



OpenVent is aiming to tackle the severe global shortage of ventilators | Photo source OpenVent

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HACKATHON INSPIRES NEW VENTILATOR DESIGN FOR COVID-19

 HEALTH & WELLBEING

A German hackathon has led to the development of a number of innovative ideas, including a 3D-printed ventilator

Spotted: One of the defining issues of the COVID-19 pandemic has been the lack of ventilators around the world for people who are stricken with severe symptoms of the disease. These are crucial for keeping these victims alive, but there are not enough to meet the vast increase in global demand. In Germany, the federal government has attempted to find a solution to this shortage and other issues, by holding a hackathon called #WirvsVirus (“We vs Virus”).

The hackathon attracted more than 42,000 people, who spent 48 hours working together to develop ideas for tackling the pandemic. Ideas that were developed during the hackathon included websites to coordinate logistics and find job openings for people who need to work from home; a digital network connecting schools and children to provide learning support; an app to notify users if they have had contact with someone who has tested positive; and a 3D printed open-source ventilator.

The German government chose 20 of the most promising ideas developed during the hackathon for financial support and further development. The ventilator, dubbed OpenVent, was developed by Infineon and used a bag valve mask, 3D-printed components and Arduino compatible software. A belt and motor are placed in a housing and the bag valve is placed within the belt. The motor applies pressure to the belt to deflate the bag and releases it to inflate.

The plans for the device are available as open-source files on GitHub. Nico Kelling, one of the engineers on the OpenVent team, points out that the design was kept intentionally simple, saying, “We’re working for the most-simple concept possible so that others can work further on it. ...We

hope our idea will make it possible to provide a large number of devices within a short period of time. We can save lives.”

Engineers and amateurs alike have been working hard to develop solutions to equipment shortages during the pandemic. Some innovative ideas recently covered by Springwise include a stackable hospital that can be built in [two days](#) and an open-source design for 3D-printed [face shields](#).

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Takeaway:

The idea behind the hackathon was to create a digital space for those who were already working to find smart solutions for the current crisis. It also allowed the German government to rapidly source new ideas and then quickly choose the most promising for further funding. After the pandemic, it may be possible for this model to be extended to developing other types of projects quickly and efficiently. For example, businesses could hold hackathons to find the best way to produce new components or projects, and they could be used to come up with ideas in all areas of government.