Stanford eCorner

A COVID-19 Pivot

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As the dental side of Carbon's business dramatically slowed with the onset of COVID-19, the team asked how their customers might use Carbon's 3D printers and resins to keep employees busy and help local communities. Carbon founder and executive chairman Joe DeSimone describes how the company and its partners were able to quickly begin manufacturing face shields and FDA-approved nasalpharyngeal testing swabs to respond to the crisis.

Transcript

- Everything was happening so fast and then you know, 00:00:07,980 the other thing to realize is that a good chunk of Carbon's business is in dental and dental was shutting down.. Right so there's this capacity sitting there.. And a lot of our partners are sitting there.. So we had Ellen Coleman called a town hall meeting and Philip and I, my son, we hosted over 300 of our partners and team members and we said, look, we have a lot of resin.. And we have a tool that doesn't need molds to make things.. It's using light.. And remember how people make things physically typically by injection molding is you have to invest a lot of time and energy to have a mold and then you heat a plastic up, you fill the molds with the part, let it cool down, open up the mold and take the part out.. We do things without molds, it's moldless.. We use light to craft things.. And so what we did is we pivoted our capability, our machines, our team, and we said look, we'll push face shields designs, and we'll design two different ones to meet the properties of two different high volume resins that were sitting there available our dental model resin, and our Adidas running shoe resin..

And so working with Adidas and working with all our dental customers, we pushed designs out into the field and right we're approaching 1,000 printers globally, and we're in 17 different countries and we gave people the capacity and interest, the capability of not only keeping their employees going and keeping their businesses going, but to help out in their local communities.. Right so I think we did over 350,000 face shields, 50,000 shields a week and still counting and people are renewing and now they're going into grocery stores and dentists offices and all sorts of things.. So that's pretty cool.. The testing swab, we literally learned about what the conventional swab looked like.. And we printed new varieties the next day.. One day.. - You're kidding.. 00:02:22,180 - No, it was amazing, our team, Hardik and our team 00:02:26,180 and Marie and Steve Pollack, we figured out some early designs, went through a couple dozen different designs.. And then we worked with a medical device partner, Resolution Medical, who is an FDA registered medical company because we're not, and stood up a supply chain that leveraged the dental labs.. Remember there's 7,000 dental labs that support over 100,000 dentists..

And those labs are our customers that have our printers.. They're the ones that make the physical things that dentists use.. And we pivoted one of our dental resins that was used for making night guards.. It was already FDA approved for night guards, approved for mucosal contact.. It's a soft plastic, and we created a very soft lattice structure.. And we brought a medical device to life and Resolution Medical launched a device in 20 days.. A class one exempt device.. And then 50 days later, and that's why I'm over here at Stanford, 50 days later, we completed over 400 patient clinical evaluation of two different lattice designs and compared them to a standard swab for performance, performance on comfort, collection efficiency, the PCR compatibility, it was a non inferiority trial.. It's more than equivalent.. And there actually is a hint that we have a lower false negative rate for low viral loads..

And so we need to go study and quantify that but it's pretty remarkable that in 20 days, you could bring a medical device product to life and complete a 400 patient trial 50 days later...