



## **Fast Pedaling to Market: Peloton Used MakerBot to Prototype New Commercial Bike**

Developing, Prototyping, and Verifying Form and Fit for 20 Different Parts

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## Going from Design to Prototype to Production-Ready Parts Quickly and Cost-Effectively with MakerBot

Thanks to Peloton, you can take a cycling class in your own home on your own time with your own teacher. In 2014, this startup introduced a sleek, silent exercise bike that could livestream classes over Wi-Fi on a built-in touchscreen console. In so doing, the startup opened up a whole new exercise market. Now, to extend this experience to public places, like hotel gyms, universities, or even hospitals, Peloton unveiled an all-new commercial bike and content platform at the 2017 Consumer Electronics Show.

With this novel, connected approach to exercise, Peloton is disrupting an industry that's generally based on going to the gym. To further capture market share and stay a step ahead of competitors like FlyWheel Sports and SoulCycle, the startup must continue to innovate at a fast pace and release new products like this commercial bike.

To speed up design cycles and cost-effectively prototype many smaller components on this new bike, Peloton's industrial design team used MakerBot. In total, Peloton accelerated the iterative design process by prototyping twenty different parts on the MakerBot Replicator (5th Gen). "It's our primary 3D printing solution," says Jason Poure, Director of Industrial Design. "Any designer can walk in the door and start 3D printing." The company now also has the Replicator+.



From the end of 2015 when development started through 2016, the industrial design team printed over a hundred iterations for twenty different parts. With MakerBot, Peloton could save approximately \$20,000 dollars and a few months in time compared to using a service bureau. The team sometimes relies on the latter to prototype larger parts or parts in higher-end materials.

By iterating with MakerBot, the team could get instant feedback with every new design at approximately a dollar a prototype and make changes immediately without having to wait a week for parts to come back from a service supplier. The team could also verify the size, scale, and ergonomics of these parts with enough confidence to decide when each design was ready for production.





## The Touchpoint of Your Brand

The bright red resistance knob on the Peloton Commercial Bike is a prime example of how the industrial design team could rapidly and efficiently finalize a design. As probably the most used piece of hardware on the bike, it determines the level of resistance during a workout. Less resistance is better for sprinting and more is better for simulating an uphill ride.

“You want the touchpoint of your brand to be the most beautiful element,” says Poure. To perfect the knob’s design, Industrial Designer, Nigel Alcorn started with drawings in Illustrator or CAD, would model them in SolidWorks, and then 3D print designs on the MakerBot. Each design represented a distinct direction, which Alcorn would then discuss with Poure. Designing the right form and shape for the knob was also critical, since users will need to frequently grip and adjust it through cycling classes. That’s also why iterating with precise, accurate 3D prints from a MakerBot was a huge advantage in the process.

Over approximately 36 iterations, Alcorn experimented with 8 and 6-sided forms, tried a base-cap structure, and eventually struck upon an elegant design with three valleys and three peaks. With this design, he could account for riders who would subtly turn the knob or slap it to drastically change the resistance. In the process of designing the knob alone, the team saved a few thousand dollars and a few weeks by iterating with MakerBot.

Alcorn sometimes enjoys the free-flowing control of modeling with foam board; however, by the time he starts iterating on very similar designs, he prefers the precision of 3D printing with MakerBot: “I can make a really educated comparison between two models that have a single feature that’s different by a millimeter.”

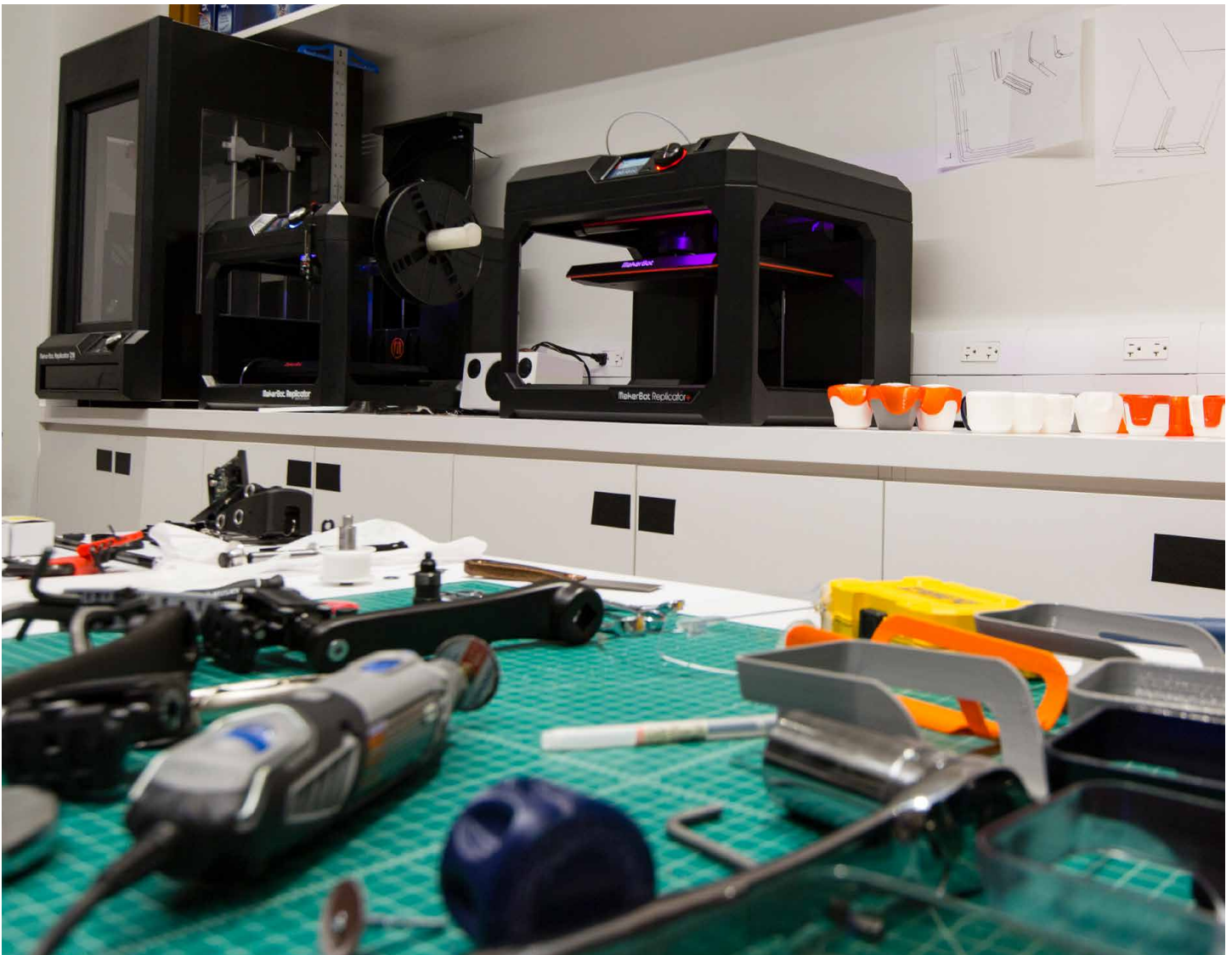




# Confidently Testing Fit and Function for Production

Beyond cutting costs and saving time, the industrial design team also 3D printed with MakerBot to “verify ergonomic placement, scale, and size right on the spot” according to Poure. Most, if not all, of the plastic parts were prototyped on a MakerBot, including levers, the weight holders, water bottle holder, and a hub inside the wheel.

In addition, the team could also verify the feel, snap, and function of a specific tolerance for a part, especially if that part was going to fit in an assembly. For Poure, this process is extremely helpful in deciding whether a part is ready for production or not. After, the team has injection-molded versions created.



# The Seamless Experience That's Disrupting an Industry

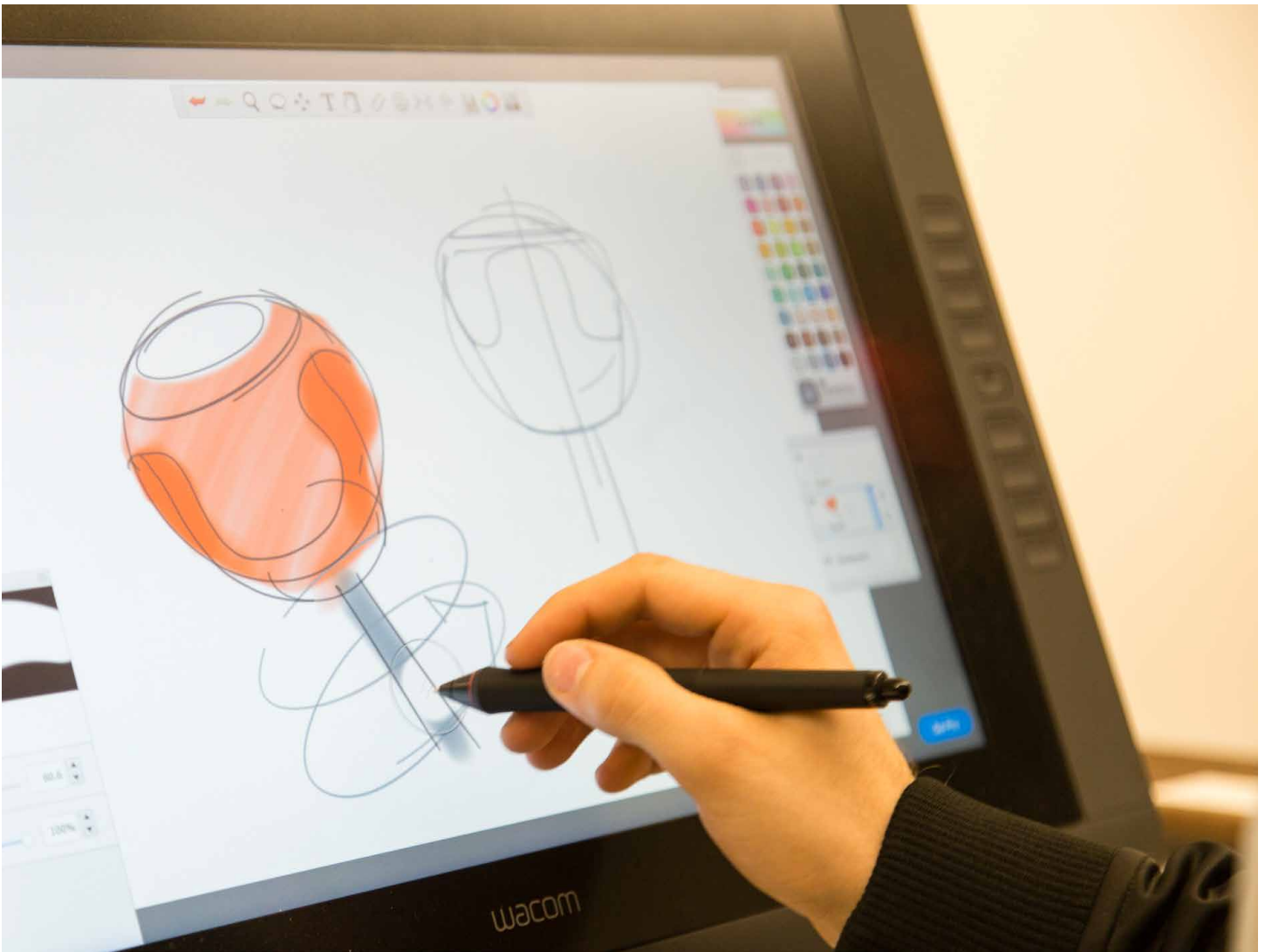
Ultimately, what's at stake for Peloton is more than cycling classes or exercise bikes. The Peloton team has created an entirely new model for instructor-based exercise. Previously, your options for working out were to either go to the gym to attend classes and use machines there or the solitary experience of working at home. For the latter, you would need to purchase your own equipment and find your own content.

So, here's Peloton's big twist: the startup has mashed up social media, high-energy content, and high-quality equipment to make the experience of exercise social, interactive, and seamless. Now you can connect with friends, log your workout stats, and stream Peloton's live or recorded classes on your own time, whether at home or a hotel gym. You can even sync your Fitbit with either bike.

In order to quickly build out this model, the Peloton team must release new products before their competitors can catch up. To work at this accelerated pace, they need an accessible, reliable technology like MakerBot's 3D printing solutions. With MakerBot, the startup's industrial designers can quickly, confidently, and cost-effectively shorten product development cycles, release pioneering new products, and pave the way for freewheeling success.







# About Peloton

Founded in 2012, Peloton is a tech-focused exercise startup that combines high-quality hardware, interactive content, and social media. It offers Wi-Fi connected exercise bikes for both the home and public facilities, like hotel gyms, hospitals, or universities.

Outfitted with a sweatproof touchscreen, these bikes can livestream high-energy content from Peloton's integrated content platform and allow

anyone to connect with friends and monitor workout stats.

All told, Peloton provides a seamless experience where anyone can take a cycling class on their own time whether at home or away. Through this integrated approach, it is disrupting an exercise industry-long based on the experience of either going to a gym or working out at home with piecemeal solutions.