DFO Data Stewardship and Data Quality Initiatives

GoC Data Conference 2021

February 18, 2021

The Office of the Chief Data Officer

Purpose

- The purpose of this presentation is to provide an overview of the data stewardship and data quality approaches used at DFO.

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DFO's Journey – What are our drivers?

Data Strategy Roadmap for the Federal Public Service
- The need to become a more data-driven organization that systematically uses data to:
  - inform decision making (e.g. for the creation of new policies, programs, initiatives)
  - evaluate our performance (i.e. improved reporting on results)
  - improve service delivery to Canadians. (i.e. reduce impacts on operations that could reduce the ability to deliver key services)

DFO Data Strategy
- The need to account for and clearly understand our data assets
- The need for data to be viewed, treated and managed as a valuable corporate asset
- Overall, the need for data to be available, accessible, shareable, discoverable, interoperable, trusted, protected, secure & ethically managed using an enterprise approach
- The need for a data literate workforce

Review of Data Quality
- Numerous review and assessments of DFO data management maturity have indicated that DFO needs to improve its ability to recognize the importance of data as a key departmental strategic asset.
- Lack of information for decision-making has remained a mission critical risk for the Department for several years.

Policy on Service and Digital (TBS)
- Policy on Service and Digital advances the delivery of services and the effectiveness of government operations through the strategic management of government information and data and leveraging of information technology.

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The **DFO Data Strategy** was approved by DMC on 26 September 2019.

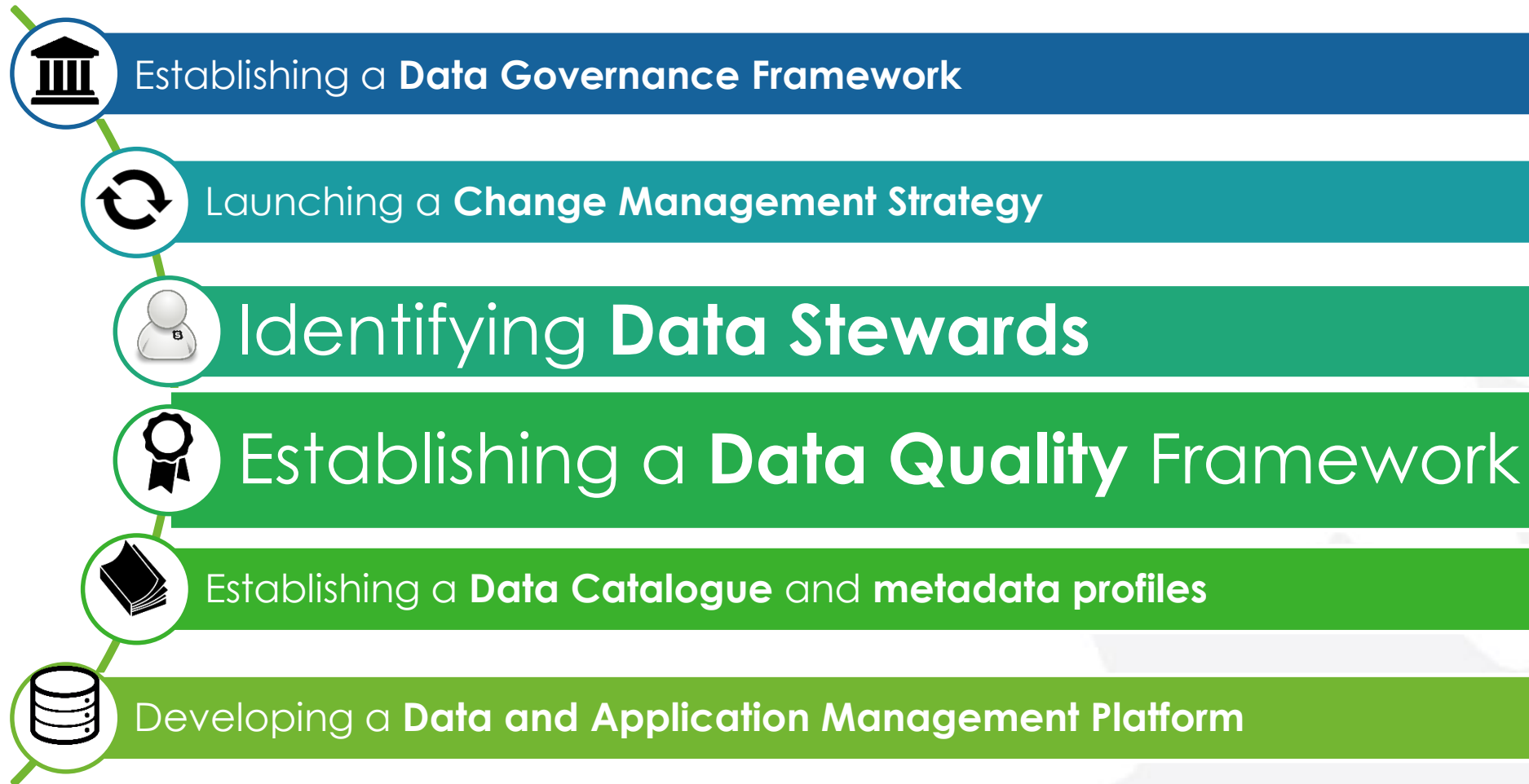The Data Strategy aligns with TBS Direction for a whole-of-government approach to data.

> **Data Strategy Roadmap for the Federal Public Service**
> - **Data Strategy** in place for **September 2019**
> - Establish **data accountabilities, roles and responsibilities**
> - Establish **Chief Data Officer (CDO)** and **Data Program**
> - Assess state of **data literacy** and required **data skills and competencies**
> - Review and update **legislative and policy frameworks**
> - Develop frameworks for **ethical** and **secure use of data**
> - **Secure user-friendly systems** to enable **data access for decision-making**
> - Foster **innovation** and **data analytics**

"Recommendations are **unfunded** but **will require incremental resources.**"

– *Report to the Clerk of the Privy Council: Data Strategy Roadmap for the Federal Public Service*

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2020-21 Data Strategy implementation is focusing on **foundational activities**.

- Establishing a **Data Governance Framework**
- Launching a **Change Management Strategy**
- Identifying **Data Stewards**
- Establishing a **Data Quality** Framework
- Establishing a **Data Catalogue** and **metadata profiles**
- Developing a **Data and Application Management Platform**

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# DFO Journey – Accomplishments and Work in Progress

Accomplishments to Date

- Established Data Governance Structure & Framework

- Developed the DFO Policy and Directive on Data and established roles and responsibilities across the department.

- Established various data management working groups including: data quality, metadata, reference data, data catalogue, & artificial intelligence.

- Developed the departmental DQ framework, and data steward implementation model

Currently in Progress

- Standing up data stewardship and data quality programs

- Data Management Platform Pilot – development of DFO's departmental data catalogue

- Proof of concepts with respect to AI to support decision making

- Creation of the data sharing working group

- Alignment of BADM with data stewardship

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# Data Stewards – Central Role in Enterprise Data Management*
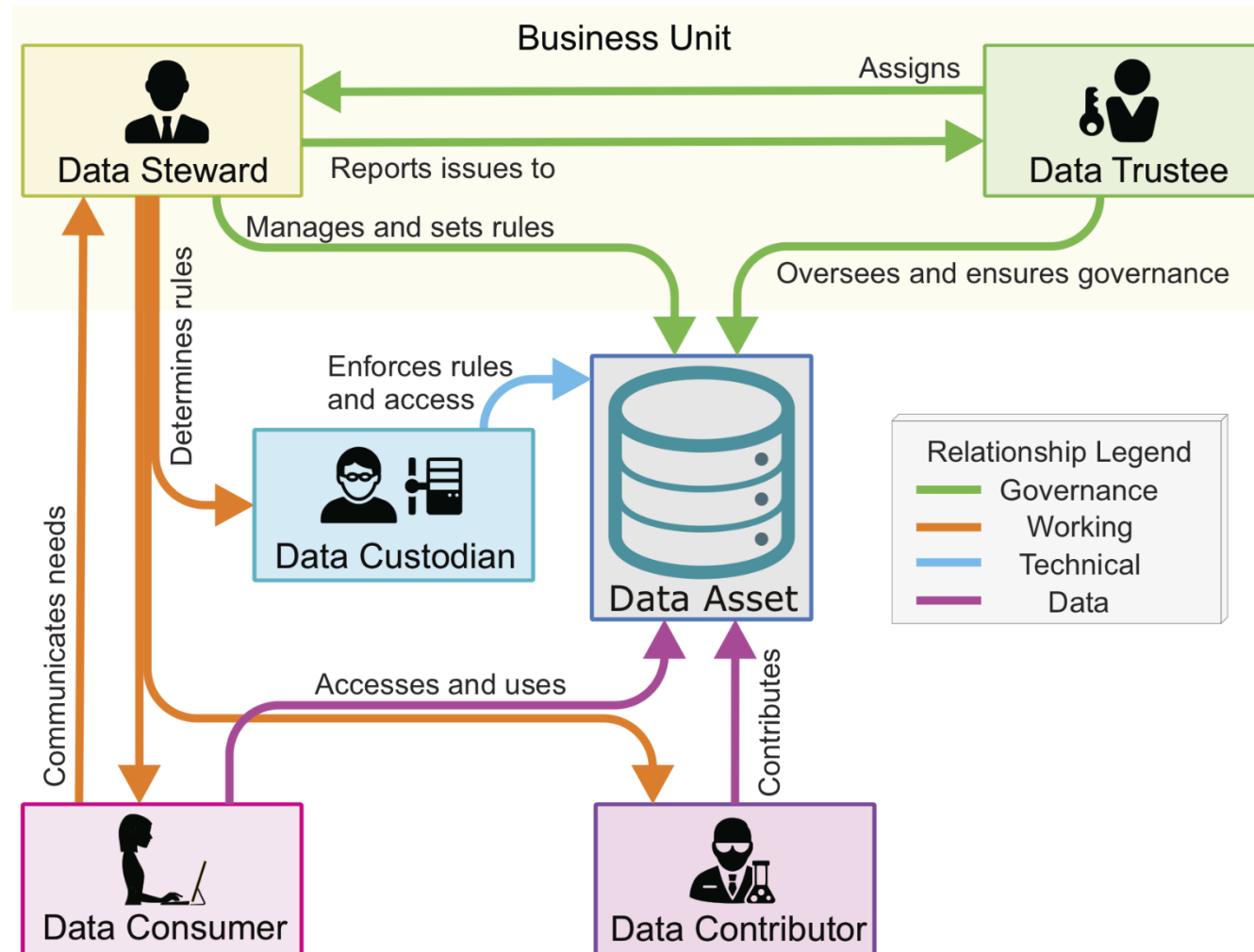
*These represent the five standard data management roles DFO has developed.

Goal is to identify stewards and formalize data responsibilities (on a business area by business area basis)
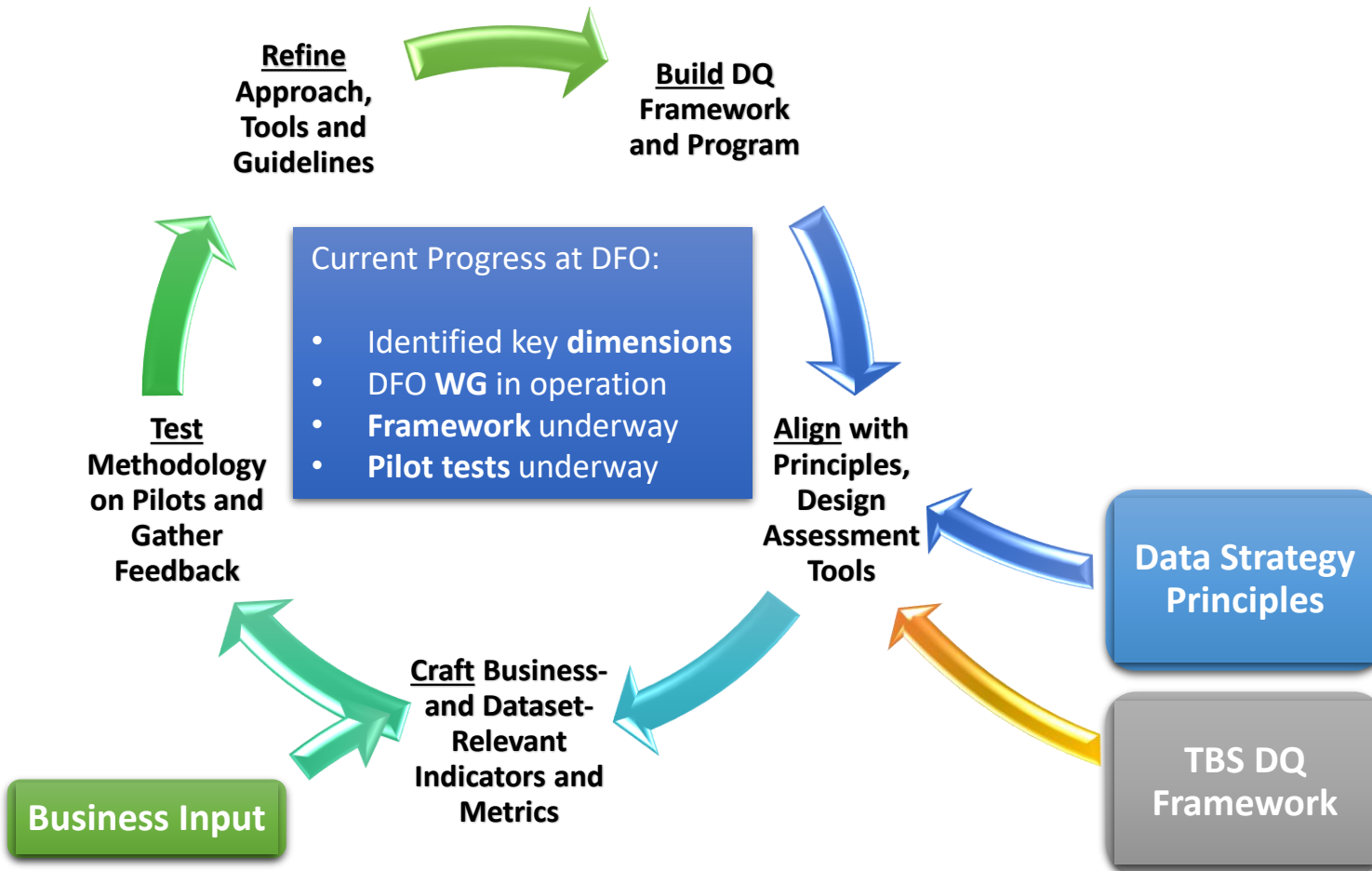
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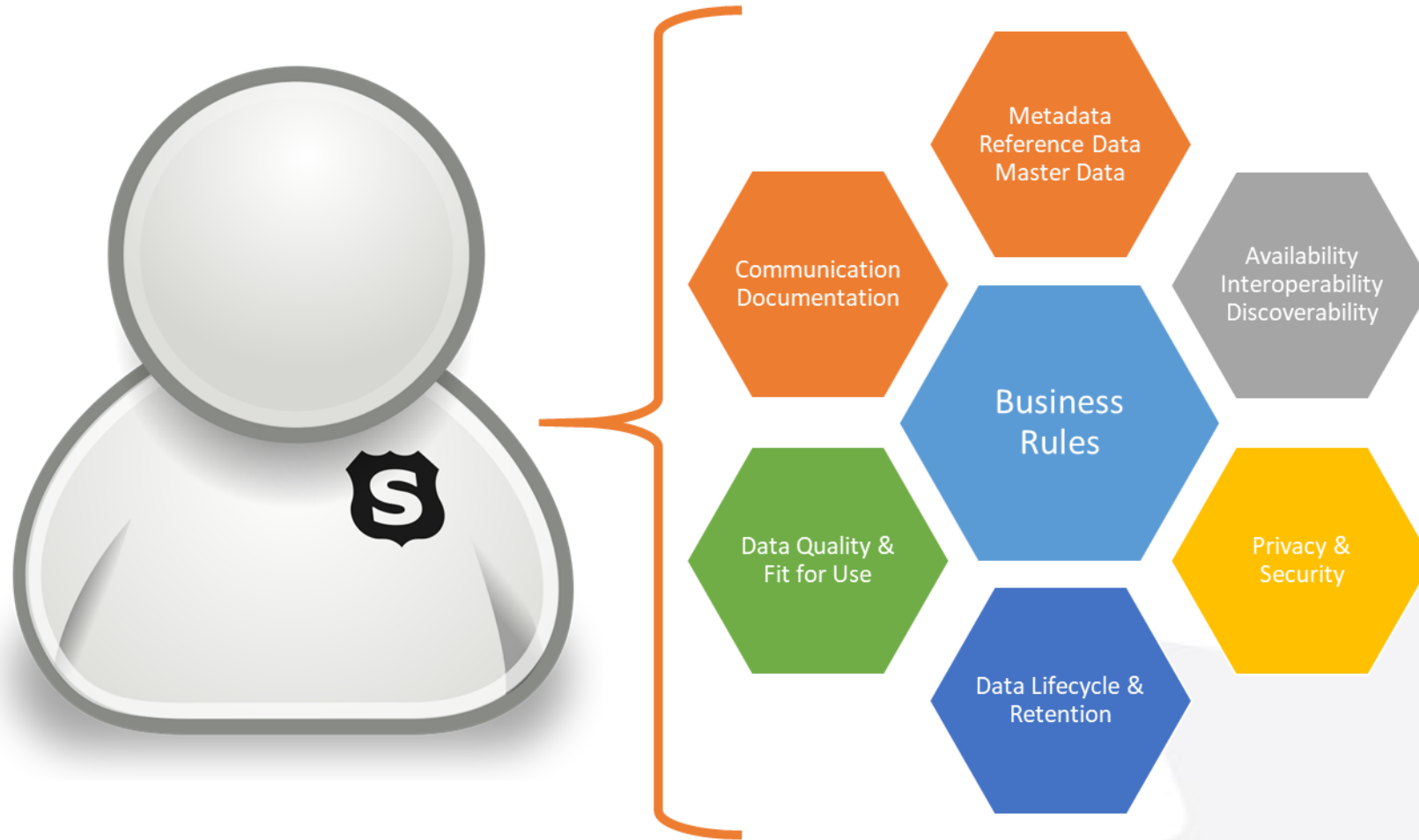
OCDO is piloting a process for "non-invasive" data stewardship. Goal is to build incrementally via pilots to demonstrate value and then expand iteratively)

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Data Quality Program

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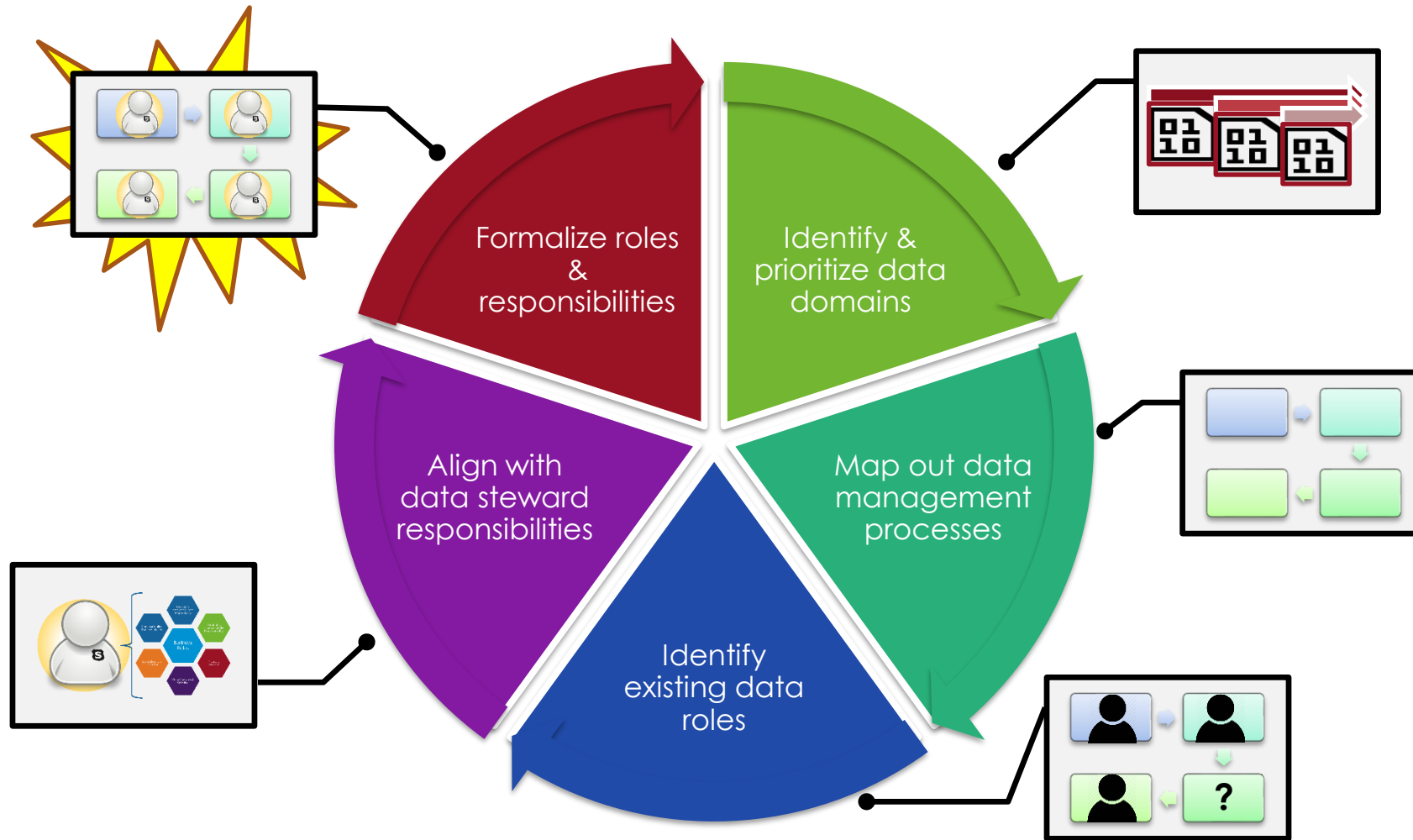
Principles-based, **structured** and **iterative** approach to data quality framework development

Refine Approach, Tools and Guidelines

Build DQ Framework and Program

Align with Principles, Design Assessment Tools

Craft Business- and Dataset-Relevant Indicators and Metrics

Test Methodology on Pilots and Gather Feedback

Business Input

Current Progress at DFO:
- Identified key **dimensions**
- DFO **WG** in operation
- **Framework** underway
- **Pilot tests** underway

Data Strategy Principles

TBS DQ Framework

DFO Challenges

- A high **diversity** of data
  - E.g. scientific data requires in-depth analysis and highly specific business rules
- Data and quality-control related **literacy**
  - To be addressed through training, workshops and engagement
- Lack of data **warehousing**
  - Examining solutions, build methodology and framework that are solution-agnostic

DFO Path Ahead

- Transition towards a DQ **program**
  - Build on the DQ framework
  - Policies, processes, procedures, etc.
- Enhance DQ-related **literacy**
  - Conduct workshops, training and increase engagement
- **Engage** businesses and **build** partnership
  - Conduct pilot tests, build business rules, indicators and refine methodology and framework

Commitments under the Data Steward Initiative

- Approach to data stewardship: Business remains the Data Trustee, and the Office of the Chief Data Officer (OCDO) provides support (resources and assistance) to help map out current data responsibilities and formalize the data stewardship roles across the department.

- Data Trustees need to commit to formalizing data stewardship roles

- There's need to be a clear understand between business areas and the OCDO regarding their responsibilities surrounding data

- Goal is to move ahead on the shared understanding of our commitments

Business Partner

- Provide subject matter experts (SMEs)

- Identify and prioritize business area data process(es) for inclusion

- Formalize identified data responsibilities under data stewards

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- Provide resources, consultant and advisory services

- Map out business area data models (BADM)

- Identify existing data responsibilities

- Align BADM with data stewardship

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DFO Approach – Data Stewardship

- Start with broad engagement and collaboration (bottom up approach)
  - Identify whom already is positioned in this informal role currently within the department
  - Identify current informal processes being used to improve the quality of data
  - Identify stewards and formalize data responsibilities
- Set up foundations (establish core processes, procedures, and tools to support data stewardship)
- Build incrementally via pilots to demonstrate value (i.e. quick wins) and then expand iteratively via strategic onboarding

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Questions/Comments?

Thank you!

For additional information:

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