Visual Inventory of Immigrant Services

Project Description

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Background

Immigrant services are focused on newcomers to Canada, to help them become oriented to Canadian culture and the Canadian way of life, as well as to help them integrate into Canadian communities in all aspects, including language, employment, education, and orientation to health services and family services. Immigrant services are generally offered by Settlement Agencies or by Mainstream Agencies with services specific to newcomers.

The responsibility for immigration to Canada is shared between the federal government and provincial/territorial governments, and funding is available from both levels of government to organizations who provide immigrant services.

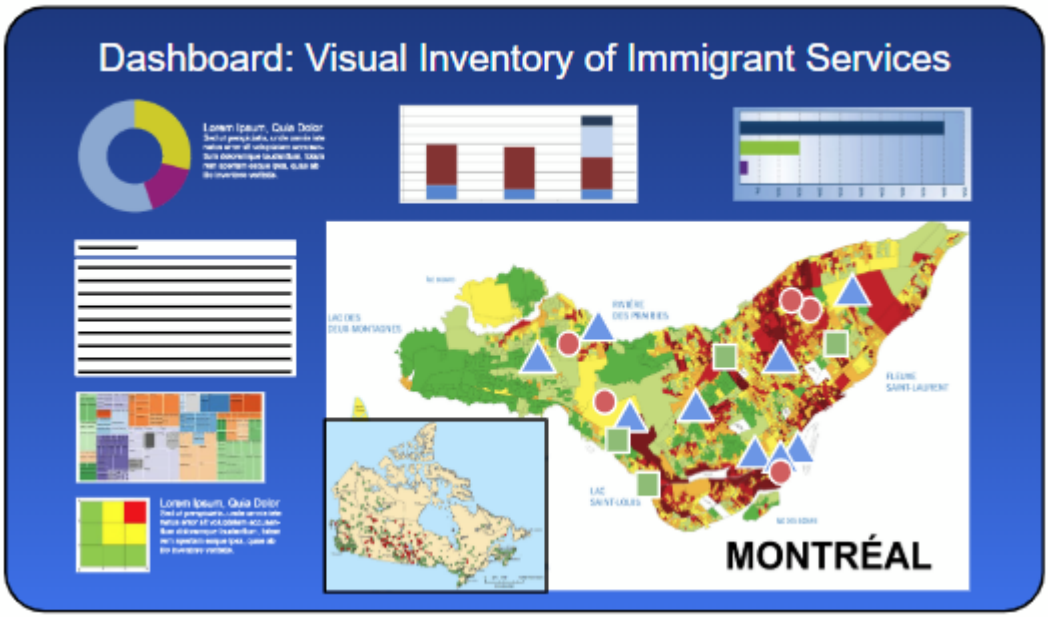
Immigration is an important part of healthy population replacement and growth in Canada and for furthering economic stability in the country. Successful settlement by newcomers in Canada means strengthening the social fabric underpinning the stability and prosperity of the Canadian standard of living.

Purpose

We want to explore the best methods to produce an online inventory of immigrant services, based on publicly available data, and to make it accessible through an online dashboard, where the data is 1) current, 2) reliable, 3) comprehensive, 4) interactive, and 5) searchable as well as filterable, including by standardized service type and geolocation.

We propose to design and build an online dashboard with basic interactive capabilities for this data, and then to explore different approaches to gathering, standardizing, and auditing this data for correctness, as well as approaches to keeping it up-to-date. By practically building a dashboard prototype, we hope to explore answers to various research questions mentioned below.

Mock-up



This is a mock-up of an imagined working system.

Justification

We think a better understanding of type and location of immigrant services being offered in a searchable inventory will help reduce:

1. Gaps in *engagement*. These are services being offered that remain unavailed by those needing them because of a lack of awareness of their existence;
2. Gaps in *need*. These are needs of the newcomer population without locally available service offerings to meet them, or funding or labour to provide them;
3. Inadvertent or unwanted *redundancy*. While planned redundancy in service offerings across different providers is often an important system design element to ensure resilience as well as transient capacity during peak times, without a good knowledge of which services are being offered where, it is difficult to quantify how much of existing redundancy was unplanned or undesired.

The three stakeholder groups we have in mind who will benefit from this work are:

- **Federal and provincial governments**, so that oversight and funding decisions can be more data-driven;
- **Service providers**, so that they can understand and adapt their offerings based on a better knowledge of services offered by other providers -- or services lacking a provider -- in a particular community or location.
- **Immigrants**, who will benefit from a more efficient system, and to whom the data can be presented in an appropriate way to help orient them to local service offerings.

Research Questions

Some of the research questions we've identified, which we hope to address through this project are the following:

1. Prior Work and Existing Systems

- What paper inventories or online inventories exist in Canadian provinces or at the federal level, and what data models have they adopted? What is their method for update to ensure current data?
- What systems do other countries use? Is there experience internationally that would provide guidance?
- What models exist for capturing service information?
- Literature Review. What academic and practitioner studies have been published that would provide input and guidance?

2. Risks and Unintended Consequences

- What risks or unintended consequences may result from building the inventory system? And making it publicly accessible?
- What are all the ways this data could be used for improper or nefarious reasons, which we want to prevent?
- What legal limitations or consequences may there be?

3. Justification

- What data exists that may help quantify the need for this project? This might include some statistics on the number of providers and their funding sources, as well as prior publications giving an indication of the scope and prevalence of inefficiencies in immigrant services caused by gaps in engagement, gaps in need, or undesired redundancy.
- Can we quantify the perception that all three stakeholder groups (immigrants, service providers, and government) have about how aware they are of what services are currently being offered and where?

4. Data Gathering

- Will human search of public websites provide the most accurate and comprehensive data?
- Is there a way to use technology to assist human search? This can include data gathering and organization, and may include the use of Machine Learning and Natural Language Processing.

- How best can service providers provide feedback and auditing of captured data to ensure accuracy?
- What percentage of immigrant services will be able to be captured based on public website information alone, plus some, minimal human follow-up? Which services are best represented and thus accurately captured from public websites of the service providers?

5. Existing Data Sources

- What data sources currently exist listing immigrant services and service providers?
- What is their level of granularity or their data model, e.g., is it a list of providers? A list of service titles by offering?
- How old is the existing data? What model was proposed to keep that data up-to-date? What model was actually implemented to keep that data up-to-date?

6. Model: Object Process Methodology (OPM)

- Is the OPM model optimum for modeling service offerings?
- What are the service offering objects, processes, and states?
- How standardized are the existing objects, processes, and states already, in terms of the services offered by different providers?
- How do we put OPM in the most understandable language for all three stakeholder groups to understand?

7. How to design a self-perpetuating update system?

- What capabilities do service providers have, and how user-friendly must the system be to expect reliable data updates to be done by service providers?
- What government incentives or government regulation may be needed to ensure sufficient updating?

8. End-user dashboard use

- How will each of the three stakeholder groups use the dashboard? What can be learned by in-person end-user observation sessions?
- What data do they want to see?
- What kinds of search and filtering capabilities will they ask for?
- What kinds of data analysis capabilities will they ask for?

9. Technology

- What are the most appropriate technology tools we can use to create the dashboard? Inexpensive, easy to develop, easy to maintain, reliable, sufficient performance, flexible, interactive.
- What tools exist for capturing, organizing, and displaying information?

- What Open Source methods and tools may be of use for developing this project?

10. Other work to coordinate with

- What work is being done laterally, e.g., dashboards for immigrant data at StatCan, which may benefit from mutual awareness?

11. Future Work Ideas

- Given a set of reliable data, what are as many use cases and scenarios we can think of how this data can be used for good?
- How would an existing, updated inventory be useful for measuring efficiency, efficacy, effectiveness of the immigrant services being inventoried?
- What is the superordinate goal of providing immigrant services?
- Over time, longitudinal data will become available. How might this be useful?