



HOW COLLABORATIVE ONLINE NETWORKS DEVELOP SOLUTIONS IN TIMES OF COVID-19

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Relevance of Peer Innovation

- Innovation is often not developed by firms
 - user innovation (von Hippel 1976, 1988, 2005), consumer innovation, free innovation (von Hippel 2016), household sector innovation (Chen et al, 2020)
- Online communities provide individuals with useful structures and tools for interactions and the distribution of innovations (von Hippel 2010)
- Increasing interconnectedness and user endowment will boost this phenomenon (Baldwin and von Hippel 2011)



Definition of Peer Innovation

- Peer Innovation

Peer innovation is a specific form of innovation in the household sector in which **private individuals voluntarily and self-determinedly collaborate** to develop novel **technical solutions** and **share them** with a peer community via online platforms **without claiming intellectual property rights**.

- ✓ Household sector
- ✓ Free
- ✓ Online
- ✓ Collaborative



Advantages of Collaborative Innovation

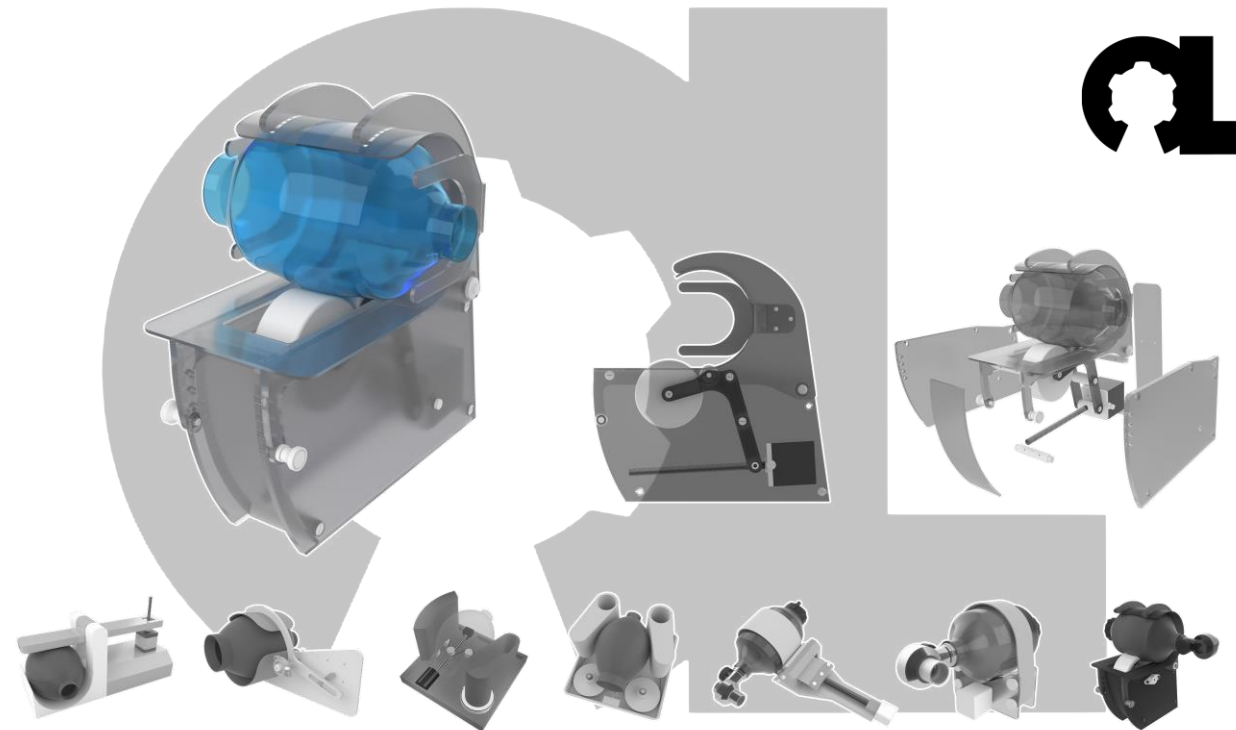
- More diverse crowd increases likelihood to successfully innovate
- Increases the speed and effectiveness of developing, testing and diffusion
- Diffusion increases social welfare (no duplication and market failure)
- Increases adoption and sharing rate
- Increases likelihood of producer adoption

COVID-19 and Peer Innovation

- Demand for medical devices > supply (ventilators, protective gear, etc.)
- Existing supply chains are not flexible enough (design, materials, production capacity, etc.) to adequately increase production output
- Free and Open Source Hardware (FOSH) as a solution
- WHO executive director Dr. Michael Ryan: “Speed trumps perfection”
- Ideation and design based on Peer Innovation → online, collaborative, free sharing
- Allows decentralized and locally sourced production by peers all around the world

OpenLung Emergency Medical Ventilator

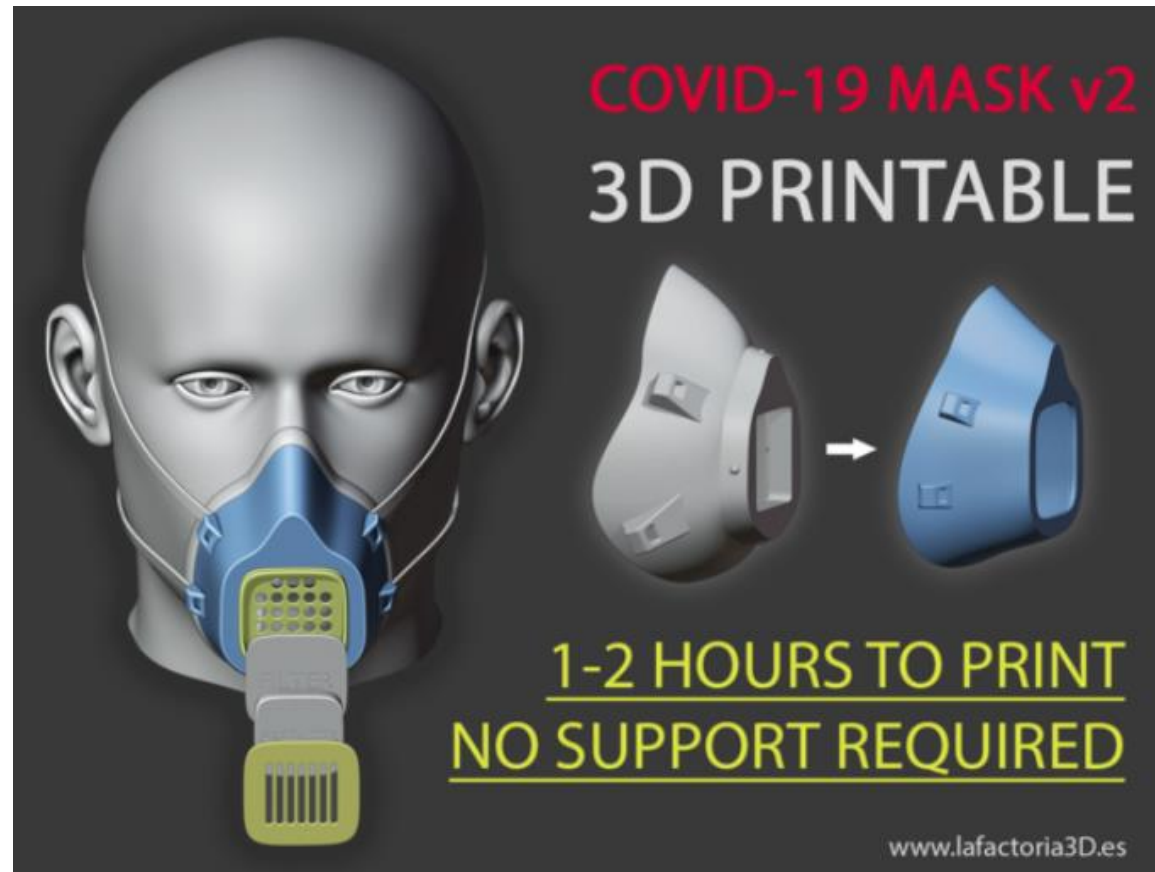
An [IN PROGRESS] open source, low resource, quick deployment ventilator design that utilizes a bag valve mask (BVM or Ambu-bag) as a core component developed in response to the global shortage of medical ventilators due to the COVID-19 pandemic.



1,238 Commits 1 Branch 0 Tags 582.9 MB Files 597.8 MB Storage



COVID-19 Mask



15
Thing Files

717
Comments

186
Makes

149
Remixes

3
Apps



What is next

- Community mapping using social network analysis of social media & community data
- Build a ML based tool that uses community data to detect peer innovation
- Both will help companies and policymakers to detect key stakeholders and innovative solutions to pressing issues

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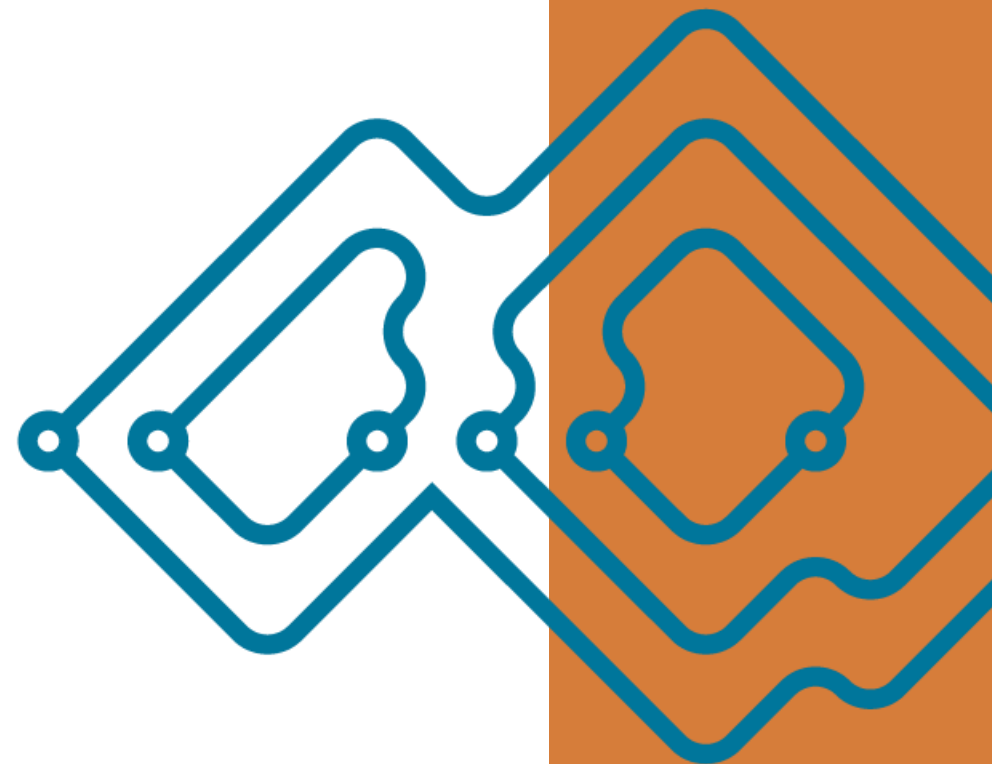
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