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INNOVATION
EXPLORATION
OBSERVATION
INSPIRATION

Space Projects and Open Data as Innovation Drivers

Global Forum 2017

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Agence spatiale
canadienne Canadian Space
Agency

Canada



Innovation at CSA

- Placeholder for video.

Space Projects and Innovation

Innovation in the project
Limited data lifecycle

Innovation beyond the project
Extended data lifecycle

- Robotics
- Medical Instrumentation
- Satellites
- Technology Demo./ Development

Launch,
Operations

Data

**OPEN
DATA**

- Applications
- Research
- Education
- Commercial Growth
- Etc.

The Case for Open Data

“Open Data is defined as structured data that is machine-readable, freely shared, used and built on without restrictions.”¹

*“Firms functioning in the countries in which public sector agencies provide fundamental geographical information either freely or at maximum marginal costs have grown, on average, **about 15 percent more per annum** than the firms in the countries in which public sector GI is priced according to the cost-recovery principle” (Koski, 2011).²*



¹ Government of Canada’s Directive on Open Government

² Reproduced with permission of The Research Institute of the Finnish Economy (ETLA).



Implementing Open Data

Recommendations & Considerations

Policy, Regulations (Requirements)

Executive-Level Leadership


Dedicated Open Data Team (Level of Effort)

Info Sessions with Project Teams (Why Open Data? Success Stories)

Clear and Simple Tools for Project Teams (e.g. Templates, Checklists)

Pilot Projects (Validate the Open Data Approach)

Update Project Management Governance to Address Open Data



Some CSA Data Sets (Government's Portal)

Canada Mosaic - RADARSAT-2

This is a Mosaic of Canada which is made from 121 images captured by Canadian satellite RADARSAT-2. These images were acquired from May 1, 2013 to June 1, 2013. The color variation represents the changes in soil texture, roughness and the level of soil moisture. (Credit: RADARSAT-2 Data and...

Organization: Canadian Space Agency

Resource Formats: **KML**

Far Ultraviolet Spectroscopic Explorer Telescope (FUSE) Satellite Data

Far Ultraviolet Spectroscopic Explorer (FUSE) was a NASA space telescope, led by Johns Hopkins University (JHU), and built in collaboration with the Canadian and French space agencies. It undertook high-resolution spectroscopic observations in the far-ultraviolet from 1999 to 2007, significantly...

Organization: Canadian Space Agency

Resource Formats: **HTML**

Ionosphere images from Alouette satellites

Designed and assembled in Canada, Alouette-1 was the first satellite built by a nation other than the United States or the Soviet Union. It was constructed at a time when most satellites had a useful lifespan of a few months. Although Alouette-1 was as complex as any previously launched...

Organization: Canadian Space Agency

Resource Formats: **PNG** **DOCX**

Tangible Benefits: Apps Gallery

Canadian Travellers



Publisher: CODE

Canadian Travellers app aims at informing the Canadian public of issues affecting the security and well-being of Canadians abroad, health notices outlining potential risks to travellers, and providing estimated border wait times when crossing the...

CODE

Border Wait Times



Publisher: Canada Border Services Agency

The application provides estimated border wait times (commercial and travellers flow) for the busiest Canada Border Services Agency land border crossings.

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Annual Crop Inventory



Publisher: Agriculture and Agri-Food Canada

This application provides information and tools to allow landowners, decision-makers, and the general public to observe crop rotations for a four year cycle. The crop rotation analyst allows a user to create specialized or generalized queries of...

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Start your life in Canada



Publisher: Citizenship and Immigration Canada

Find information and services to help you, as a newcomer, adjust to life in Canada. Use the Living in Canada tool to develop a basic settlement plan to give you, a newcomer to Canada, steps to make the transition to Canada easier. The settlement...

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Web

Canadian Patents Database



Publisher: Industry Canada

This database lets you access 93 years of patent descriptions and images. You can search, retrieve and study more than 2,140,000 patent documents.

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Milieu



Web

Publisher: Milieu Technologies Ltd.

Milieu is a web application that maps urban planning and development information in an easy to use interface. We allow citizens to comment on developments in their neighbourhoods and use cognitive computing to translate their feedback into insight...

Web

Web



Open Data Resources

- Canadian
 - Open Government
 - <http://open.canada.ca/en>
 - Applications Gallery
 - <http://open.canada.ca/en/apps>
 - Open Data search engine
 - <http://open.canada.ca/data/en/dataset>
 - Government of Canada Innovation and Skills Plan
 - <http://www.ic.gc.ca/eic/site/062.nsf/eng/home>
- International
 - European Data Portal
 - <https://www.europeandataportal.eu/>
 - Open NASA
 - <https://open.nasa.gov/open-data/>
 - United Nations Open Government Partnership
 - <https://www.opengovpartnership.org/>



Backup Slides

CANADIAN SPACE AGENCY – ONGOING PROJECTS

JAMES WEBB
SPACE TELESCOPE



MARS SCIENCE LABORATORY



OSIRIS-REx



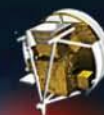
MARITIME MONITORING AND MESSAGING
MICROSATELLITE (M3MSat)



INTERNATIONAL SPACE STATION



SCISAT



SWARM



SMAP



RADARSAT CONSTELLATION
MISSION (RCM)



NEOSSat



CASSIOPE



SURFACE WATER AND OCEAN
TOPOGRAPHY (SWOT)



Three main “streams” of projects:

- 1- Space Utilization (SU) (Earth Observation (EO))
- 2- Space Exploration (SE)
- 3- Space Science and Technology (SS&T)