



# **Effective Presentation of Complex Enterprise Data – Management Dashboards in the Canadian Government**

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# **Good financial management is built on a foundation of information**

- **Developments in reporting and data science are contributing to this foundation**
  - New data available through Open Data, increasing information for both public and TBS
  - Greater awareness and use of data management and analysis tools (e.g. SAS statistical software)
- **Growing standardization of information brings new management applications, deeper understanding**
  - As information is integrated for the first time, new details and limitations become clear

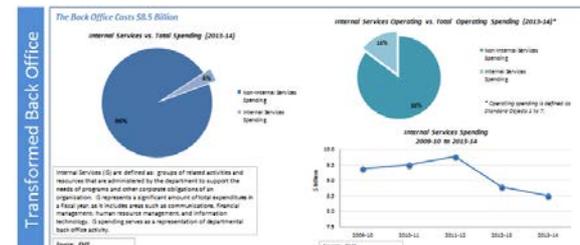
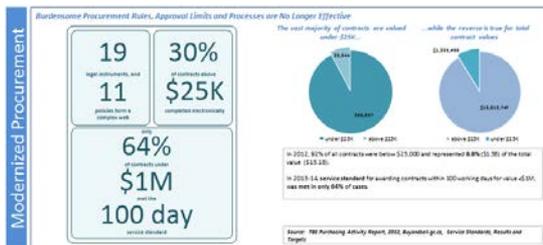
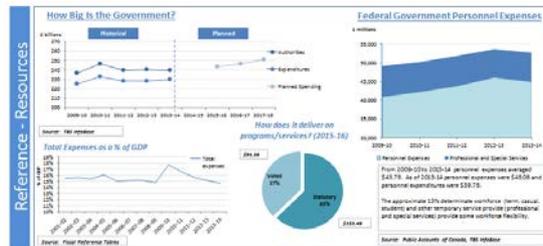
# Establishing a good foundation comes with challenges

- Increased standardization and easy use of data does not translate directly into useful information
- Decision makers are increasingly overwhelmed by the variety, volume, and velocity (frequency) of data available
  - A single enterprise, the Government of Canada has more than 100 different departments reporting massive volumes of data through dozens of channels
- As financial managers, we must establish the veracity of the data we rely on.
  - Is it relevant? When analyzed, do we have a complete picture?
  - If we don't, where are the blind spots and how do we mitigate them?
- We are no longer bean counters, but rather bean farmers who must understand the intricacies of our organizations.

# Canadian government has had success with financial dashboards

- Dashboards are a compact way to make diverse information easily accessible and understandable in different forms (tables, text, visuals)
- This form of data ‘curation’ improves the identification and communication of key operational trends to decision makers

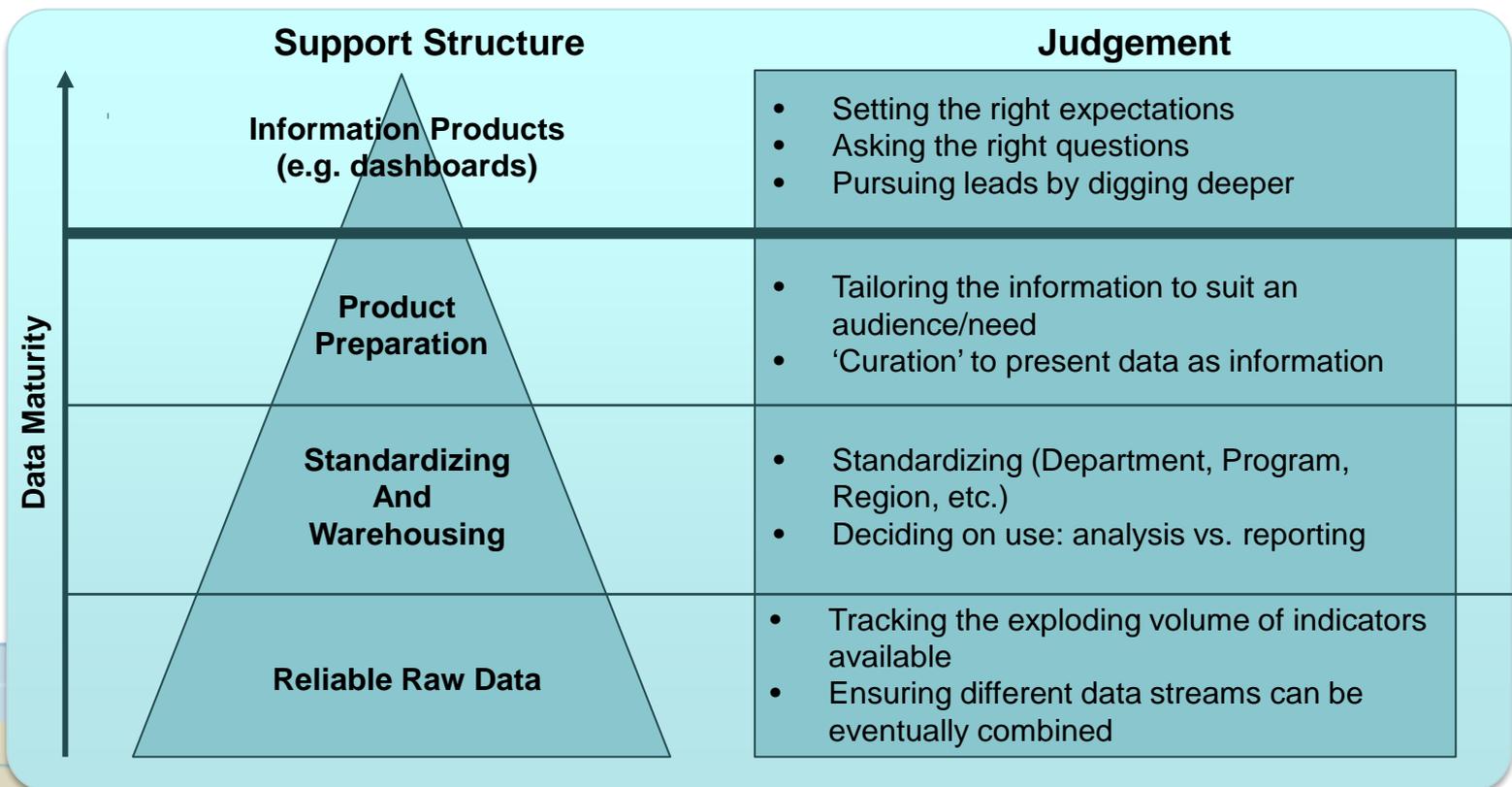
Example contents



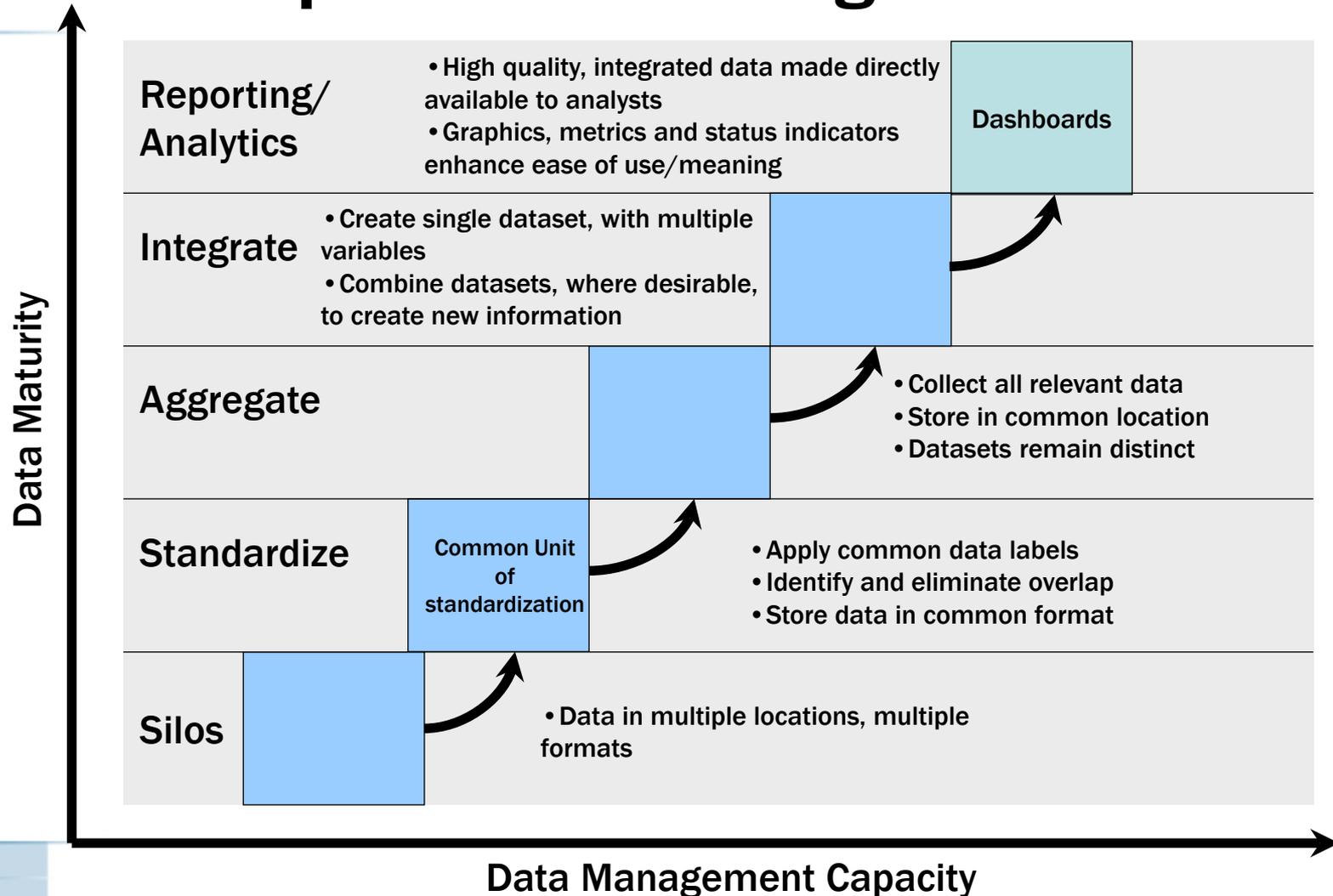
For the first time, we can easily describe government operations in a single product, not just departments

# What does it take to support a dashboard?

- Sustainable management dashboards are built on good data structure and soundly expressed business knowledge
  - Tailored dashboards push the need for flexible data structures that can quickly adapt to changing business focus
- Design should be done by groups experienced in how to be both responsive and cost-effective



# Building capacity for dashboards requires data management maturity



# New tools complement dashboards

- **New low-cost tools create opportunities in presenting information flexibly for dashboard users**
  - E.g. Web-based tools such as JavaScript, [D3 visualization](#) libraries
  - Responding to evolving user needs by rapidly prototyping and providing business analysis/context is easier with low-cost tools
  - Lets us deliver non-traditional ‘data’, such as text-based file histories, alongside quantitative dashboard data, boosting corporate memory
- **For example, with the TBS InfoBase:**
  - Users can view and access information based on their needs and expertise: infographics, data tables, visual exploration (see annex)
  - Web-based structure is lightweight and allows nimble response to emerging needs
- **Management tools of this nature help present a more robust view of an organization, flexibly navigating between high- and low-level information as needed**

# Effective dashboard development brings challenges and opportunities

- **Regardless of the support structure in place, success triggers more demand**
  - Discipline is needed to manage expectations and prioritize the integration of more data
- **Sustainability may require culture change within your organization**
  - New skills for analysts (data scientists), mindset of ‘build it once for myself, but for all to share’
  - New willingness to take risks such as rapid prototyping, or developing innovative ways of presenting data-driven storytelling
  - An environment in which careful judgement is applied when using this type of product is essential for decision making
- **Standardizing/structuring data must be supported by senior management**
  - This work will be neither high profile, nor attractive, with payoffs often only in the distant future, but is necessary nonetheless (slide 6)
- **Communication between dashboard users and the teams that build them is very important if dashboards are to effectively support sound stewardship**

Business needs drive the evolution of dashboards, while IM/IT tools should enable, not define them.

# What has this work done for the Secretariat's management process?

- **With increased focus on data-driven decision making, we can:**
  - **Manage operations better.** Better context on departments' operating situations = better assessment/challenge of their spending proposals
  - **Shape government-wide policy together.** Decision makers can have the same starting point, the same snapshot of current conditions
  - **Take stock of enterprise-wide trends.** Impact of specific measures or initiatives at the government level can sometimes be best identified and understood through graphical presentation styles
- **Dashboards are now an integral piece in our briefing product arsenal, along with more traditional intelligence such as briefing notes and targeted analysis**
- **However, increased management engagement and demand for scalable dashboards has exposed information gaps**
  - Data for some concepts is not readily available

# Dashboards: no panacea for good judgement and analysis

- Dashboards are a starting point for management conversations, often raising more questions than they answer. Judgement is required in their interpretation.
- Dashboards should not be used in isolation.
- Once created, the tendency is to use a dashboard in many different situations. Explaining a dashboard's specific limitations and business context can be challenging.
- Ongoing communication between dashboard users and producers:
  - Mitigates risk of improper interpretation
  - Increases re-use of existing dashboard components

**Dashboard results should be used with other information strategies to fully understand any organization**

# Annex: Treasury Board of Canada Secretariat 'InfoBase'

## TBS InfoBase



[Learn and Explore](#)



[Explore Visually](#)



[Search by Organization](#)



[Create Your Own Report](#)

Welcome to the **TBS InfoBase**, a searchable online database providing financial and human resources information on government operations. Explore the TBS InfoBase for quick and easy access to detailed information on government spending and people management.

- **Learn and Explore** or **Explore Visually** to access graphical overviews of different facets of how the government spends its funds and manages its people.
- **Search by Organization** to access detailed information on a particular government organization.
- **Create your own reports** or choose from a variety of **prepared reports**.

## Analyze Data by Subject Area



[Currently Tabled But Not Approved Estimates](#)



[Internal Service Expenditures](#)



[Personnel Expenditures](#)



[Total Estimates](#)



[Employment by Region](#)

## Explore Government of Canada Management Data



[Whole-of-government](#)



# Questions?