Promoting Data Access and Data Protection

How emerging technologies can help agencies navigate the triple constraint of data.

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Every time you release any statistic calculated from a confidential data source you “leak” a small amount of private information.

If you release too many statistics, too accurately, you will eventually reveal the entire underlying confidential data source.

The Triple Constraint of Data

Confidentiality

Increasing one dimension will typically require reducing one and/or the other of the dimensions.

Access

Accuracy

You can maximize on two dimensions, but only at profound cost to the third.
Data Access and Disclosure Risk

Supporting increased access to agency data for evidence-building increases disclosure risk in a number of ways:

• Increased quantities of data being released;
• Increased demand for microdata;
• Increased demand for highly granular data; and
• Increased demand for direct identifiers (to permit linkage).
Emerging Technologies Can Help

- Synthetic Data
- Query Systems
- Secure Multiparty Computation
- Differential Privacy
None of these emerging technologies is (currently) an “off the shelf” solution.

Proper implementation requires:
- Statistical and technical expertise;
- Engagement with data users;
- Configuration and optimization; and
- Up front agency investment.

Plus, many of these technologies still require additional research and development to have broad applicability.
The U.S. Census Bureau’s Experience with Differential Privacy
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