

Symposium on Algorithmic Government



Artificial Intelligence and Data Governance: Are we AI ready?

Prepared by: Mario Cantin, mario.cantin@prodago.com
April 24th, 2019



Today's Agenda

- 1** | Why we need to be AI ready
- 2** | What it means to be AI ready ?
- 3** | How to make it happen ? – TRV context
- 4** | Lessons learned / Key takeaways

Why We Need To Be “AI Ready”

Through 2022, over **75%** of organizations will use machine learning

“ **If your data is bad, your machine learning tools are useless** ”

- Dr Thomas Redman, Harvard Business Review, April 2018

AI grew **270%** in the past four years and **tripled** in the past year

37% of organizations have already implemented AI in some form

AI today solves one task exceedingly well, but if the **conditions of the task change** only a bit, it fails

GDPR requires explanation of automated decisions involving people

“ **... and potentially harmful** ”

- Hubert Laferrière, IRCC AAL, September 2018

Systems built on an immature and rapidly evolving technology such as machine learning will have **spectacular successes and dismaying failures**

Government of Canada funded \$125 million toward the Pan-Canadian AI Strategy and \$950 million for the Superclusters initiative

A key mechanism for delivering ethical AI is being open and transparent.
- Alex Benay, Canada CIO

AI & ML systems should be **developed and deployed with special care !**

TRV Context

Develop and implement analytics based risk triage to automate TR applications decision processes

- ! Incomplete and restrictive access to data
- ! No agreed upon standard of naming derived fields
- ! Inability to explore beyond a small subset of data
- ! Some data points not collected for all applicants

- ! Data Dictionary not available
- ! Incorrect matching of client's UCIs
- ! Lack of inheritance in models and scripts
- ! Textual Unstructured Data stored in SQL dbs

- ! Unclear / undefined processes to manage:
 - Model Explainability
 - Algorithm Trustability
 - Model Robustness
 - Model Certificability



- ! Some data points collected, but not available for AAL
- ! Generic fields used for data entry

- ! Flags creation should be pushed to Netezza
- ! Standard keywords not used by the Visa Officers

- ! Undefined / unclear processes to demonstrate:
 - Privacy & Security
 - Ethical compliance

IMPACTS OF DATA ISSUES

Limits capacity to automate application approvals

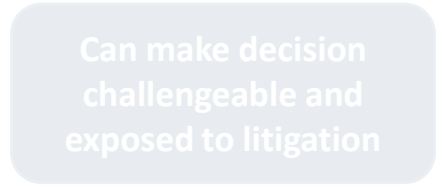
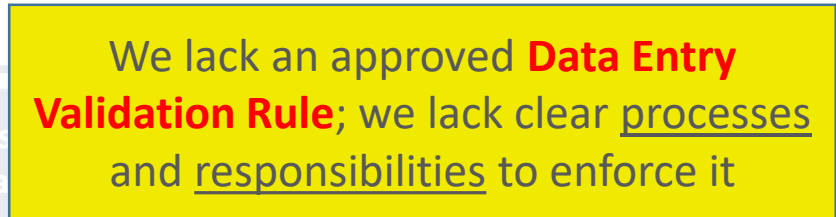
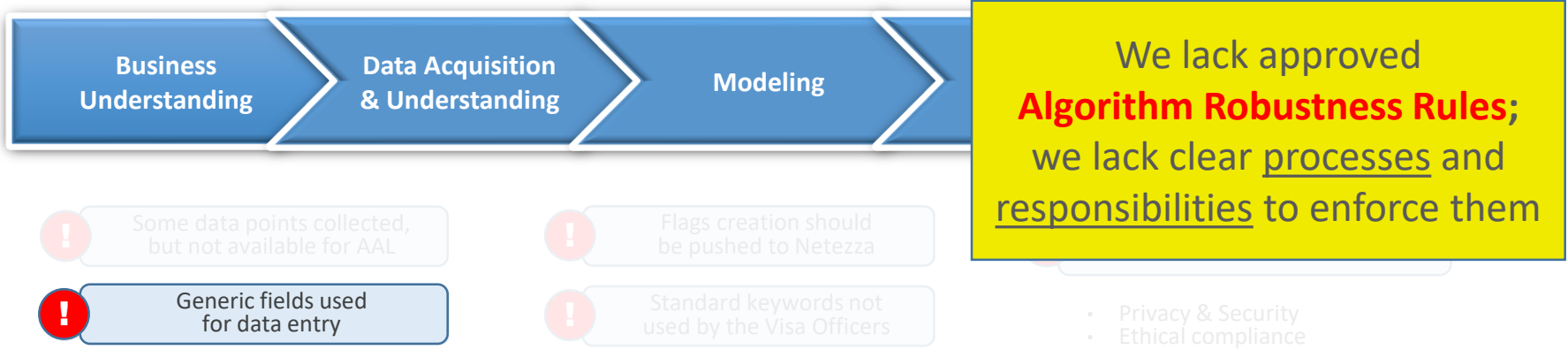
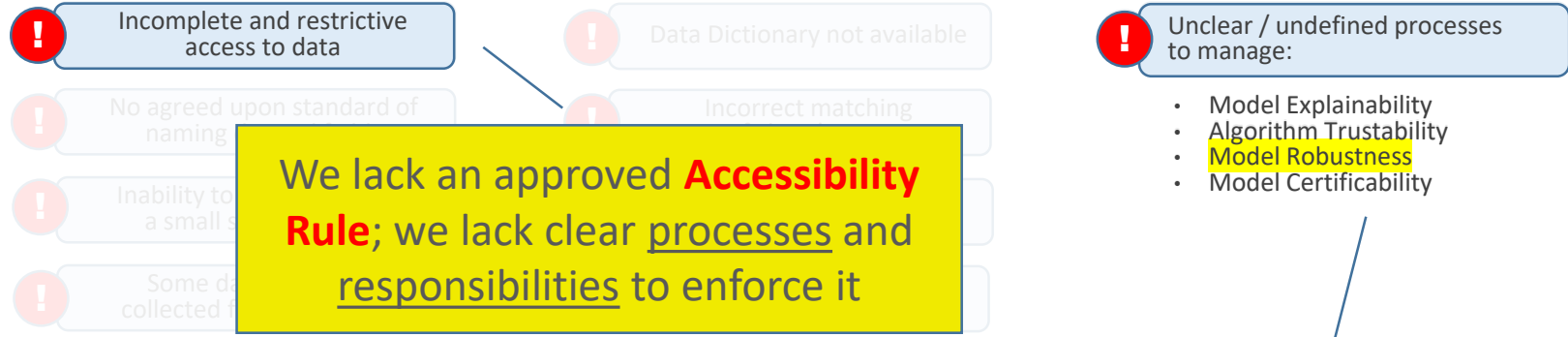
Impacts trust in algorithm results

Impacts IRCC capability to extend analytics

Can make decision challengeable and exposed to litigation

TRV Context

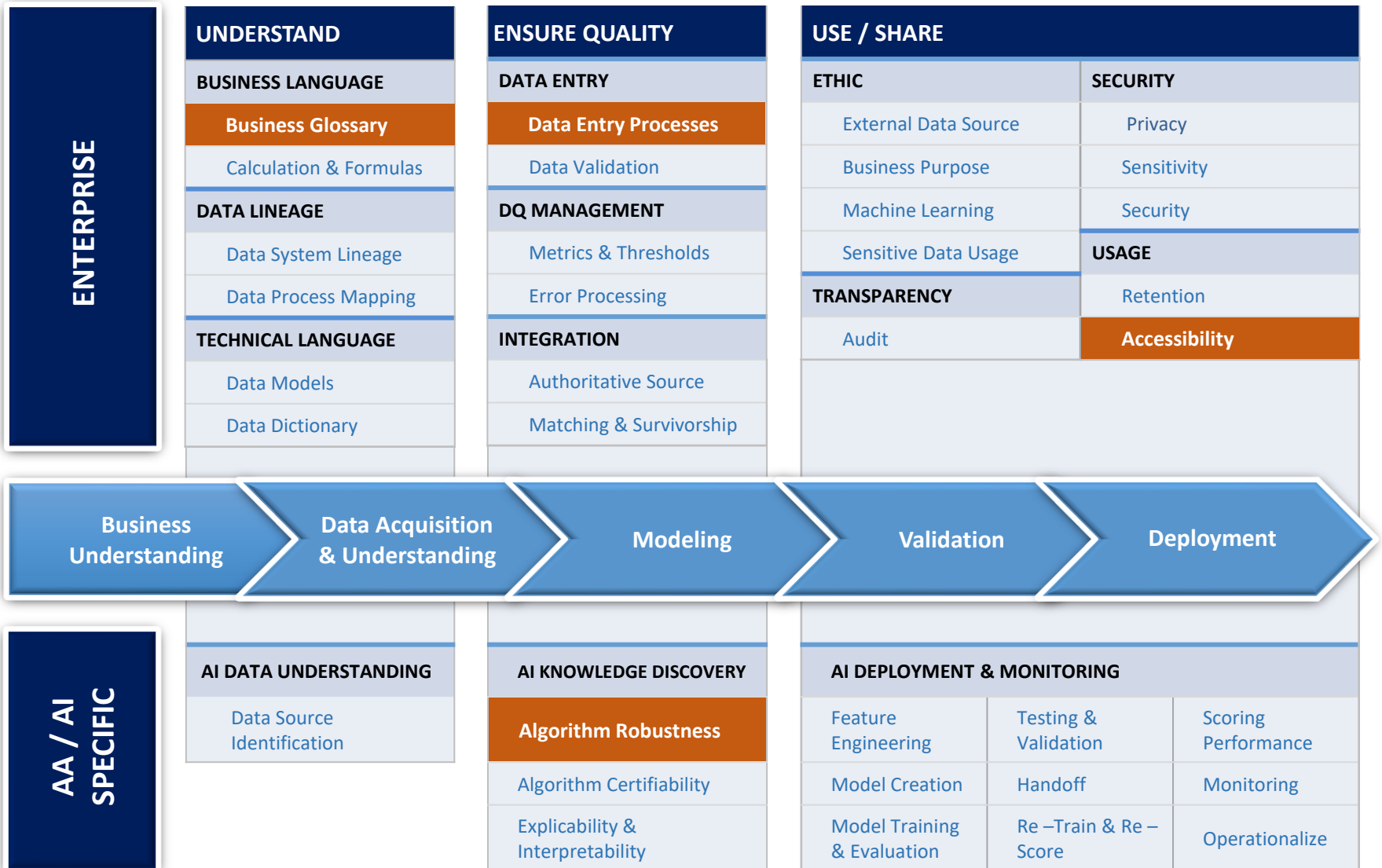
Develop and implement analytics based risk triage to automate TR applications decision processes



What It Means To Be “AI Ready”

It means ensuring that the required *rules, processes and responsibilities* related to the management of your data are *defined, approved, enforced and monitored*

The Required Rules, Processes & Responsibilities



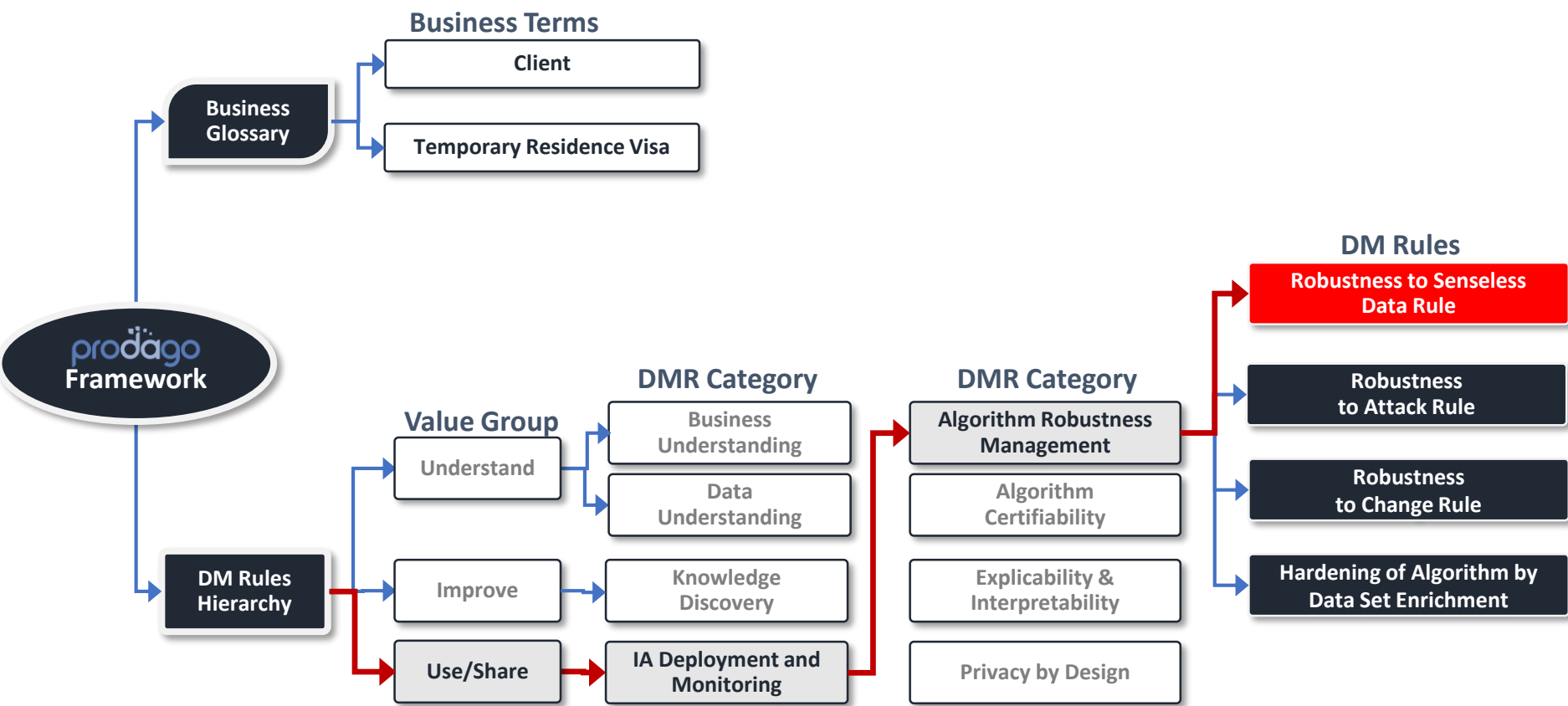
The Required Rules, Processes & Responsibilities

Key Issues:

- Data Points inconsistently collected
- Standard key words not used by Visa Officers

Impacts:

Can make decision challengeable, exposes the department to litigation and increases the risk of refugee claims



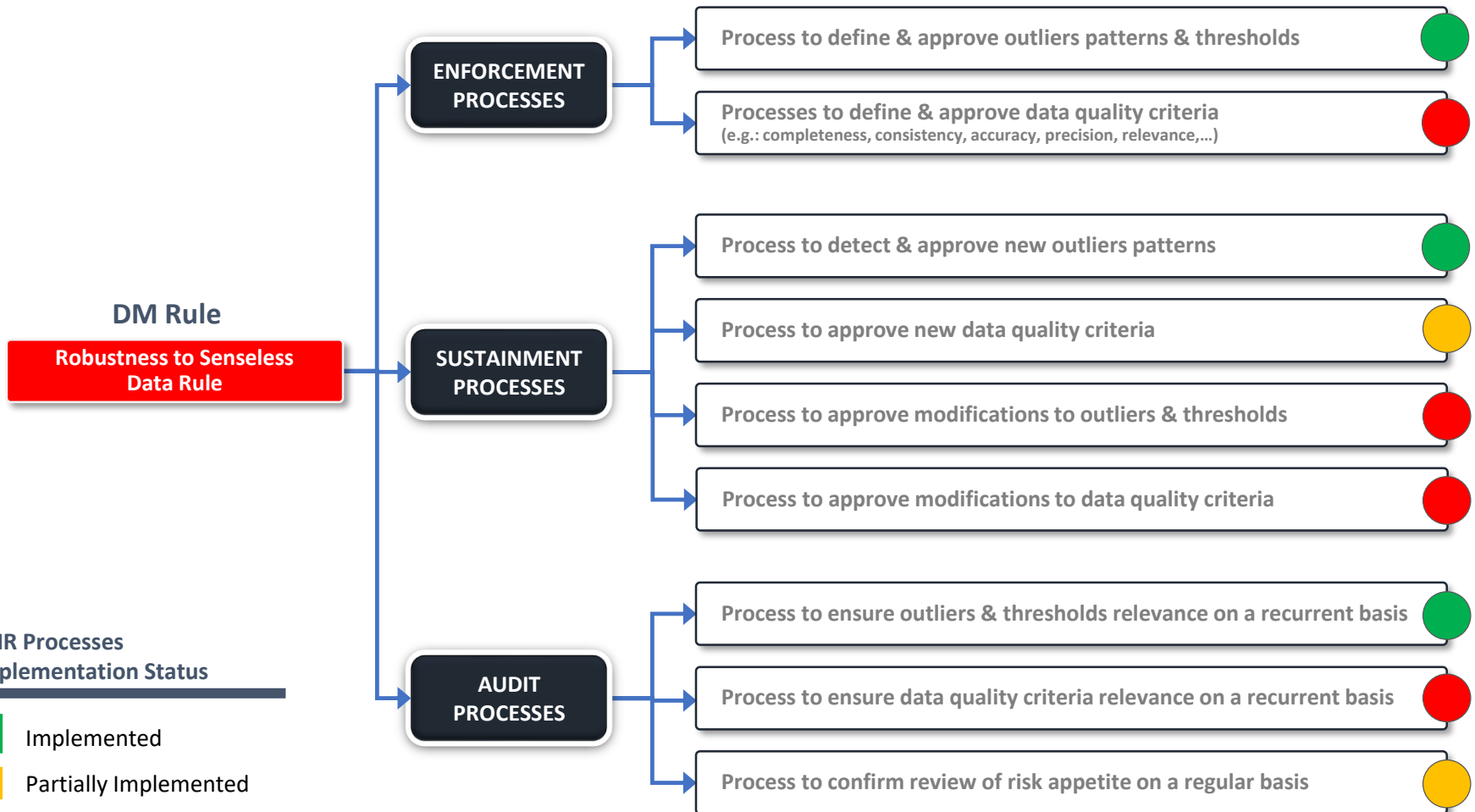
The Required Rules, Processes & Responsibilities

Key Issues:

- Data Points inconsistently collected
- Standard key words not used by Visa Officers

Impacts:

Can make decision challengeable, exposes the department to litigation and increases the risk of refugee claims



Temporary Resident Volume Management

DATA MANAGEMENT IMPLEMENTATION DASHBOARD

FILTER CRITERIA

DRAs

Value Groups

Data Rule Categories

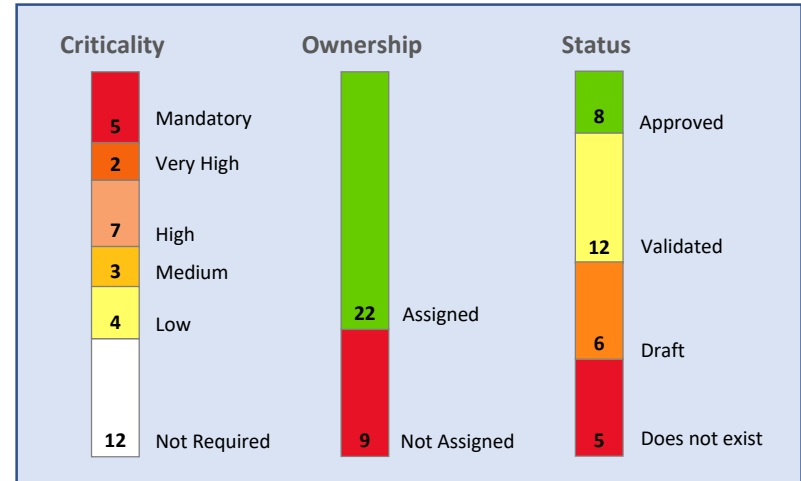
Data Rule Types

Data Rule Criticality

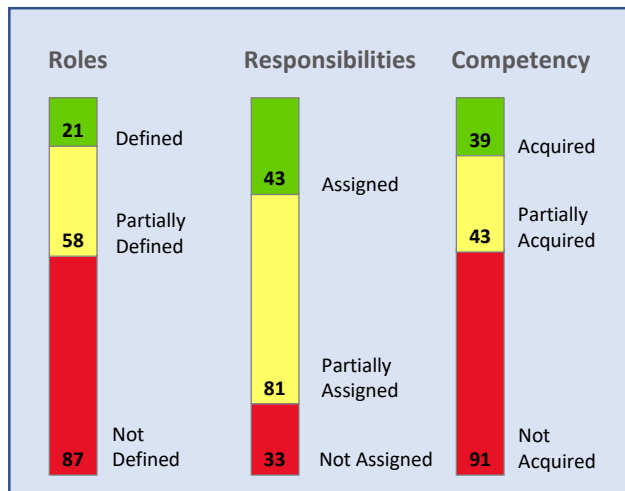
Policies enforced

Data rules

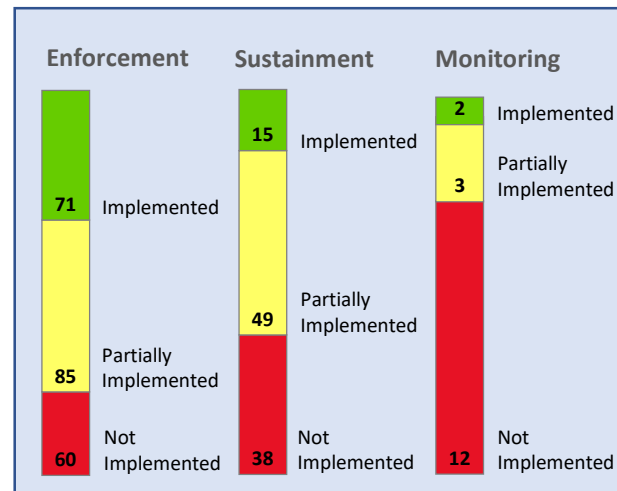
DATA MANAGEMENT RULES



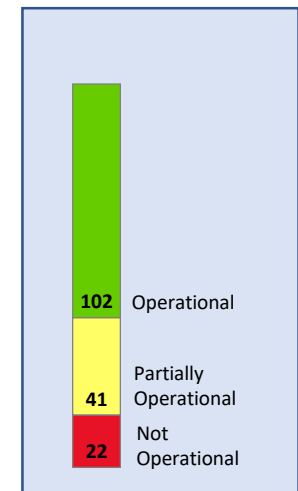
PEOPLE



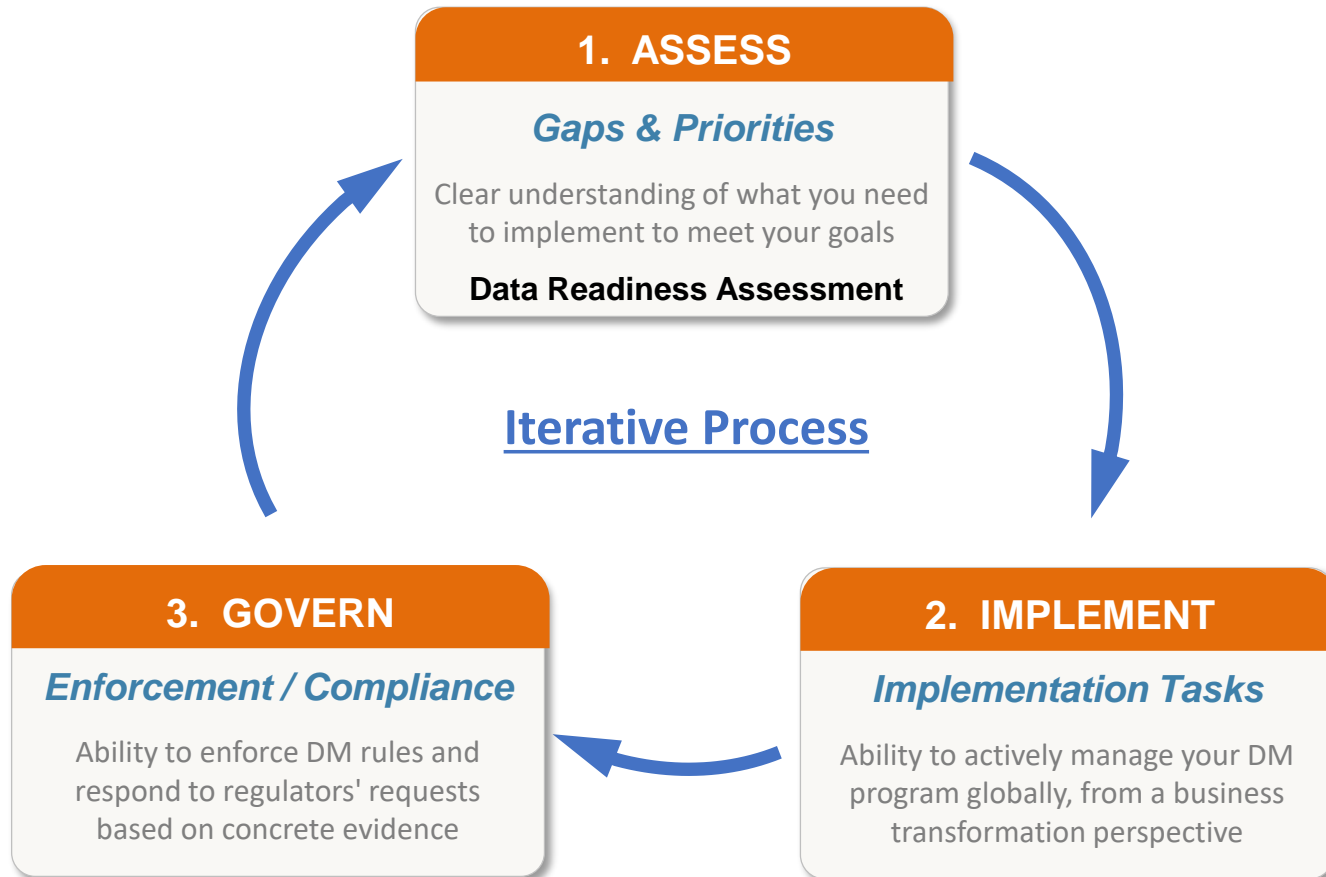
PROCESS



TECHNOLOGY



How to make it happen ? – TRV context



Key Takeaways

- AI readiness is critical
- Being AI Ready means that
 - The rules, processes and responsibilities specifically required by AI processes must be defined, approved, implemented and monitored
- AI Governance can be achieved, incrementally, by
 1. Assessing the gaps between your current and target state
 2. Implementing the identified priorities
 3. Governing the implemented rules, processes and responsibilities

Are you AI Governed ?