



Improving Performance Measurement Through Data

A Presentation for PPX Symposium

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Government Advancing Digital and Data Strategies

- ▶ Privy Council Office published a report titled “Data Strategy Roadmap for the Federal public Service” on November 2018 along with specific directives from the Clerk to manage data as a strategic asset.
- ▶ The Data Strategy Roadmap emphasized early actions on key areas including creating departmental data strategies, improving data governance with clear roles and responsibilities and to foster employees’ skills and their IT environment to better leverage data.
- ▶ The Government of Canada is currently drafting its Digital Policy that will serve as a single set of rules and guidelines that set out how Government of Canada organizations should manage service delivery, information and data, technology, and cybersecurity.

ECCC Context

- ▶ ECCC, headquartered in Gatineau, is the lead science based federal department, for a wide range of environmental issues with 6,415 FTEs and a budget of \$1.5 Billion.
- ▶ As a science based organization, it creates and disseminates significant amount of data on a range of climate, weather, environmental protection and ecosystem issues. Includes the Meteorological Service of Canada.
- ▶ Responsible for developing and enforcing 70 government regulations and providing public policy leadership on environmental issues. This work is conducted with significant collaboration with provinces/territories.

ECCE's 3 Year Data and Analytics Strategy Framework

Vision	ECCE is a leader in turning data into insight, and insight into action to protect the environment for the benefit of Canadians		
Guiding Principles	<ul style="list-style-type: none"> • Managing data as a Strategic Asset Through Effective Governance & Stewardship • People Have Access to Tools and Training to Use Data Effectively • Promote Testing, Prototyping and Experimentation Through Agile Approach • Data is Open by Default, Discoverable, Accessible & Secure • Data is a Shared Partnership Between CIO, CDO and Branches 		
Pillars	Empowering people and culture	Enabling environment and data infrastructure	Treating data as a strategic asset
Objectives	ECCE has the talent and capacity it needs to manage, interpret, use and understand data.	ECCE's processes and data infrastructure are aligned to turn good data and analysis into action.	ECCE has the data it needs, which are fit for use, discoverable, and available.
Foundation	<p style="text-align: center;">Data Governance</p> <p style="text-align: center;">Governance exists at the right levels to ensure that data are managed holistically as a strategic asset. Includes accountability, roles, and responsibilities.</p>		
	<p style="text-align: center;">Data Transparency</p> <p style="text-align: center;">Data is leveraged to facilitate reporting on results and performance to Canadians and open government</p>		

2018 This Is What Happens In An Internet Minute



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Need for Data and Analytics

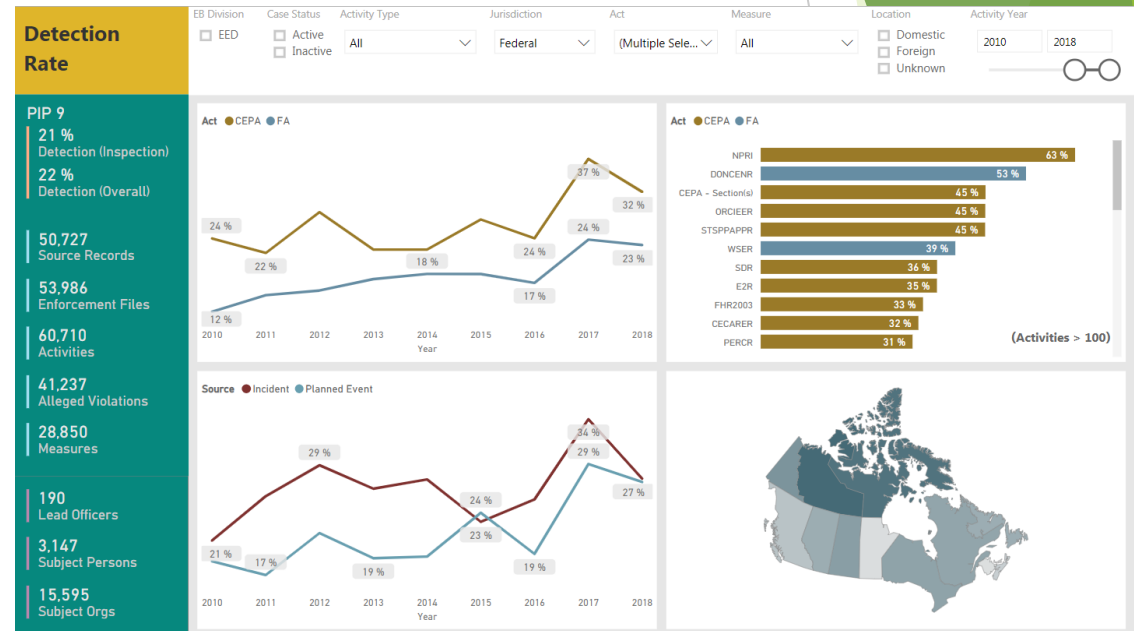
- ▶ Departments create and collect massive amounts of data everyday.
- ▶ Enormous opportunity to leverage data for insight in all areas of government.
 - ❖ This can lead to improved services, better decision-making and improved performance overall
- ▶ Data and digital skills are becoming increasingly important not only for government effectiveness but also for modernizing work force.
- ▶ Data literacy, data governance, data tools (i.e., dashboards) are core to doing more with data.
- ▶ Last year, CDO at ECCC advanced 20 data initiatives in the areas of enforcement, wildlife protection, environmental programs, corporate planning, human resources etc.

Enforcement Activities in ECCC

- ▶ One of ECCC's mandate is to protect and conserve the environment and wildlife for future generations. In-the-field enforcement officers across Canada enforce environmental and wildlife laws.
- ▶ There are tens of thousands of regulatees under environmental laws and therefore it is not possible to inspect and enforce compliance laws for each of them.
- ▶ ECCC generally used a combination of input from the field and some historical data on compliance to determine which regulatees would be inspected. However, this process was not systematically based on assessing risk.
- ▶ The Office of the CDO is leveraging internal and external data to support the development of a risk-based framework for compliance enforcement.

Dashboards

- ▶ Data scientists integrated performance information held in different databases within ECCC to create an automated and reproducible metrics in an interactive dashboard.
- ▶ The dashboard visualizes data on enforcement activities, such as number of inspections, compliance rates etc. and allows for the exploration of this historical data in detail which was not possible before.



Metrics for Performance Measurement

- ▶ Using interactive dashboard, a wide array of metrics can be studied in detail to determine if these metrics could be used meaningfully as indicators or whether current indicators are up to the mark in quantifying performance.
- ▶ Guided by data on these metrics, we created a preliminary risk-based enforcement predictive model that shows that using this model would increase non-compliance detection from the current 1 in 5 inspections to 3 in 4 inspections, a 3-fold increase!
- ▶ Interactive dashboards are effective tools to illustrate important metrics that can guide decision-making on critical areas, as well as to understand, analyze and adjust performance indicators that are relevant, meaningful and evidence-based.

Key Lessons Learned

In the course of running this project, we learned 3 key lessons on performance indicators:

- ▶ Connect data to performance indicators. Sometimes the data exists, but is not tracked as a performance indicator.
- ▶ Ensure performance indicators are measurable and tracked. Due to possible disconnect between teams that set performance indicators and teams that collect data, indicators may be set that are not measurable.
- ▶ Analyze relevance and meaningfulness of indicators. Indicators may use data because it is available and not because it truly assesses progress. The other side is also true. The indicators may not be appropriate for measuring progress. In these cases, either indicators or data needs to change.

It's Time To Do More With Data!

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