Resolving Policy Challenges through Use of Artificial Intelligence

19th Legislative Drafting Conference, Canadian Institute for the Administration of Justice
Overcoming Policy Blockages: Helping Drafting Instructors with their Instructions

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## Outline

1. Application of AI to policy challenges
2. Case Study from University of Ottawa – Semantic Analysis
3. Opportunities and considerations
AI and Policy

AI in its various forms (natural language processing, machine learning, deep learning) will impact policy development the practice of law and legal service

• Assess, compare, classify, search large volumes of text, predictive analysis

Growing application in private sector firms and private legal practice

• Contract due diligence, document review, research, factual and contextual analysis, find anomalies, continuously monitor changes in laws and regulations

Complex GoC environment (2,600+ Regulations enabled by 800 Acts)

• Obligation to continually review regulations (Cabinet Directive on Regulations) - Time pressures and demand for legal resources and expertise
Confronting Policy Blockages

**Complexity**
Addressing readability and complexity challenges: identifying contributory factors (e.g., legalistic jargon, poor sentence structure)

**Coherence**
Due diligence and comparative analysis to ensure coherence and clarity with similar provisions in other legislative instruments or other jurisdictions

**Choice**
Decision-making on design of most effective tools and instruments for compliance and enforcement, flexibility and innovation
Case Example: Semantic Analysis

Identify
- Select key-words / phrases as indicators of regulatory attributes

Assess
- Complexity
- Prescriptivity
- Age

Results
- Counts of occurrences in regulations
- Identify patterns and trends, compare results
- Opportunity to inform regulatory reviews
Case Example: Semantic Analysis

Complexity

Addressing readability and complexity challenges: identifying contributory factors (e.g., legalistic jargon, poor sentence structure)

- Standard readability tests do not work with legislative text
  - does not take account of paragraphed structure
- Cross-references indicate greater complexity
  - distinct elements that must be connected
  - often requiring readers to jump around the text
- Legalese also indicates unnecessary complexity
  - outdated / obscure words
Case Example: Semantic Analysis

Prescriptivity

Mandatory v. permissive provisions – impact on efficiency, flexibility and innovation:

- must
- must not
- shall
- shall not
- must be
- is due
- is payable
- is prohibited
- is required to

- is required to
- not less than
- no(t) later than
- cannot be
- payable
- necessary
- may only

(may)(?! not| only)
- not required
- not be required
- not prohibited
- entitled to
- has the right to
Case Example: Semantic Analysis

Age

- Outdated regulations

Date of last modification
- signals need for review

Outdated terminology
- paper-based
- physical delivery / signature
Potential Applications of AI

Insights Based on Own Knowledge
Methodologies or proofs of concept that yield new insights into GoC regulations beyond listed categories

Incorporation by Reference
Produce an accurate list of documents incorporated by reference with identified source, cost and language available

Comparative Analysis
Systematic analysis of regulations between Canada, U.S. and/or EU or insight into overlapping federal and provincial regulations

Language of Regulations
Indicators of barriers to innovation (or agility), prescriptivity, complexity and readability

Consolidation and Streamlining
Cluster analysis to suggest ways to group regulations or mapping regulations to business and sectors that are regulated

Compliance/Reporting Burden
Identifying modes of service delivery that are outdated or insights into efficacy or efficiency of regulations
### Key Points to Consider

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<th>What is under the “hood?”</th>
<th>Understanding methodologies/approach underlying algorithms, verifiability and data quality is important</th>
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<td>AI augments - does not replace</td>
<td>Results add value if they are organized for human analysts to make the final decisions on what is important and irrelevant.</td>
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<td>Carefully consider tools and providers</td>
<td>Consider experience (data scientists and legal expertise) and capability to work with regulatory and legislative data and information (e.g., demonstration projects and proposals)</td>
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<td>Stay connected for new opportunities and best practice</td>
<td>Early days of application of AI to means many lessons to be learned, best practices to be shared and opportunities to build organizational and individual capacity.</td>
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Questions and Comments?

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## Regulatory Insights - Project Overview

| Opportunity | Explore large and growing ecosystem of small, medium and large firms  
Assess applicability to regulatory and legislative challenges |
|-------------|------------------------------------------------------------------|
| Lead        | Canada School of Public Service (CSPS)  
Supported by an advisory committee (Justice, TBS, regulatory and AI experts) |
| Deadlines   | Demonstration projects and proposals due September 14, 2018       |
| Results     | Showcase to be held in Ottawa (Bayview Yards) on October 19, 2018  
Successful projects promoted on-line and via social media |
| Access      | Release of vendor list in Fall 2018  
List can facilitate future procurement by Justice, departments and agencies |