Keeping up with the Data:

Reflections on Fixity and Data Visualizations

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|  | **Angela Beking** |  |
|  | *Privy Council Office*  *Canada*  *Angela.Beking@pco-bcp.gc.ca*  *0000-0002-6165-5970* |  |
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**Seeking to use data to drive decision-making in real-time, organizations are revolutionizing how they understand, produce, and use information. To sustain the value of insights derived from data, digital preservation professionals must challenge a core assumption: that data and information workflows will automatically produce static objects that can represent a complete record of our times. Using the specific example of Tableau data visualization software, I will suggest that the only way to support accountability, transparency, and justice via digital preservation is to become more active in the data and information lifecycle. To succeed, we must invest in collaboration with a broader community: specifically, data and information management professionals.**

**Keywords – Data Management; Information Management; Data Visualization; Collaboration; Fixity**

**Conference Topics – Community; Innovation**

# Introduction

Fixity is a core concept in digital preservation. It means assurance that a digital file has remained unchanged. Establishing and maintaining fixity demonstrates chain of custody, which allows us to ensure that digital materials are authentic [1]. But what if there is no digital file (or otherwise static preservation object) on which to establish fixity? What if data and information workflows no longer naturally create static objects?

This poster will present data visualization software as an example of a technology that does not necessarily generate a complete “record” by default. While Tableau is the example discussed here, there may be similar challenges with other tools such as Infogram, ChartBlocks, Datawrapper, or Power BI.

## “Analytics for Everyone”

Tableau is a visual analytics platform that provides “analytics for everyone.” Tableau seeks to fuel *data culture:* the “collective behaviors and beliefs of people who value, practice, and encourage the use of data to improve decision-making” [2]. Users can visually express data by drag and drop actions into data queries through a GUI; advanced coding knowledge is not required. The resultant data visualizations are completely interactive and can be refreshed at different intervals, such as hourly, daily, weekly, or monthly. This changes the information product in real time, as the data is updated (e.g., by adding new sales figures to the connected data source) [3].

# The Challenge

Tableau’s default file format (\*.twb) does not contain the actual data that is used to create the visualization(s). This means that when the data connection changes (such as post transfer to an archival repository), the file will fail to open. While Tableau can also produce a “packaged workbook” (\*.twbx) that saves local file data, this requires manual intervention. It may also be possible to create an “archive solution” in Tableau via the REST API functionality or Tabcmd; this is a current topic of research [4].

What is important is that none of these potential solutions are “out of box” functionality of the software. A software cannot predict which data and information need to be maintained, for how long, or for what purpose. Defining this is a “people and process” issue as much as it is a technical issue. The content that is required to maintain accountability, transparency, and justice will not necessarily be created without active intervention. This poster will explore how that intervention could succeed as a broad community effort between data management, information management, and digital preservation professionals.

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