunity to participate.

**PERIODIC REVIEW**
Periodically, the DGC will review the frequency and duration of meetings in-line with University's needs.

# Operations and Escalation

To aid the successful implementation of the Data Governance Council (DGC), the following references have been developed to outline the operating procedures for DGC meetings as well as procedures on how to escalate issues.



## Operating Procedures

- Meeting agendas will be circulated two business days prior to the meeting.
- Documentation including escalated issues, metrics and progress reports will also be circulated two business days prior to the meeting, so attendees can review in advance and be in a position to make decisions at the meeting.
- All meetings will have minutes and actions recorded, and these will be distributed within two business days after the meeting.
- All decisions will be logged and reviewed periodically.

## Escalation

- Data issues with a significant impact (the term “significant” needs to be defined by the DGC) on the activities of University working groups will be escalated to the DGC or DGO and the relevant working groups will be notified as appropriate.
- Any data issues with a significant impact on technology, systems, databases, or reporting tools will be raised to Information Services and the Office of Resource Planning via the appropriate channels.
- Conflicts over issues that cannot be resolved among members of the DGC will be escalated to the University Executive Team (UET).

# Guiding the Data Governance Council

The Data Governance Council will have an assigned DGC Chair to guide the decisions that need to be considered to solve the data issues that the Institution brings to the Council. The DGC Chair is the key facilitator and moderator to coordinate with the different entities that are required to provide input to the DGC so they are able to make a decision effectively and efficiently to support the University to become a data-driven organization.

## Description of the Chair's role

The role of the Chair of the Data Governance Council is to provide oversight and guidance to the Council by chairing the Council.

## The Chair's responsibilities

- Chairing Data Governance Council meetings
- Delegating responsibility for Action Items
- Ensuring the Data Governance Council cadence is appropriate and effective
- Ensuring Action Items are addressed by their assigned owners
- Assisting decision making as necessary by providing oversight and issue resolution

## Appointing the Chair

The University Executive Team (UET) will appoint the Data Governance Council Chair.

# Data Governance Officer

## Mandate, roles and responsibilities, job description

# Mandate

Based on numerous discussions, this mandate was deemed appropriate as a starting point to move forward with the Data Governance initiative. Once the Data Governance Officer (DGO) position is established and a discussion with the Data Governance Council (DGC) takes place, the mandate for this role will evolve.

## About the DGO

The DGO will lead and facilitate (prepare, manage and run) meetings with the DGC.
The DGO will liaise with the University Executive Sponsor(s), drive requirements for data standards, and lead the overall institutionalization of the Data Governance framework. This individual will work collaboratively across the University and bring together an institutional view of the data needs and challenges.

This person will be accountable to the Data Governance Executive Sponsor(s) – the Provost and VP Academic and / or the Executive Director of University Governance.

## Mandate

The University of Regina's DGO will have the following mandate:

**To be the operational leader that is responsible for valuing, governing, and managing the institutional data of the University by: developing and championing data definitions, standards, policies, and controls; increasing data quality; and, assuring that the University's data is performing to improve the student and employee experience as well as to enhance operational performance measures.**

This mandate is a key guiding principle to the design and establishment of the responsibilities of the DGO.

# Roles and responsibilities



The proposed strategic and operational roles and responsibilities that will further define the authority of the Data Governance Officer (DGO) are outlined below.

**Data Governance Strategy**

- Develop a vision, strategy, and plan for data performance that furthers the University's objectives
- Champion and facilitate the awareness for data performance across the University
- Serve as a liaison between Academic / Research / Administrative units

**Data Quality Management**

- Establish data quality monitoring and evaluation
- Liaise with data stewards to define specific data quality definitions and standards
- Evaluate data quality, produce reports with operational functions and identify key issues

**Data Governance Process Management**

- Establish data standards process management
- Plan, facilitate, and coordinate the DGC meetings, providing input for decision making
- Manage basic data governance processes (request, access, collection, definition, quality, storage)
- Liaise with Data Privacy Officer (University Secretariat) for standards for data privacy / security

**Data Standards Management**

- Establish data standards compliance monitoring framework
- Work closely with the University to monitor data quality and data management programs
- Analyze and resolve data quality issues

**Data Value Improvement**

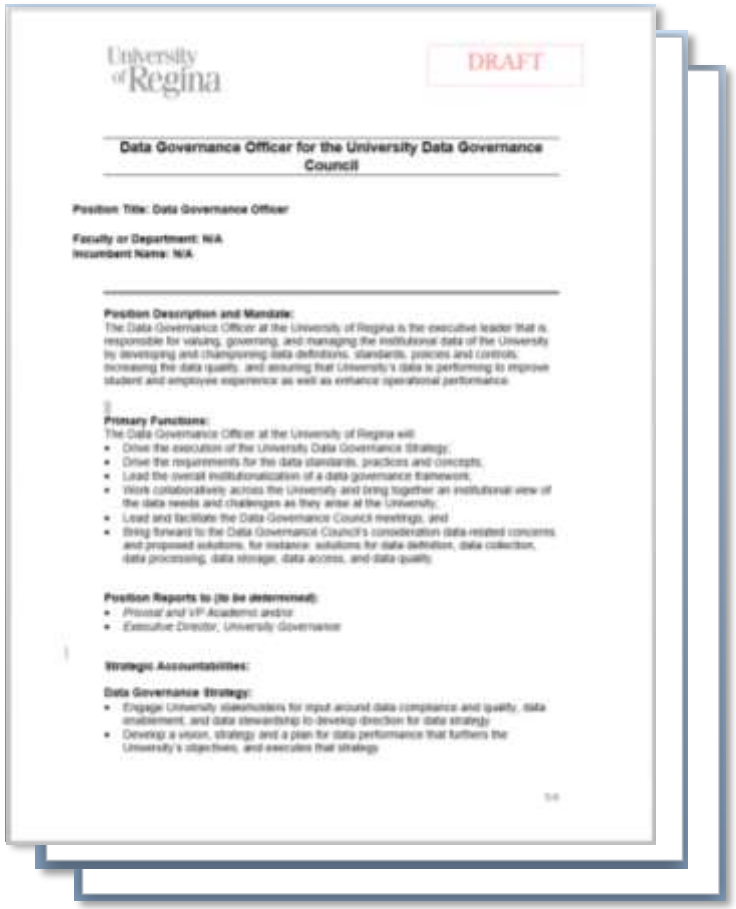
- Execute the data strategy and support the Data Governance Council
- Lead research and innovation for advanced data analysis tools and methods
- Train and advise the University Data Communities as required

**Data Stewardship**

- Act as a "one-window" single point of contact for data-related issues
- Encourage collaboration between Academic, Research, and Administrative units
- Bring an objective outlook of the problem and be able to ask the right questions

*These are initial responsibilities for the DGO – these responsibilities will evolve as the DGC forms and matures*

# Job Description


University of Regina

DRAFT

**Data Governance Officer for the University Data Governance Council**

**Position Title: Data Governance Officer**

**Faculty or Department: N/A**
**Incumbent Name: N/A**

**Position Description and Mandate:**
The Data Governance Officer at the University of Regina is the executive leader that is responsible for valuing, governing, and managing the institutional data of the University by developing and championing data definitions, standards, policies and controls; increasing the data quality; and assuring that University's data is performing to improve student and employee experience as well as enhance operational performance.

**Primary Functions:**
The Data Governance Officer at the University of Regina will:
- Drive the execution of the University Data Governance Strategy;
- Drive the requirements for the data standards, practices and concepts;
- Lead the overall institutionalization of a data governance framework;
- Work collaboratively across the University and bring together an institutional view of the data needs and challenges as they arise at the University;
- Lead and facilitate the Data Governance Council meetings; and
- Bring forward to the Data Governance Council's consideration data related concerns and proposed solutions, for instance: solutions for data definition, data collection, data processing, data storage, data access, and data quality.

**Position Reports to (to be determined):**
- *Provost and VP Academic and/or*
- *Executive Director, University Governance*

**Strategic Accountabilities:**

**Data Governance Strategy:**
- Engage University stakeholders for input around data compliance and quality, data enablement, and data stewardship to develop direction for data strategy
- Develop a vision, strategy and a plan for data performance that furthers the University's objectives, and executes that strategy

The job description outlines:

- The DGO's primary functions
- To whom they are accountable
- Who reports to them
- Their specific strategic and tactical accountabilities
- The characteristics of a successful incumbent

*Please refer to a supplementary MS Word document "UofR DGO Job Description Sample" for the complete job description example.*

# Data Governance standards and processes

# Data Governance standards



Data standards build a common language for sharing and interpreting key Academic, Research, and Administrative data across the University. The goals for the standardization of data include usability, transferability, and measurability.

## Prioritizing Data Governance standards – outcomes achieved

The DGC was introduced to and reviewed 18 proposed leading practices for data standards. During the discussion, these 18 data standards were accepted and one additional standard was identified as necessary to meet the University's Data Governance needs: *periodicity*[4]*.* Stakeholders were then asked to vote on which five data standards they felt were most important to implement at the onset of the University's Data Governance initiative. The five selected data standards are:

| Component | Description | Standard |
|---|---|---|
| **Definition**  | A common understanding of the meaning of a given data element, agreed to by all parties and expressed in plain language | Data definitions should state the essential meaning of concepts in a precise and unambiguous manner, expressing the meaning of the data element without embedding definitions of other data or underlying concepts. |
| **Business rules**  | Operations, calculations, validation rules, and mapping that are applied to data elements to ensure their quality, accuracy, and adherence to business logic | Business rules should be agreed upon, centralized, and used in a consistent manner on each element across every functional group. Example: *A validated count for total number of students must be conducted on the 1st and 28th day of each term; mapping of various programs and courses to different faculties* |
| **Accuracy**  | Refers to correctness and explicitness of the data, whether it accurately represents reality or a trusted source of truth, and has a verifiable and singular source | Wherever applicable, all business terms should accurately reflect values/meaning per their definition and should satisfy an established accuracy metric. Example: *the student enrollment status must be confirmed and validated by the University quarterly* |
| **Data security / sensitivity**  | These attributes capture the security (personally identifiable information, or not) and sensitivity (private, protected and open, highly confidential, or confidential and public) requirements for each data element and / or pairing of data fields | Each term should be classified from a data security and data sensitivity perspective. All personally identifiable information should be masked before publishing and sensitive data should be shared in a restricted fashion. |
| **Timeliness / responsiveness**  | This refers to the indication of whether or not raw data is processed in a timely manner and if data is available within a pre-defined time frame | Wherever possible, timeliness Service Level Agreements (SLAs) should be established for reports; and, timeliness metrics should be established to measure adherence to the established SLA. Example: *Financial reports should be made available to users within one week of a request being made.* |

 Denotes a vote

# Data Governance standards – prioritization results



While not selected as an initial priority for Data Governance initiatives, the following data standards will provide significant value to the University and as such should be revisited as the DGC matures.

| Component | Description | Standard |
|---|---|---|
| **Integrity** | Defines the business rules for exact replication of source data between updates of a data record through the use of error-checking and correcting procedures to ensure that the veracity of the raw data is unaltered by various extract, transform, load (ETL) processes | Terms that share a linkage should be identified and integrity checks should be run by comparing the data that exists in these terms. For instance, *Registrar's Office owns student data entry, while Finance manages tuition revenue, both must maintain an integrity linkage.* |
| **Conformity** | Defines data formatting rules to conform to standards for representation, presentation, aggregate reporting, search, and the establishment of key relationships | A set of clear criteria should be in place that define and enforce data formatting rules. Example: *all dates and times should be set to Month, Day, Year, etc.; data should also be entered consistently across similar fields (i.e. 1-to-1, not 1-to-one).* |
| **Periodicity** | Periodicity describes how often, or at which time periods, certain data will be made available for decision-making | Standards for availability of data should be defined, recognized, and agreed to for each data set by all stakeholders. Example: *Convocation numbers are made available once per semester, seven days after the grade submission deadline.* |
| **Hierarchy** | A systematic organization of data elements, grouping data elements by function and then ranking them by precedence and relationship to one another | A term that belongs to a hierarchy should be identified and its relationship captured to enable its efficient usage. Example: *Student is a parent of the "Part-time Student" and "Full-time Student" terms.* |
| **Completeness** | Data completeness refers to an indication of whether or not all of the data necessary to meet the current and future business information demands has been collected, entered, and is accessible through the data resource | For terms that collectively describe a business aspect, a completeness metric should be established to inspect if all the required information is available and accessible in the system. Example: *Does a student have a valid home address indicated?* |
| **Usage** | Intended purpose of a given data element | Usage should explain the purpose of the term in unambiguous language in order to facilitate easy adoption and use by the University. |

# Data Governance standards – prioritization results

Standards and Processes

While not selected as an initial priority for Data Governance initiatives, the following data standards will provide significant value to the University and as such should be revisited as the DGC matures.

| Component | Description | Standard |
|---|---|---|
| **Valid values** | The approved set of values contained within a data element | An exhaustive list of valid values for each term should be identified, documented, and reinforced. Example: *Month must only contain values JAN through DEC.* |
| **Naming convention** | Explicit rules for labeling data fields and their content | Plain business language should be leveraged wherever possible to name data elements so that their names uniquely imply the content captured by the term. |
| **Consistency** | Consistency refers to uniform representation of data across functional groups | A consistency metric should be established to measure the consistency of terms across functional groups. Example: *displaying all financial data in thousands of dollars ('$000) with a currency sign across all Faculties, Departments, and Units.* |
| **Data format** | Syntax and the representation of the data element | Formatting standards should be enforced for all terms. Business requirements should drive consistent formatting of terms such as *time, date, amount, currency,* etc. |
| **Duplication** | Defines the standard to maintain a single representation of each data element across all component business systems | A unique student or financial record should be stored only once to avoid consideration of the same data point multiple times during the aggregation of data. |
| **System of Record (SOR)** | This attribute identifies a valid and unique source for any report / data used | System of Record attributes should be documented for all business terms. A system of record could be a source system, a data warehouse table, or another system within the University information management environment. Example: *The system of record for "Student count" populating the Enrollment report is 'Banner'.* |
| **Presentation format** | The medium of publication for reports (Example: PDF, Excel, HTML XML, etc.) | Report publication standards for all data should be identified and documented. All external reports that are shared outside of the functional group should be in an un-modifiable format (e.g., PDF) to preserve data integrity and avoid data manipulation unless required by the University. When there is no risk of data manipulation, the reports could be published in formats such as Excel, Access, or other medium. |
| **Distribution frequency** | How frequently reports will be published, distributed, and circulated within a certain time frame | Standards as per business requirements/SLAs should be established for the distribution frequency of canned reports. Example: *All monthly operations reports are published into the "X" shared drive by 5 pm EST on the 10th business day of a calendar month*. For ad hoc reports, distribution frequency should be determined based on user requirements. |

# Approach to defining data structure



Organizational functions typically determine the initial level in the data classification hierarchy and structure:

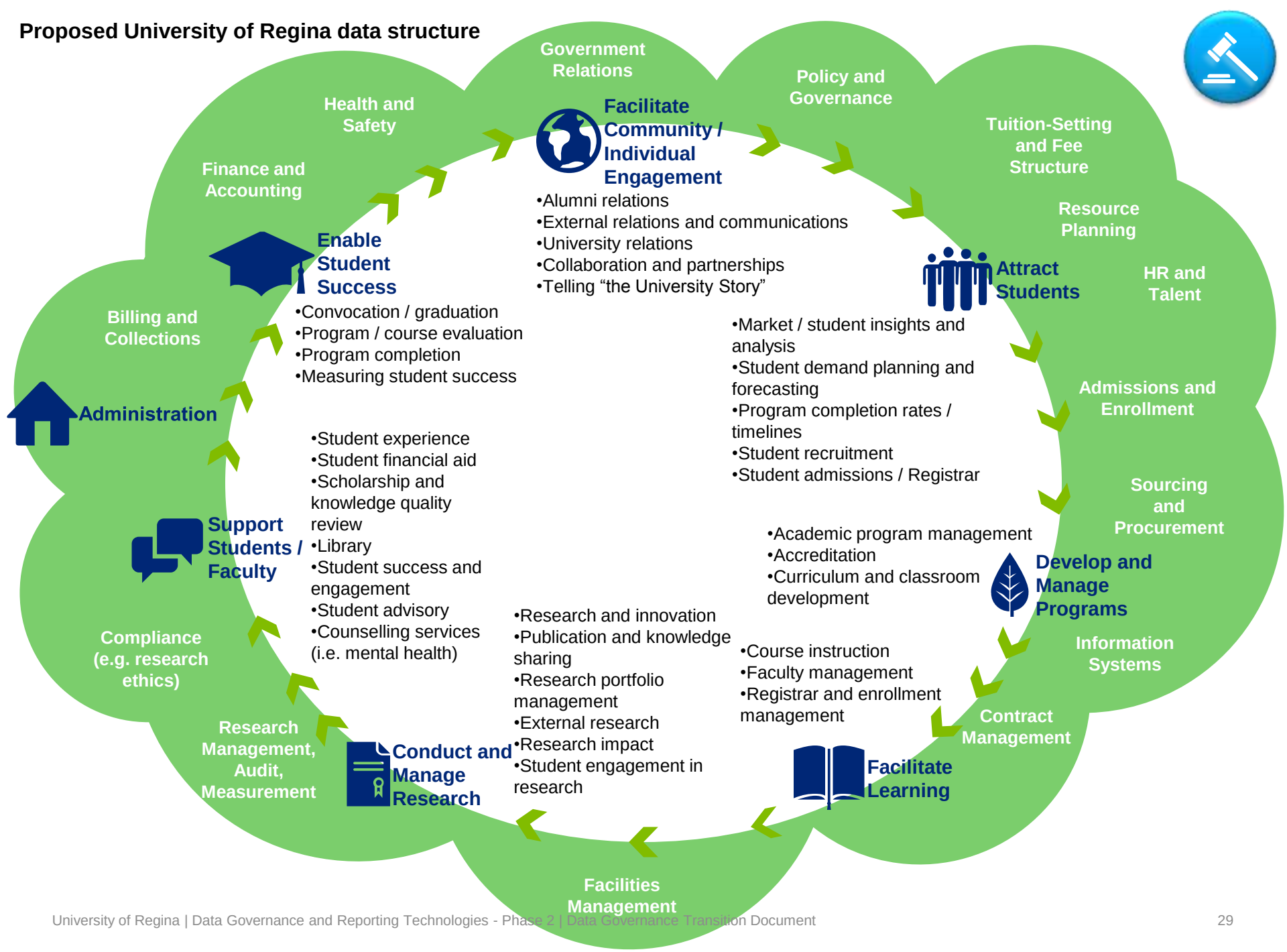
- **Organizational sub-functions and activities** (complex organizational processes) determine where aggregates of information exist (in other words files, databases, or other content such as web pages).
- **Transactions** (e.g., registering a student) are where records are created or received and captured.
- Thus, it is critical to define and agree upon a **universal, overarching, and consistent structure of all data** at the University.

The following page outlines University of Regina's proposed data structure. As the Data Governance Council (DGC) forms, evolves, and matures, this data structure will need to be revised and updated to reflect the reality of the University's Data Governance.

The DGC will need to work collaboratively with Information Services and the Office of Resource Planning to leverage existing technology solutions and to ensure that future technology solutions are aligned with Data Governance objectives.

Please refer to the Microsoft Excel document, *Data Dictionary Template*, for the full, updated data structure template.

# Proposed University of Regina data structure



# Data Governance processes

As part of the implementation of the Data Governance initiative, six basic processes have been identified and specifically-tailored for use by the Data Governance Council (DGC) at the University of Regina.



| | |
|---|---|
| **Data definition** | A series of steps outlining key participants, activities, and decisions that shape how the data terms and elements will be defined, classified, categorized, and managed. Requesting changes to data definitions is part of this process. |
| **Data collection** | A series of steps outlining key participants, activities, and decisions that define by whom, how, and when the data will be collected. |
| **Data processing or Data Request** | A series of steps outlining key participants, activities, and decisions that shape how the data will be processed and manipulated once the data has been collected. |
| **Data storage** | A series of steps outlining key participants, activities, and decisions that define how the data will be stored and managed. |
| **Data access** | A series of steps outlining key participants, activities, and decisions that define who has access – and when – to the University data, and how access will be granted and / or revoked. |
| **Data quality** | A series of steps outlining key participants, activities, and decisions required to perform data quality checks and assurance. |

These are high-level drafted processes, and will evolve as the Data Governance Council and the University itself reaches a more mature state of Data Governance. The following slides outline these processes in greater detail, highlighting leading practices and integrating additional, customized steps that came about during workshop discussions.

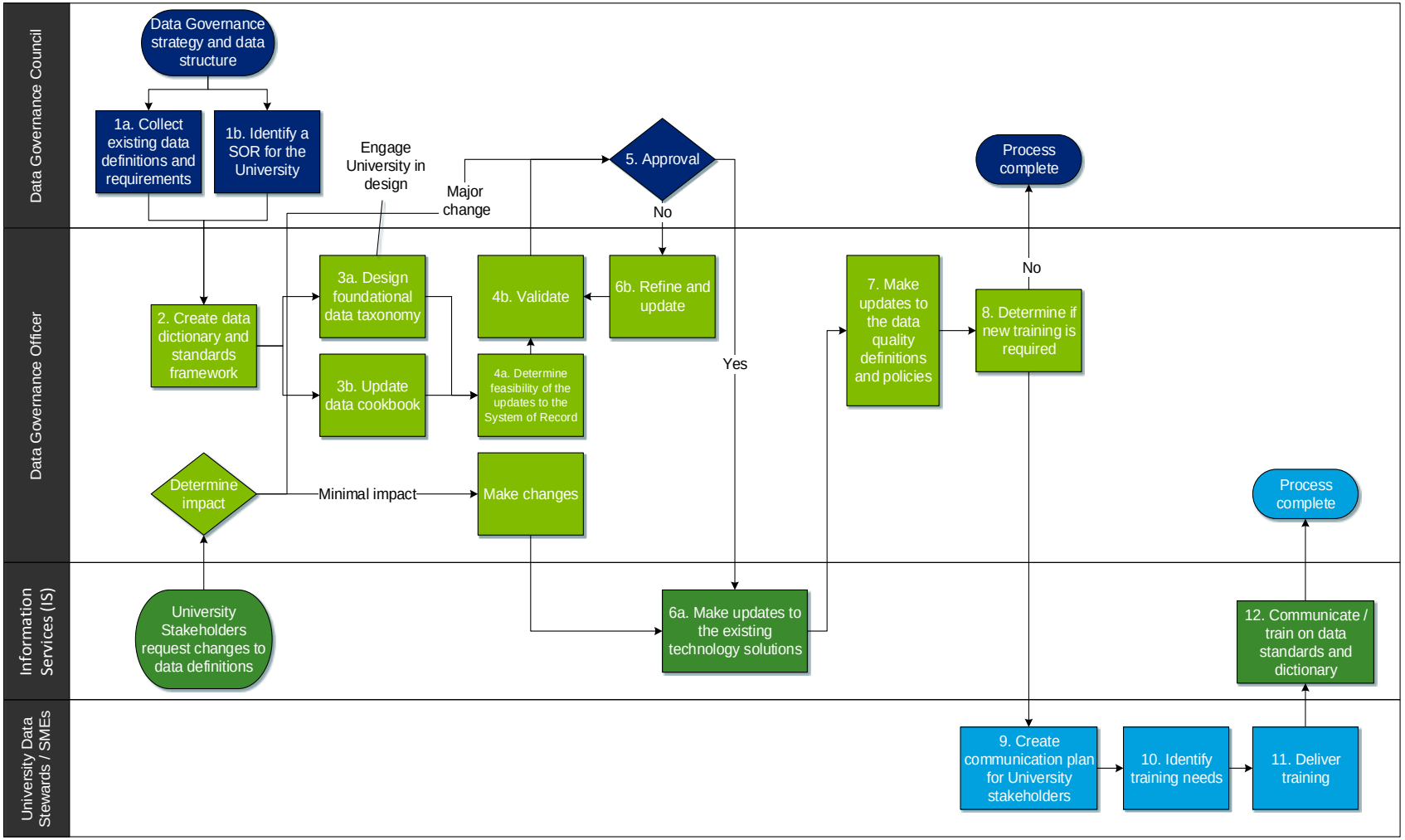
# Data Governance processes – terminology



| Term | Definition |
|---|---|
| Data Producers / Owners | Individuals accountable for one or more Systems of Record (SOR) and responsible for ensuring that data is in compliance with policies and standards. Data Producers / Owners are accountable for managing, protecting, and ensuring the integrity and usefulness of the University data. In addition to upholding the University policies and legislation, Data Owners are responsible for identifying the sensitivity and criticality of data. |
| Data Custodians | A technology-focused role with responsibilities to ensure the proactive usage of data management practices. Data Custodians have control over a data asset's disposition whether stored, in transit, or during creation. They are usually associated with IT / IS units within the University, and typically have modification or distribution privileges. Because they take such a hands-on role, Custodians carry a significant responsibility to protect data and prevent unauthorized use. |
| Data Stewards | System of Record (SOR) owners with a deep understanding of business needs and enterprise data requirements. Data Stewards ensure that decisions made within their SOR are rationalized, communicated, and implemented across the organization. They may represent Data Producers / Owners in policy discussions, architectural discussions, or in decision-making forums. |
| University Data Communities | A collection of all University stakeholders who have an interest in accessing specific data for decision-making, each with a different set of technological literacy and training needs. For example, Deans will have different data needs than Administrative assistants, and will have different training needs as well. Typically, Data Communities are comprised of Data Users. |
| System of Record (SOR) | An information / data storage system that is the authoritative data source for a given data element or piece of information; for example, using Banner for student data, and FAST for Finance and HR. |
| Data User | This individual has interest in the data or requires access to the data to perform their daily duties. Data Users share responsibility in helping Data Stewards and Custodians manage and protect data. Data Users can consist of any individuals or University units that create, use, or manage sets of University data. |
| Data Governance Council (DGC) | The strategic layer of the Data Governance structure, responsible for championing data improvement and setting data quality standards. |

# Data definition






*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1a. Collect existing data definitions and requirements
# 1b. Identify a SOR for the University



1a. Collect existing data definitions and requirements

1b. Identify a System of Record (SOR) for the University

## Group / function responsible for this step

The Data Governance Council is responsible for determining priority and defining what data elements need to be defined. Actual research and assessment of existing data sources or data elements will be led by the Data Governance Officer. Steps 1a and 1b are done in parallel of one another.

## Action items

Data Governance Council

- Defines which data elements need to be defined, keeping in mind the different stakeholder groups and their unique needs
- Requests assessment of existing data sources and data definitions from the Data Governance Officer – these sources can be from the cookbook, the University Board, or an external source (e.g., *MacLean's*, other universities, etc.)

Data Governance Officer

- Identifies most frequently used reports that define the term in question; reviews existing data cookbook
- Logs all data elements identified into the University Data Dictionary – this will set the scope for engaging University Data Communities in establishing definitions
- Creates / adds to the Data Dictionary
- Identifies sources of record for data used to define the term in question and where it is stored
- Defines a "single source of truth" for the relevant data

# 2. Create data dictionary and standards framework



2. Create data dictionary and standards framework

## Group / function responsible for this step

The Data Governance Officer creates the Data Dictionary and establishes definitions for key data elements.

## Action items

- Receive a pre-populated Data Dictionary and a scope statement from the Data Governance Council on the key data elements that need to be defined
- Review the Data Dictionary and determine an approach for defining data elements
- Communicate with key stakeholders about upcoming workshops to define and agree upon the data elements
- Communicate with Executive as necessary

## Challenges in completing this step

- Potential risk of scope creep in defining only data elements related to a small, focused subset of data
- Lack of stakeholder availability may increase time to completion

## Other considerations

- Organizational Change Management and communication will be required to help build understanding and stakeholder buy-in

# 3a. Design foundational data taxonomy
# 3b. Update data cookbook



3a. Design foundational data taxonomy

3b. Update data cookbook

## Group / function responsible for this step

The Data Governance Officer is responsible for designing the foundational data taxonomy for the University by leveraging the University's Data Dictionary and updating the data cookbook. Steps 3a and 3b are done in parallel of one another.

## Action items

Step 3a

- Engage University stakeholders who "own" data elements under analysis
- Document the definitions for the data elements and reach consensus among all stakeholders on how each related data element will be defined and analyzed for reporting
- Provide progress updates to the stakeholders and Data Governance Council

Step 3b

- Based on finalized University Data Dictionary, update the data cookbook as required or amalgamate the data cookbook into the Data Dictionary
- Communicate as required

## Challenges in completing this step

- It may be challenging to reach consensus on all data elements and therefore a decision-making protocol must be put in place in the event a consensus cannot be reached

## Other considerations

- Potentially, a significant effort may be required to engage the appropriate stakeholders to define and agree on data element definitions
- Organizational Change Management and communication will be critical for success

# 4a. Determine feasibility of updates to the SOR
# 4b. Validate



4a. Determine feasibility of updates to the SOR

4b. Validate

## Group / function responsible for this step

The Data Governance Officer is responsible for working with Information Services to determine the feasibility of the suggested updates to the System of Record, and for validating the content of the finalized Data Dictionary with the Data Governance Council.

## Action items

- Work with Information Services to explain the desired changes to the Data Dictionary / Cookbook and understand the necessary changes that would be required in the System of Record to accommodate those changes
- Determine the impacts of those changes to the System of Record, the cost to make a change, and the level of effort required
- Determine whether or not the changes to the System of Record make sense, given the above
- Finalize University Data Dictionary upon agreement with Information Services
- Prepare a summary of the proposed data definitions to the Data Governance Council and seek feedback
- Prepare pre-reading documentation for the Data Governance Council meeting
- Attend the next Data Governance Council meeting

## Other considerations

- The suggested changes to the System of Record may not be feasible, requiring a loop back to Step 2
- The Data Governance Council must review and fully understand the proposed data definitions in order to determine the impacts of this change to the rest of the University

# 5. Approval




## Group / function responsible for this step

The Data Governance Officer is responsible for preparing supporting materials (University Data Dictionary) and providing a summary of newly defined data elements. The Data Governance Council is responsible for reviewing the Data Dictionary, proposed data definitions and determining the impacts of those definitions on University operations.

## Action items

- Review Data Dictionary and/or data cookbook and any other supporting materials provided by the Data Governance Officer
- Determine if the proposed definitions are viable and align with the Data Governance principles and reporting needs of the University
- Determine the impacts of the proposed changes on the rest of the University and any associated processes or policies
- Approve or reject the proposed data definitions
- Delegate communication of the decision(s) to the Data Governance Officer and University Data Stewards

## Other considerations

- This process requires significant collaboration and open communication as well as consideration of multiple priorities and, sometimes conflicting, stakeholder needs

# 6a. Make updates to the existing technology solutions
# 6b. Refine and update



6a. Make updates to the existing technology solutions

6b. Refine and update

## Group / function responsible for this step

The Data Governance Officer is responsible for engaging the appropriate stakeholders to make changes to existing technology solutions to reflect approved data definitions or to refine data definitions as necessary.

## Action items

Step 6a

- Engage the Information Services group and Data Custodians to work through and make updates to existing technology solution(s)
- Change business rules, if necessary

Step 6b

- Based on the feedback from the Data Governance Council on the finalized Data Dictionary, makes updates as necessary

## Challenges in completing this step

- Dependent on a degree of hard-coded rules and functionality that is pre-existent in Banner
- Multiple iterations may be required to make updates to the existing technology, which can extend timelines

## Other considerations

- Organizational Change Management and communication will be critical for success

# 7. Make updates to the data quality definitions and policies



7. Make updates to the data quality definitions and policies

## Group / function responsible for this step

The Data Governance Officer is responsible for identifying operational impacts to data-related University processes and policies and for updating those policies accordingly.

## Action items

- With the Data Governance Council's guidance, identify any operational impacts of the updated Data Dictionary and data definitions
- Identify who needs to be informed and which areas require updates (e.g., Data Quality definitions)
- Make updates to the data-related policies as required
- Communicate as required

## Challenges in completing this step

- This step is highly dependent on a collaborative approach to identify impacts on other processes and policies

## Other considerations

- Organizational Change Management will be critical for success
- A University Data Quality policy needs to be defined

# 8. Determine if new training is required



8. Determine if new training is required

## Group / function responsible for this step

The Data Governance Officer is responsible for determining (amongst other impacts outlined in Step 7) whether training is required to educate University stakeholders on the new data definitions and their recommended usage.

## Action items

- With the Data Governance Council's guidance, identify any training requirements/needs as a result of the new data definitions
- Identify stakeholders who will require training
- Engage University Data Stewards and hold training sessions or demonstrations on the new data definitions
- Communicate with stakeholders as required

## Challenges in completing this step

- Highly dependent on the knowledge of Organizational Change Management techniques, training approaches, and communication strategies
- May want to consider engaging Organizational Change Management / Human Resources in this process

## Other considerations

- Organizational Change Management will be critical for success
- Data Governance Officer needs guidance from Organizational Change Management Leads or needs to be trained on the concepts of Organizational Change Management

# 9. Create communication plan for Data Communities



9. Create communication plan for Data Communities

## Group / function responsible for this step

The University Data Stewards are responsible for supporting the Data Governance Officer in conducting communications around new data definitions and designing a communication plan.

## Action items

- Identify which stakeholders are impacted by this process and how they will be impacted by changes to this process
- Determine communication needs and prepare communication materials accordingly
- Communicate with each affected stakeholder group through an appropriate channel

## Challenges in completing this step

- University Data Stewards need to be identified in advance and engaged appropriately
- University Data Stewards will require training on key data governance concepts

## Other considerations

- Organizational Change Management will be critical for success
- University Data Stewards will need guidance from Organizational Change Management Leads or need to be trained on the concepts of Organizational Change Management

# 10. Identify training needs



10. Identify training needs

## Group / function responsible for this step

The University Data Stewards are responsible for acting as the voice of the end users of the reports / dashboards and therefore should anticipate the training needs of the end users and develop the training materials necessary to fulfill those needs.

## Action items

- Identify stakeholders impacted by the new processes and policies
- Anticipate how the creation / change of data definitions, processes, and policies will impact each stakeholder groups' daily operations and decision-making
- Define training needs
- Develop training materials and workshops that will help to build capability and knowledge

## Challenges in completing this step

- University Data Stewards need to be identified in advance and engaged appropriately
- University Data Stewards will require training on key data governance concepts

## Other considerations

- Organizational Change Management will be critical for success
- More than one Data Steward or Subject Matter Expert (SME) will be involved in this activity

# 11. Deliver training



11. Deliver training

## Group / function responsible for this step

The University Data Stewards are responsible for delivering training to University stakeholders and end users.

## Action items

- Leverage training materials developed in Step 10 of the data definition process
- Categorize the stakeholder groups identified in Step 10 to determine how many training sessions will be required
- Schedule training with impacted stakeholders
- Prepare training materials for the sessions
- Deliver training

## Challenges in completing this step

- University stakeholder availability has been a challenge in the past and will likely continue to be a challenge – delivering the same training session on multiple days is one way to ensure that everyone receives training

## Other considerations

- Organizational Change Management will be critical for success
- More than one Data Steward or Subject Matter Expert (SME) will be involved in this activity

# 12. Communicate changes



12. Communicate changes

## Group / function responsible for this step

Information Services is responsible for communicating changes to key stakeholders.

## Action items

- Communicate changes to impacted stakeholders based on the developed communications plan (identified in Step 9)
- Schedule training workshops and demonstrations with the impacted stakeholders as part of the rollout of the new/refined processes
- Deliver training on the data standards and dictionary processes and policies
- Document lessons learned and outcomes of training and communicate across all stakeholder groups

## Challenges in completing this step

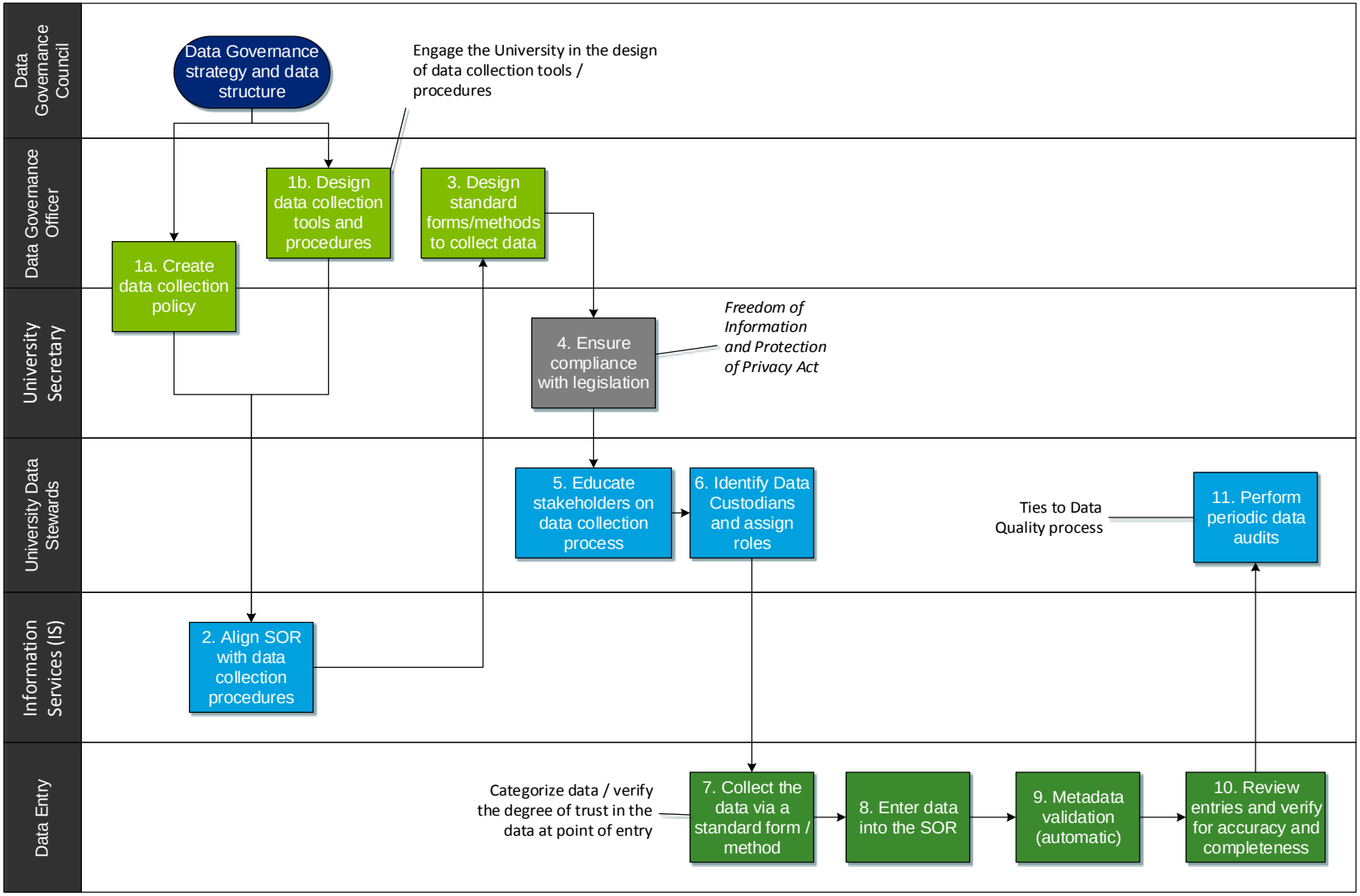
- University Data Stewards need to be identified in advance and engaged appropriately
- University Data Stewards will require training on key data governance concepts

## Other considerations

- Organizational Change Management will be critical for success
- Policies may need to be altered based on the data discovered
- More than one Data Steward or Subject Matter Expert (SME) will be involved in this activity

# Data collection






*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1a. Create data collection policy



1a. Create data collection policy

## Group / function responsible for this step

The Data Governance Officer and the University Secretary are responsible for the creation of the institution-wide data collection policy at the University.

## Action items

- Identify the data elements under analysis
- Engage data stewards to identify how each of the data elements are currently being collected
- Aggregate current data collection policies and procedures and evaluate them against industry standard / best practice data collection objectives, policies, and procedures
- Develop the institution-wide data collection policy
- Socialize the data collection policy, collect feedback, and refine as appropriate

## Challenges in completing this step

- Current data collection policies and procedures across the organization may differ greatly and be difficult to align as a result
- Full participation by all impacted stakeholders is critical to achieve buy-in, but difficult to coordinate

## Other considerations

- An institution-wide data collection policy may already exist that is available to leverage and refine as appropriate

# 1b. Design data collection tools and procedures



1b. Design data collection tools and procedures

## Group / function responsible for this step

The Data Governance Officer is responsible for the design of data collection tools and procedures that will standardize the way that data is collected at the University.

## Action items

- Define the data elements under analysis
- Design standard templates for data collection that identify, define, and map required data elements for business use
- Socialize the templates and tools with the University Data Stewards, collect feedback, and refine the tools
- Pilot the standardized forms and templates with a small, focused subset of data
- Establish procedures for data collection that minimize data entry errors
- Socialize the new data collection procedures with Data Stewards
- Publish the data collection tools and procedures in a common file format and location for use by University stakeholders

## Challenges in completing this step

- Engaging the right stakeholders to provide insight and guidance to current data collection procedures
- Socializing new templates, tools, and procedures across the University

# 2. Align data collection procedures with System of Record



2. Align data collection procedures with the System of Record

## Group / function responsible for this step

The University Data Stewards are responsible for ensuring that the new data collection procedures are aligned with the University's System of Record (i.e., Banner)

## Action items

- Identify the naming conventions and format specifications within the System of Record
- Perform data element mapping, if required
- Document data element mapping with data collection procedures
- Develop and refine the data collection procedures with the natural work flow of the System of Record
- Document and describe in the data collection procedures the institutional / solution logic behind the procedures

## Other considerations

- Data that does not reside within the System of Record (e.g., alumni profile data) may not be captured by these data collection procedures

# 3. Design standard forms / methods to collect data



3. Design standard forms / methods to collect data

## Group / function responsible for this step

The Data Governance Officer is responsible for designing standard forms and methods to collect data at the University.

## Action items

- Identify the category / purpose of the data collection
- Define the data elements and terms that require collection
- Design a standard form for collecting the data
- Socialize the standard forms / methods with University stakeholders

## Other considerations

- Engaging the University stakeholders in the design of the data collection forms and methods can result in a higher quality form/method, as well as speedier acceptance of the new process

# 4. Ensure compliance with legislation



4. Ensure compliance with legislation

## Group / function responsible for this step

The University Secretary is responsible for reviewing any data collection tools / forms / methods being implemented at the University and ensuring that no legislation or regulation is being compromised by those tools / forms / methods.

## Action items

- Receive data collection tools, forms, and methods from the Data Governance Officer
- Review and align the tools, forms, and methods against the *Freedom of Information and Protection of Privacy Act*
- Sign off on or reject the data collection methods

## Other considerations

- Engaging Government officials responsible for Privacy and Information may prove beneficial

# 5. Educate stakeholders on the data collection process



5. Educate stakeholders on the data collection process

## Group / function responsible for this step

The University Data Stewards are responsible for educating University stakeholders on the newly developed data collection process

## Action items

- Engage Data Custodians to gain understanding of the current data collection processes and procedures they follow
- Educate Data Custodians on their roles and responsibilities as they pertain to the data collection process
- Engage Data Custodians regularly to further develop an understanding of the data collection methods and to refine the data collection processes and procedures over time

## Challenges in completing this step

- Lack of availability may prolong time to completion
- Ensuring consistent messaging throughout the organization is critical
- Standardizing and finalizing the data collection processes and procedures will take much time and effort

## Other considerations

- Data collection processes and procedures may currently exist within the University that can be leveraged and refined

# 6. Identify Data Custodians and assign roles



6. Identify Data Custodians and assign roles

## Group / function responsible for this step

The University Data Stewards are responsible for identifying Data Custodians and assigning roles within the organization.

## Action items

- Identify the required data elements and the business area where those data elements are entered into the System of Record (i.e., Banner)
- Identify individuals within those business areas who perform the task of data entry, define them as Data Custodians for the relevant data elements, and engage them in data governance efforts
- Assign roles and accountabilities to individuals (i.e., who is responsible for the manual entry of the data into the System of Record versus who is accountable for ensuring that the data entered is accurate)

## Challenges in completing this step

- While consistent with best practices, assigning accountability for data collection and data entry is a net-new approach for University stakeholders, and there may be some push back on this approach

## Other considerations

- The role of Data Custodian should not entail the changing of a position within the organization; but, rather an additional responsibility within a stakeholder's current role

# 7. Collect the data via a standard form / method



7. Collect the data via a standard form / method

## Group / function responsible for this step

There are a number of stakeholder groups who will be responsible for collecting University data via standard forms and methods, including Finance, HR, Facilities, Procurement, Registrar's Office, etc.

## Action items

- Locate and open the standard data collection tools, templates, and procedures from a centralized location
- Complete the standard forms following the methods outlined
- Seek guidance and assistance if needed from the Data Governance Officer

## Challenges in completing this step

- Socializing the centralized file and location of the new standards and processes is critical to ensure that all Data Custodians follow the same procedures

# 8. Enter data into a System of Record



8. Enter data into a System of Record

## Group / function responsible for this step

There are a number of stakeholder groups who will be responsible for entering data into the System of Record (i.e., Banner), based on the type of data being entered.

## Action items

- Enter the data into the System of Record as per the policies, templates, and procedures provided in a centralized location
- Conduct a data quality review (see data quality assessment template)
- Request a secondary review before finalizing the data in the System of Record; receive approval
- Finalize the data in the System of Record

## Challenges in completing this step

- Additional procedures and steps for data collection could prolong the data entry process and, if not executed efficiently, delay the timeliness of the data reported

## Other considerations

- Timeliness *and* quality of the data needs to be taken into account when defining data collection procedures

# 9. Data validation (automatic)



9. Data validation (automatic)

## Group / function responsible for this step

The University Data Custodians and Information Services group are responsible for validating that data has been correctly entered into the System of Record (i.e., Banner).

## Action items

- Run automated data validation tools
- Initiate data quality issue resolution, if necessary

# 10. Review entries and verify for accuracy / completeness



10. Review entries and verify for accuracy / completeness

## Group / function responsible for this step

The University Data Owners / Producers are responsible for verifying that the data being produced by the System of Record (i.e., Banner) accurately reflects the source data entered.

## Action items

- Once the data has been entered into the System of Record and validated, conduct a final review within the System of Record to reconcile the initial data collected through the data collection tools to that within the System of Record
- If the records do not reconcile, the data cleansing process is initiated

## Challenges in completing this step

- Tracking the initial Data Producer to the point where the data is ready for review
- Creating bandwidth for University Data Owners / Producers to perform a data quality review
- Creating a culture of accountability for data quality at the point of data entry and validation

# 11. Perform periodic data audits



11. Perform periodic data audits

## Group / function responsible for this step

The University Data Stewards are responsible for performing periodic data quality audits on the data entered into the System of Record (i.e., Banner)

## Action items

- Periodically, select a sample of data and export it to a Microsoft Excel file
- Apply data quality rules (see Data Quality process) to test for data quality elements pertaining to data collection (e.g., formatting, duplication)
- Prepare a summary of audit findings
- Report findings to the Data Governance Council, where the data cleansing process will be initiated if necessary

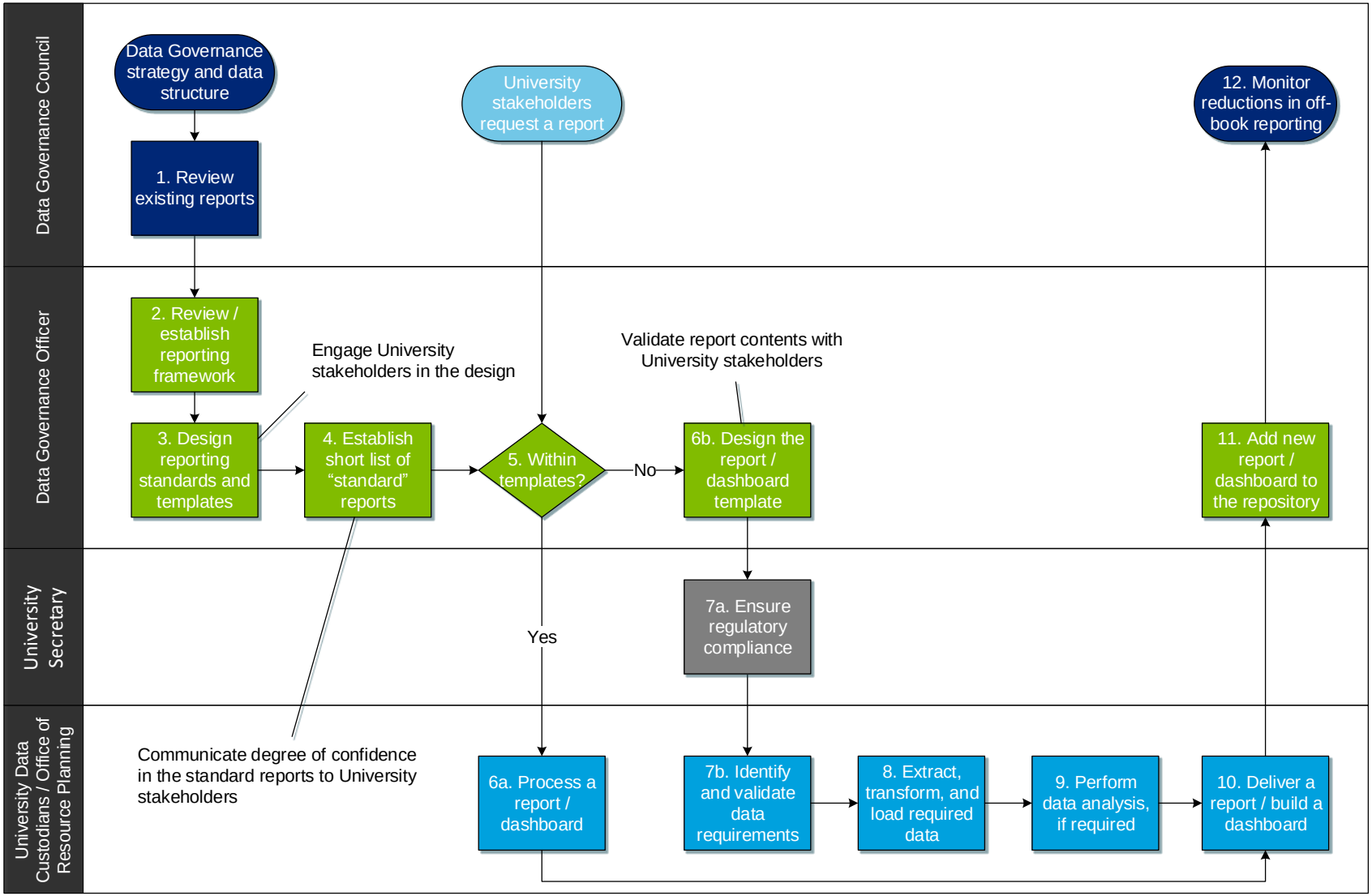
## Challenges in completing this step

- Creating bandwidth for University Data Stewards to perform periodic data audits
- Manual audits pose a threat to data quality due to an increased number of “touches” and data transformations (e.g., increased ETLs and exports to external solutions)

## Other considerations

- The University may already have an automated data validation tool that can be leveraged for the data collection process

# Data processing




*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1. Review existing reports



1. Review existing reports

## Group / function responsible for this step

The Data Governance Council is responsible for reviewing existing reports and conducting an assessment on the report's usage and purpose.

## Action items

- Identify all reports that are currently used by different levels and areas within the University and document how they are used, their frequency, and their purpose
- Categorize and group reports by subject area
- Consider the audience of the reports and how many stakeholders would have the same reporting needs
- Identify and document key data inputs and sources for all reports that have been identified
- Perform an assessment of the reports' usage and impact (i.e., efficiency, effectiveness)
- Create and document a University-wide current report repository (library)

## Challenges in completing this step

- The assessment may identify a number of duplicate or similar reports that require elimination or amalgamation
- Some reports and source data could be housed on personal computers and therefore are difficult to track down

## Other considerations

- Potentially, a significant effort may be required to engage the appropriate people to conduct such an assessment and clean up reports / data

# 2. Review / establish a reporting framework



2. Review / establish a reporting framework

## Group / function responsible for this step

The Data Governance Council will provide guidance to the Data Governance Officer on the creation of a new reporting framework, based on the current state assessment conducted.

## Action items

- Based on the current state assessment of the existing reports, design a reporting framework that focuses on improving current processes and promotes standardized reporting
- Design a template for a few of the standard reports (subject areas, types of data, etc.)
- Identify and propose which reports could be easily turned into a dashboard
- Design an interaction model for the updated reporting framework

## Challenges in completing this step

- A significant culture shift is required to accomplish this step – building awareness amongst the University that a report does not have to be a static snapshot in time and that a dashboard is a recommended solution to standardize the University's reporting needs

## Other considerations

- Consider defining and documenting key data elements associated with each report so that they can be used consistently across the University
- Organizational Change Management and communication will be required to help build understanding of this new approach

# 3. Design reporting standards and templates



3. Design reporting standards and templates

## Group / function responsible for this step

The Data Governance Officer is responsible for designing reporting standards and templates for reports / dashboards.

## Action items

- Engage University stakeholders who use the report to help design reporting standards and templates
- Collect requirements for the standard reports / dashboards and align with industry best practices
- Develop reporting standards and templates (frequency, periodicity, data quality audit frequency, categorization, new report / dashboard request, data issue resolution)
- Design templates for standard reports / mock up dashboard wireframes
- Communicate standards and templates and promote adoption across the University

## Challenges in completing this step

- Extensive unique requirements for reporting standards
- High dependency on stakeholder participation and support

# 4. Establish short list of “standard” reports



4. Establish short list of “standard” reports

## Group / function responsible for this step

The Data Governance Officer is responsible for establishing the short list of “standard” reports.

## Action items

- Create a centralized, accessible location for the University to access the reports / dashboards
- Communicate standard reports / dashboards to the University
- Monitor how often University stakeholders access the standard templates and reports / dashboards

## Challenges in completing this step

- Extensive Organizational Change Management and communication will be required to help the University stakeholders to adopt the new process
- Training may be required to educate the University stakeholders on how to use this process and navigate the standard reports / dashboards

# 5. Report request


## Group / function responsible for this step

University stakeholders are responsible for identifying the need for a new report, filling out the report request template, and submitting it. The Data Governance Officer is responsible for determining whether the data / report requested lies within an existing template. The Data Governance Council is responsible for connecting with the Data Governance Officer to monitor the types of submitted requests to identify patterns.

## Action items

- Receive and review report request(s)
- Add the request to the work in progress log
- Ensure the report request is complete and that nothing is missing
- Assess the request to make sure the report is, indeed, unique and does not reside within the existing repository
- Assess the urgency and complexity of the report
- Prioritize report development
- Work with the Data Governance Council to monitor the types of submitted requests to identify patterns in requirements

# 6a. Process the report / dashboard



6a. Process a report / dashboard

## Group / function responsible for this step

The Data Governance Officer delegates the development of the report / dashboard to Information Services and the Office of Resource Planning. If the University stakeholders have requested a report that already exists, Information Services and the Office of Resource Planning should first direct the stakeholders to the appropriate report, and provide guidance on where to find the report / how to use the report repository.

## Action items

- Identify and match the request to the appropriate report within the report repository
- Share the report with stakeholders
- Communicate standard reports to University stakeholders
- Collect feedback on the efficiency of the report / dashboard in meeting stakeholders' needs

## Challenges in completing this step

- There are potential redundancies in duplicate report requests that will be time consuming to triage

## Other considerations

- Information Services and the Office of Resource Planning may consider implementing a triage and escalation mechanism to assist with the management of report requests

# 6b. Design the report / dashboard template



6b. Design the report / dashboard template

## Group / function responsible for this step

The Data Governance Officer reviews the report request template and determines if a new report is required. If the report is deemed unique and necessary, the Data Governance Officer is responsible for designing the report / dashboard template. The Data Governance officer delegates the development of the report / dashboard to Information Services and the Office of Resource Planning.

## Action items

- Engage University stakeholders to identify reporting requirements (e.g., data inputs, possible calculations and analysis, and “look and feel” of the output)
- Set expectations around timelines and scope of the report development
- Identify and document data inputs
- Design the report / dashboard wireframe, incorporating the design suggested by the report / dashboard requestor

## Challenges in completing this step

- Potential misalignment between the expectation for the requested report (e.g., functionality, visualization) and the actual report
- Multiple iterations may be required to design an output of sufficient quality, which can extend timelines

# 7a. Ensure regulatory compliance



7a. Ensure regulatory compliance

## Group / function responsible for this step

The University Secretary is responsible for reviewing the proposed dashboard / report design and ensure that it does not contradict legal and regulatory requirements.

## Action items

- Receive dashboard / report design from the Data Governance Officer
- Review and / or align with provincial and federal legislation
- Ensure alignment with University policy
- Sign off on / reject dashboard / report design

# 7b. Identify / validate data requirements



7b. Identify / validate data requirements

## Group / function responsible for this step

The Data Governance Officer delegates the development of the report / dashboard to Information Services and the Office of Resource Planning, who are responsible for identifying / validating the data requirements for the dashboard templates and layouts defined by the Data Governance Officer.

## Action items

- Collect and validate reporting requirements previously identified by the Data Governance Officer
  - Validate data requirements
  - Validate visual requirements
  - Validate calculation / analysis requirements

## Challenges in completing this step

- Requirements may potentially be incomplete or unclear
- There are potential limitations in the University's knowledge and subject matter expertise on key metrics or data elements (e.g., retention versus attrition) when gathering and validating requirements
- This step is highly dependent on the definition and adoption of the University Data Dictionary

# 8. Extract and transform required data



8. Extract and transform required data

## Group / function responsible for this step

Information Services and the Office of Resource Planning are responsible for extracting and transforming the required data for the report / dashboard that they have developed with the Data Governance Officer.

## Action items

- Check if data exists in the source system; if no, refer to the Data Collection process and escalate an issue to the Data Governance Officer
- Extract and cleanse the data – bring the data to the appropriate format
- Perform data quality checks and validation
- Identify and investigate issues as required
- Create a cleansed data set for further analysis

## Challenges in completing this step

- Potential low data quality could jeopardize the confidence in and usage of the report / dashboard developed
- Potential lack of data available could halt the dashboard development process
- Excessive time spend on issue resolution and data quality checks may contribute to delays to completion of reports / dashboards

# 9. Perform data analysis, if required



9. Perform data analysis, if required

## Group / function responsible for this step

Information Services and the Office of Resource Planning are responsible for performing any data analysis necessary to provide the insights needed by University stakeholders.

## Action items

- Leverage key data analysis techniques such as clustering, regression, decision trees, etc.
- Gather input from the Data Governance Council on the types of analysis and trends University stakeholders need in order to make decisions
- Perform analysis as documented in the analysis requirements
- Test and incorporate the results into the report / dashboard
- Start report / dashboard development

## Challenges in completing this step

- Without the appropriate collaboration and guidance amongst all groups, the data analysis may not satisfy the needs of University stakeholders

# 10. Deliver a report / build a dashboard



9. Deliver a report / build a dashboard

## Group / function responsible for this step

Delivering the report / dashboard will be the responsibility of Information Services and the Office of Resource Planning.

## Action items

- Complete the second iteration of dashboard design relying on the dashboard wireframe and validate it with University stakeholders
- Incorporate stakeholder feedback
- Produce a final version and share it with University stakeholders as well as the Data Governance Officer
- Request stakeholder feedback to ensure that the report / dashboard satisfies their needs

## Challenges in completing this step

- The length of time and effort associated with issue resolution may impact delivery timelines
- The iterative nature of this process could potentially mean that the dashboard is never “complete” – it will continue to evolve as stakeholders’ needs change
- Stakeholders’ needs are dynamic – the process will require frequent updates and improvements. This can be addressed with the adoption of Agile development techniques

# 11. Add the report / dashboard to the repository



11. Add the report / dashboard to the repository

## Group / function responsible for this step

The Data Governance Officer is responsible for adding all new reports / dashboards that are created to the report repository.

## Action items

- Add the report / dashboard to the repository
- Publicize the addition of the new report / dashboard to the repository
- Communicate updates to standard reports to University stakeholders

## Challenges in completing this step

- User training and onboarding for how to navigate and interpret the report / dashboard may be needed

# 12. Monitor reductions in off-book reporting



12. Monitor reductions in off-book reporting

## Group / function responsible for this step

With the Data Governance Officer's help, the Data Governance Council will monitor the reduction in off-book reporting and requests for new reports / dashboards over time.

## Action items

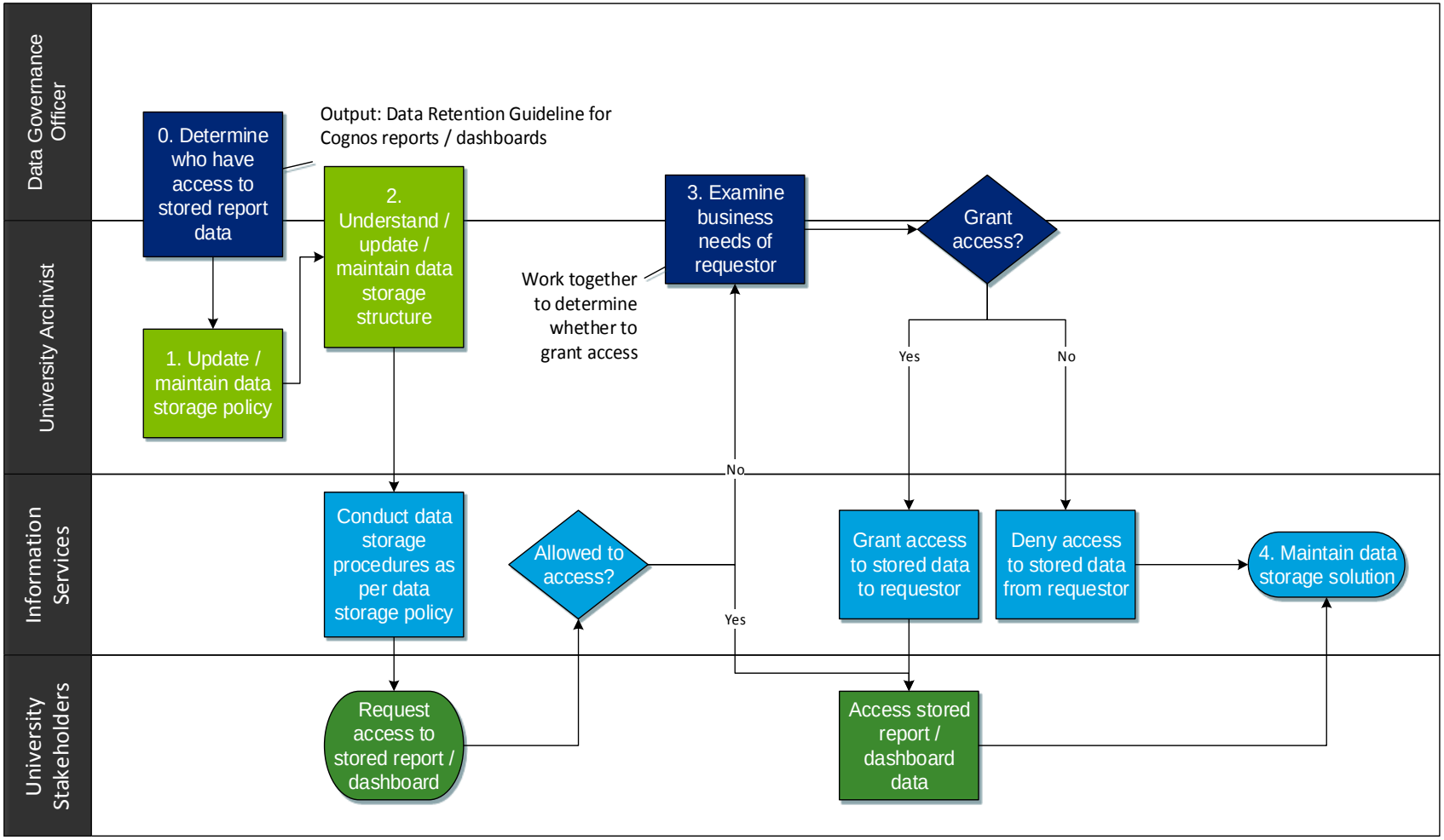
- Data Governance Officer determines patterns in report requests over time and identifies gaps within the current reporting framework
- Data Governance Officer documents types and categories of requested reports and submits them to the Data Governance Council
- Data Governance Council looks for patterns in requests and determines the appropriate course of action
- Data Governance Council continuously monitors stakeholder awareness and understanding of the new process and reductions in new report / dashboard creation requests
- Data Governance Council engages with key University stakeholders continuously on how frequently the developed reports / dashboards meet their needs and reduce re-work

## Challenges in completing this step

- Off-book reporting may not get passed up to the Data Governance Council – this will need to be a proactive action taken by the Data Governance Council members

# Data storage process






*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1. Update / maintain data storage policy



1. Update / maintain data storage policy

## Group / function responsible for this step

The Data Governance Officer and University Archivist are responsible for working together to update and maintain the data storage policy for Cognos reports / dashboards that aligns with the University ARMS/ORS schedules.

## Action items

- Take part in the discussion with the Data Governance Council on aligning data storage for Cognos reports / dashboards to the University's existing data storage processes and schedules
- Identify impacted stakeholders
- Draft the storage policy and updates to existing data storage policies
- Review and finalize the data storage policy with the Data Governance Council
- Socialize the data storage policy with impacted stakeholders

# 2. Understand / update / maintain data storage structure



2. Understand / update / maintain data storage structure

## Group / function responsible for this step

The Data Governance Officer and University Archivist are responsible for understanding the University data storage structure to ensure that any data storage processes developed for Cognos reports / dashboards align with the existing data storage structure in the University. These two parties are also responsible for updating and maintaining the data storage structure as the University's Data Governance matures.

## Action items

- Collaborate with Information Services to understand the data storage structures present in Banner, as well as other source systems which inform the reports and dashboards, if any
- Map each of the data elements informing the reports and dashboards back to the data storage structure currently housing those data elements
- Make updates as required

## Challenges in completing this step

- Each data element in the reports and dashboards may be stored in a different data storage structure; making alignment more challenging

# 3. Examine business needs of requestor



3. Examine business needs of requestor

## Group / function responsible for this step

When a University stakeholder requests access to a Cognos report / dashboard, the Data Governance Officer and University Archivist are responsible for assessing the needs of the requestor and determining whether to grant access.

## Action items

- Receive data access request from Information Services
- Review data access request
- Determine the need of the requestor to access the Cognos reports / dashboards in order to fulfill their responsibilities, as per the Cognos Data Retention and Disposal Policy
- Determine whether to grant access to the requestor based on their needs

# 4. Maintain data storage solution



4. Maintain data storage solution

## Group / function responsible for this step

The University Data Custodians / IS are responsible for maintaining the data storage solution.

## Action items

- Review the tools' requirements for maintenance
- Execute maintenance according to each tool
- Review the data storage is complaint with data storage policies
- Execute maintenance check-up on each tool at least once a year

## Challenges in completing this step

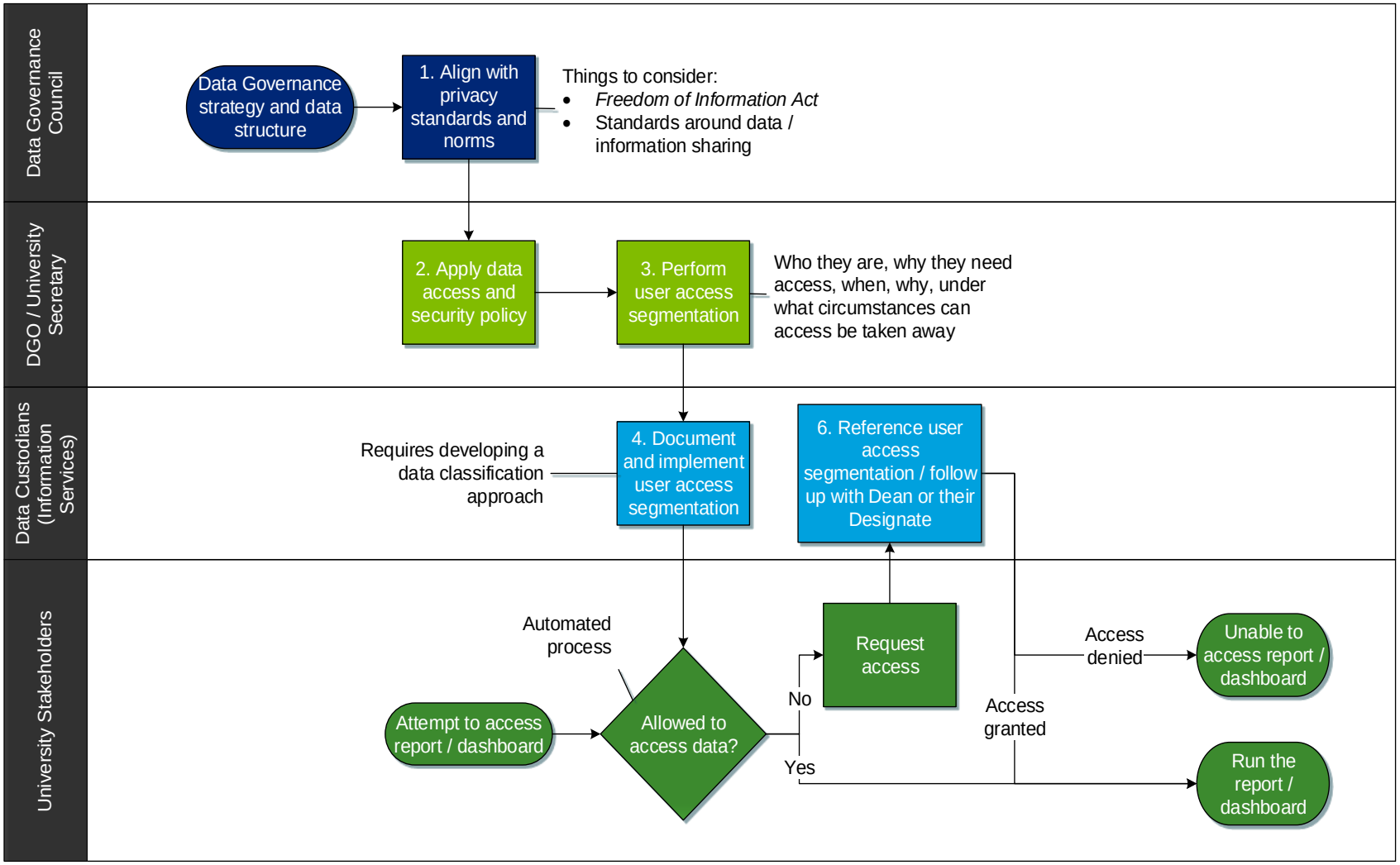
- Each data storage solution may have their own maintenance and the more tools are used for storage the more time this step could take every year to do a maintenance check

## Other considerations

- Consider how best to store data could change, and could require changing storage solutions every 3 to 5 years

# Data access process






*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1. Align with privacy standards and norms



1. Align with privacy standards and norms

## Group / function responsible for this step

The Data Governance Council is responsible for aligning the data access process with the University's existing privacy standards and normal practices, as lead by the University Secretary.

## Action items

- Review the University's existing privacy standards
- Identify all data elements that inform the report / dashboard
- Identify the terms that inform those data elements and classify them from a Data Security and Data Sensitivity perspective
- Identify the Personally Identifiable Information and determine how to mask that data before it is published, if it will be published at all
- Identify the sensitive data and define how that data will be shared and restricted among University stakeholders

## Challenges in completing this step

- Stakeholders at the DGC level may not be experts on the University's privacy standards – including someone more familiar with these standards and norms in the conversation may be more beneficial and ensure full compliance with the privacy standards

## Other considerations

- Will all stakeholders agree with one another on what their access rights should be with regard to Personally Identifiable Information?
- Educating all stakeholders on the University's privacy standards an norms is important

# 2. Apply data access and security policy



2. Create / update data access and security policy

## Group / function responsible for this step

The Data Governance Officer and University Secretary are is responsible for the creation / update of the data access and security policy for Cognos reports / dashboards.

## Action items

- Take part in the discussion with the Data Governance Council on aligning data access to the University's existing privacy standards and normal practices
- Identify stakeholders who will be impacted by the policy
- Draft the data access and security policy
- Review and finalize the data access and security policy with the Data Governance Council
- Socialize the data access and security policy with impacted stakeholders

## Other considerations

- The Data Governance Officer may wish to engage a Policy Analyst or someone familiar with the University's privacy standards to assist with the creation of the data access and security policy for the dashboard(s)

# 3. Perform user access segmentation



3. Perform user access segmentation

## Group / function responsible for this step

The Data Governance Officer and University Secretary are responsible for defining the user access segmentation for any dashboard or report and confirming the segmentation with the DGC.

## Action items

- Engage the University to determine who / what roles may require access to the reports or dashboard
- Compile the full list of stakeholders who will require access of some kind to the report or dashboard and group them based on the business and institutional questions they need to answer in their roles or the decisions they need to make

## Challenges in completing this step

- Stakeholders may feel that they should have access to more detailed information than is required for their role (*want* versus *need*)

# 4. Document and implement user access segmentation



4. Document and implement user access segmentation

## Group / function responsible for this step

The University Data Custodians (Information Services) are responsible for documenting and implementing the user access segmentation.

## Action items

- Group the list of stakeholders based on the level of detail they require access to in order to answer their business or institutional questions
- Conduct privacy impact analyses (PIAs) for all of the data elements
- Define which parts of a dashboard or report they should have access to based on the level of depth required (e.g., only Academic Advisors should be able to access individual student profiles)
- Define levels of user access for the dashboard (e.g., institutional, academic unit, individual) for the list of stakeholders
- Implement the levels of user access in Cognos and create user IDs for the various stakeholders

## Challenges in completing this step

- Stakeholders may feel that they should have access to more detailed information than is required for their role (want versus need)

# 6. Reference user access segmentation / follow up with Management



6. Reference user access segmentation / follow up with Management

## Group / function responsible for this step

The University Data Custodians (Information Services) are responsible for referencing the user access segmentation for Cognos reports / dashboard and following up with Management when a user access request is made by University stakeholders.

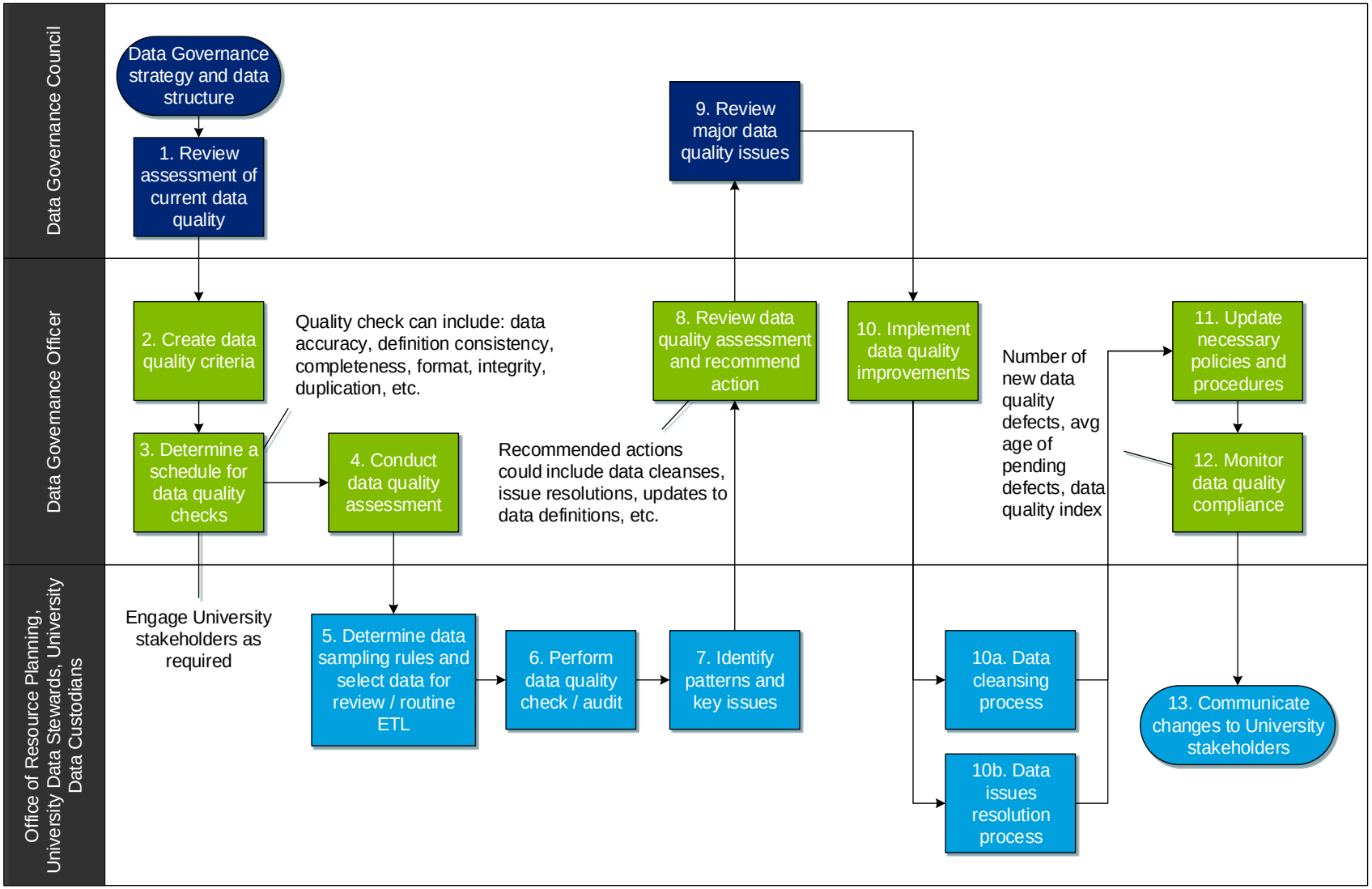
## Action items

- Receive user access request from University stakeholders
- Review user access request and assess against the Cognos Report / Dashboard User Access policy
- Follow up with the requestor's manager(s) to verify the requestor's need to access the Cognos reports / dashboards
- Determine whether to grant access to the reports / dashboards

## Challenges in completing this step

- Stakeholders may feel that they should have access to more detailed information than is required for their role (want versus need)

# Data quality process




*All Data Governance processes are iterative in nature, and will evolve as the Data Governance at the University of Regina matures.*

# 1. Reviewing initial assessment of current data quality



1. Reviewing initial assessment of current data quality

## Group / function responsible for this step

The Data Governance Council is responsible for reviewing the initial assessment of data quality for the data elements required for report / dashboard development.

## Action items

- Identify required data elements
- Request a data extract of the data elements from Information Services or the Office of Resource Planning
- Engage the Data Governance Officer to conduct an initial, high level data quality assessment by looking for completeness, consistency and reasonability of data elements
- Prioritize data quality exceptions that require immediate improvement based upon the initial data quality assessment
- Communicate data quality assessment results to the Data Governance Officer

## Challenges in completing this step

- Not all data quality errors (e.g., incorrect data from data entry level) can be identified through this process
- In order to measure the quality of data, each data element needs to have a pre-defined “standard” of its ideal state – currently, such standards have not been identified

## Other considerations

- Collaboration with Information Services and the Office of Resource Planning is critical in this step, as it is these groups who will be cleansing the data

# 2. Create data quality criteria



2. Create data quality criteria

## Group / function responsible for this step

The Data Governance Council delegates the creation of data quality criteria to the Data Governance Officer. The Data Governance Officer creates the data quality criteria and establishes levels of acceptance for data quality for the key data elements.

## Action items

- Review data quality assessment from the Data Governance Council
- Define data quality acceptance criteria for data completeness, comprehensiveness accuracy, accessibility, coherence, timeliness, periodicity, representativeness, disaggregation, confidentiality, objectivity
- Create data quality check templates
- Review data quality acceptance criteria with Data Governance Council
- Communicate introductions/changes to data acceptance criteria for the defined data elements to impacted stakeholders at the data entry level

## Challenges in completing this step

- Defining data quality criteria is an iterative process, and can result in prolonged timelines and/or scope creep

## Other considerations

- The data quality criteria implemented should be consistent with the criteria that would be applied at the level of the highest governing entity (e.g., CRA, Government of Saskatchewan) involved in order to ensure regulatory compliance
- To ensure the continuation of the data quality process, first iteration acceptance criteria should be developed for the pilot exercise only, and then the scope of data quality can expanded to include other areas

# 3. Determine a schedule for data quality checks



3. Determine a schedule for data quality checks

## Group / function responsible for this step

The Data Governance Officer is responsible for determining the schedule for data quality checks with the University Data Stewards.

## Action items

- Determine the frequency of reporting – based on this reporting, determine the frequency by which the data will be checked for quality
- Prepare a data quality assessment template to be used consistently when conducting data quality checks
- Schedule data quality checks
- Communicate the data quality check schedule to impacted stakeholders, to promote understanding of when the data will be considered to be of the highest quality

## Challenges in completing this step

- Stakeholder groups may express the desire to have data quality checks conducted more frequently than the Data Governance Officer has the capacity to accommodate
- Stakeholders need to be educated about what data quality means for the University

## Other considerations

- A first-level of acceptance should be determined, with those levels of acceptance evolving over time
- Training will be required for the Data Governance Officer on how to conduct data quality checks

# 4. Conduct data quality assessment



4. Conduct data quality assessment

## Group / function responsible for this step

The Data Governance Officer is responsible for conducting thorough and periodic assessments of the data quality for the data elements needed for reports / dashboards.

## Action items

- Conduct periodic data quality assessments in accordance to pre-defined schedule using the data quality assessment template (see appendix for sample template)
- Prepare the data quality summary report and identifies key opportunities for improvement
- Assess and evaluate data quality summary report
- Identify data elements of high, acceptable, low, and unacceptable quality
- Communicate results of data quality check to Data Governance Council, suggesting prioritization of data quality for data elements of low and unacceptable quality

## Challenges in completing this step

- Limited capacity of the Data Governance Officer to perform periodic assessments

## Other considerations

- The length and level of detail of the data quality assessment will vary greatly depending on the number of data elements being assessed

# 5. Determine data sampling rules & select data for review / routine ETL



5. Determine data sampling rules & select data for review / routine ETL

## Group / function responsible for this step

The Data Governance Officer delegates this responsibility to the Office of Resource Planning and the University Data Stewards. The Office of Resource Planning and University Data Stewards are responsible for determining data sampling rules and for selecting data for review / routine extract, transform, load functions.

## Action items

- Review current data sampling rules (e.g., anonymizing data, use of population data, sample sizes)
- Review security and privacy regulations and constraints on the data elements to be used Define and document data sampling rules, communicate these rules to the Data Governance Officer
- Select data for review / routine ETL
- Extract data from the System of Record (i.e., Banner) to be used for the data quality check / audit

## Challenges in completing this step

- Data usage regulations and constraints on the data elements may not be fully known

## Other considerations

- Collaboration with the Data Governance Officer is critical in this step in order to ensure that impacted stakeholders are aware of the potential limitations of data usage

# 6. Perform data quality check / audit



6. Perform data quality check / audit

## Group / function responsible for step 6a and 6b

The Office of Resource Planning delegates responsibility for this step to the University Data Custodians, who are responsible for performing the data quality check / audit on the data elements to be used in reports / dashboard.

## Action items

- Define the scope of tables and their attributes
- Get sample data from the Office of Resource Planning
- Establish a base rule set to test the conformity of the attributes' data values against basic constraints of the attributes
- Apply data management rules that identify and document known business rules that affect each table or attribute
- Calculate confidence levels and create an audit report
- Evaluate exceptions to the business rules to assure the accuracy of the business rule declaration
- Adjust business rules as required based on clarification of the business rule; recalculate confidence levels as necessary
- Calculate final results and publish audit report

## Challenges in completing this step

- Data sets under consideration could be very large and result in prolonged time to conduct data quality assessments

## Other considerations

- Business rules may not be pre-defined and therefore the activity of defining business rules for data quality checks / audits may impact the delivery timelines

# 7. Identify patterns and key issues



7. Identify patterns and key issues

## Group / function responsible for this step

The University Data Custodians are responsible for identifying patterns and key issues reported in the data quality check / audit.

## Action items

- Analyze data quality reports and collect baseline data
- Identify trends in the baseline data collected from data quality audit reports
- Identify key issues in data quality audit reports
- Report findings to the Data Governance Officer

## Other considerations

- The University Data Custodians will require training on how to conduct an evaluation of a data quality check / audit report.

# 8. Review data quality assessment & recommend action



8. Review data quality assessment & recommend action

## Group / function responsible for this step

The Data Governance Officer is responsible for reviewing the data quality assessment conducted by the University Data Custodians and recommending actions to the Data Governance Council.

## Action items

- Review data quality assessment and patterns identified from the Office of Resource Planning
- Look for quick wins that can be achieved through targeted data quality improvement activities as well as identify systemic data issues that require a greater level of effort
- Prepare and present recommendations to the Data Governance Council on how best to address the data quality issues identified

## Other considerations

- It will be critical to prioritize the data quality improvement recommendations in order to keep pilots and report development efforts moving forward

# 9. Review of major data quality issues



9. Review of major data quality issues

## Group / function responsible for this step

The Data Governance Council is responsible for reviewing the recommendation report submitted by the Data Governance Officer and approving recommendations to implement data quality improvement activities.

## Action items

- Receive recommendation report from the Data Governance Officer
- Review report
- Approve or reject the recommended activities for data quality improvement
- Initiate data quality improvement activities with the Data Governance Officer

## Challenges in completing this step

- Data quality improvement activities are conducted among other day-to-day activities of the Data Stewards and thus can stretch their capacity if too many activities are assigned at once

## Other considerations

- The Data Governance Council should be kept up to date and approve on the data business rules that will be used to conduct the data quality audit

# 10. Implement data quality improvements



10. Implement data quality improvements

## Group / function responsible for this step

The Data Governance Council delegates responsibility for this activity to the Data Governance Officer, who is responsible for taking the direction of the Data Governance Council and determining a strategy for how to improve data quality.

## Action items

- Review summary of recommendations for data quality improvement activities
- Determine approach for implementing data quality improvement activities
- Monitor, provide input and guidance, and review data quality improvement results

## Challenges in completing this step

- Availability of stakeholders needed to conduct data quality improvement activities may be limited
- The Office of Resource Planning and / or University Data Stewards will require training on data improvement

## Other considerations

- All groups and stakeholders asked to conduct data quality improvement activities will require training before they are able to do so

# 10a. Data cleansing process



10a. Data cleansing process

## Group / function responsible for this step

The Office of Resource Planning and University Data Stewards are responsible for conducting data quality improvement activities and managing the data issue resolution process.

## Action items

- Receive data quality improvement initiatives from the Data Governance Officer
- Select a data sample
- Determine which data elements require cleaning
- Update/change data element to adhere to the quality standard
- Do spot-check to ensure completeness of the cleansing exercise

## Challenges in completing this step

- The true values for data points could be unknown or require extensive effort to discover

## Other considerations

- Training will be required in order to enable the Office of Resource Planning group and University Data Stewards to conduct this activity

# 10b. Data issue resolution process



10b. Data issue resolution process

## Group / function responsible for this step

The Office of Resource Planning and University Data Stewards are responsible for conducting data quality improvement activities and managing the data issue resolution process.

## Action items

- Develop a data issue intake process
- Intake data issue
- Assign a data issue “owner” and define the stakeholder group impacted by the data issue
- Assign priority level for data issue; perform root cause analysis
- Develop an action plan to resolve the data issue
- Request advice from Data Governance Officer and Data Governance Council
- Provide progress reports to Data Governance Officer
- Implement action plan, close when data issue resolution is complete
- Document any revised business processes
- Prepare training materials to expedite future data issue resolutions of similar natures
- Document lessons learned

## Other considerations

- Training will be required on proper data issue resolution procedures / root cause analysis
- Capacity planning will be critical to ensure that the groups responsible for data issue resolution are not stretched beyond capacity

# 11. Update necessary policies and processes



11. Update necessary policies and processes

## Group / function responsible for this step

The Data Governance Officer is responsible for updating policies and procedures as a result of data quality improvement activities.

## Action items

- Review documented revised business processes from Step 10b
- Assess impact of revised business processes on policies
- Assess impact of revised business processes on existing business procedures
- Update as necessary to ensure alignment between existing and updated policies and processes
- Identify stakeholder groups impacted by the change in policies and processes
- Communicate the change in policies and processes to impacted stakeholder groups

## Challenges in completing this step

- This represents a fundamental shift in the way the University conducts issue resolution and the documentation of changes to policies and processes

## Other considerations

- Organizational Change Management is essential to ensure that all stakeholders involved understand the need for this change

# 12. Monitor data quality compliance



12. Monitor data quality compliance

## Group / function responsible for this step

The Data Governance Officer is responsible for monitoring data quality compliance and improvement.

## Action items

- Define data quality metrics that will be used to measure data quality compliance (e.g., number of new data quality defects, number of data quality defects resolved, average age of pending defects, data quality index)
- Develop template of data quality metrics and disseminate this template to the group conducting data quality audits
- Regularly review the data quality reports
- Initiate action as necessary

## Challenges in completing this step

- Agreeing upon which metrics are the most important to measure and how to prioritize data quality improvement activities that could result from the reports

## Other considerations

- Data quality compliance reports should be reported to the Data Governance Council regularly to enable a full circle of awareness

# 13. Communicate changes to University stakeholders



13. Communicate changes to University stakeholders

## Group / function responsible for this step

The University Data Stewards are responsible for communicating the change / updates in data quality policies and processes and the impacts of these changes.

## Action items

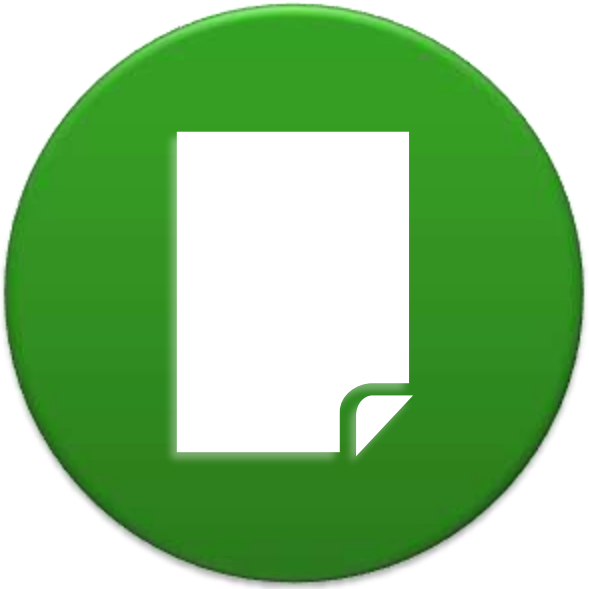
- Collect and aggregate all information that has been updated or changed
- Identify stakeholders and stakeholder groups impacted by the changes / updates
- Determine the impact of the changes to each stakeholder and stakeholder group
- Determine the mediums and frequencies with which stakeholders expect to be communicated and updated
- Distribute all changes and updates to University stakeholders

## Challenges in completing this step

- University Data Stewards need to be identified in advance and engaged appropriately
- University Data Stewards will require training on key data steps
- The impacts of data quality and acceptance criteria changes could be varied across the stakeholder groups, impacting the way they conduct their daily activities – these changes could be met with some resistance

## Other considerations

- Organizational Change Management and communication will be critical for success



# Policies and templates

# Dashboard request template

The following dashboard request template[5] has been developed for use by the Data Governance Council (DGC) and University stakeholders.

The template captures the following elements:

- **The purpose of the requested dashboard**
- **The data needed to develop the dashboard**
- **Benefits of the dashboard**
- **Distribution of the dashboard**

The template also covers data required to satisfy the needs of six Data Governance processes:

- **Definition**
- **Collection**
- **Processing**
- **Storage**
- **Access**
- **Quality**


Each time a new request is made, the DGC can leverage this template to determine the quality of the data required to create the dashboard and thus direct its Data Governance initiatives.

*5 See the attached Microsoft Word document titled, "Dashboard Request Form", for the complete template.*

# Data quality assessment – sample template



| Term | Questions to ask when conducting the data quality assessment | Assessment |
|---|---|---|
| Relevance | Does the data meet the needs of the stakeholders and users at different levels? | |
| Accuracy | Does the data accurately estimate or describe the quantities or characteristics being measured? Does the data represent true values? | |
| Credibility | Do the University's users have confidence in the data? | |
| Accessibility | Can the data be readily located and accessed in multiple dissemination formats? | |
| Interpretability | Can the University's users readily understand, use, and analyze the data, assisted by clear definitions of concepts, variables and terminology, as well as by information describing the limitations of the data? | |
| Coherence | Are the statistical definitions and methods consistent and are any variations in methodology that might affect data values clear? | |
| Timeliness | Are the delays between data collection and availability or publication minimized, although not to the extent of compromising accuracy and reliability? | |
| Periodicity | Are vital data points shared regularly so that they serve the ongoing needs of stakeholders for up-to-date information? | |
| Representativeness / Statistical Significance | Does the data adequately represent the whole population and relevant sub-populations? Is the volume of data appropriate for the decisions that must be made? | |
| Disaggregation | Can the data be stratified by demographic, time, frequency? | |
| Confidentiality / Sensitivity | Are the data management practices aligned with established confidentiality standards for data storage, backup, transfer, and access? | |
| Objectivity | Is the data unbiased, unprejudiced, and impartial? | |
| Lifetime | Has the definition of the data element remained constant in the time frame for which it is being used? | |

**Legend**

A = High quality  B = Good quality  C = Acceptable  D = Low quality  F = Unacceptable

# Data Collection objectives

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

**Data Collection objectives**

| | |
|---|---|
| 1 | **Data is complete from all required sources** |
| 2 | **Data is accurate, uniquely represented, and meets defined data quality standards** |
| 3 | **Data is collected timely, and from sources that are sufficiently current** |
| 4 | **Required data cleansing is identified, applied as necessary, and validated** |
| 5 | **Data errors are identified and reported or corrected as appropriate** |
| 6 | **Modifications, changes, and additions to data sources are identified timely, and the impact is assessed and actioned as appropriate** |

# Data Collection objectives and standards

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements



| 1 | Data is complete from all required sources |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|

DC1.S1 – All data sources and data elements used to satisfy requirements will be identified and documented, including:

- Data records collected from each data source
- Data element definition, purpose, data mappings, and data element classification

DC1.S2 – Data will be validated where it is extracted, transmitted through an interface, mapped, or derived in order to demonstrate the completeness of that data extract or interface relative to documented requirements or expectations

1. Frequency of data source and data element changes
2. Type of data being extracted:
   - Master data
   - Transactional data
   - Aggregated data
   - Transformed data
   - Derived data
3. Types of validations available:
   - Financial reconciliation
   - Record counts
   - Dollar totals
   - Other totals
4. Frequency of validation
5. Applicability of a Master Data Management approach to key data sources
6. Commitment and support from source system owners to participate in the definition and documentation of their data

# Data Collection objectives and standards

## Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

| 2 | Data is accurate, uniquely represented, and meets defined data quality standards |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|
| DC2.S1 – Collected data will be validated for accuracy<br><br>DC2.S2 – Collected data will meet defined data quality standards, including, but not limited to:<br>▪ Duplicates<br>▪ Completeness test<br>▪ Data field definition<br>▪ Formats<br>▪ Value validity<br>▪ Value standardization<br>▪ Field completeness<br>▪ Source system specific business rules<br><br>DC2.S3 – Data not meeting defined data quality standards will be remediated or cleansed as required | 1. Frequency and/or rotation program for validation<br>2. Data sampling or 100% validation<br>3. Defined accuracy tolerances for data elements that require validation<br>4. Likelihood of duplicate records within and across source systems<br>5. Appropriate actions if duplicates are identified<br>6. Applicability of data quality standards for each data element subjected to testing<br>7. Appropriate actions if data quality is insufficient<br>8. Data owner support and participation in defining desired data quality for source data, and remediating data at the source when most appropriate |

# Data Collection objectives and standards

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

| 3 | Data is collected timely, and from sources that are sufficiently current |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|
| DC3.S1 – The required frequency of data collection will be defined and documented for each data source<br><br>DC3.S2 – Data sources will be updated and maintained frequently enough to support downstream data collection requirements | 1. Frequency of processing and reporting (i.e. Processing and Access requirements)<br>2. Frequency of updates to data sources<br>3. The data currency within source systems should support the data collection frequency that is required<br>4. Timing and order of sequential collection processes<br>5. Support and participation from data source owners in determining the frequency of data source updates through understanding of business processes, and improving the frequency of data source updates to meet data collection requirements if necessary |

# Data Collection objectives and standards

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

| 4 | **Required data cleansing is identified, applied as necessary, and validated** |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|
| DC4.S1 – All known and required data cleansing will be documented in detail, such as:<br>▪ How the data is cleansed (i.e. the specific data cleansing process)<br>▪ Where in the data collection process the data is cleansed<br><br>DC4.S2 - All data cleansing during the data collection process will be validated | 1. Type of cleansing validation required, such as:<br>▪ Test the data<br>▪ Test the data cleansing process<br>2. Reliability of change management processes and controls<br>3. Level of source system data quality<br>4. Extent of differences between different source systems that require merging<br>5. Well defined data cleansing triggers |

# Data Collection objectives and standards

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

| 5 | Data errors are identified and reported or corrected as appropriate |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|
| DC5.S1 – All data collection processes will be capable of identifying and reporting data collection errors with sufficient detail to support error correction | 1. Methods of error prioritization, such as:<br>▪ Risk based<br>▪ Business impact<br>▪ Ease of correction<br>▪ Financial error thresholds and financial impact<br>2. Root cause analysis of data collection errors<br>3. Available error correction methods:<br>▪ Correcting source system data causing the collection error<br>▪ Correction the collection process to account for new or unexpected data<br>4. Error classification during the error identification and reporting design |

# Data Collection objectives and standards

Data Collection is the process of defining, identifying and mapping data elements to satisfy business requirements

| 6 | **Modifications, changes, and additions to data sources are identified timely, and the impact is assessed and actioned as appropriate** |
|---|---|

| Data Governance Standards | Requirements and Considerations |
|---|---|
| DC6.S1 - Formal change management processes for data sources will consider downstream systems that use the source system data when:<br>▪ Communicating to appropriate stakeholders<br>▪ Assessing the impact of proposed changes<br>▪ Prioritizing the requested changes<br>▪ Authorizing proposed changes | 1. Frequency of source system changes<br>2. Who should be notified about changes<br>3. Who should approve changes<br>4. Change prioritization could include:<br>▪ Impact to downstream system<br>▪ Changes to data structure or content<br>▪ Business driver for the change |

# DRAFT Data Collection Policy



## Policy Highlights

- The University of Regina collects, stores, uses, and discloses a large volume of data. Data is an important resource used for University operations, including services to students, funding, management, planning, monitoring, improvement, and research.
- Data is a critical resource for the University as a whole, and must be managed with regard to the cost of collection, quality of data collected and process undertaken in establishing new collections and justifying the continuation of existing collections.
- This policy applies to all electronic data collections that inform University Cognos reports / dashboards.
- The policy includes collections of University information that: are used to be organizational, operational, or legal requirements; has strategic importance; contains personal information; is used for reporting; and, is used across multiple University departments / units.
- The purpose of this policy is to support and regulate the establishment of data collections that inform University Cognos reports / dashboards by:
  - Formalizing the establishment of new data collections
  - Ensuring all new data collections are developed with regard to other existing University data collections and strategic initiatives within the University
  - Preventing the uncontrolled collection of data
  - Encouraging the effective, efficient, and accurate collection of data across the University
  - Promoting a culture whereby information is seen and managed as a valuable institutional resource

## Consequences for Noncompliance

- Noncompliance to this policy may have ramifications for the University, which include: legal action; financial costs; imposition of fines; and, the loss of reputation. Individuals who breach this policy or misuse personal information may also be subject to disciplinary actions.

# Data collection template

As part of the data collection process (Step 1b), the DGO will engage University stakeholders to design data collection tools and procedures. Below is a template that can be leveraged in this design. This template has been filled in as an example for the Undergraduate Student Retention dashboard to promote discussion.

| | |
|---|---|
| Description of data collection request | *Begin collecting supplemental, social information about at risk undergraduate students from Academic Advisors as they engage with students.* |
| What data needs to be collected? | *Free-text, additional demographic, social, academic data that could further assist in the build of a profile of at-risk undergraduate students for the purpose of intervening before a students decides not to return to the University.* |
| Who will be the users of the data? | *Academic Advisors – anyone not directly responsible for student engagement should not be able to see this data, until aggregated at the undergraduate student summary level.* |
| Which report / dashboard will house this data? | *Undergraduate Student Retention Dashboard* |
| For what purpose will the data be used? | *The aggregated data will assist the University to build a more accurate profile of at risk undergraduate students so as to intervene earlier and have a more meaningful impact on student success.* |
| Who will collect this data? | *Academic Advisors will capture the data as they interact with students. They shall fill out a standard form and assign it to a data entry staff member in their Unit.* |
| How will the data be collected? | *A standard form will be created for Academic Advisors, and stored in the University's public network for easy access.* |
| Where will the data be stored? | *Data entry personnel will enter the data into Banner, where it will be stored.* |
| What is the source of the data? | *The source of the data is Academic Advisors, who interact regularly with undergraduate students.* |

# DRAFT Data Retention and Disposal Policy



## Policy Highlights

- University of Regina data residing within Cognos reports / dashboards is subject to numerous requirements for retention, storage, and disposal. The University of Regina is committed to complying with these requirements.
- A section for Cognos reports / dashboards will be added to the University's existing data retention and disposal policy
- It is the University's policy to maintain and use the data residing within Cognos in a manner that meets its strategic, tactical, and operational needs and is in compliance with all known federal, provincial, and industry requirements.
- The intention of this policy is to provide appropriate guidance to ensure that the University retains its records long enough to meet all legal requirements, has records available that are necessary to fulfill its obligations, that such records are readily available to satisfy research inquiries, and that eligible records are routinely and non-selectively disposed of in the normal course of activities.
- Premature destruction of records or excessively long retention of records, in conflict with this Policy, create the risk that the University will not fulfill its legal, regulatory, or operational obligations and is unacceptable.
- The University's Data Governance Officer will collaborate with the University Archivist to develop a Data Retention Guideline for data elements residing within Cognos reports / dashboards.

## Consequences for Noncompliance

- Any University employee who does not manage records and information in accordance with this policy may be subject to disciplinary action.

# DRAFT User Access Policy



## Policy Highlights

- The University has an obligation to reasonably ensure the financial, human resource, donor, alumni, and student records contained within Cognos reports / dashboards are both accurate and secure.
- Many faculty and administrative department personnel require access to these reports / dashboards in order to carry out their legitimate work responsibilities.
- The purpose of the Cognos Report / Dashboard Access Policy is to ensure that access to data residing within Cognos reports / dashboards is controlled and provided only on a need-to-know basis.
- Access to data residing within Cognos reports / dashboards must be granted only when specifically authorized and warranted based on job function and responsibilities. Access levels will be determined based on a hierarchy / user access segmentation conducted by the Data Governance Officer and University Secretary.
- This Cognos Report / Dashboard Access Policy applies to all users of data residing within Cognos reports / dashboards, including all University employees, contractors, vendors, service providers, partners, affiliates, and third parties.
- Cognos reports / dashboards must be made available to users with the intent that these resources are to be used for conducting and performing the normal business-related activities of the University.
- The Cognos User Access Policy shall be separate from the current, Banner-specific policy, and will grant view access only to Cognos reports

## Consequences for Noncompliance

- Any employee found to be noncompliance to this policy may be subject to disciplinary action, up to and including termination of employment. Federal, provincial, and/or municipal law enforcement agencies may also be notified if evidence of criminal actions exists.

# Communications strategy

# Objective of the Communication Strategy



The communication strategy will support the implementation of the Data Governance model and Cognos in through the following objectives:

- Build a sense of **positive anticipation** throughout the Institution about the initiative
- **Encourage further engagement** in the initiative from University stakeholders
- **Raise awareness** of the initiative, its rationale, scope and implementation through strategic communications
- Support the initiative's **change management** and training activities
- **Manage expectations** regarding the Data Governance initiative and the implementation of Cognos

# Communication guiding principles

The following principles will help guide the Data Governance Council throughout the Data Governance initiative and implementation of Cognos:

- Communications will highlight **how the initiative supports the University's mission**
- Communications will be **integrated** with the University's other priorities and initiatives
- The Data Governance team will work with the University Communication to coordinate activities
- Use existing University communication channels when possible
- Determine the **appropriate messenger and vehicle** for each communication
- Distribute messages using various channels
- Use a documented communication approval process
- Obtain and review feedback to continually adapt communications
- Communications will be **tailored for specific audiences** to address levels of engagement and understanding
- Produce messaging that reflects the integration of all processes as a cohesive solution
- Reflect that this project is about **more than a visualization tool**. It is an overhaul of business processes and requires the engagement of many University groups beyond those involved in the Data Governance Council
- **Provide open, honest and informative communications**
- Encourage **two-way communication** where practical, effective and beneficial
- Communications will follow the University's brand standards

# Data Governance communications approach



The plan used to communicate throughout the initiative will include specific activities to deliver messaging tailored toward each stakeholder's needs and expectations. It will also align with the culture and expectations engrained into the University's environment.

This project will bring significant change to the University and will impact many different academic and administrative units in a variety of ways. This plan proposes that when possible, communication activities will be tailored to the needs of stakeholders. The plan will require input from the University throughout its development, and will be a living document that is adaptable to changes, progress, and feedback at all times.

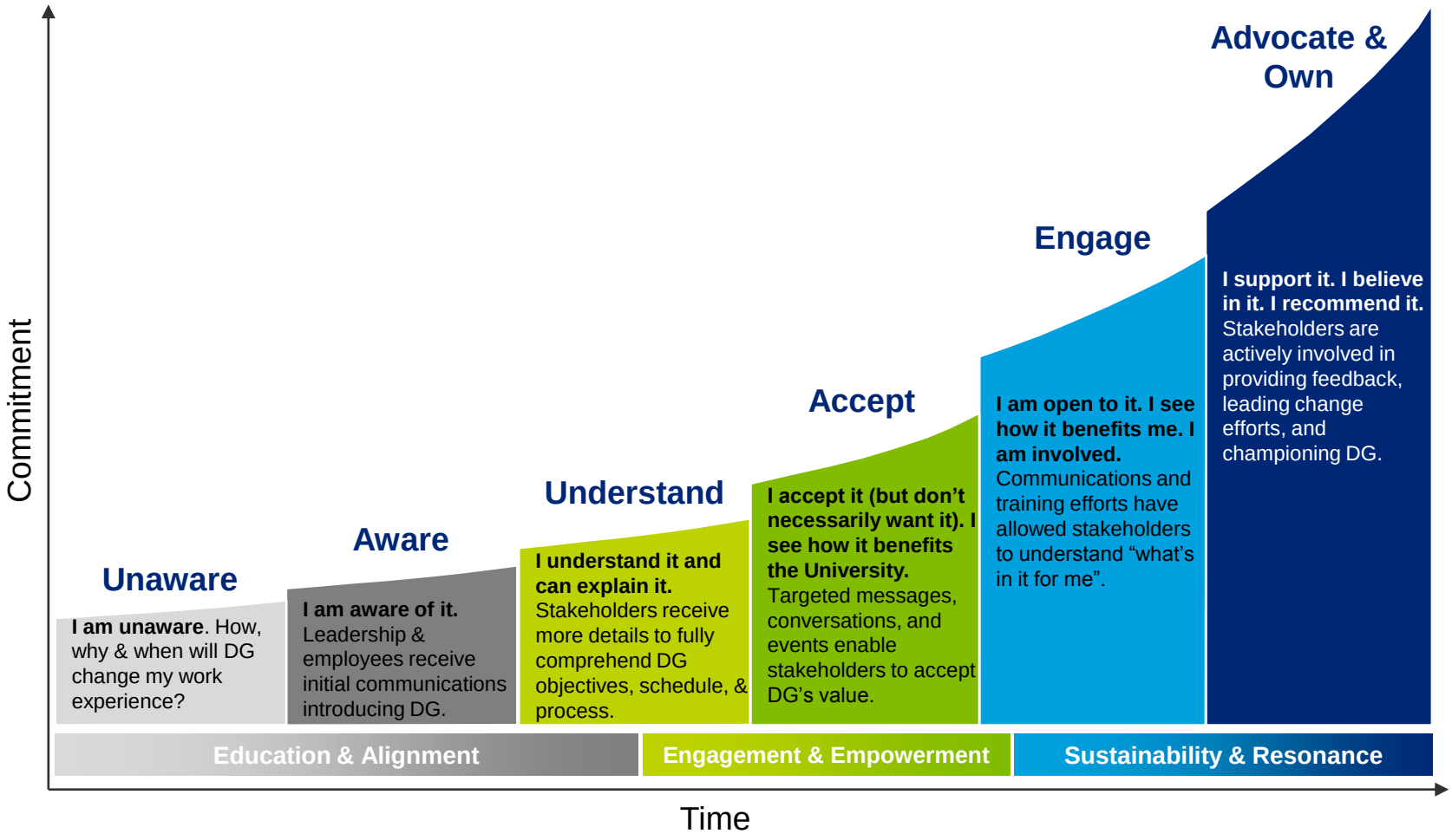
In recognizing the differences of each stakeholder group, we use the Engagement Curve (see next page) as a framework to discuss how stakeholder engagement evolves over time. Over the course of the Data Governance initiative, stakeholders will experience different levels of commitment depending on available information and individual openness to change. The concept of the Engagement Curve is:

1. **It takes exposure to messages over time (left to right) to move up the curve from engagement to ownership, and**
2. **The process is sequential as one needs to first have awareness, before progressing to personal understanding and then buy-in, etc.**
3. **Effective communication requires proper planning, engagement, and timing.**

Similar to this framework, the communication strategy developed for the University also highlights the level of engagement targeted for each stakeholder.

# Engagement Curve

Targeted, informative, and well-sequenced communications will provide University stakeholders with a clear understanding of the implementation process and program benefits, and will help these groups to transition from a state of unawareness to advocacy and ownership.



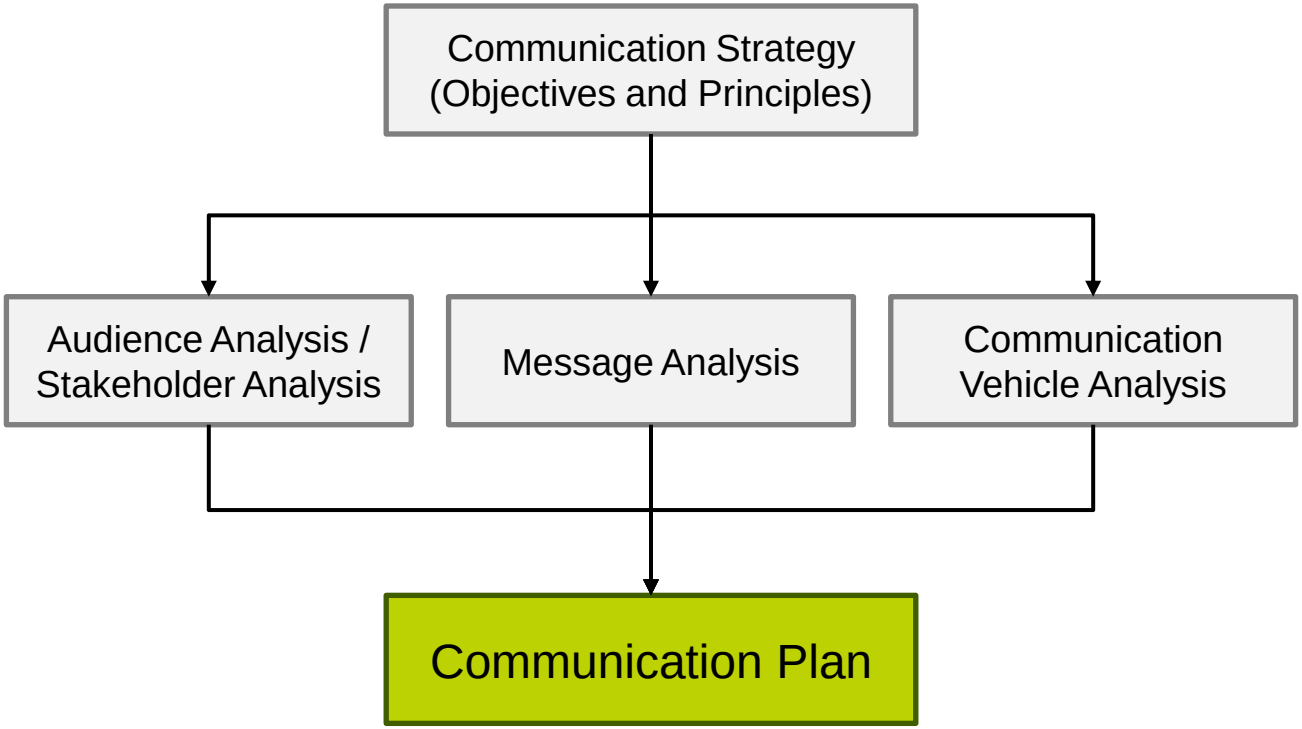
# Common communication tactics across the Curve

The communication tactics used to increase engagement changes as an individual moves across and up the engagement curve. To build awareness and an understanding of the project, print and electronic communication vehicles are generally appropriate. However, to move beyond understanding to engagement and ownership, two-way, face-to-face communication is required. As the communication vehicle becomes more personal, as does the commitment level of stakeholders.

| Unaware | Aware | Understand | Accept | Engage | Advocate / Own |
|---|---|---|---|---|---|
| • Inform the University community about the DG initiative's existence | • Build an identify for the initiative and provide a vocabulary to define how people talk about the DG initiative | • Explain the "big" picture so stakeholders understand why the DG initiative is needed, what it hopes to accomplish, and how it is proceeding | • Explain to the University community the benefits of the DG initiative and how it will impact the University as a whole | • Consult and engage the University community consistently throughout the DG initiative<br>• Create a sense of steady progress | • Provide opportunities for feedback and show that feedback is being considered |

# Approach to developing a tailored communication plan

To create a tailored, holistic communications plan, many inputs are required, starting with the overall objectives and principles of the initiative and moving towards the analysis of available communication vehicles, messages, and stakeholders. This inputs are displayed in the image below.

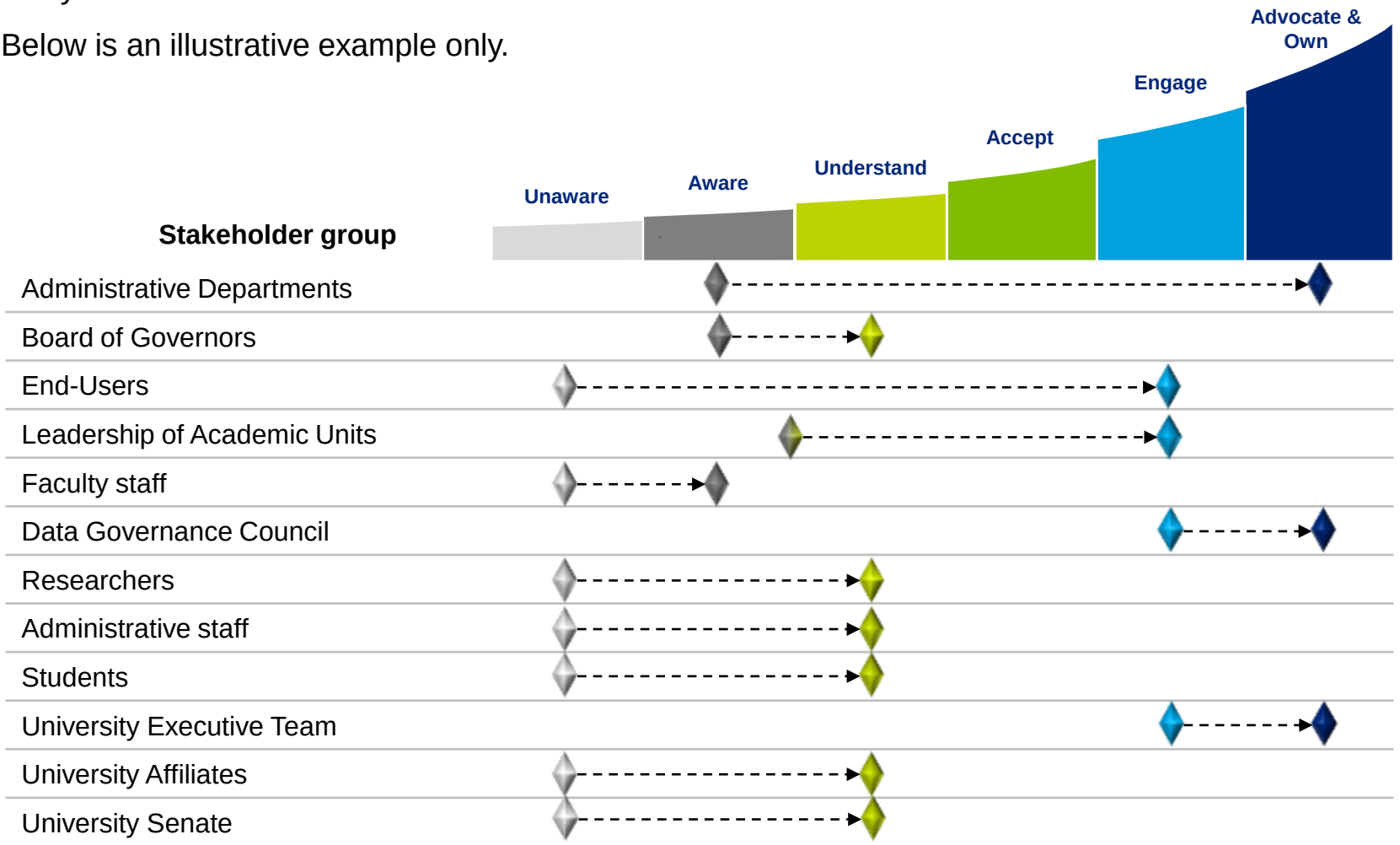



It is important to remember that effective communications are not a project to be undertaken for only a short period of time. Effective communications are a perpetual process that evolves over time, coordinated with the delivery of a final product.

# Audience analysis

The purpose of an audience analysis is to identify the impacted stakeholder groups and their current position on the engagement curve. Audience analysis is an important starting point for developing the communications and training plans. The stakeholders that will form the basis of the audience analysis are listed below. The initial list of stakeholders will evolve throughout the project. DGO will lead this analysis in the first month to understand where to focus the communication efforts:

Below is an illustrative example only.



# Message analysis

The purpose of a message analysis is to identify the key messages and takeaways each communication will strive to deliver. As stakeholders will be impacted by the Data Governance initiative in different ways, the messages incorporated into each communication will need to be both mindful of the audience and also incorporate messages applicable to all stakeholder groups.

The current set of key messages will either be explicitly or implicitly woven into communication artifacts. The key messages provide a basis for communications and reveal a set of themes. The key messages are as follows:

- **This initiative is necessary and urgent. The status quo is not an option.**
- **This initiative is University-wide and is an institutional priority with the support of senior leadership**
- **The implementation of Cognos will enable the University to become more data-driven**
- **Modernizing business processes across the University will support innovation and strengthen the student experience**
- **This initiative is an opportunity to make the University a better place to work, research, and study**
- **All University stakeholders have an important role to play in the success of this initiative**

In addition to the key messages identified, additional messages related to the initiative will be communicated. These messages are as follows:

- **This initiative is still underway**
- **This initiative will extend over a long period of time**
- **This initiative requires many different groups to work together to be successful**
- **Success requires significant change across the University**

# Communication vehicle analysis

A communication vehicle analysis is an inventory and assessment of the existing methods the University uses to communicate information to its various stakeholders. The objective of this analysis is to understand the communication vehicles currently in use, how they are used, and which are the most effective to leverage for the Data Governance initiative. The result helps identify how the different messages should be packaged and delivered to different stakeholders, and whether additional vehicles will need to be developed.



| Vehicle | Advantages | Disadvantages |
|---|---|---|
| **Electronic** – includes a wide array of computer-based communications, such as e-mail, video, electronic newsletters, websites, webcasts, and blogs | • Facilitates rapid, broad distribution<br>• Reduces potential for filtering or screening<br>• Supports some two-way communication<br>• Facilitates repetitive delivery<br>• Supports visually stimulating presentation of messages<br>• Permits easy sharing and storage by end-users | • May require changes in technology to support group-wide distribution of some of the media<br>• Limits the ability to convey empathy<br>• Can be easily overshadowed by large volume of electronic communications<br>• Websites require users to visit |
| **Print** – includes hardcopy communication vehicles, such as newsletters, flyers and posters | • Improves portability of message for future reference<br>• Effectively supports person-to-person communications<br>• Facilitates mass distribution | • Increases cost of preparation (time and materials)<br>• May limit timeliness of messages<br>• Limits ability to tailor language and messages<br>• Limits ability to convey empathy<br>• Supports one-way communication<br>• Increases potential for filtering/screening |
| **Face-to-Face** – includes person-to-person meetings, audio or video conferencing, and other mechanisms that enable “live” exchange of information | • Establishes relationship between communicator and recipient<br>• Conveys empathy more easily<br>• Supports two-way communications<br>• Facilitates assessment of audience understanding and receptiveness<br>• Increases credibility of message<br>• Allows language to be tailored to the audience | • Limits portability of messages to other groups<br>• Places onus on the employee to participate unless mandatory<br>• May require coaching and preparation of communicators and conflict management techniques<br>• Can be time consuming and unrealistic |

# Summary of available communication vehicles

The University has a variety of communication vehicles that will be used throughout the project based on content, target audience and timing.

## Electronic

| Communication Vehicle | Content / Purpose | Target Audience | Frequency / Timing | Existing Vehicles |
|---|---|---|---|---|
| Topical e-mails | To provide information on a need-to-know basis | Audience depends on message | As needed | Y |
| FAQs | To provide opportunity to answer questions | Those who access the www.uregina.ca website | Review every 3-6 months | N |
| Social media | Short info bits linking to other materials | Students | During student rollout | Y |
| University website | To provide information about upcoming events, documentation, and project background | Entire University community | As needed / constant | Y |

# Summary of available communication vehicles

The University has a variety of communication vehicles that will be used throughout the project based on content, target audience and timing.

| **Print** | | | | |
|---|---|---|---|---|
| Communication Vehicle | Content / Purpose | Target Audience | Frequency / Timing | Existing Vehicles |
| Poster campaign | To build awareness of the DG initiative | Entire University community, especially students | Used during change points | Y |
| Theme (Issue) sheet | To be used to provide information on the DG initiative background | DGC members and leaders | As needed | N |

# Summary of available communication vehicles

The University has a variety of communication vehicles that will be used throughout the project based on content, target audience and timing.

| **Face-to-Face** | | | | |
|---|---|---|---|---|
| Communication Vehicle | Content / Purpose | Target Audience | Frequency / Timing | Existing Vehicles |
| Status meetings | To provide status updates | Stakeholder groups | As needed | Y |
| Workshops | To gather requirements, collect feedback, engage stakeholders | Stakeholder groups | As needed | Y |
| Formal meetings | To provide status updates, reach decisions, determine next steps | Leadership | As needed | Y |

# Development and maintenance of communications plan



The individual components of the communications plan – audience analysis, message analysis, and communication vehicle analysis – will merge to create a communication plan that is results-driven and stakeholder engagement driven.

To execute on the communication plan, a template will be used that will identify specific communication activities and the frequency (bi-weekly or monthly) of maintenance required to manage the development and distribution of each communication in a timely fashion.

From a high-level, the communication roadmap will be used to summarize how the communication plan will unfold over each dashboard release and within each stakeholder group.

# Communication plan template

Communication efforts will be ongoing throughout the Data Governance initiative. Several communication activities will be managed on a bi-weekly or monthly basis. The following table provides a sample template for possible communication activities. It is expected that over the course of the initiative, communications will need to be developed based on the needs of the project and managed accordingly.

| Vehicle | Audience (Who) | Key Messages (What) | Medium (How) | Timing (When) | Source of Content | Status |
|---|---|---|---|---|---|---|
| DGC Meetings | DGC | • To provide status updates and plan ahead<br>• To conduct DG activities | Face-to-Face | Monthly (2-hours) | DGC Chair DGO | Ongoing |
| Newsletters | Leadership, Staff, Faculty | • To provide updates and what to expect in the near future | Electronic / Print | Monthly (after DGC meetings) | DGO / Internal Communications Team | Not started |
| Workshops | Impacted stakeholder groups | • To gather requirements<br>• To solicit feedback<br>• To define next steps | Face-to-Face | As needed for dashboard pilots | DGO | Not started |
| Dashboard Request Form | Impacted stakeholders | • To understand the needs of University Community for reports | Electronic / Face-to-Face | Ad hoc | University stakeholders | Not started |

# Draft communication | DGC kickoff



## Data Governance Council Kickoff

## Goals and priorities for the Data Governance Council

Hello everyone,

We are very excited to be kicking off the Data Governance initiative at the University of Regina! Enclosed is a list of goals, priorities, and desired outcomes for the Data Governance Council.

**Big picture goals**

- Raising awareness about Data Governance at the University and its importance
- Developing a series of managerial dashboards for use by University decision makers

**Priorities for the first few months**

- Implement the basic data governance processes across the University
- Identify and prioritize reports / dashboards for development in the next 12 months
- Begin report / dashboard development

**Roles**

- I, Brian Christie, have been appointed to be the Data Governance Council Chair
- Keith Fortowsky is the Data Governance Officer
- You  will act as a member of the Data Governance Council

We've talked about this project for a long time. It's finally time to deliver. We know what to do – now let's make it happen.

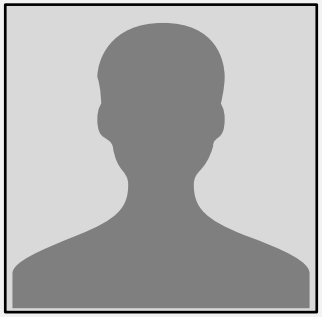
Warm regards,

*Brian Christie*

# Draft communication | New DGC member announcement



## Introducing our newest DGC member
## Christa Bradley



**A message from Brian Christie**, Chair, Data Governance Council

I am excited to announce that Christa Bradly, our University Archivist, will be joining our membership on the Data Governance Council effective immediately. Christa has been working with the University Librarian on revitalizing the University's Records and Information Management (RIM) strategy since joining us in [YYYY].

As a member of the Data Governance Council, Christa will be helping us to better understand the University's current data storage and archival processes and to refine our basic data governance processes as they relate to Cognos reports / dashboards. Her experience will be a great asset as we look to further develop our Data Governance capabilities.

Please join me in welcoming Christa to our team!

*Brian Christie*

# Draft communication | New data request



## Data request from the Data Governance Council
## Insights needed from the Department of Finance

**A message from Brian Christie**, Chair, Data Governance Council

**The University Data Governance Council would like to work with you on our next project – a Budget Management dashboard!**

The Data Governance Council has been hard at work developing Data Governance capabilities here at the University of Regina for some time now; and, we are excited to be moving our efforts forward into the University's finance/administrative data. With this in mind, we would like to partner with you in order to gather requirements, collect data, and improve data quality and governance in order to develop a Budget Management dashboard for the University.

We would like to invite you to participate in the University's Data Governance efforts as a Subject Matter Expert Working Group over the next several weeks as we dig deeper into Financial and Administrative data to build our next dashboard.

If you have any questions, feel free to reach out to me at Brian.Christie@uregina.ca.

More details about your specific roles and responsibilities will follow as we work together to define the scope of your activities throughout the development of the Budget Management dashboard.

# Draft Communication | New report / dashboard release



## New dashboard release

## Undergraduate Student Retention Dashboard is LIVE!

**A message from Brian Christie**, Chair, University Data Governance Council

We are pleased to announce that the Undergraduate Student Retention Dashboard (dashboard) is live and ready for use. We have been working on the development of this dashboard for a while now and we are excited to be sharing it with the University.

### About the dashboard

The dashboard is meant to help you answer basic questions about undergraduate student retention at the University of Regina and to help you begin to develop an understanding of at-risk students. The dashboard may not answer all of your questions, but it can certainly point you in the right direction.

The dashboard enables University decision-makers to develop an understanding of students at three levels of granularity – institution-wide, per academic unit, and individually.

Those interested in participating in a training session on how to use the dashboard are encouraged to notify me at Brian.Christie@uregina.ca.

Click here to access the dashboard and start exploring!

# Draft communication | Invitation to training for new dashboard release



## Invitation to join us

## Dashboard release training

**A message from Brian Christie**, Chair, University Data Governance Council

**You're invited to participate at the dashboard release training for the Undergraduate Student Retention Dashboard**

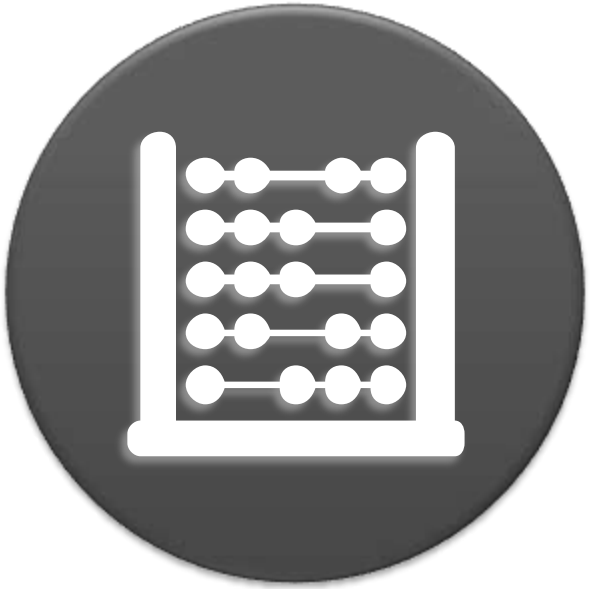
We have been working together with Deloitte and Newcomp Analytics to develop an Undergraduate Student Retention Dashboard for use by the University to promote data-driven decision making at the University of Regina.

You have been selected to participate in a **2-hour training session** for the new dashboard. The training will be conducted in a participatory and collaborative format, where you will have the opportunity to interact with the dashboard, learn how to navigate the tool, and ask questions!

A more detailed agenda will follow, but in general terms, we expect this training session to be both exciting and productive as you learn how to use Cognos dashboards for your day-to-day managerial activities.

If you have any questions, feel free to contact me at Brian.Christie@uregina.ca.

**Event location and time for dashboard release training: TBD**



# Evaluation criteria and prioritization framework

# Guiding principles for evaluation and prioritization



**Improving the Student Experience**

- Be driven, first and foremost, by the needs of our students and our focus on student-centered service delivery
- Demonstrate measurable improvements to our interactions with students and the student experience
- Continue to refine workflows to ensure that system design supports best practices
- Ensure technology as an enabler of service delivery

**Inter-Professional Collaboration**

- Focus on collaborative and interdisciplinary activities rooted in clear scopes of responsibility
- Support students across the student life cycle
- Ensures collaboration between the Data Governance Council and the rest of the University to define standard documentation

**Data Standardization and Utilization**

- Build on and continue to drive the organization toward standardization of documentation around proven practices
- Accurately collect and store data with minimal redundancy
- Ensure widespread access of data to University stakeholders in full compliance with privacy and security regulations

**Evaluation and Performance Management**

- Utilize industry benchmarks to measure progress against pre-defined goals
- Make decisions that are driven by data
- Make decisions based on doing what is best for the organization as a whole, not specific to an individual area or department
- Ensure that our priorities align with other projects and priorities of the organization

# Evaluation criteria for new Cognos projects | Value



| Evaluation Criteria | Useful Questions to ask… | Score (1-10) | |
|---|---|---|---|
| | | **1** | **10** |
| **Strategic Alignment** | • Does the dashboard align with the University's strategy and current and long-term priorities?<br>• Will the dashboard enhance the University's reputation?<br>• Will the dashboard contribute to the development of core competencies?<br>• Does the dashboard improve the University's accountability to its stakeholders? | Not at all in line with strategic focus | Fully-aligned to strategic focus |
| **Benefits Delivery** | • Will the project deliver measurable outcomes for the University (e.g., improved retention rates, fewer "Christmas graduates", more staff time spent on value-add activities)? | **1**<br>No benefits delivery | **10**<br>High, measurable benefits delivery |
| **Organizational Impact** | • How many stakeholders will benefit from this project?<br>• Will there be a measurable increase in data-driven decision making through this project?<br>• Will it increase efficiency of all stakeholders?<br>• Will this project aid in the improvement to the student experience? | **1**<br>No organizational impact | **10**<br>Significant organizational impact |

# Evaluation criteria for new Cognos projects | Alignment



| Evaluation Criteria | Useful Questions to ask… | Score (1-10) | |
|---|---|---|---|
| | | **1** | **10** |
| **Strategic Sustainability** | • Will the dashboard be used long-term, or does it satisfy short-term needs only? | Long-term, positive strategic sustainability | Limited strategic sustainability |
| **Regulatory Requirements** | • Does the dashboard compromise any regulations set out by the University or the Government?<br>• Does the dashboard jeopardize the safety and privacy of students? | Regulatory requirements are not compromised | Regulatory requirements prohibit project |
| **Resources** | • How many resources/staff are required to develop the dashboard?<br>• How many in-house?<br>• How many outsourced?<br>• How much maintenance is required to keep the dashboard current? | Adequate resource availability | Very limited resource availability |
| **Ease of Execution** | • How complex is the dashboard to build?<br>• How many different systems of record (SORs) inform the dashboard? | Easy to implement | Very complex to implement |
| **Interdependencies** | • Is the success of this project dependent on other projects?<br>• Does the execution of this project depend on receiving Executive buy-in? | No dependencies / inter-dependencies | Complex dependencies |

# Sample evaluation and prioritization framework

The University can leverage the framework below to evaluate the net value of a report / dashboard project. When evaluating multiple projects at once, the net value scores for each project can be ranked against one another to determine prioritization and order of development.

| | Evaluation Criteria | Score (1-10) | | Weighting | | Weighted Score |
|---|---|---|---|---|---|---|
| | **Value** | | | | | |
| V1 | Strategic Alignment | 8 | | 25% | | 2 |
| V2 | Benefits Delivery | 7 | | 25% | | 1.75 |
| V3 | Organizational Impact | 9 | | 50% | | 4.5 |
| | | | | | Sum of Value scores | 8.25 |
| | **Risk** | | | | | |
| R1 | Strategic Sustainability | 2 | | 15% | | 0.3 |
| R2 | Regulatory Requirements | 2 | | 25% | | 0.5 |
| R3 | Resources | 5 | | 25% | | 1.25 |
| R4 | Ease of Execution | 4 | | 25% | | 1 |
| R5 | Interdependencies | 7 | | 10% | | 0.7 |
| | | | | | Sum of Risk scores | 3.75 |
| | | | | | Sum of Value scores **minus** Sum of Risk scores | 4.5 |

# Dashboard concepts

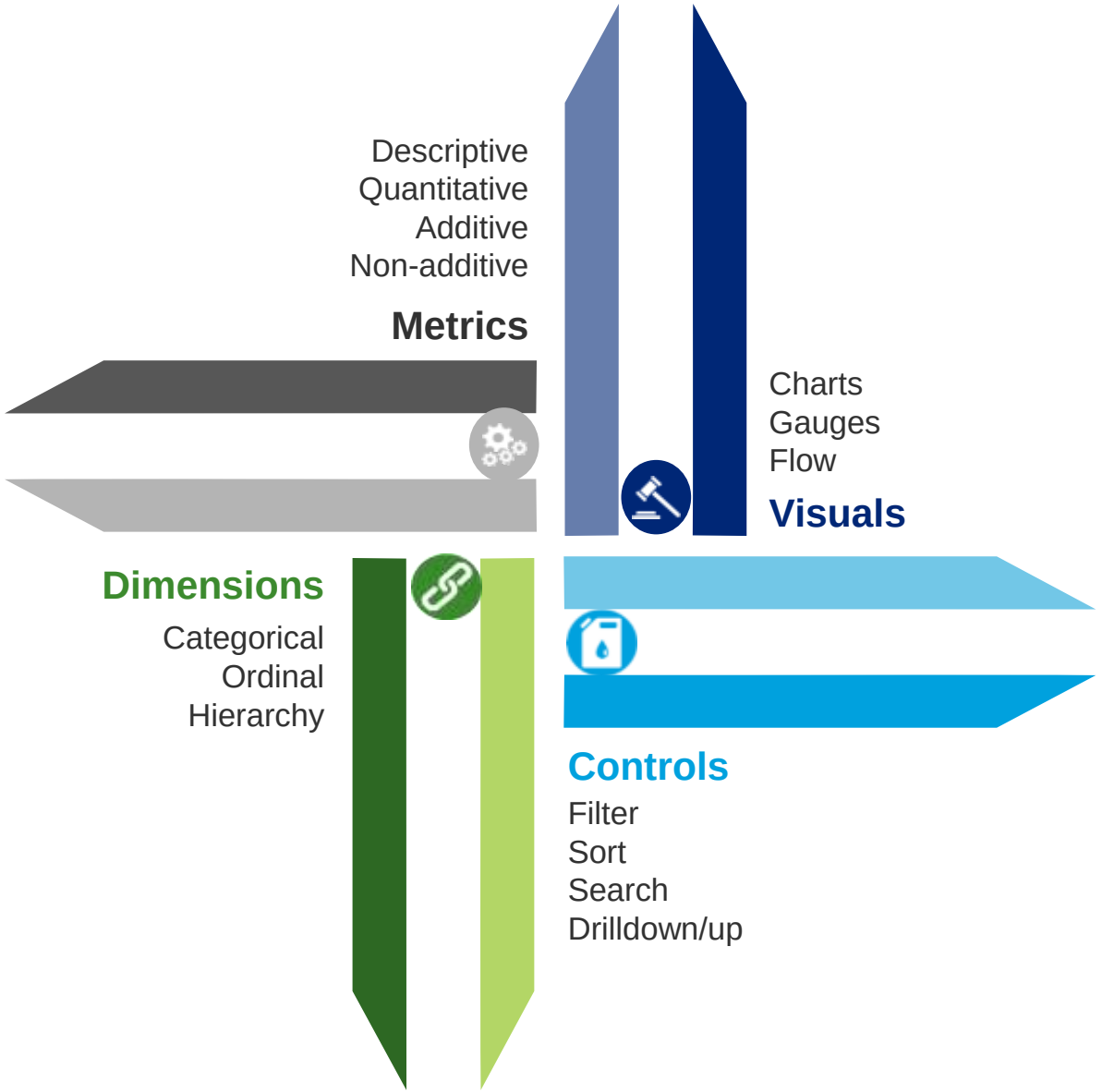
# Dashboards 101 – Purpose of dashboards

The main purpose of a dashboard is to provide a quick view to important information. They display information graphically, just like the dashboards in vehicles. The four key characteristics of a “good” dashboard are:

1. Simple, communicates easily
2. Minimum distractions...no confusion
3. Supports organizations with meaningful and useful data
4. Applies human visual perception to visual presentation of information

# Dashboards 101 – Elements of a dashboard



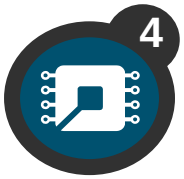


# The dashboard development process

## The dashboard development process below follows a simple, user-centric approach to developing an effective dashboard


**Purpose**

- Define the purpose for the dashboard and the types of questions that the dashboard must answer
- Ensure the dashboard's purpose is aligned to the University's strategy




**Dimensions**

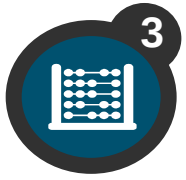
- Define the dimensions over which users need to see the data presented in the dashboard (e.g., time series, student type, year of study, etc.)
- Dimensions can be displayed at multiple levels of granularity


**Audience**

- Define the audience of the dashboard and the questions that each audience member will use the dashboard to answer
- Define dashboard personas


**Visuals**

- Define how the dashboard should present the data
- There are a variety of visuals that can be chosen to communicate information (e.g., bar charts, bubble charts, histograms, line graphs, maps, word clouds, etc.)




**Metrics**

- Define the metrics that the dashboard will report
- Strong metrics are actionable, have a common interpretation, are transparent and simple, and report on accessible, credible data

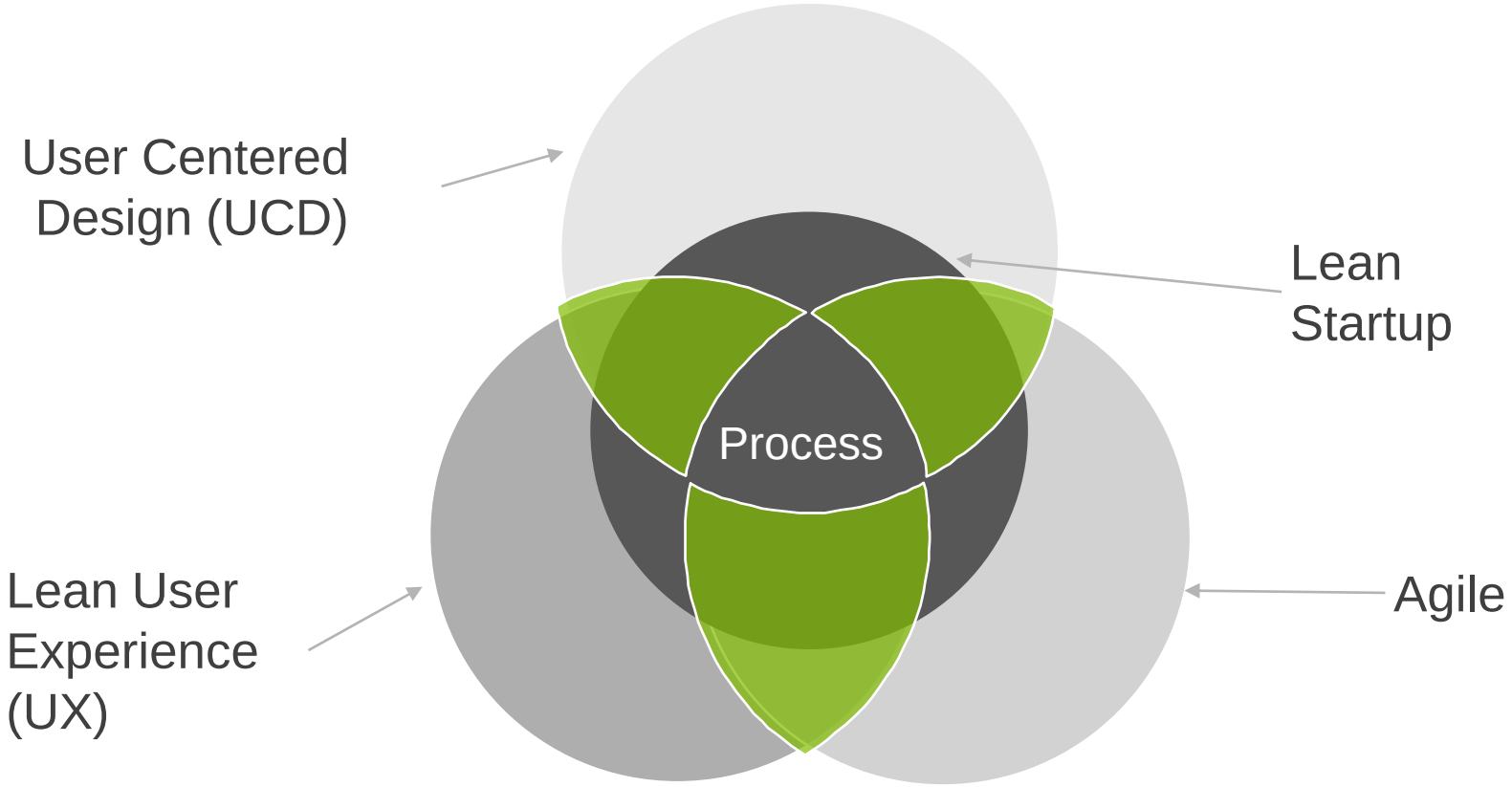

**Presentation**

- Define the "look and feel" of the dashboard
- Determine which visuals should be placed where on the dashboard, how big, in what colors, etc.

Build

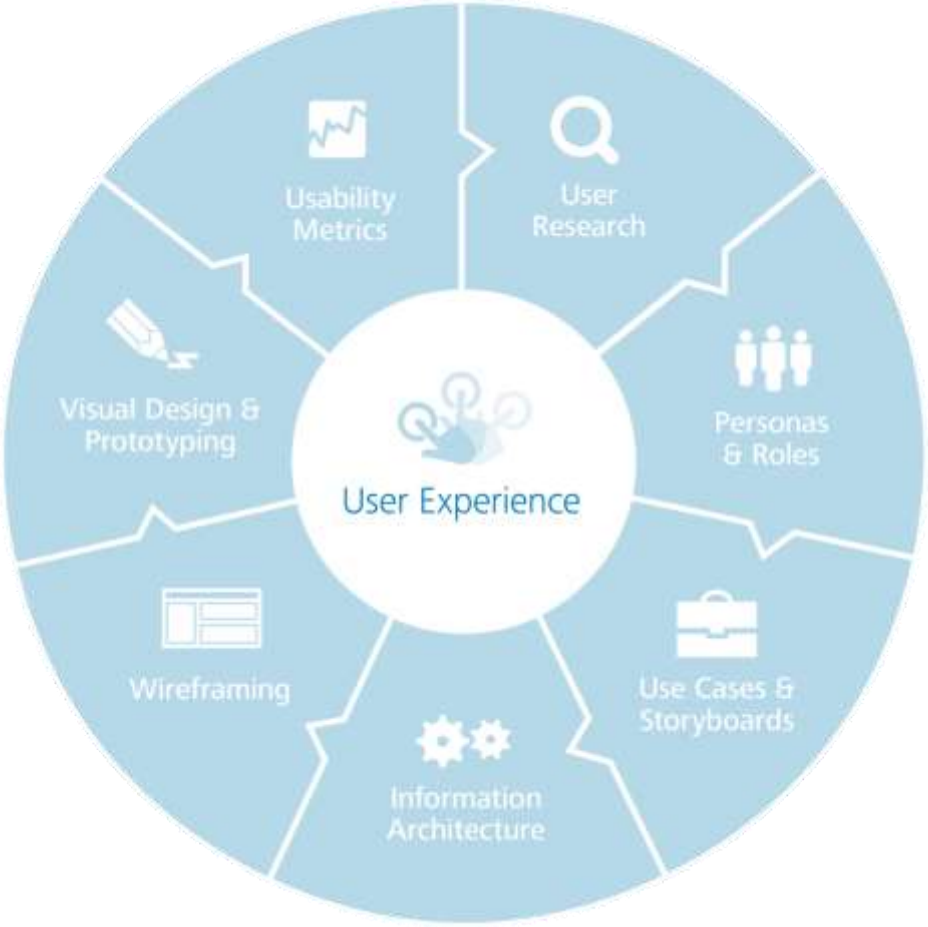
# Integrating the user into an agile process

The benefit of considering the user while designing the dashboard is to develop faster with higher value results with lean development from start to finish



# Customer focused design approach

The user experience design approach is centered around the user in order to ensure that they are considered through every step of the journey




**Engage users** - We start by making stakeholders and users part of the process and maintain their involvement throughout the life of the program

**Define the experience** - We define personas, use cases, and customer experience maps that match the business direction—specifying not just functionality but also how users will interact with each digital channel

**Enable the experience** - We then determine how to enable that functionality across your processes and infrastructure

**Iterate the experience** - We iterate with mock-ups and wireframes and even end-user devices to eliminate as much interpretation as possible and get down to a design that users can see

**Achieve user adoption** - Achieving results for any new user experience is driven by user adoption. In this case, if the users are not able to make use of the new digital experience in a way that is easy and valuable to them, they will not adopt

**Reinvent the personalized user experience** - For the UofR, we guide users to the products right for them in a way that adds differentiation to the University brand

# The value of user experience

Doing a proof of concept first allows the University to invest in the user experience and reduce the cost in development and production, as done with traditional waterfall full-fledged technology projects

User Experience design has an extremely high value proposition.

$1 of spending on UX can save up to $100 of development work

- Save development and redesign cost
- Reduce maintenance costs
- Reduce training/documentation costs
- Reduce support or help desk calls

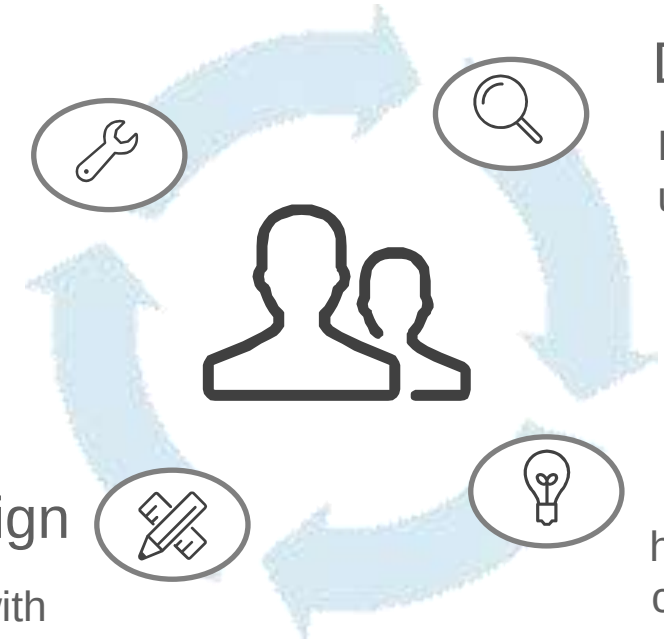
- Increase adoption rate
- Increase efficiency/productivity
- Increase engagement and usefulness
- Increase user satisfaction

# User experience principles

During a proof of concept, you can use the following user experience principles to design the dashboards, to increase the efficiency and the value that the data can bring to the users

As we keep looking towards building better experiences, these core principles guide our actions

# User experience process



**Discovery**

Business context and user insight

**Concept**

high-level idea and concept illustration

**Design**

Detailed design with colors, styles

**Build**

Develop and iterate

# Sample outputs: user personas / profiles



## What

Personas are a representation of our users base derived from real world data and research. They describe the goals, motivations, as well as habits of the target users.

## Why

We use personas to create empathy for users, and guide decision making throughout design. This also drive a consistent experience for users across touch points and platforms.

## How

Develop personas & user profiles by looking at the current users types, their similarities and differences. Conduct contextual inquiry to gather both explicit and implicit needs.

# Sample outputs: user journey



## What

User journeys are a way of conceptualizing the pathways a user might take through interacting with multiple channels and touch points, focusing on users' experiences including how they feel, what they're thinking and any issues or concerns they may have.

## Why

User journeys allow us to see the perspective of the users. We take an 'end to end' approach to ensure that we design for every step of the journey since what the user comes away with is the sum of their experiences.

## How

Research, personas, key task and experience principles are all key inputs into user journey modeling. We write stories that evoke key elements of each input, and that hang together in a realistic narrative.

# Sample outputs: wireframes



**What**

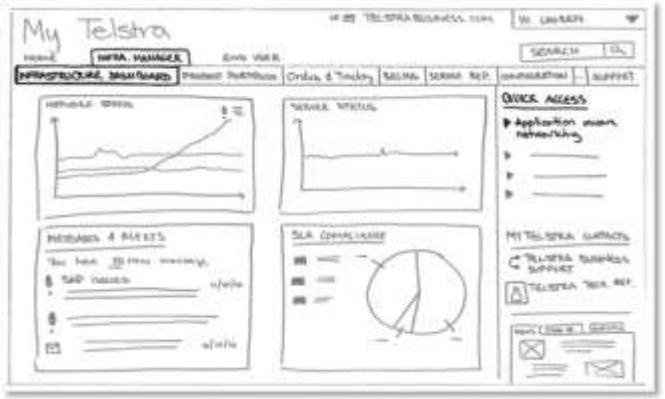
Wireframes are visual representations allow us to communicate a page's context and functionality without conveying visual styling.

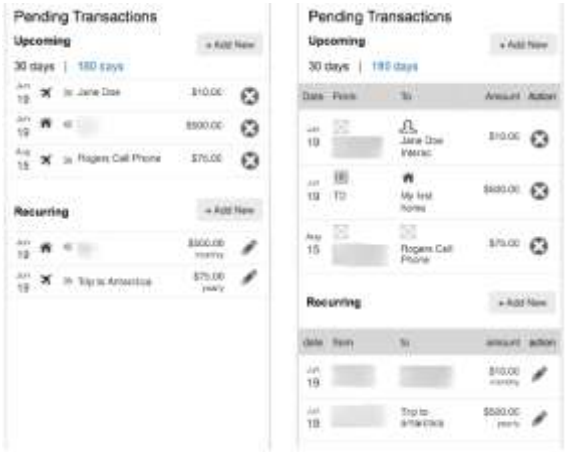
**Why**

We use wireframes to communicate design requirements in an easily consumable way.

**How**

Wireframes are usually low-fidelity screens which allow us to communicate design hypotheses without locking functionality and styling down before a consensus has been reached. At times, prototypes are built to facilitate usability testing.



# Sample outputs: high-fidelity mockups



**What**

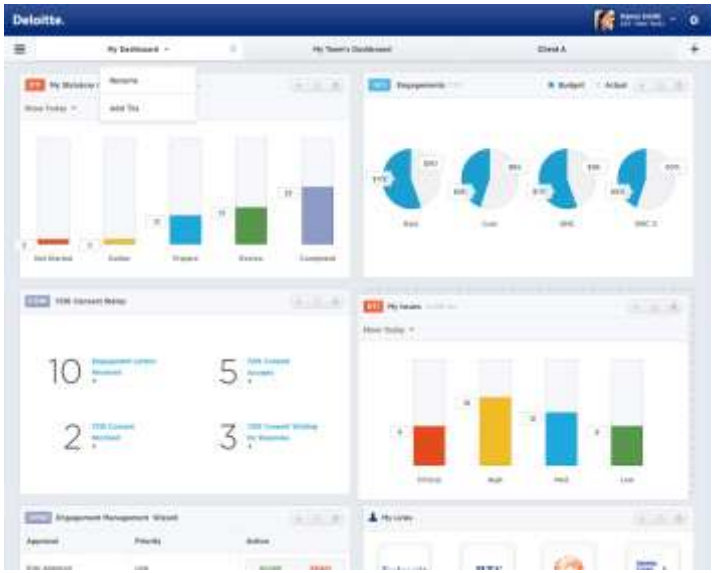
High-fidelity mockups are full-color visual representations of the final product.

**Why**

We use high-fidelity mockups to gather user feedback and impressions on the overall theme and individual design elements.

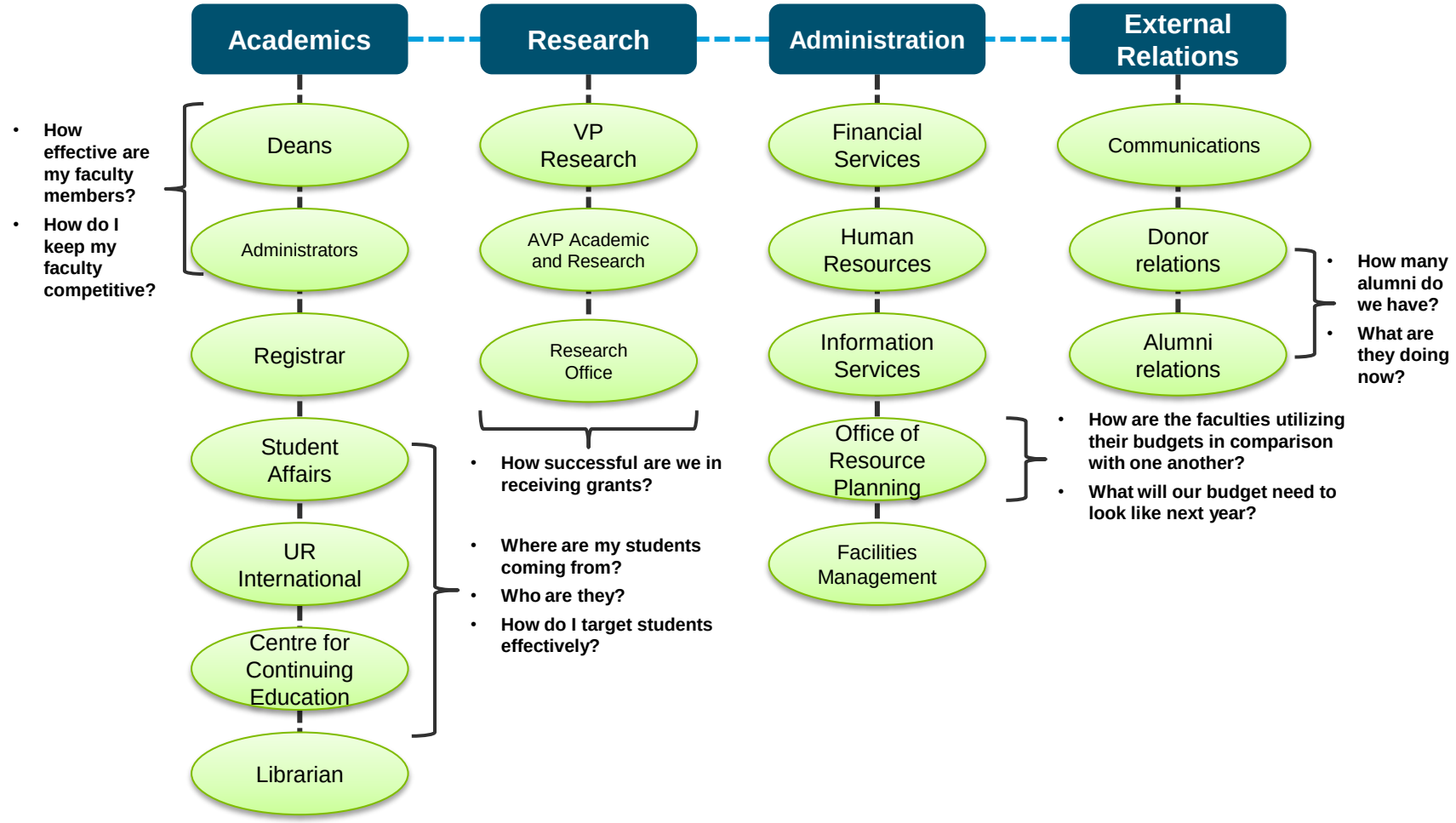
**How**

We typically produce two different visual concepts based on the wireframes for review. Once we finalized the theme. More screens and detailed style guide will be created.



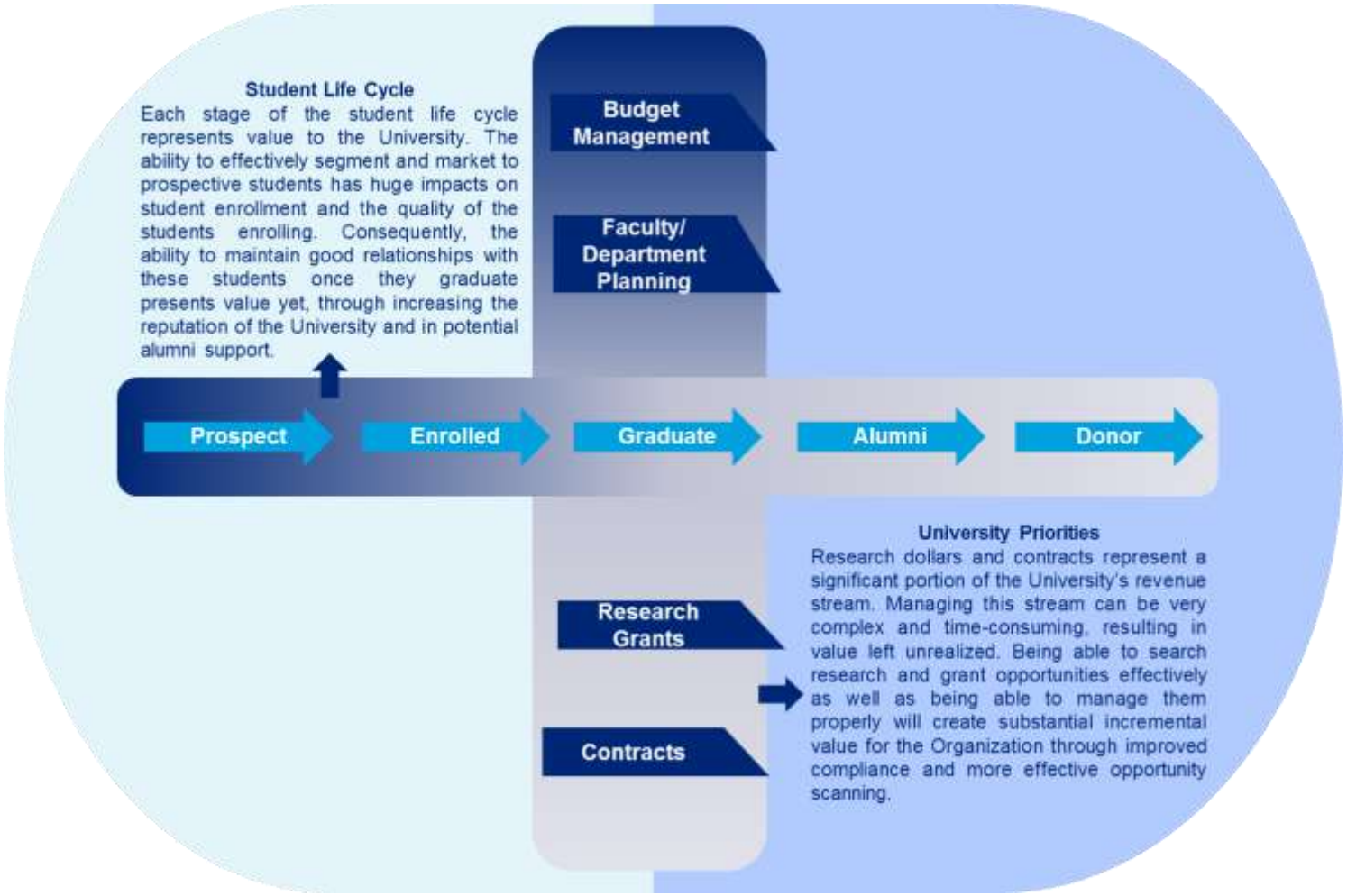
# Dashboard concepts from Phase 1

To create concepts for dashboards, we divided stakeholders into four groups based on their roles in the organization to better understand their information needs and define what types of managerial questions they need to answer on a daily basis.



# Analytical model for dashboard concepts

In Phase 1 of this project, we proposed a set of dashboards that can drive organizational value, derived from this analytical model that encompasses both academic and non-academic value streams.



# Dashboard possibilities

## The following dashboard concepts were provided in Phase 1



| Dashboard | Value to the University | Decision-making process |
|---|---|---|
| Prospect | The dashboard will allow the users to analyze existing prospect information, identify current and target student needs and enrollment behaviors, and identify best channels to interact with prospects, therefore improving recruiting campaigns' effectiveness. | Increase Current Enrollment through prospect segmentation |
| Enrolled | The dashboard will allow the users to understand the academic profile and progress of enrolled students, therefore improving their chances of graduating on time or assisting them with advancing on the path to completion. | Improve Retention |
| Graduate | The dashboard will allow the users to correlate each student's education with their career path and measure their societal impact, improving their chances of finding employment within their respective fields of study and become contributing members to society upon graduation. | Align student supply with employer demand |
| Alumni | The dashboard will allow the users to analyze what field the alumni work in, the level of positions they hold within an organization, their community involvement, impact to society, as well as understand general feedback. This will allow the University of Regina to understand how a particular program can be improved. | Build school image through increased alumni participation |
| Donor | The purpose of the dashboard is to visualize the number of donors per region, pledges and contact preferences, track progress of acquired vs. budgeted funds and the last time the donor was contacted. This will lead to more effective relationships with the University's donors. | Increase existing donations through strategic relationships with alumni and non-alumni |
| Faculty/Department Planning | The dashboard will assist with identifying the faculty's workload, find the right balance between research / teaching capacities, optimize the number of existing and temp instructors, therefore improving the efficiency. | Balance teaching load by aligning staff with student demand |
| Research Grants | The dashboard will allow the users to analyze grants per institution, associated research and accounts, amount of funds left in the account and track any limitations associated with a grant therefore improving the grant management processes. | Align programs with government and non-governmental funding |
| Contracts | The dashboard will allow the users to track contracts, associated research and/or activities, agreed upon deliverables or commitments and contract renewal dates. This will allow to improve contract management processes. | Align programs with corporate sponsorship |
| Budget Management | The dashboard will allow the users to understand the amounts needed by the faculty for particular research projects. This will allow better alignment of needs with available or potential funding. | Improve planning, budgeting and forecasting capabilities to align faculty and department budgets with organizational priorities |

# Prospect dashboard concept

Here is a concept of a Prospect dashboard that could be built, the questions it answers, and the necessary components to build it



**Prospect Dashboard**

The dashboard will allow the users to analyze existing prospect information, identify current and target student needs and enrollment behaviors, and identify best channels to interact with prospects, therefore improving recruiting campaigns' effectiveness.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **AVP Student Affairs** | • Student acquisition<br>• Strategic planning<br>• External reporting | Low | • How do I best target my recruiting/marketing efforts?<br>• How do I screen and admit the highest quality students?<br>• How many students are inquiring, applying, offered, registered, show up?<br>• How many transfer students arrived this year?<br>• How prominent are the barriers to confirmation/registration/attendance for prospective students?<br>• What are students looking for in a University? What are their personal and academic needs?<br>• What does the growth look like at our off-campus sites?<br>• What is my potential student demographic? Where are my students coming from?<br>• What programs are students interested in? |
| **Deans** | • Student acquisition<br>• Strategic planning | Medium | |
| **Director – CCE** | • Strategic planning | Low | **Metrics / data used to answer questions** |
| **Director – URI** | • Strategic planning<br>• External reporting | Medium | • Enrollment funnel, year-to-year enrollment growth trends<br>• Tests for English proficiency<br>• Map of regions with reach of students, applications, and acceptances year-to-year<br>• Percentage growth of enrollment by country<br>• Percentages of age, gender, citizenship, geography, language, Aboriginal versus non-aboriginal<br>• Percentages of geography, locations for high schools, provinces, countries<br>• Ranking of events/visits held, money spent on the event, the number of resulting applicants, and the number of resulting enrollments<br>• Results of student surveys<br>• Results of focus groups<br>• Trends in program interest per faculty/program |
| **Registrar** | • Student enrollment | Low | |

# Enrolled dashboard concept

Here is a concept of an Enrolled dashboard that could be built, the questions it answers, and the necessary components to build it

## Enrolled Dashboard

The dashboard will allow the users to understand the academic profile and progress of enrolled students, therefore improving their chances of graduating on time or assisting them with advancing on the path to completion.

| Audience / role | Areas of responsibility | Level of Analysis |
|---|---|---|
| **Administrators** | • Student performance | High |
| **AVP Student Affairs** | • Senate reports<br>• Student acquisition, retention | Low |
| **Registrar** | • Student enrollment | Low |
| **Deans** | • Student experience / performance<br>• Program performance / planning | Medium |
| **Librarian** | • Internal reporting | Low |
| **Director – CCE** | • Strategic planning<br>• Student performance | Medium |
| **Director – URI** | • External reporting<br>• Program / student performance / planning | High |
| **AVP Human Resources** | • Performance management<br>• Reputation management | Low |
| **AVP ORP** | • Managing off-campus entities<br>• Strategic planning | Medium |

### Questions the audience needs to answer

- How are the students performing academically?
- How does my program compare to other faculties within the University?
- How long does it take students to complete a degree?
- How many courses, on average, are students enrolled in?
- How many students do I have in total? How many students are in each year of study? What are their time status? How many co-op, mature students, aboriginal, international? What campus are they attending?
- Is the University growing in terms of enrollment?
- How are the students segmented demographically and domestically versus internationally?
- How effective are we at converting prospects to enrolled students? How does all of this information compare year-to-year?
- What is my student demographic? Where are my students coming from?
- What students are at risk of discontinuing/dropping out of the program?

### Metrics / data used to answer questions

- Average extracurricular activity participation
- Average time to completion
- Comparison of GPA, enrollment growth trends
- Drop-out rates
- Heat map of where the majority of students are coming from
- Demographic numbers
- High school average, entering average, GPA, CGPA, TGPA, UGPA, PGPA
- Fail rate, drop-out rate, attrition rate, retention rate
- Maclean's ranking
- Absenteeism
- Age, gender, citizenship, geography, language, Aboriginal versus non-aboriginal
- Geography, locations for high schools, provinces, countries
- Results of program surveys and focus groups
- Usage of University services (UR Guarantee, Residence Community Council, Rec Centre, Career Counselling, Health Services, etc.)

# Graduate dashboard concept

Here is a concept of a Graduate dashboard that could be built, the questions it answers, and the necessary components to build it



**Graduate Dashboard**

The dashboard will allow the users to correlate each student's education with their career path and measure their societal impact, improving their chances of finding employment within their respective fields of study and become contributing members to society upon graduation.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **Deans** | • Program performance<br>• Strategic planning | Medium | • How well are we positioning our students for careers/lives post-graduation?<br>• How many students are graduating from the institution, faculty, program?<br>• What is the University's average graduation rate? How does my faculty's graduation rate compare?<br>• What is the University's graduate employment rate? How does my faculty's employment rate compare?<br>• How many graduates gain employment within six months? One year? Beyond? |
| **AVP Student Affairs** | • Student acquisition<br>• Senate reports | Low | |
| **External relations** | • Reputation management<br>• Alumni relations<br>• Donor relations | Low | **Metrics / data used to answer questions**<br>• Employment rates<br>• Number of job offers based on specialty<br>• Number of summer and co-op term employment<br>• Number of students/graduates involved in community activities<br>• Number of students receiving awards for community contributions |

# Alumni dashboard concept

Here is a concept of a Alumni dashboard that could be built, the questions it answers, and the necessary components to build it

**Alumni Dashboard**

The dashboard will allow the users to analyze what field the alumni work in, the level of positions they hold within an organization, their community involvement, impact to society, as well as understand general feedback. This will allow the University of Regina to understand how a particular program can be improved.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **Deans** | • Maintaining the public image of their Academic Units | Medium | • Who are my alumni?<br>• Where are alumni located?<br>• What careers are they in?<br>• What is their impact to society?<br>• How best do I target alumni for events invitations and relationship building? |
| **AVP External Relations** | • Alumni relations<br>• Events | High | |

**Metrics / data used to answer questions**

- List number of alumni by industry, career-level, and community involvement
- Segment alumni by profession, geography, and faculty they graduated from

# Donor dashboard concept

Here is a concept of a Donor dashboard that could be built, the questions it answers, and the necessary components to build it

**Donor Dashboard**

The purpose of the dashboard is to visualize the number of donors per region, pledges and contact preferences, track progress of acquired vs. budgeted funds and the last time the donor was contacted. This will lead to more effective relationships with the University's donors.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **Deans** | • Strategic planning | Low | • How much funding comes to the University through gifts, donations, sponsorships, and research grants?<br>• How am I utilizing my budget in comparison with other faculties/departments?<br>• Where are donated funds going?<br>• Who are the University's top donors/highest-priority relationships? |
| **AVP ORP** | • Strategic planning | Low | |
| **AVP External Relations** | • Budgeting<br>• Donor relations<br>• Reputation management | High | **Metrics / data used to answer questions**<br>• Dollar values segmented by gifts, sponsorships, research, etc.<br>• Key donors/organizations<br>• Comparison/trends of budget spend for specific unit and for each faculty/University as a whole<br>• Heat map with numbers per region<br>• Year-to-year trends<br>• Ranking by dollar values |

# Faculty / Department Planning dashboard concept

Here is a concept of a Faculty / Department Planning dashboard that could be built, the questions it answers, and the necessary components to build it



**Faculty / Department Planning Dashboard**

The dashboard will assist with identifying the faculty's workload, find the right balance between research / teaching capacities, optimize the number of existing and temp instructors, therefore improving the efficiency.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **Administrators** | • Staff scheduling and management | Medium | • How many faculty/staff do I need to support enrollment for the next year?<br>• Do I have enough field educating supervisors are available throughout internships who actually have a social degree in their respective fields?<br>• How effective are my faculty/staff compared to those in other programs? Is each instructor teaching enough hours?<br>• Are we, as a faculty, receiving comparable funding for research?<br>• How are my faculty balancing teaching and research?<br>• Are students getting the right levels of attention and knowledge transfer necessary to be successful in their courses?<br>• Do my staff teach their course materials effectively?<br>• How well are my faculty/staff being utilized?<br>• What is my ratio of full-time faculty to sessional instructors?<br>• What is the student-to-faculty ratio? (both undergraduate and graduate)<br>• What is the composition of my staff? |
| **Deans** | • Performance management<br>• Program accreditation | High | |
| **Librarian** | • Performance management | Low | |
| **AVP Human Resources** | • Performance management | High | |

**Metrics / data used to answer questions**

- Credit-hours taught per semester
- Research hours per semester
- Practicum/co-op hours per semester
- Full-time-to-sessional ratio
- Gap between projected student-teacher ratio and desired student-to-teacher ratio
- Course enrollment
- Number of full time, part-time, and seasonal lecturers
- Staff salaries/pay
- Failure rates
- Student-to-faculty ratio
- Staff demographics (ages, gender, etc.)
- Union membership
- Number of tenured professors
- Number of disability, grievances, resignations
- Absenteeism
- Peer reviews or management reviews for topics including helpfulness, availability to students, research/publication output, etc.
- Student reviews
- Course averages

# Research Grants dashboard concept

Here is a concept of a Research Grants dashboard that could be built, the questions it answers, and the necessary components to build it



**Research Grants Dashboard**

The dashboard will allow the users to analyze grants per institution, associated research and accounts, amount of funds left in the account and track any limitations associated with a grant therefore improving the grant management processes.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **VP Research** | • Research spend<br>• Research reputation | Medium | • How best do I promote the research being done within the University of Regina?<br>• How much funding comes to the University through gifts, donations, sponsorships, and research grants?<br>• How successful are we in applying and receiving research grants?<br>• What are the University's most valuable ongoing research projects?<br>• What percentage of our research dollars are allocated to overhead costs?<br>• What research topics are receiving the most interest (both within University's research and in general)?<br>• Which faculties/professors are publishing the most research/receiving the most funding?<br>• Which researchers are publishing the most/least research and publications? What topics are trending? |
| | | | **Metrics / data used to answer questions** |
| | | | • Rank mediums/formats of research "hits"<br>• Dollar values segmented by gifts, sponsorships, research, etc.<br>• Key donors/organizations<br>• Application/consideration/success funnel with numbers and percentages, year-to-year comparison<br>• Ranking by dollar values<br>• Ratios of overhead to total funding<br>• Ranking of top topics per year/period per faculty<br>• Rank by dollar amounts and publications number<br>• Ranking of research publications by both number published and number of "hits" |

# Contracts dashboard concept

Here is a concept of a Contracts dashboard that could be built, the questions it answers, and the necessary components to build it

**Contracts Dashboard**

The dashboard will allow the users to track contracts, associated research and/or activities, agreed upon deliverables or commitments and contract renewal dates. This will allow to improve contract management processes.

| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **AVP Information Services** | • Contract / vendor management | High | • How can we manage contracts more effectively? How can we ensure that we are delivering according to commitments?<br>• Which contracts are approaching expiry and require attention? |
| **VP Research** | • Contract management | High | |
| **AVP Academic and Research** | • Contract management | High | |

**Metrics / data used to answer questions**

- Track milestones/deliverables and list showing "complete" or "incomplete"
- List of contracts with expiry dates within X days/weeks

# Budget Management dashboard concept

Here is a concept of a Budget Management dashboard that could be built, the questions it answers, and the necessary components to build it



**Budget Management Dashboard**

The dashboard will allow the users to understand the amounts needed by the faculty for particular research projects. This will allow better alignment of needs with available or potential funding.

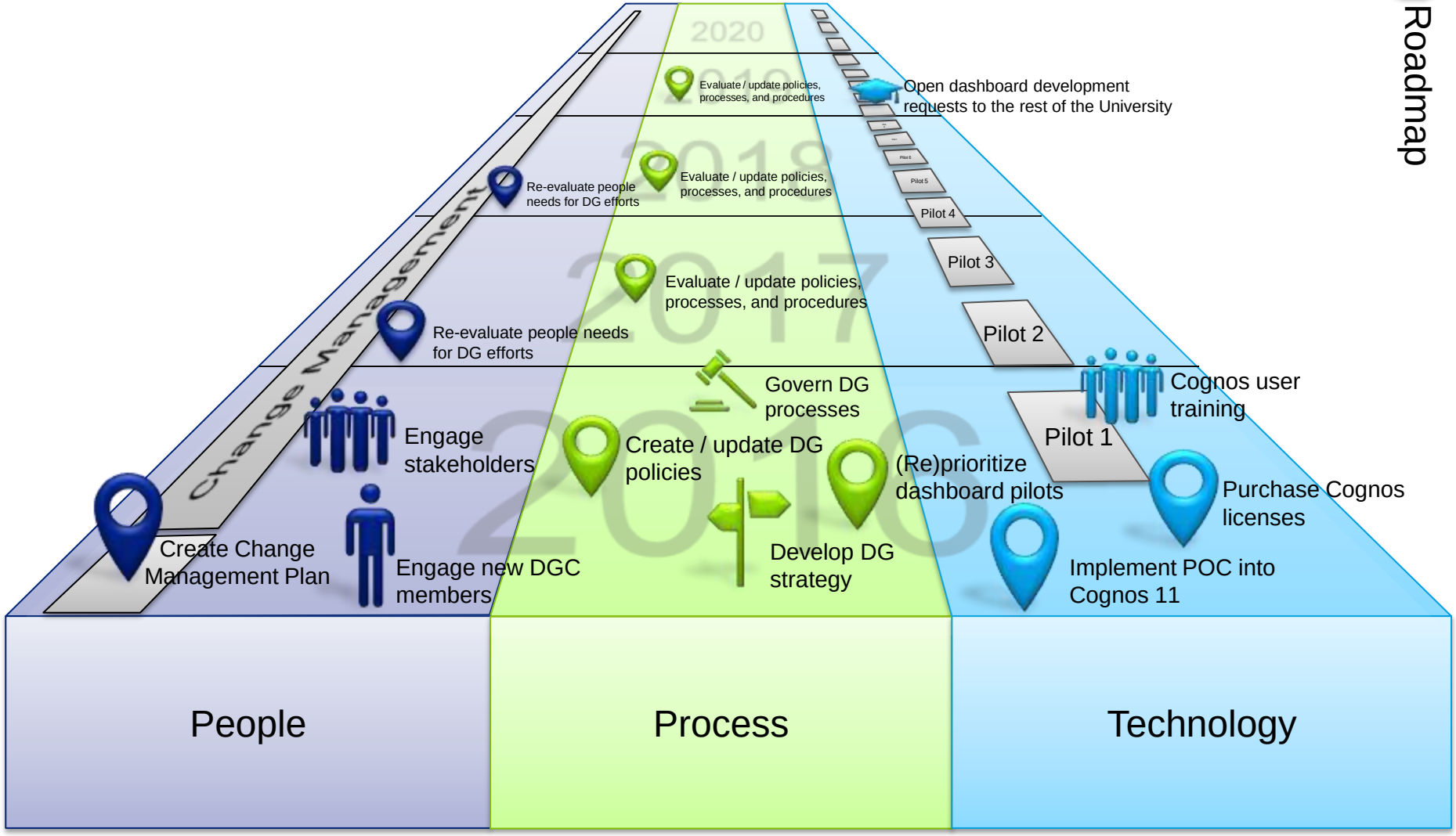
| Audience / role | Areas of responsibility | Level of Analysis | Questions the audience needs to answer |
|---|---|---|---|
| **Administrators** | • Budgeting | Medium | • How best do I allocate our resources (funding, buildings, assets) for use by faculties?<br>• How do my expenses compare to previous years?<br>• How do the faculties'/University's expenses compare with the budgets?<br>• How do we compare actual costs against planned budget?<br>• How much money will we need to fund the program next year?<br>• How am I utilizing my budget in comparison with other faculties/departments?<br>• What are my costs per student?<br>• What are my current operating expenses/costs?<br>• What will my fixed and operating budget look like for the next period (months/years)? |
| **Deans** | • Strategic planning<br>• Budgeting | Medium | |
| **AVP External Relations** | • Budgeting | Medium | |
| **AVP ORP** | • Financial planning and budgeting<br>• Strategic planning | High | |
| **AVP Financial Services** | • Financial reporting / accounting<br>• Strategic planning | Medium | |

**Metrics / data used to answer questions**

- Comparison/trends of budget spend for specific unit, for each faculty, and for the University as a whole
- Difference between budget vs. actuals
- Dollar figures for salaries, wages, materials, travel expenses, utilities, building, etc.
- Dollar values, comparison of budget to actual, composition of budget - salaries, capital expenses, operational expenses, etc.
- Student enrollment numbers
- Requested operating spend
- Trends in prospect students
- Current number of FTEs across University (FT/PT)
- Current/potential workload of faculty members
- Current conditions of buildings
- Lease agreements of buildings
- Trends/comparative figures for salaries, wages, materials, expenses, utilities, etc.
- Year-on-year trends of figures for salaries, wages, materials, expenses, utilities, etc.

# Roadmap

# Roadmap


2020
2019
2018
2017
2016
Change Management
Evaluate / update policies, processes, and procedures
Open dashboard development requests to the rest of the University
Re-evaluate people needs for DG efforts
Evaluate / update policies, processes, and procedures
Pilot 6
Pilot 5
Pilot 4
Pilot 3
Pilot 2
Pilot 1
Evaluate / update policies, processes, and procedures
Re-evaluate people needs for DG efforts
Govern DG processes
Cognos user training
Engage stakeholders
Create / update DG policies
(Re)prioritize dashboard pilots
Purchase Cognos licenses
Create Change Management Plan
Engage new DGC members
Develop DG strategy
Implement POC into Cognos 11
People
Process
Technology

# Roadmap – 120 day view



| Immediate Next Steps | 30 day focus | 60 day focus | 90- 120 day focus |
|---|---|---|---|
| Checklist activities:<br>Taking the Transition Deliverable, assess required changes to policies, standards, process, metrics that already exist in the University<br>Gap identification | | | |
| Define Data Strategy including Programs and business cases for:<br>Data Standards Management<br>Master Data Management<br>Data Quality<br>Metadata / Data Dictionary Management<br>Data Architecture and Data Model | | | |
| Define key data domains to focus on: student, alumni and finance data<br>Standup DGO role and consolidate data governance linkages to Subject Matter Expert Working Groups and University related areas into a DGO communication and reporting structure | | | |
| Define Change Management Program<br>Communication needs assessment<br>Audience analysis<br>Training needs assessment<br>Communication plan: what, who, when, how | | | |
| Stand up Cognos Capabilities<br>Licensing agreements<br>Tool implementation<br>Resourcing the team<br>Training the team | | | |
| Stand up project, communication, and metadata management capabilities | | | |

# Roadmap – from 120 to 365 days



| Immediate Next Steps | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|
| Data Governance Council institutionalization DGO and DGC Chair to interview Data Governance Council resources to build agenda of key priorities for the first 4 month focus. | | | | | | | | | |
| Define Data Definition Program:<br>• Key Business Terms<br>• Business data definitions<br>• Data Certification<br>• Data Classification<br>• Data Standards | | | | | | | | | |
| Define Data Collection and Data Storage Management Program:<br>• Identification of Master Data<br>• Authoritative master data sources<br>• Master Data Management practices | | | | | | | | | |
| Define Data Quality Program<br>• Business Data Quality Targets<br>• Data quality detection<br>• Data quality remediation<br>• Data defect prevention | | | | | | | | | |
| Define Metadata / Data Dictionary Management Program<br>• Metadata capture and storage<br>• Metadata publication<br>• Business rules management<br>• System of record maintenance | | | | | | | | | |

** The program definition is done in partnership with IS*

# Milestones Plan – Short, mid and long-term overview

Roadmap

| | Major Milestones | Short-term: 12 months | Mid-term: 12 - 24 months | Long-term: 24-36 months |
|---|---|---|---|---|
| Establish, plan and quick wins | • DGC in place, DGO is executing<br>• Change management assessment and high level plan complete<br>• Cognos capabilities staffed and stood up<br>• Project, communication, and metadata management capabilities stood up<br>• Data governance what, why, how, who, and when are communicated to the University<br>• Data communities defined and stood up for student, alumni, and finance data domains<br>• Policies, standards and processes developed and implemented<br>• Data strategy developed<br>• DGO is working collaboratively with IS partners and Subject Matter Working Groups<br>• Work on 1 or 2 additional PoCs | 120 Day Plan | | |
| Institutionalize | • Data Programs developed and implemented<br>• Data Governance Council recurrent membership established and secured<br>• Data programs producing sustainable benefits<br>• All data communities and classes engaged<br>• Data metrics and reporting to board level provides value to different forums<br>• Data enablement formalized | | | |
| Strategic leverage | • Advanced analytics embedded in dashboards used in a day to day management and processes throughout the University<br>• Strategic planning driven by data analysis and some predictive analytics<br>• Integrated data with right level of quality<br>• Benefits pay to invest in advanced modeling and planning for technology refresh | | | |

# Roadmap – Cognos dashboard preparation



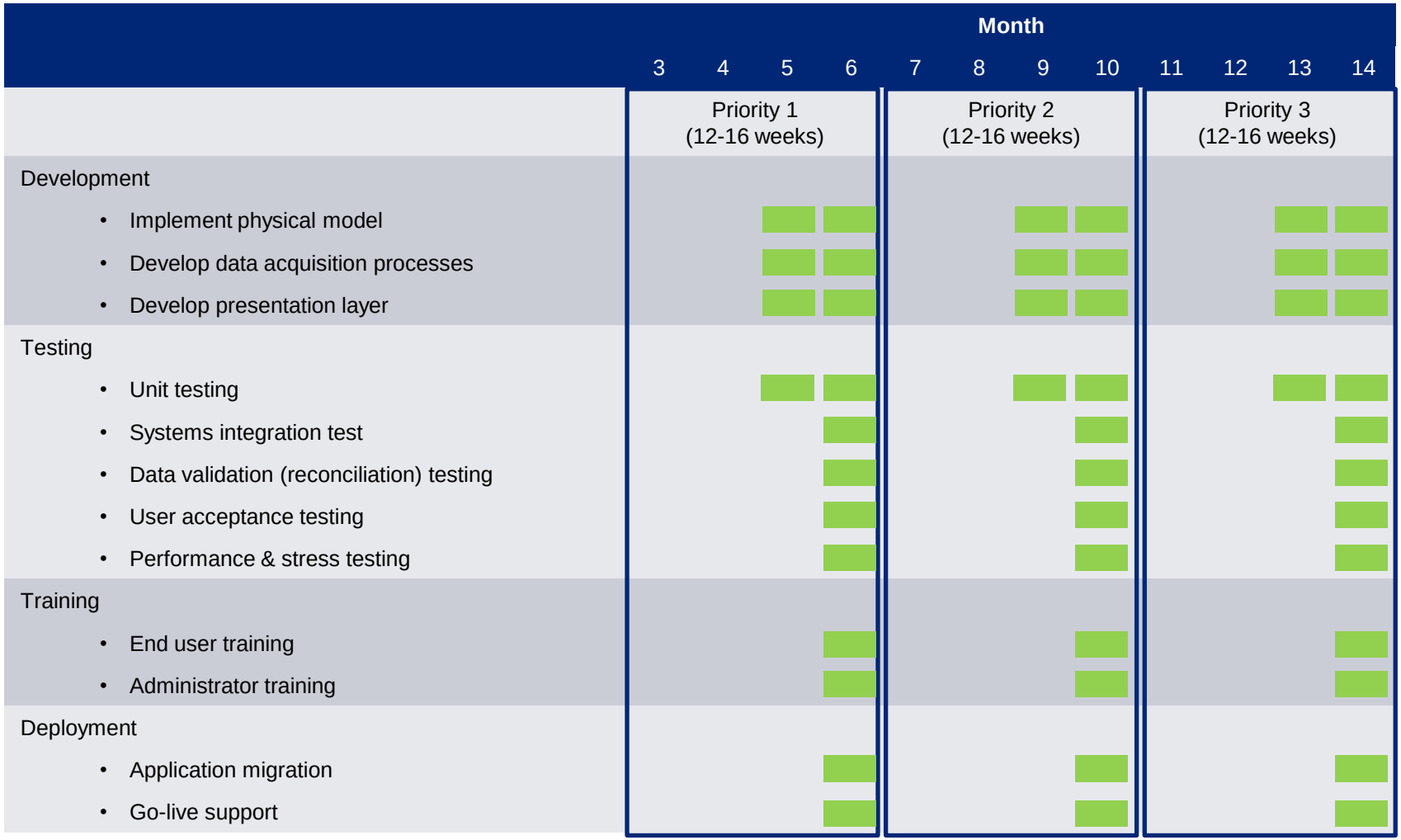
| | June 2016 | July 2016 | July 2017 |
|---|---|---|---|
| Technical Strategy and Architecture | | | |
| • Information architecture | | | |
| • Environment strategy | | | |
| • Database approach and design standards | | | |
| • Data acquisition approach and design standards | | | |
| • Presentation layer approach and design standards | | | |
| Cognos Standup | | | |
| • Implement Cognos 11 | | | |
| • Refine POC and turn into 1st production dashboard | | | |
| • Continue to develop data cookbook | | | |
| • ETL RFP and integration with the cookbook | | | |
| • Project management development stand up | | | |

# Roadmap – Cognos dashboard development



# Roadmap – Cognos dashboard development cont'd



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