



CASE STUDY

VentilatorChallengeUK manufactures 20 years' worth of ventilators in 12 weeks to help save lives

Avanade plays our part in the effort by enabling a resilient supply chain through the power of Microsoft.

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Business situation

Coming together to avoid a secondary crisis

As tens of thousands of UK residents fell sick at the beginning of the COVID-19 pandemic, many hundreds were being admitted to hospitals across the country every day. The most seriously ill were admitted to ICUs, requiring ventilators to help them breathe. As the modeling continued to paint a dire picture of just how many ventilators were needed, the question on everyone's mind became: What if there aren't enough for everyone?

With only 5,900 ventilators available within the National Health Service (NHS) and a projection that nearly five times that number could be needed in the months ahead, the British government needed a rapid solution. And with global demand cutting off the supply from overseas, that solution would have to be homegrown.

The call went out: All hands on deck.

After the government made a formal request for manufacturers in the UK to shift focus to producing ventilators, the country responded. Thousands of leading organizations from the aerospace, automotive, engineering and digital technology industries were brought together – branded as the VentilatorChallengeUK Consortium – with a shared goal to manufacture more than 10,000 ventilators in 12 weeks. It was a monumental task, but with the hospitals filling and lives at stake, there wasn't a moment to waste.

"Our clients often say we're able to do the impossible," says Thomas Nall, Avanade's global manufacturing lead. "At the outset, this seemed impossible, but we were up for the challenge."

Solution

Doing our part for the public good

The Consortium determined that the best way to ramp up production was to use two existing ventilator designs. Avanade quickly dispatched a team from across Europe and India to help deliver multiple digital solutions to support the supply chain and ventilator production. We implemented Industry 4.0 technologies, including business applications, data analytics, AI and mixed reality for:

- **Rapid supply chain management:** In just three weeks, Avanade, Accenture and Microsoft built a supply chain solution using [Microsoft Dynamics 365](#), a job that would typically take up to a year. Using the tool, Consortium members could order, track, receive and pay for all ventilator components.
- **Ventilator assembly line training via mixed/extended reality (XR):** By digitizing ventilator blueprints and assembly guides and using Microsoft HoloLens 2, Avanade enabled an XR training experience for 3,500 assembly line workers from multiple companies. Additionally, we provided an "over-the-shoulder" solution using Microsoft Dynamics 365 Remote Assist to connect experts with workers who were hundreds of miles away. This approach helped to ensure quality and consistency in the manufacturing of the ventilators.
- **Control tower dashboarding:** With so many different companies working toward a common goal, visibility was key. Avanade built a unified, control tower-like dashboard using [Microsoft Power BI](#) to provide a single source of truth and analytics for ventilator production. From supply chain through to assembly, testing and delivery, this dashboard provided a 360-degree view of the process to all stakeholders, 24/7, improving product traceability and compliance.

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Avanade created the digital solutions using an agile approach that delivered a "minimum viable product" (MVP) to help meet compressed production timelines. Additionally, we conducted multiple calls each day with our partners to ensure everyone was moving forward in the right direction and the solutions were working as needed. The approach paid off. With everyone pulling together, the project was a massive success.

Results

Life-saving high-speed innovation

The numbers are staggering: Over the course of the initiative, 15 million parts from 88 global suppliers flowed through the Dynamics 365 supply chain solution, and the consortium produced 13,437 ventilators. To put this into perspective, that's 20 years' worth of typical ventilator production in just 12 weeks. At its peak, a ventilator was completed – on average – every 88 seconds.

While the output is impressive, it all adds up to the result that truly matters: Thousands of lives were saved.

"Manufacturers are used to adapting to global challenges," says Nall. "I could not be more proud of how Avanade, Accenture and Microsoft used the latest technologies to help a consortium of leading companies rethink the way they operate to drive innovation, adopt new working practices, enhance supply chains and dramatically accelerate the production of ventilators, each one with the potential to save multiple lives."

With ventilators available to those who need them, the NHS now has the critical equipment to continue its fight against COVID-19. It was the ultimate collaboration for the ultimate human impact – an impossible task made possible thanks to technology and a joint effort from everyone involved.

About Avanade

Avanade is the leading provider of innovative digital and cloud services, business solutions and design-led experiences on the Microsoft ecosystem. Our professionals bring bold, fresh thinking combined with technology, business and industry expertise to help make a human impact on our clients, their customers and their employees. We are the power behind the Accenture Microsoft Business Group, helping companies to engage customers, empower employees, optimize operations and transform products, leveraging the Microsoft platform. Avanade has 39,000 professionals in 25 countries, bringing clients our best thinking through a collaborative culture that honors diversity and reflects the communities in which we operate. Majority owned by Accenture, Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com

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