

# (Co-)Producing knowledge out of the academic box

A service-based view of citizen science

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**Leuven, 27-28 May 2019**



Involvement of non-experts  
(lay people) in scientific  
discovery, monitoring and  
experimentation  
[Callon 1999, p. 14)

# Background

- Citizen science (CS) engages millions of individuals around the globe and spans different fields.
- CS as a sort of public service aimed at co-producing (generating and disseminating) scientific knowledge in the academic community and society at large.
- CS is of interest to public management research and practice.

# Our arguments

- A closer look at the new geography of knowledge co-production can provide essential theoretical insights for the broader case of co-production in the public realm.
- From a managerial perspective, CS offers opportunities for strategic thinking on co-production in the public sector:
  - Commonalities with *more traditional* domains of co-production,
  - ... but differences in terms of: empirical significance, degree of institutionalisation, use of standard routines and assessment methods, and support by leading public research organisations.
  - Outcomes subject to public scrutiny.
- CS is a mature co-production field.

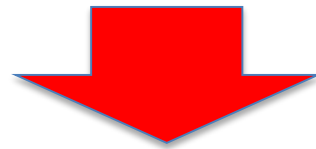
# Our guiding question

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What can the public managers involved in *more traditional* forms of co-production learn from the diffused and consolidated practice of Citizen Science?

# Research approach

- Qualitative, conceptual.
- Literature review focused on two make-or-break issues of CS:
  - The role of ICT
  - Citizens' motivations to participate.
- Users' heterogeneity 'by design' as a unique character of CS.



The analytical lens: a **service logic** (e.g., Osborne&Radnor 2016).

# A service-based view

- Citizen science (CS) as an **ecosystem** of knowledge co-production [Nowotny, Scott&Gibbons 2003; Lusch&Nambisan 2015] .
- Main roles [Grönroos 2018; Grönroos&Voima 2013]:
  - Citizens scientists are knowledge co-producers and **value creators**.
  - Research institutions are **value co-creators** with laypeople (not viceversa), and **facilitators**.
- Citizen scientists contribute their time and effort only if their *situated* experience with the platform is perceived as valuable. Otherwise, they loose motivation [Grönroos 2018].
- ... consequently, the effective design of the process is necessary, but not sufficient [Osborne&Radnor 2016].
- ICT as an **operand** and **operant** resource [Lusch&Nambisan 2015].

# Preliminary findings

*RQ: What can the public managers involved in more traditional forms of co-production learn from the diffused and consolidated practice of Citizen Science?*

- The platforms of interaction should be aligned to the needs and expectations of the users, at the individual, organisational and systemic levels.
- The development of user-centric platforms requires an iterative design approach.
- To deploy the appropriate departments, public decision makers should be mindful of the dual role of ICT.
- If the *locus* of knowledge creation becomes increasingly decentralised, new organisational roles are required to allow for continuous scanning of the ecosystem.

# Research opportunities

- The concept of *Psychological distance* (or ‘the perceived closeness to an experience’) promises interesting developments for understanding the willingness to interact in CS ecosystems [see: Holmqvist et al. 2015].
- The dual role of ICT is crucial to investigate the innovation potential of the various tools deployed in co-productive practices.
- The wealth of freely available information can help fill the gap - i.e., the absence of co-production evidence in large N settings - that challenges the research (e.g., Brandsen, Verschuere & Pestoff, 2012) and that has, until now, limited the generalisability of the findings of many empirical studies.



# Summing up

- In this paper we have tentatively extended the influential ideas originally proposed by Osborne and colleagues on the co-production of public services, applying these to a domain (CS) that remains under-appreciated in the public management debate.
- Implications: framing Citizen Science according to a ***service logic*** can provide essential practical and theoretical insights for the broader case of co-production in the public realm.
- Finally, we have outlined areas deserving further investigation for both the practice and the theory of co-production.

# Next steps

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- Testing and conversations with practitioners are needed to see if this approach is useful and worthwhile.
- We would like to continue the investigation applying a service-based view to the knowledge co-production processes in the provider, interaction and user spheres.

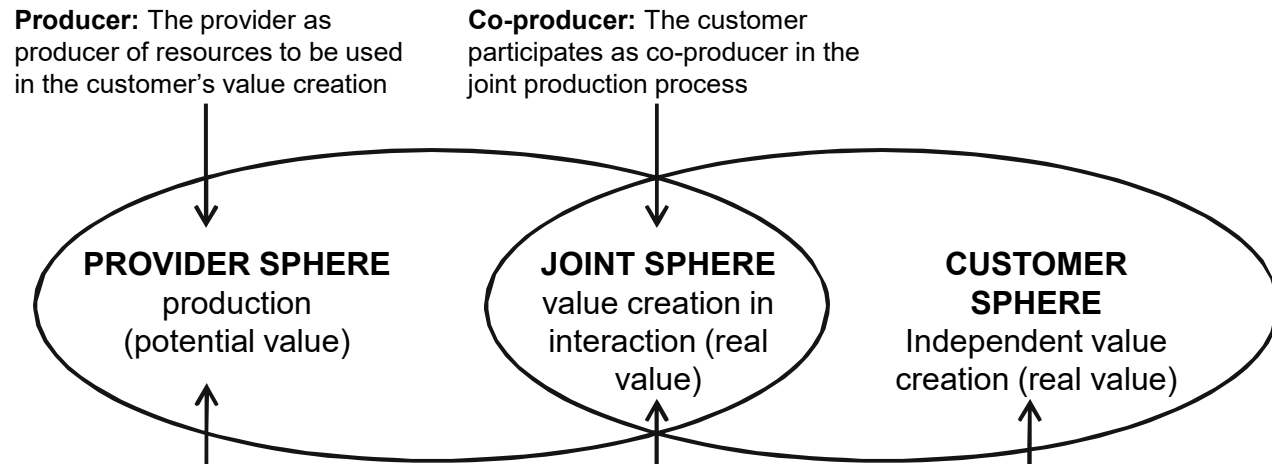
***Thank you for your interest!***

***Maddalena, Rocco, Massimo, Stefano***



# Value creation spheres\*

## From a production perspective



### Customer's role

**Value creator/ co-creator:** The customer is the value creator in direct interaction, but when inviting the provider into this process (a merged dialogical process), value is co-created with the provider

**Value creator:** The customer is an independent value creator outside direct interaction

### Provider's role

**Value facilitator:** The provider is a value facilitator

**Co-creator:** The provider may get an opportunity to engage in the customer's value creation process as a co-creator

**Value facilitator:** The provider is a value facilitator

\* C. Grönroos , P. Voima  
J. of the Acad. Mark. Sci. (2013) 41:133–150

## From a value creation perspective



# Research strategy & pathway

