The IPC's Big Data Guidelines
Privacy, Fairness and Ethics

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Outline

- Big data and Ontario's privacy laws (David Goodis)
- IPC's "Big Data Guidelines" (David Weinkauf)
- Questions

Big Data and Ontario's Privacy Laws

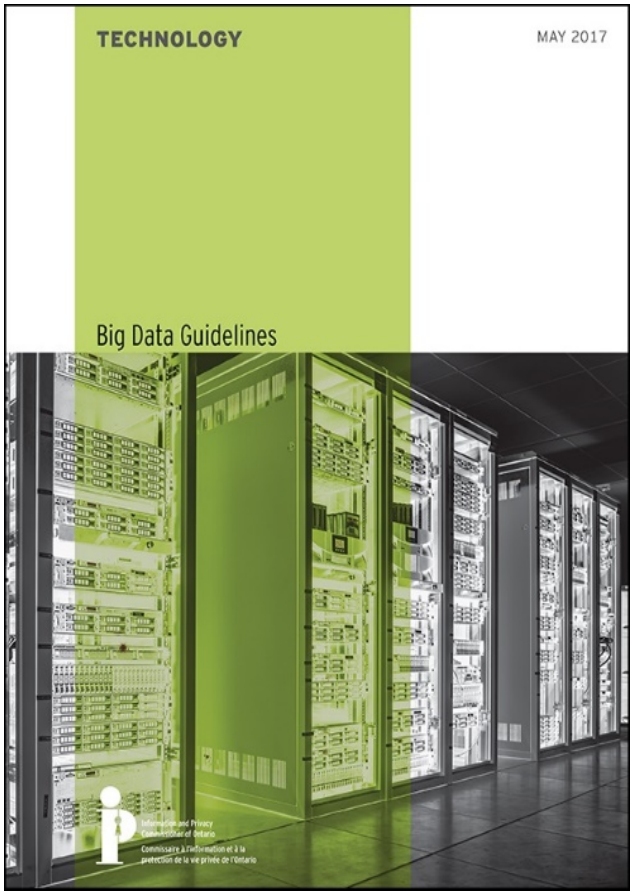
- *FIPPA/MFIPPA* not designed with big data in mind; not possible when proclaimed in 1988/1991:
  - world wide web not yet invented (1989)
  - information technology was less prevalent
  - types of data and analytics were less complex
  - uses of personal information were discrete and determinate
- Current legislative framework treats government institutions as **silos**:
  - collection of personal information must be "necessary"
  - secondary uses are restricted
  - information sharing is limited

Big Data and Ontario's Privacy Laws *(Cont'd)*

- May still be possible to conduct big data under *FIPPA* if:
  - collection of personal information (PI) is **expressly authorized by statute** [s. 38(2)]
  - disclosures are for purpose of **complying with a statute** [s. 42(1)(e)]
- Such cases should be the exception, not the rule
- To support big data in general, we need a **new legislative framework**

Ontario IPC's Big Data Guidelines

- Designed to inform institutions of key issues, best practices when conducting big data projects involving PI
- Divides big data into four stages; each stage raises a number of concerns (14 total)
- Institutions should avoid uses of PI that may be **unexpected, invasive, inaccurate, discriminatory or disrespectful** of individuals
- Today we will discuss a selection of points raised in paper



What Is Big Data?

- The term “big data” generally refers to the combined use of a number of advancements in computing and technology, including:
  - *new sources and methods of data collection*
  - *virtually unlimited capacity to store data*
  - *improved record linkage techniques*
  - *algorithms that learn from and make predictions on data*

Collection

- Issue: **speculation of need rather than necessity**
  - inherent tension between big data and principle of data minimization
  - what is now known as “data mining” was originally called “data fishing”
  - analyze data first and ask “why” later
- Best practice (BP): proposed collection of PI should be **reviewed and approved** by a research ethics board (REB) or similar body

Collection *(Cont'd)*

- Issue: **privacy of publicly available information**
  - potential uses and insights derivable from a piece of information are no longer discrete and recognizable in advance
  - innocuous PI can be collected, integrated and analyzed with other PI to reveal hidden patterns and correlations that only an advanced algorithm can uncover
- BP: any publicly available PI should be **treated the same** as non-public PI

Integration

- Issue: **inadequate separation of policy analysis and administrative functions**
  - PI collected for the purpose of administering a program can be used for secondary purpose of fulfilling the policy analysis function of the program
  - however, in general the reverse is not the case
- BP: integrated data sets should be **de-identified** before analysis to ensure adequate separation
- De-identification also helps to address the inherent tension between big data and principle of data minimization

Analysis

- Issue: **biased data sets**
  - even if “all” data is collected, the practices that generate the data may contain implicit biases that over- or underrepresent certain people
  - also, the conditions under which a data set is generated may cause some members of the target population to be excluded
- BP: assess whether the information analyzed is **representative** of the target population by considering whether:
  - the practices that generated the data set allowed for discretionary decisions
  - the design of a program or service contained overly restrictive requirements

Analysis *(Cont'd)*

- Issue: **discriminatory proxies**
  - Charter guarantees every individual a right to "equal protection and benefit of the law without discrimination"
  - variables in a data set that are not explicitly protected may correlate with protected attribute
- BP: ensure analysis of integrated data set does not result in any variables being used as proxies for **prohibited discrimination**
- Outcome of analysis may need to be reviewed by REB or similar body to determine its potential for such discrimination

Analysis *(Cont'd)*

- Issue: **spurious correlations**
  - with so many combinations of variables at play, there are likely to be some that appear to be meaningful without actually being so
  - however, correlation does not imply causation
  - two variables may relate by chance or to a third variable
- BP: ensure any patterns discovered in the analysis are **meaningful**
- You may need to verify results of the analysis in a manner that is independent of the procedure used

Profiling

- Issue: **lack of transparency**
  - profiling not only processes PI but generates it as well
  - evaluation or prediction of PI happens in the background
  - individuals may not understand the consequences
- BP: individuals should be **informed of the nature of the predictive model** or profile being used, including:
  - the use of profiling and the fields of PI generated by it
  - a plain-language description of the logic employed by the model
  - the implications or potential consequences of the profiling on individuals

Profiling *(Cont'd)*

- Issue: **individuals as objects**
  - profiling takes reductive approach to understanding where individuals only amount to the sum of their parts
  - even if accurate, individuals may feel a loss of dignity from being subjected to profiling
  - extension of profiling to too many aspects of society or individuals' lives would have serious consequences, such as loss of autonomy, serendipity and exposure to a variety of perspectives
- BP: the public and civil society organizations should be consulted regarding the **appropriateness and impact of proposed profiling**