RIZE
Case Study

Photo © RIZE

Challenge
When the COVID-19 pandemic hit, 3D printing solutions provider RIZE switched to a completely remote workforce. It needed to maintain full operational efficiency and ensure effective collaboration between its engineers to hit product development milestones. At the same time, RIZE mobilized quickly to redesign and print personal protective equipment for frontline health workers.

Solution
RIZE created a new model of working, its Safe at Home Manufacturing workflow, facilitated by Dassault Systèmes' **3D**EXPERIENCE platform on Cloud. The company took advantage of the collaboration apps on the platform to enable its engineers to communicate with each other seamlessly as they worked together on projects.

Benefits
Despite having all its engineers working from separate locations, RIZE accelerated the progress of its key business development activities and hit all major milestones, bringing together all disciplines on the **3D**EXPERIENCE platform to innovate at speed – an initiative that was so successful RIZE began offering it to other enterprises. Simultaneously, RIZE used the platform to design and develop a face shield within just a week.

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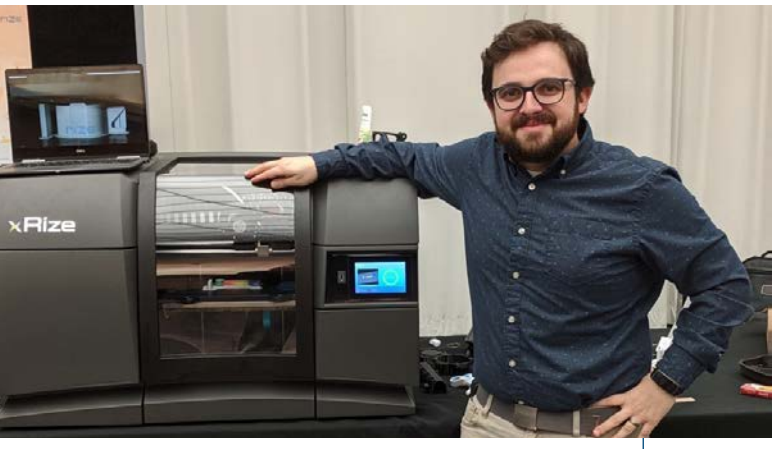
>
> — Andy Kalambi, CEO, RIZE

INDUSTRIAL 3D PRINTERS FIT FOR A UNIQUE PURPOSE

From gyms and basements to home offices and kitchens, RIZE's industrial 3D printers have been busy at work in slightly more unconventional settings amid the COVID-19 pandemic. Based in Massachusetts, RIZE creates innovative RIZIUM 3D printing materials that are recyclable, moisture resistant and USP Class VIII certified – and manufactures industrial 3D printers that print in full color and a wide range of composites. RIZE is the number-one provider of UL GREENGUARD certified products in the 3D printing industry. GREENGUARD certification attests that approved devices meet ANSI/CAN/UL 2904, "Standard Method for Testing and Assessing Particle and Chemical Emissions for 3D Printers," demonstrating that 3D printers can be used without negatively impacting indoor air quality.



RIZE engineers, including 3D print process engineer David Silverman (pictured here), design and collaborate much needed face shields on the **3D**EXPERIENCE platform.

In many ways, the events of 2020 have helped to accelerate RIZE's vision where 3D printing becomes more of an integral part of the engineer's workspace, wherever that may be. When the company shifted to working from home to protect its employees at the beginning of the COVID-19 crisis, it quickly adapted to a new way of working, supporting remote operations and equipping its engineers with industrial 3D printers to continue their projects at home safely with no health risk to them and their families. That's because its 3D printers use non-toxic materials and emit no dangerous chemicals, thanks to RIZE's patented hybrid printing process called Augmented Polymer Deposition, which blends thermoplastic extrusion with ink jetting.

"When our home state was locked down due to the pandemic, the most important thing was to keep people safe," said Andy Kalambi, CEO of RIZE. "Our office was given an exception to stay open as an essential business, but we decided to have everyone work from home. Our entire team took 3D printers home with them to continue to work. These are industrial printers, but since RIZE's company focus is on safe, sustainable, color 3D printers, our solutions are UL GREENGUARD certified safe. Our team turned their basements, kitchens and home gyms into micro-factories."

During the COVID-19 pandemic, RIZE employees worked at home and collaborated remotely on the **3D**EXPERIENCE platform to successfully launch its new RIZE 2XC printer.

AN ADAPTIVE WORKFORCE

As a **3D**EXPERIENCE® platform on Cloud user, RIZE quickly adopted the applications on the platform to support its remote workforce. In particular, it used the platform's core applications to connect and allow everyone to continue working in a collaborative manner as seamlessly as possible.

"Our digital capabilities assumed a new significance when we had everyone working remotely," Kalambi said. "We connected our printers and people through the platform. We effectively created a new digital workplace and workflows online, all facilitated by the **3D**EXPERIENCE platform."

This smooth transition enabled RIZE to continue with its business operations as normal, while its engineers productively worked from their home offices, carrying out their usual engineering tasks. The initiative was so successful that RIZE took its "Safe at Home" Manufacturing initiative and began

helping other enterprise to implement the same with their employees.

3D PRINTING MASKS IN RESPONSE TO COVID-19

When RIZE became aware of a shortage of personal protective equipment (PPE) for healthcare workers in its local state at the height of the COVID-19 crisis, it wanted to help. Even with its team of engineers working from home, RIZE responded by designing and printing new face shields at home.

"We all wanted to contribute," said David Silverman, 3D print process engineer at RIZE. "We had available printers and a unique material that was well suited for this use case. So we took some existing designs for face shields and improved them, to make them more comfortable, easier to print and optimized for RIZE 3D printers. We did all of this design work on the **3D**EXPERIENCE platform and used the ENOVIA app to communicate and track our daily changes. If we made a change in the design, we could print it, try it out and then send it to a colleague to test. Over a couple of days, we iterated very quickly and collaborated to find a more improved design. We were able to finalize an optimized design within a week."

Using the collaboration capabilities within the platform, RIZE's team of engineers leveraged a single source of information, which facilitated change management and versioning control.

"Even for a simple part like this, there was a lot of concurrent engineering and all of this was achieved remotely," said Chetan Keny, engineering program manager at RIZE. "We used some visual management tools available in the **3D**EXPERIENCE platform to capture design changes and used 3DSpace to easily share CAD models between engineers, all facilitated by 3DSWYM communities for effective brainstorming sessions and general collaboration."

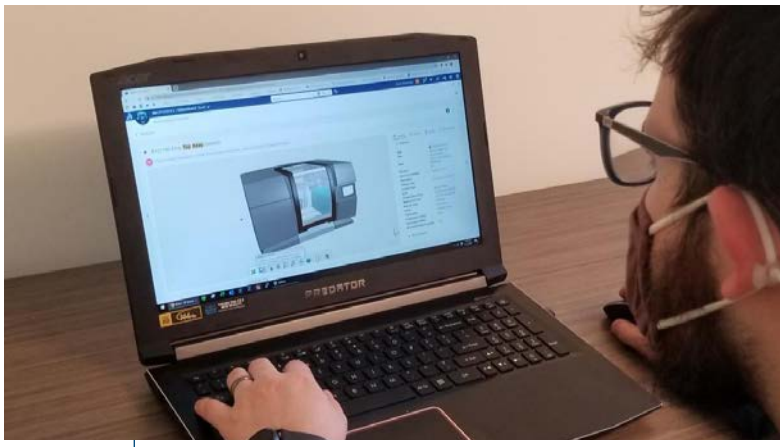
Over two months, RIZE's team created and produced hundreds of lightweight, personalized and reusable face shields for local hospitals and healthcare settings.

"Not only did we make these parts, but we used the **3D**EXPERIENCE platform and our functional inks to incorporate critical information on the shields, including the hospital's logo, the doctor's name to reduce cross contamination, and cleaning and storage instructions," Keny said. "This entire initiative was enabled by the fact we had these safe 3D printers in our homes and the ability to collaborate online using the **3D**EXPERIENCE platform. I hope we were able to make an impact."

NEW WAYS TO INNOVATE

While all of this was going on, RIZE also continued with its core business, developing new 3D printers, new materials, enhancing its existing product line and working to provide Artificial Intelligence-driven scan-to-print applications for its end users, including life sciences customers.

"Our prototyping work was at its peak when the COVID-19 situation hit," Keny said. "We were working on feature enhancements for our XRIZE printer, and we were able to launch the new RIZE 2XC printer as well as new printing material. These were collaborative tasks between our software, firmware, hardware, materials and process teams, all achieved remotely using tools like 3DMarkup and 3DSWYM communities. We developed an entirely new workflow for remote working. The result was an amazing engineering effort that I've never seen before."



Top image: GREENGUARD certified 3D printers by RIZE were transported to employee homes during the pandemic to continue to work and print safely.
Bottom image: A new digital workplace for RIZE was facilitated by the **3D**EXPERIENCE platform.

With its smart, connected way of working on the platform, RIZE could drive innovation and reduce time to market.

"We were able to launch our new printer products in record time, and we estimate we achieved an overall productivity boost of between 12-15% – which is phenomenal – thanks to the amazing effort of the RIZE team and the collaboration tools on the **3D**EXPERIENCE platform," Kalambi said. "It has enabled us to stay productive and find new ways to innovate."

GROWING 3D PRINTING CAPABILITIES

Despite the challenging conditions posed by the pandemic, RIZE has succeeded in bringing to market exciting new innovations and broadening its product portfolio to expand the capabilities of 3D printing in industrial applications. This includes the ability to do large format 3D printing in full color and use cases in pre-surgical planning, where users can print hips, knees and cardio parts directly from a CT scan.

"We've significantly expanded our product portfolio through our new way of working," Kalambi said. "The cherry on top was being recognized by the World Economic Forum as a 2020 Technology Pioneer – the only 3D printer maker to secure such an honor. Over the last few months, we've demonstrated the power of agile supply chains with our Safe at Home

Focus on RIZE Inc.

RIZE Inc. is an Additive Manufacturing 2.0 company based in Concord, MA focused on enabling sustainable and inclusive innovation with safe, affordable and full color 3D printing. RIZE's unique patented 3D printing technology enables production of full color, functional parts in homes/offices/factories/point-of-care settings using safe, non-toxic materials that are engineered for strength and durability. RIZE is the first 3D printing company in the world to receive the UL GREENGUARD certification for health and safety for its printers, materials and inks, and a 2020 World Economic Forum Technology Pioneer. Applications include full color functional prototypes, medical models, customized tools and fixtures and urban lifestyle items.

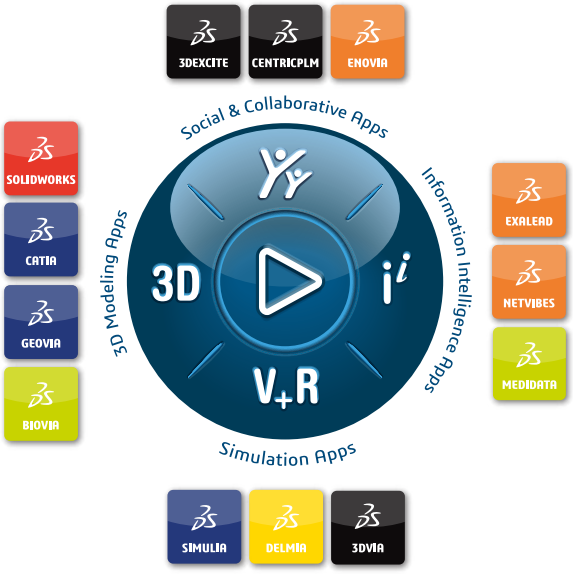
For more information: www.rize3d.com

Manufacturing approach – and that it's entirely possible to stay productive when you find new ways of working. We've been on a unique journey and we couldn't have done it without technology and the power of the **3D**EXPERIENCE platform on Cloud."

Our **3D**EXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3D**EXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our **3D**EXPERIENCE platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes' 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit **www.3ds.com**.



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