

URL: <https://ecorner.stanford.edu/in-brief/3d-printing-crosses-the-chasm/>

Carbon founder and executive chairman Joe DeSimone describes how Carbon expanded 3D printing from a mostly niche prototyping technology into a legitimate manufacturing platform. A number of consumer products, particularly an Adidas shoe with a Carbon-printed midsole, helped the company scale toward applications like football helmets, bike seats, car parts, and dentures.



## Transcript

- So up to the point when Carbon launched, 00:00:08,240 3D printing has been mostly a prototyping industry, right? And that includes hardware, software materials, even the parts, and that's about an \$8 billion marketplace.. Also had some dental in there.. Dental's been part of this sector.. And so, that's probably the more and most commercial of the traditional 3D printing.. You know, when we figured out how to take 3D printing and go faster and make real parts, that was the beginning to go into the \$300 billion manufacturing world of injection molding.. And so, I think, you know, what's crossing the chasm for us is what are the used cases.. What are the killer apps, if you will, that drove high volume manufacturing? And you know, Adidas, I don't know if I've mentioned Adidas back then, but you know, Adidas is our partner.. And you know, we always sought a way if we could scale up a consumer running shoe, you know, the world would be our oyster because we would have figured out a lot of stuff.. You know, advanced materials, global scale, manufacturing, and we figured that out, and now you go adidas.com and buy the, you know, the AlphaEdges, and the 4D, and lots of great running shoes, and over a million pair already with that.. We also have liners for Riddell, football helmets, personalized helmets, over 1,000 NFL D1 athletes, and many other sports coming along..

And so, those high volume consumers, including, you know, specialized bike seats, they've all happened, we've crossed the chasm.. And now, it's scaling to replace foam more broadly.. We also have the very first parts on production vehicles out of Detroit, new cars, Ford Mustangs, F-150 trucks, the very first parts on 3D printed polymeric parts on those cars and trucks.. And so, that sets the stage.. It took us two years to get through the quality, Ford quality standards to make that happen.. But now, that opens up many billions of opportunity in electrical connectors, and other sort of application than the automotive space.. And then, you know, in the healthcare space for us, you know, not only dental and dental models, but you know, we have now the first FDA-approved 3D printed dentures.. And you know, you could argue that we should do nothing else but dentures right now.. It's a \$14 billion marketplace.. We have over 5,000 people now wearing the first 3D printed dentures..

So there are great examples of crossing the chasm, but they are the killer apps, and we need thousands of those.. We're expecting to do thousands of those applications because that's what manufacturing is all about, and that's what we're focused on..