Bank of Canada’s IM perspective on the digital transformation journey

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Chantal Marcoux
Director
Knowledge and Information Services
Agenda

- Main components of our Information strategy
  - Challenges, vision, maturity and evolution

- Main projects to embrace the digital age:
  - DROP – Decrease Records on Paper strategy
  - Email Management
  - Network Drives Content remediation
  - Data Catalog
  - ...and many others
Challenges we are facing in the digital age

- Governance for data and information is decentralized at the Bank
- Staff create information on many systems and in many formats
- Difficult to find critical information when you need it
- The volume of BoC information created is growing exponentially on a shorter timeframe
- Staff want to retain everything
- The Bank needs more and more data information that are externally purchased or acquired
- Supporting ATIP needs to find information is very difficult
- Supporting the Bank Open Access strategy

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“INHOUSE: What is your No. 1 challenge with technology right now?

FARR: I can’t really identify just one; I have to identify two. One is record retention and retrieval. We have a proliferation of systems across a variety of different platforms that don’t communicate with one another. We don’t have a centralized search capability, so, both in terms of responding to access to information and litigation discovery, it has become problematic. Add to that a corporate culture of retaining everything even though it is transitory and doesn’t need to be retained and that’s finally brought the institution to a critical halt in trying to respond effectively and efficiently.

We have a major initiative underway of a single data management platform that is being introduced. Probably the biggest change management issue is a one-year retention period with automatic disposal: You either file what you have or you lose it after a year. That’s just being rolled out now.”

Jeremy Farr, General Counsel, Bank of Canada

Canadian Lawyer magazine, August 2018
Vision

K&IS is a recognized leader in the Bank’s digital transformation, equipping and enabling Bank employees to gain optimal value from data, information and knowledge.
Increasing Maturity of Enterprise Information and Data Management

Initial
No vision, but yes, we do have a problem

Developing
No vision. Firefighting is the answer.
Isolated, bottom-up initiatives.

Defined
OK, let’s do something (at the silo level).
Silo-oriented solutions.

Managed
A unifying vision emerges (with high-level sponsorship).
Enterprise-wide Information / Data Management program.

Optimizing
Enterprise Information and Data Management is the way we do things around here.
Managing information and data as an asset.
Continuing to Learn and improve.

Maturity Levels of Enterprise Information and Data Management

Source: Adapted from Gartner’s Master Data Management Maturity Model
Where are we going at the Bank?

**2013-2015**
- **ECM Program**: putting in place the foundation of Enterprise Content Management with Collaboration Centrale (CC)

**2016-2018**
- Records Management: Unified system to manage paper and electronic records in CC
- Revised Information Policy
- Email management
- Discovery Search

**2019-2021**
- Artificial intelligence for Enterprise Search and Auto-classification
- Reduction of Network Drives and disposition
- SharePoint to the cloud
- Research Tracking Tool

**2022-2024**
- Digital transformation achieved by:
  - Enterprise Information Architecture: information driven architecture to enable macro intelligence
  - Records Management standards formalized in all Bank systems

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### Bank of Canada IM Roadmap

<table>
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<tr>
<th>IM Roadmap</th>
<th>Scope / (Description)</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Expected Outcomes</th>
<th>Next MTP</th>
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<tbody>
<tr>
<td>Change Management</td>
<td>Holistic Departmental IM/Digital Transformation plans to support transition to working digital.</td>
<td>IM Digital Plan developed and negotiated for six departments. Transition to digital self-serve tutorials for IM/CC.</td>
<td>Enterprise Data strategy OCM activities related to metadata, etc.</td>
<td>Significant increase in adoption and use of CC.</td>
<td>Implement directives on storage limits/limited use network drives.</td>
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<td>Search and EIA</td>
<td>Reduce user effort to file, find and use information.</td>
<td>Support for CRM EIA (Metadata) Requirements and strategy for enterprise search.</td>
<td>Design and configuration phase for Enterprise search. CC Open access model addressed during cloud migration.</td>
<td>Enterprise search implemented. Search analytics (Delve).</td>
<td>Significantly less time spent finding information.</td>
<td>Adding more repositories to Enterprise search. Auto-classification (AI) implementation.</td>
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<td>DROP - Decrease records on paper</td>
<td>Disposition of physical records and digital signature</td>
<td>20% of eligible physical records disposed. 50% of eligible physical records disposed. Digital signatures implemented.</td>
<td>Remainder eligible physical records disposed.</td>
<td>All Bank records are born and managed digitally through their lifecycle. Significant reduction in paper records managed.</td>
<td>Dispose properly paper records; More digitization.</td>
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<td>E-records</td>
<td>Network Drive Reduction, DAM (Digital Asset Mgmt), e-IM</td>
<td>Network Drives cleaned for CL, HR, FID and CUR.</td>
<td>Network Drives cleaned for ELS, FID and T&amp;D. Collaborate (cloud) implemented.</td>
<td>Network Drives cleaned for remainder departments.</td>
<td>Network Drives no longer used for user-generated content and collaboration.</td>
<td>Digital Asset Management. Archival preservation system for digital records.</td>
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<td>Collaboration</td>
<td>CC, O365, Support evolution of collaboration platforms to the cloud.</td>
<td>OneDrive transitioned to cloud. EIA standards framework for cloud/O365 developed.</td>
<td>SharePoint to cloud. Service and support model for O365 developed and implemented.</td>
<td>Implement O365 Tools/Services.</td>
<td>Bank staff have access to more and enhanced collaborative features to exchange knowledge and information.</td>
<td>Continue evolution within the O365 environment.</td>
</tr>
<tr>
<td>Data</td>
<td>Support evolution of the Bank’s data strategy.</td>
<td>Enterprise Data Strategy developed with priority sections implemented. Data search and metadata requirements defined.</td>
<td>Enterprise Data strategy implemented. Data search capabilities implemented.</td>
<td>Access to analytic data is improved.</td>
<td>Other categories of data are better governed and accessed.</td>
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DROP strategy – Decrease records on paper

- **What?** Establish a strategy to work with all Bank departments to significantly reduce paper records and change their related business process to get to a fully digital lifecycle management of their information.

- **Why?** Disposition to reduce storage space, enhance search, better access to information process, etc.

- **When?**
  - 2018: established the strategy
  - 2019-2021: implementation
  - Start with « Low hanging fruit » than the rest
DROP strategy

**How?** Digital transformation plans with each department to change their business processes when necessary

- Includes:
  - Disposition of eligible records
  - Digitization of archives and very limited active paper records
  - Change management activities
  - Business processes improvement to get to manage fully digital through the entire lifecycle
Where we were: Dec 2017

Space used (TB) for user generated content on Email, Windows Network Drives (user files) and CC

Email takes up the most space; CC usage is relatively low.
Where we are: January 2019

Estimated space used (TB) for user generated content on Email, Windows Network Drives (user files) and CC

Email is drastically reduced via the 1-year retention rule; Network Drives now take up the most space; CC continues to grow.
Where we will be: December 2021

Estimated space used (TB) for user generated content on Email, Windows Network Drives (user files) and CC

Email and Network Drives are roughly the same; CC is now the primary storage location for documents – anything remaining on the Network Drive is considered inadmissible to CC.
Email management

- **What?**
  - Introduction of a one-year retention rule to individual Outlook accounts and a new tool to transfer email in our EDRMS (official corporate repository)

- **Why?**
  - Forced transfer of corporate records to corporate repositories
  - Improve search for ATIP and other legal purposes
  - Reduced maintenance and recovery of network environment
Email Management

- **When?**
  - 2017: environmental scan, option analysis, approval and planning
  - 2018: One year for change management strategy with Bank staff and email standard definition
  - 2019: January 1st, retention rule applied

- **How?**
  - Started with the Leaders
  - Tailored presentations by department to all staff
  - Methodology to assess and support each department throughout the year
  - Email standard and directive

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Success!

We did it: the new email rules are up and running
January 16, 2019

The Bank’s new email retention rules took effect this month, and we’re pleased to report that the process of cleaning up over 2,200 mailboxes is now complete. On January 3, we launched a process to delete all emails more than a year old. It rolled out smoothly and the final numbers are impressive:

63 million emails deleted
If we printed and stacked each one beside Mount Everest, our email pile would be more than 1 km taller.

24 terabytes freed up
That’s 40 straight years of streaming music.

Seven calls to ITS
That’s only 0.3% of users!
Network Drive Content Remediation

- **What?** Reduction of Network Drives by transferring active and semi-active documents to our EDRMS were retention rules will be applied and disposition of eligible content after a risk-based methodology will be done. Only non-eligible format will be allowed on network drives.

- **Why?**
  - Ensure corporate records can be truly managed for their entire lifecycle
  - Reduced maintenance and recovery of network environment
  - Forced usage of formal corporate repositories (e.g. EDRMS)
Network Drive Content Remediation

- **When?**
  - Started slowly in 2017
  - 2018: Revised methodology, development of the risk-based approach and pilot for tools and processes
  - 2019-2021 Dedicated project – exploring using AI

- **How?**
  - Assessment of content
  - Disposition of eligible content
  - Migration of content on EDRMS
  - Definition of a network drive standard and directive
Data catalog

What?
- Built a data catalog to inventory all data objects available at the Bank for the Analytic Environment and increase the information available to describe these data assets to improve findability e.g. search experience

Why?
- No real inventory available
- Volume of data exponentially growing
- Nature of the data acquired and created is increasingly varied (source, type and format)
- Data infrastructure mainly for time series data e.g. data warehouses
Data catalog

- **When?**
  - Started in January 2019 as a Data search initiative
  - 2 years to implement by end of 2020

- **How?**
  - Proof of concept for the first 3 months using current library system
  - Select and establish a metadata schema
  - Find, select and implement a metadata repository and search tool
  - Define and establish priorities of data objects to be catalogued
  - Automate wherever possible (uploading and applying metadata)
...and many others

- Digital authorization / signature
- Entreprise Search and auto-classification (AI)
- Research Tracking tool and Institutional Repository for Bank research outputs
- Digital preservation assessment and strategy
- Digitization of Bank’s collections (Library, Archives and records)
- Development of policy instruments to mitigate and control Bank’s data and information assets like Corporate repository standard, Entreprise metadata standard, Transitory information directive and standard, etc.
Questions, advices and feedback are welcome
Chantal Marcoux cmarcoux@bankofcanada.ca
Bank of Canada Information Policy (2017) - Principles

Security: Safeguard sensitive information to ensure its confidentiality, integrity, and availability.

Ownership: Treat information acquired, produced, collected, or received in the course of conducting business as an enterprise asset.

Quality: Create and manage information so that it is available, understandable, usable, complete, accurate, and current according to the need.

Description: Accurately describe information assets and conditions of use so information can be found, reused, and managed appropriately.

Sharing: Provide open access to information wherever possible to support organizational effectiveness, collaboration, and learning.

Compliance: Manage the access and usage of information to ensure that business and legal obligations are met.
Why dealing with the print legacy

- Continue to carry a heavy burden
- Difficult to find critical information
- Can not continue to have time and resources devoted to these activities
- Stop the too long transition of print vs digital
- Still need to be considered in ATIP requests
- It is courageous