

# Reusable and customised facemask to keep healthcare workers safe thanks to digital supply-chain

April 5 2022

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Credit: University of Warwick

Throughout the pandemic the filtering facepiece 3 respirator (FFP3) mask was heavily in demand, as it is the most widely used respiratory protective equipment in UK healthcare system. However, according to a study with health workers from 32 hospitals, the overall fit-testing pass rates had a mean pass rate of 81%.

MyMaskFit with their NHS Nurse co-Founder saw this statistic in reality in setting up the COVID-19 Wards, and with inspiration from the

Ventilator Challenge UK they have created a reusable, customized facemask to protect medical workers during and after the pandemic.

The mask is unique as it has:

- Fully customized fit according to individual's face. This will ensure a high fit-testing pass rate and better protection.
- Different from the traditional one fits all masks, customized mask will also provide the most comfortable wearing experience that enable clinical workers wearing them for long time.
- Local 3D printing supply chain to ensure a fast and flexible reaction to the demand with short lead time.

However, to ensure MyMaskFit could be rolled out and mass produced it was important to secure a sustainable supply chain. This is where the WMG Supply Chain Research Group stepped in and helped MyMaskFit to create a digital solution, taking advantage of emerging distributed manufacturing.

Distributed manufacturing consists of using global and remote expertise, producing parts locally and diversifying supplier network productions, researchers from WMG decided to use distributed manufacturing to create a digital supply-chain marketplace, which is attractive to buyers and suppliers, as it uses the insight gained from other marketplace examples to address known barriers and issues. This means that companies can transform customer feedback into designs and products that can be achieved within days through such a dynamic and distributed supply chain.

The WMG Accelerator Team also helped, by leveraging their existing knowledge learned from UK Collaborative Commerce Marketplace (UKCCM). UKCCM is a digital marketplace created by WMG Accelerator Team, which aims to increase sales and lower costs through

providing easy access to the core competences and capabilities of small and medium-sized enterprises.

MyMaskFit was then able to meet the classification of cloud-additive manufacturing with a touch of the platform's support (marketplace) to amplify the on-demand supply chain to a larger scale.

Carl Che from the WMG SCRG at the University of Warwick comments: "We are glad that our distributed manufacturing archetype and marketplace archetype helped MyMaskFit to form their business model from academic side. It feels great knowing a better mask can potentially help more NHS workers or even save more lives.

"From a macro perspective, two separated models (distributed manufacturing and B2B marketplace) perfectly help each other out. This project can potentially sketch out an emerging pattern of the future [manufacturing](#) in the UK."

Paul Perera from MyMaskFit comments: "Our mask is unique as it is reusable and customizable, however in order for it to be mass produced and manufactured easily we needed a sustainable supply-chain in place.

"WMG at the University of Warwick have helped us meet our customer's needs and expectations by helping us secure a sustainable and digital [supply-chain](#), this means we can easily check our suppliers availability and prices and provide MyMaskFit quickly and at a competitive price."

Provided by University of Warwick

Citation: Reusable and customised facemask to keep healthcare workers safe thanks to digital supply-chain (2022, April 5) retrieved 11 May 2024 from

<https://medicalxpress.com/news/2022-04-reusable-customised-facemask-healthcare-workers.html>

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