Citizen Science in the Digital Age: Connecting ‘Unapplied Capacities’ with ‘Unmet Needs’

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Outline

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6. Discussion and Policy Implications
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1. Introduction
Objective

Building upon 2016 Fotheringham paper

Apply conceptual framework to new theme

Key Research Question:

How does Citizen Science (CS) relate to the digital economy? CDO objectives?
What is Citizen Science?

Oxford Dictionary Definition (added 2014):

citizen science n. scientific work undertaken by members of the general public, often in collaboration with under the direction of professional scientists and scientific institutions.

Practice or philosophy?

Common areas:

Positive Functions in Society
2. Citizen Science and the Digital Economy
How Does CS Relate to the Digital Economy?

Preliminary nature of inquiry

Revolution of Web 2.0 and smartphones

‘Unmet needs’ and ‘unapplied capacities’

New application for benefits of CS projects

What could this look like in 10 years?
3. Method
Method

Framework based on the role of participants in their respective projects

First examined ~30 projects, then inductively produced four categories and populated with the rest of the projects (n=145).
4. Framework and Analysis
Four Categories of Citizen Science Projects

- Active Data Collection
- Passive Data Collection
- Skilled Data Analysis
- Unskilled Data Analysis
Active Data Collection

Participants collect data

Usually have some knowledge of field

‘Participatory monitoring’

Comprise the majority of projects surveyed (104 out of 145)

Overwhelmingly ecological in nature
Passive Data Collection

Participants do not take specific actions to collect data

Usually monitoring some aspect of environment

Perhaps should not be considered as CS projects

Generally web-based
Skilled Data Analysis

Participants use requisite knowledge to analyze data provided

Most commonly identifying objects in photos

Almost all created after 2010
Unskilled Data Analysis

Participants analyze data; does not require specialized knowledge

Second most populous category (23 of 145)

Diverse subject matter

Most created after 2010
5. Case Studies
Citizen Science Case Studies

Active Data Collection - eButterfly
Passive Data Collection - Safecast
Skilled Data Analysis - Agent Exoplanet
Unskilled Data Analysis - Old Weather
Platform - Zooniverse
Private Sector Equivalents

Active Data Collection - Poimapper
Passive Data Collection - Google Traffic
Skilled Data Analysis - Unable to find example
Unskilled Data Analysis - reCAPTCHA
Platform - Amazon Mechanical Turk
6. Discussion and Policy Implications
Discussion

More avenues for connecting unmet needs and unapplied capacities as a result of digital innovation

Finding balance between open access and market incentives in policy making

CS can provide a guide in determining this balance and how to effect it

Opportunities for better leveraging human capital
Lines for Further Inquiry

How could open data differentially benefit commercial interests?

How could the digital innovations discussed here be leveraged to increase end user innovation?

How could CS projects disrupt or become further integrated with existing systems that provide public goods?
Questions and Discussion