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Crowd dynamics, Co-creation, and Values in technology innovation:

A case study in robotics infrastructures

Gianluigi Viscusi; EPFL, Switzerland; gianluigi.viscusi@epfl.ch

In this article, I am going to analyze crowd dynamics in co-creation settings (Cordella, Paletti and Maha, 2018; Ramaswamy and Ozcan, 2018; Viscusi and Tucci, 2018). Furthermore, I am going to investigate the connection between these dynamics and the values as mechanisms *informing* or rather *forming* the outputs of co-creation initiatives as leading eventually to new infrastructures, with a specific focus on technology innovation (Stirling, 2008; Shilton, 2013; Snyder, Shilton and Anderson, 2016) and responsible innovation in robotics (Stahl, 2012). On the one hand, the research aims to provide an understanding of *how* crowd dynamics eventually shape collective co-creation activities, either enabling or bounding their capacity of scaling; on the other hand, different value perspectives are questioned in their difference through the shapes that co-creation practices may assume once moving from, e.g., value intensive setting of local groups and communities to a population assuming the dimension of anonymous crowd in co-creation practices characterized by seriality (Sartre, 1960; Young, 1994; Viscusi and Tucci, 2018), where the capacity to execute patterns of activities for a goal passively unifies the individual members more than shared values. The theoretical argument is empirically developed through the analysis of the case of a Robotics Innovation Facility (RIF) based in Italy, one of the initiatives funded by the European project ECHORD++ to provide access to businesses as well as a general audience to high-tech robotic equipment and expertise, thus eventually promoting and enabling co-creation in robotics. Those facilities are laboratories with a specific configuration of open physical or virtual infrastructures for collective efforts of ideation, invention, research and development innovation with some characteristics shared by living labs and test beds (see for the overlap of test beds with other setting: Engels, Wentland and Pfotenhauer, 2019). Nonetheless, according to what could be considered as a common sense definition, a laboratory is a facility that provides controlled conditions in which scientific or technological research, experiments, and measurement may be performed."(Wikipedia, 2019). Furthermore, a facility seems to be, on the one hand, a general "virtual" class of entities[1], including "laboratory" as a specific kind of facility or else one of its many forms of "actualization"(DeLanda, 2002; Deleuze, 2002); thus, not strictly related to the domain of scientific research and experiments. The tension with the common-sense definition of "facility" as well as the implicit dialectic with other experimental spaces (e.g., living labs or test beds) makes "facility" as worth questioning together with the crowd and co-creation mechanisms that especially act when facilities scale to eventually become infrastructures (Star, 1999; Monteiro, Pollock, Hanseth and Williams, 2012) for the design and development of new systems having societal impacts, such as the robotic ones (Barrett, Oborn, Orlikowski and Yates, 2011; Aleksander, 2017; Rai, Constantinides and Sarker, 2019).

[1] According to the Collins Dictionary (2019): "Facilities are buildings, pieces of equipment, or services that are provided for a particular purpose."

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