When thousands of citizens innovate: how policy-makers can contribute

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The COVID-19 pandemic is a great challenge to our global society, exposing our limitations as well as new ways to generate adequate responses to global crises.

Communities and individuals have spontaneously organized to deal with this crisis. Thousands of skillful individuals have engaged in the development of mechanical ventilators and masks, SARS-CoV-2 test kits, mobile applications for contact tracking and for coordinating mutual help and care, to name just a few.

Since March, we recorded 63 groups focused on open source solutions for the coronavirus crisis, on Facebook alone. Open source enables faster innovation, as everyone can build on existing knowledge and information. In parallel, over 80 online hackathons were organized. Between April 24-26, 380 volunteers organized EUvsVirus, a hackathon initiated by the European Innovation Council to federate projects realized across Europe. 20,900 people registered for this event, which resulted in 2,150 projects submitted [1] At the same time, traditional organisations worldwide bridged with the crowd, proposing over 26 challenges and prices to crowdsource innovation [2].

This burst of crowd-based organized action propagated on top of existing networks of hackers and makers of all sorts, share a common culture of open collaboration. Governments around the world have started to pay attention to this phenomena, acknowledging its potential. Open source development and open science are well documented, but they have not yet been integrated into the mainstream. Some have coined the term "fourth sector" in referring to this wide-scale mobilization of individuals around a common purpose or issue.

Although the response of this movement has been very prolific, the results have not been up to the expectations that could be derived from this massive mobilisation. We need to better channel the potential expressed in this unique manifestation of will and this demonstration of skills, into practical, real, solutions. Is this a loss of opportunity? If so, what have been the shortcomings?

First, we can look at some issues within the movement: redundancy and poor horizontal coordination. For example, let's consider the vast number of open source ventilator projects that have been proposed. Many of them share multiple similarities and could have benefited from more collaboration and mutualization of resources. Moreover, we also observe poor trans-disciplinary coordination within these ventilator projects, many of which have suffered from lack of medical expertise.

Secondly, we can look at some issues between this movement and traditional sectors: recognition and legitimacy. Some open source development groups