



Institutional Data Governance

Best Practice Assessment & Critical Analysis / Recommendations

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Version 2.0

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For a complete list of Working Group members, see Participants (Appendix A)

Document History

Author/Contributor	Rev #	Date	Comments on Revision
Robert S. Seiner – KIK Consulting	0.1	2019-02-01	Draft Version 0.1. Template provided to UCalgary.
Kristen Kallstrom	0.2	2019-02-08	Added Appendices A and B
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Executive Summary: Data Governance Best Practice Assessment and Critical Analysis

This **Data Governance Best Practice Assessment & Critical Analysis** identifies the requirements for The University of Calgary (“UCalgary”) to institutionalize a Data Governance (“DG”) Practice focused on improving the University’s use of strategic data with confidence. Strategic data is the “data that enables informed decision making”, while confidence in that data equates to “validating and trusting that the data is accessible and timely, complete and accurate, understood and secured”.

UCalgary is developing the DG Practice to formalize accountability and increase the value of data as a cross-University asset. As part of the DG Practice, the UCalgary is planning to provide central and common understanding of how business data is defined, produced and used across the University.

UCalgary contracted with Robert S. Seiner of KIK Consulting & Educational Services, a recognized leader in the field of Data Governance, and Kristen Kallstrom (Business Analyst) to assist the University in the definition and implementation of its DG Practice. KIK Consulting has proposed a two-phase effort.

1. Phase 1 is already underway and is focused on delivering the DG Best Practice Assessment and Critical Analysis (this document). The resulting assessment artifacts (recommendations and actionable streams) directly feed into the UCalgary Actionable DG Roadmap as the second deliverable for Phase 1. The DG Roadmap will outline how to achieve a successful DG Practice at UCalgary.
2. Phase 2, beginning in Q2-2019, will focus on the development and deployment of the DG Practice. The DG Practice will include 1) DG roles and responsibilities, 2) a detailed DG communication and awareness plan, and 3) the incremental deployment of DG throughout UCalgary by providing guidance and leadership to the Business Units focused on improving the confidence and quality of critical and Strategic data.

It should be noted that the term “Data Quality” does not refer only to the accuracy or completeness of the data; there are many other aspects on which data quality is measured. At UCalgary one of the most commonly cited data quality issue is the discrepancy in data definitions. Such discrepancies in semantics are an important aspect of data quality, specifically of the quality of the metadata.

While actively working on the Phase 1 deliverables, the UCalgary is simultaneously benefitting from the mentoring and guidance of KIK Consulting on several of the recommendations and actionable streams documented as Phase 2 activities as part of this assessment.

UCalgary is following KIK Consulting’s Non-Invasive Data Governance approach to formalize existing levels of responsibility and accountability for data in a non-threatening way throughout UCalgary.

The UCalgary has elected to take a “best practice” approach to DG by selecting those industry-accepted best practices most relevant to its circumstances and customizing them to fit UCalgary structure and culture. Working with the Data Governance Working Group (DGWG), best practices that define the future desired state of data governance for UCalgary were documented and used as a benchmark to assess the current state.

Assessment Approach

DG Best Practices provide the basis for standing up a formal DG Practice.

KIK and UCalgary (Data Governance Working Group) first defined a limited number of best practices that are relevant for UCalgary’s specific DG requirements and circumstances. The DG best practices can be thought of as the behaviour that the organization will be required to achieve and maintain common ‘ways of doing things’ around the governance of data.

With the best practices defined, the gap-risk assessment was completed by identifying and articulating the differences between UCalgary present practices and the best practices defined for the UCalgary DG Practice. This assessment articulates the risks associated with the gaps and concludes with recommendations of next steps for eliminating (or narrowing) the gaps described.

Assessment Participants

A Data Governance Working Group (“DGWG”) was formed by UCalgary to facilitate and manage the delivery of the Data Governance Practice to deliver Strategic data with confidence. Each of the DGWG members (plus other individuals from their respective Business Units) participated in thorough interview sessions focused on comparing UCalgary’s present practices to the best practices defined in this document. These individuals and meetings have been instrumental in providing information and feedback leading to the development of this assessment and critical analysis.

For a complete list of people that participated in the sessions, please see [Appendix A](#).

UCalgary Data Governance Definition and Best Practices

The definition of Data Governance adopted by UCalgary is:

Data Governance is the specification of decision rights and an accountability framework to encourage desirable behaviour in the valuation, creation, storage, use, archiving and deletion of data.

To accomplish the formalized and guided behaviour over UCalgary data, cross- organizational adherence to DG best practices will be required.

Two criteria were used to evaluate which Best Practices were particularly relevant to UCalgary:

- The best practice is practical, understandable and enforceable given UCalgary culture and Business Unit relationships.
- The DG Practice will be at-risk or destined to be ineffective if the best practice is not accomplished.

The list below provides a summary of the five Data Governance Best Practices required for UCalgary:

1. Senior Leadership Backing

There is a high level of UCalgary Senior Leadership support, sponsorship and understanding of the Institutional Data Governance Practice, established in a Data Governance Policy approved by senior leadership.

2. Resource Commitment

UCalgary is committed to providing resources focused on the definition, development, execution and sustainability of the Institutional Data Governance Practice on a continual basis.

3. Policy and Standards

The Data Governance Policy and operating standards are required as the backbone of making the action and assurance of governing data “not optional”.

4. Defined Expectations, Roles and Success

The goals, scope, expectations, measurements of success, and roles and responsibilities of the Institutional Data Governance Practice are well defined, approved by UCalgary Senior Leadership and communicated with the business units (including IT).

5. Consistency of Application

Data Governance is applied to all UCalgary business data, technical data, and metadata consistently across the organization.

The underlined words, as well as other frequently used terms are defined in Appendix B.

Findings from Data Governance Working Group Interviews and Meetings

Observations – Strengths to Leverage

- In general the interviewees felt that senior leadership supports and sponsors this initiative. The approval of funding for the initial phase is indicative of this support.
- The existence of the Information Asset Management Policy and the Information Asset Management Committee over the past two years shows that there is a keen interest in the management of information assets.
- In general the respondents felt that initial resourcing of projects was usually done well but that continuous resourcing for ongoing initiatives is not done as well.
- The Information Asset Management Policy has been successfully passed and implemented; a data governance policy should be associated with that.
- Several units have already implemented some guidelines and standards around data governance; this work can be leveraged in creating the data governance policy and standing up the practice.
- UCalgary is generally good at defining roles, scope, measurements of success, etc., for projects, but it is at the operational level that it isn't as well done. There are some examples where this is happening within individual business units, e.g., the VERA MDM project in the Cumming School of Medicine, the Information Asset Management Policy, etc.

Observations – Opportunities to Improve

- There is a general belief that while senior leaders are supportive, their understanding of the data governance issues being presented to them may be incomplete.
- The university is a very complex organization; academic units have a lot of independence and autonomy, and there are several different governing bodies. There is not a clear “chain of command” as there is in other types of organizations. These factors need to be taken into account when instituting an overarching approach to data governance.
- Historically, initiatives have failed due to lack of continued budget and resourcing. Senior leadership needs to ensure continued support, beyond the initial funding. Sustaining resources to business units is a permeating problem. Recommendations have been made in the past, projects started, but then not sustained, e.g., a data dictionary was started but was not maintained.
- Projects are resourced, but once they are operationalized they no longer receive the resourcing they require for sustainment. There needs to be a plan detailing how to prioritize projects competing for resources/budget.
- This should not be a “mighty project”. Historically multi-year projects have not been successful at UCalgary. There needs to be well-defined interim milestones and goals. The measurements of success and scope have to be at an appropriate granularity.
- Data Governance is seen as resource intensive. Managers want to base decisions on good data, but they don't always understand that reliable results can only be obtained from clean/complete/commonly understood data, which requires good data governance practices.

- There is concern about the continuity and change management aspects of the DG practice once it is established. These issues need to be addressed by the practice and the approach has to have the backing of management.
- Currently, requests for data at the university can be an uphill battle, conversely, because there are no clear rules, some units feel unduly pressured to share data that they don't feel they can due to security/privacy issues. An institutional agreement, based on trust, as well as an escalation and dispute resolution plan are required.
- UCalgary has excellent policies but they are not well communicated nor rolled out to business units. There needs to be a clear approach for communicating the new policy and a comprehensive roll out plan so that everyone is aware of the data governance rules and standards and how they affect them.
- The siloed nature and the level of autonomy within units typically makes it more difficult to maintain consistency when applying standards and guidelines.
- There is no definitive "system of record" for data, and no clear roles with respect to data stewardship.

Gaps between the Observations and Best Practice / Risks Associated with Gaps

- UCalgary's reputation is at risk if there are inconsistencies in data or in how metrics are measured and reported.
- Currently a data governance policy does not exist; one must be created in a consultative manner and approved by senior leadership.
- The University does not have standardized and generally accepted data governance roles and responsibilities – they need to be identified and recognized to provide continuity to the practice.
- A formal communication and education plan is required to apprise senior leadership of data governance issues and objectives.
- The data and process siloes between units need to be reduced as much as possible, while maintaining appropriate levels of autonomy.
- The goals, scope, expectations, measurements of success, and roles and responsibilities of the data governance practice must be developed in a consultative manner that includes stakeholders from all the business units. These must then be communicated and enforced consistently across all units.
- A data stewardship program with clearly defined roles and responsibilities is required.
- There is no enterprise source of data-related policies and supporting documents that apply to all business data.

Recommended Actions Based on the Assessment

Eight recommendations from the University of Calgary (“UCalgary”) Data Governance Best Practice Assessment and Critical Analysis are presented below.

1. Identify **resource(s) to implement and administer** the ongoing DG practice after planning activities are completed. Define the responsibilities of the Data Governance Working Group (DGWG) and other roles including executive, strategic, tactical, operational, and support roles moving forward after the assessment and roadmap are completed. (Response to Best Practices below – 1, 2, 3, 4, 5)
2. Develop and gain Senior Leadership understanding and approval of a **University Data Governance Policy, Guidelines, or set of Standard Operating Procedures** (DGWG will guide this decision) focused on improving the use of strategic data with confidence. Confidence is defined as trusting that the data is accessible and timely, complete and accurate, understood and secured. (1, 3)
3. Create, document and deploy **processes and rules for improving data quality** that must be communicated, made available and enforced across the UCalgary. Improve the awareness of the policies, regulations and accountability associated with actions taken with strategic data. (3, 4)
4. Develop and coordinate **minimum standards for improving the data quality and confidence** in the University’s strategic data at the Business Unit level. (1, 3, 4, 5)
5. Utilize existing technologies (if possible – if not, investigate) to provide an **enterprise resource (repository) of data-related policies, procedures, guidelines**, tools and supporting documentation. (Minimum standards must be adhered to; standard can be exceeded.) (2, 4, 5)
6. Identify **UCalgary staff responsible and accountable** for improving strategic data quality and understanding. Target these employees (data owners/trustees, stewards, custodians, etc.) for promoting adherence to UCalgary Data Governance processes and activities. (2, 4, 5)
7. Develop and communicate a set of **enterprise level success metrics** for measuring and improving the quality and the confidence in the data. This should include measures of the impact of the practice (e.g. reduced numbers of data incidents, improved and consistent levels of awareness regarding data quality, enforcement across the University and time to respond to data and report requests). (4, 5)
8. Develop and follow a **communications and awareness plan** associated with the roll out of the Data Governance practice. Identify, build and deliver training, education and job-aids associated with practice Orientation, Onboarding and Ongoing communications at the executive, strategic, tactical, operational, and support levels. (1, 2, 4, 5)

UCalgary DG Best Practices
1 – Senior Leadership Backing
2 – Resource Commitment
3 – Policy
4 – Defined Expectations, Roles and Success
5 – Applied Consistently

Data Governance Actionable Streams

The following Actionable Streams are the specific activities that are recommended for UCalgary to consider when standing up their Practice.

Actionable Streams These Streams will be the basis of UCalgary Data Governance Roadmap Deliverable
Actionable Stream 1: Data Governance Model of Roles and Responsibilities Develop and deploy a UCalgary Data Governance model of roles and responsibilities. <i>Will include roles of DG admin, DGWG, Risk, IT security, RM, data owners, business units, ...</i>
Actionable Stream 2: Data Governance Communication and Awareness Plan Develop and act on a UCalgary data governance communication and awareness plan focused on the use of strategic data with confidence.
Actionable Stream 3: Incremental Roll Out Incrementally roll out a UCalgary Institutional Data Governance Practice via an approved schedule. <i>Initiate with pilot followed by subsequent UCalgary business units or critical data elements (CDEs).</i>
Actionable Stream 4: Data Governance Administrator Identify, organize, place and deploy a DG Administrator.
Actionable Stream 5: Data Documentation Repository / Metadata Platform Evolve a UCalgary data documentation repository and metadata platform (leverage, build or acquire) supporting the UCalgary's ability to use Strategic Data with confidence.
Actionable Stream 6: Performance Metrics Deliver a set of performance metrics that focus on UCalgary strategic data quality and confidence.
Actionable Stream 7: Data Governance Policy Deliver a data governance policy to cover UCalgary with a plan of action for using strategic data with confidence.

Appendix A: Complete List of Data Governance Session Participants

Data Governance Working Group – Full Membership

Name	Department	Role/Title	Data Trustee (VP)
Adnan Ahmed	Office of Institutional Analysis	Director, Office of Institutional Analysis	Provost and Vice-President (Academic)
Anju Visen-Singh	University Relations	Senior Director, Marketing and Digital Experience	Vice-President (University Relations)
Brad Klaiber	Financial Reporting	Director, Financial Reporting, Financial Reporting Ops	Vice-President (Finance and Services)
Brent McPherson	Facilities	Specialist, Records Management, Campus Engineering	Vice-President (Facilities)
Daniel Gresl	Archives and Special Collections (Libraries and Cultural Resources)	Electronic Records Mgmt Coord, Archives & Special Collections	Provost and Vice-President (Academic)
Guillermo (Will) Fiebelkorn	Cumming School of Medicine	Privacy and Records Officer	Office of the General Counsel
Holger Reusch	Internal Audit	Sr. Consultant, Audit Lead D&A, University Audit Services	Vice-President (Finance and Services)
Jean Gomes	Office of Institutional Analysis	Sr. Institutional Analyst, Office of Institutional Analysis	Provost and Vice-President (Academic)
Jeff Bowes	IT - Governance and Architecture	Manager, Enterprise Systems Planning, Architecture & Security (IT)	Vice-President (Finance and Services)
John Gretton	IT - Business intelligence	Architect, Business Intelligence, BI, Analytics & Integration (IT)	Vice-President (Finance and Services)
Katharine Kinnear	Legal	Coordinator, FOIP, University Legal Counsel	Office of the General Counsel
Louise Percy	HR Reporting	Manager, Process Transformation, HR Process Transformation	Vice-President (Finance and Services)
Scott Vujanovic	IT - Business intelligence	Associate Director, Business Intelligence (IT)	Vice-President (Finance and Services)
Steven McLaughlin	Enrolment services	Associate Registrar, Planning & Sys, Registrar's Office	Provost and Vice-President (Academic)
Wade Walker	Development Data	Director, Development Data, Development and Advancement	Vice-President (Development and Alumni Engagement)

In addition to the working group members, the following people also participated in the interviews:

Name	Department	Role/Title
Mehran Dilmaghanian	Development Data and Reporting	Manager of Development Data Systems
Russell Smith	Development Data and Reporting	Senior Data Analyst
(Jusang) Jeff Lee	Registrar’s Office	Assistant Registrar, Planning Systems
Raymond Johnson	Marketing	Marketing and Communications Technologist
Natalie Jayawardena	Community Engagement	Data and Email Marketing Coordinator
Ubong Henshaw	HR Process Transformation	Senior Analyst, Systems and Reporting

Data Governance Interview Schedule

Date	Group
2019-01-30	Facilities
2019-02-01	Development Data
2019-02-04	Legal
2019-02-05	Archives and Special Collections
2019-02-06	IT - Governance and Architecture
2019-02-06	IT - Business intelligence
2019-02-07	Registrar’s Office
2019-02-11	Internal Audit
2019-02-13	University Relations
2019-02-14	HR Reporting
2019-03-06	Financial Reporting

Appendix B: Definitions of Terms

As Data Governance is a relatively new discipline for UCalgary, it is necessary to include a brief glossary of terms used in the definition of the Institutional Data Governance Practice and supporting information. The terms are presented in alphabetical order.

- **Best Practices** – A series of procedures that are accepted and prescribed as being most effective for achieving specific goals.
- **Business Data** – Data that relate to the UCalgary’s administrative functions, including its services, operations, finances, transactions, facilities, and student records.
- **Data Governance** – Data Governance is the specification of decision rights and an accountability framework to encourage desirable behaviour in the valuation, creation, storage, use, archiving and deletion of information.
- **Data Governance Policy** – formal statement produced and supported by UCalgary senior management that define the data governance rules and procedures for managing UCalgary’s strategic information assets.
- **Data Quality** – Data quality is assessed on several dimensions, including, but not limited to:
 - Accuracy
 - Completeness
 - Common understanding
 - Consistency
 - Integrity
 - Reasonability
 - Timeliness
 - Uniqueness
 - Validity
 - Accessibility
- **Data Stewardship** – Formalized accountability for following established governance practices for data and data-related assets. Stewards are people that are held formally accountable.
- **Decision Rights** – Decision rights identify what business and/or technical decisions need to be made to govern UCalgary strategic data and to drive alignment to the data governance policy; who is involved in making those decisions; and define the framework for how they will be made through operating processes and support tools.
- **ELT (Executive Leadership Team) Member** – The President, a Vice President or the General Counsel of UCalgary. The University of Calgary is committed to student success, to excellence in scholarship, research and creativity, interdisciplinary teaching and research, and to return to community. The President’s Executive Leadership Team ensures that these principles govern our priorities and influence our strategic allocation of resources.
- **FOIP** – the Freedom of Information and Protection of Privacy Act (Alberta), as amended.
- **Metadata** – Data, stored in IT tools, that improves both the business and technical understanding of data and data-related assets.
- **Technical Data** – Structure, format, and rules for storing data. Examples of technical data include column structure of a database table, keys and validation rules.

- **Trustee/Owner** – The person(s) with the authority to make or guide decision-making processes with respect to data across the University.
- **UCalgary Senior Management** – includes the Executive Leadership Team (ELT), University Secretariat, Deans, Vice-Deans, Vice- Provosts, and AVPs.