International Workshop on Urban Data Science
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Democratizing Data: Citizen-Driven Data

M. ANN HOWARD

DEPARTMENT OF SCIENCE, TECHNOLOGY, AND SOCIETY - RIT

Four Propositions

- **Proposition #1: Big data and predictive algorithms have immense untapped potential to benefit the public interest and to help individuals protect and freely exercise their political, economic and personal autonomy.**

- **Proposition #2: Big data isn't a threat to democracy, if….**

- **Proposition #3: What is measurable isn't the same as what is valuable.**

- **Proposition# 4: Big data alone is not enough, we need other means to understand and respond to the wants and desires of citizens and to improve government services provided in specific contexts.**

Proposition #1:   Big data and predictive algorithms have immense potential to benefit the public interest

- There are a myriad of use cases that demonstrate this proposition
  - City of Seattle: reduce energy consumption
  - Chicago: Adopt-a-Sidewalk: assure that sidewalks are cleaned of snow and ice
  - SpotHero: Find the best parking space, used many cities, i.e. NYC, Boston, Milwaukee
  - Mosquito control for outbreaks of West Nile Virus
  - Etc., etc., etc...

Urban Planning and Data Analytics

Luís Bettencourt - The Santa Fe Institute

- *...[C]ities are first and foremost self-organizing social networks embedded in space and enabled by urban infrastructure and services.*

- *As such the primary role of big data in cities is to facilitate information flows and mechanisms of learning and coordination by heterogeneous individuals*

Proposition #2: Big data isn't a threat to democracy, if...

- The citizen's right to know about government activities and to participate in government decision making

- These rights can inadvertently get lost in the big data world

- "An educated citizenry is a vital requisite for our survival as a free people."

- The challenge: How to reconcile these basic rights with the complexities associated with big data and analytics
  - Demands more than open source solutions; mere access to data isn't enough

Doing More with Less

- The tension between accountability and efficiencies

- What are the best/efficient ways to spend limited public dollars?
  - Taxpayers expect the most efficient expenditures of public funds – "Do it well and as inexpensively as possible."

- Financial crises and shrinking tax bases have forced governments, especially at the local level, to re-think fiscal priorities and to adopt new ways to meet citizen demands for services

- Big data and data analytics have become invaluable tools

Proposition #3: What is measurable isn't the same as what is valuable.

- A Rochester Case Study

  - What to do if the only full-service grocery store in your neighborhood burns down?
  - Who decides what data matters?

  - An example of *CO-CREATION*: a process through which public sector actors collaborate with stakeholders to collect and analyze data for innovative solutions to issues of concern

  - Points to the need for a more holistic approach to data analytics

"Investing in Big Data is Easy, Using it is Hard"

Tricia Wang, Global Technology Ethnographer

- Big data is able to offer insights at scale and leverage the best of machine intelligence
- What often is missing is **THICK DATA**
- Thick data can help us rescue the context loss that comes from making big data usable
- **Thick data helps to answer the question,** *Why is this happening*?
- How do we collect **thick data?**

Big Data and Thick Data Are Not the Same

BIG DATA

Quantitative data with large data sets

Delivers numbers

Relies on machine learning

THICK DATA

Quantitative and qualitative data

Can be analyzed with human brain power and does not need computational power

Delivers stories

Relies on human learning

Proposition #4 – Big Data Alone Isn't Enough

- We need other means to understand and respond to the wants and desires of citizens and to improve government services provided in specific contexts.

- Neighborhoods are not all the same – different assets and strengths and different challenges
  - Social and cultural contexts matter

- To be effective we need to identify a role for neighborhood residents – a role in collecting **THICK DATA**

- A participatory approach – citizens as sensors

Community-Based Participatory Research

A collaborative process that equitably involves all partners in the research process and recognizes the unique strengths that each brings.

CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change."

Kellogg Community Health Scholars Program (2001)

# Community-Based Participatory Research – Context Matters

- How can citizen-generated data focus the discovery process on the study of everyday life in urban neighborhoods, determine what residents want to change, and use this data to collaboratively develop and implement a plan to accomplish change?

- How can we match this data with big data to support citizen efforts to transform their own neighborhoods?

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Whose Global Village?: Rethinking How Technology Shapes Our World
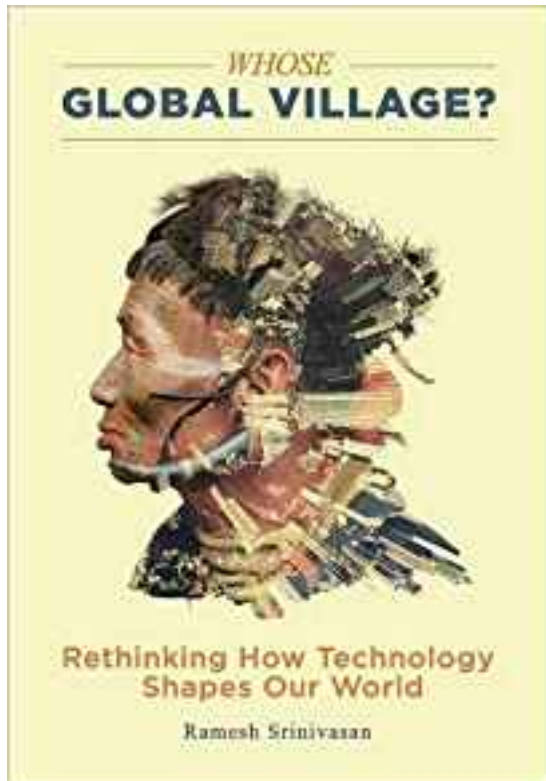
Ramesh Srinivasan

"…open ourselves up to multiple ways of creating, sharing, and classifying data and technology."