



LENDING A HAND

The Open Hand Project credits 3D printing and LulzBot with bringing an affordable solution to amputees

Taking on the big guys

Most people are satisfied if they can understand their own healthcare options. It takes a special person to put “improve global healthcare” at the top of his or her to-do list—let alone pursue it. But that’s just what Joel Gibbard of the Open Hand Project, based in the United Kingdom, did. Driven by his passion for robotics and his desire to benefit people, he set out to design a low-cost robotic prosthetic hand.

“While prosthetic technology is advancing, the industry has adopted a model where the advanced devices are very expensive and can’t be implemented by health insurers due to their high cost,” Gibbard explained. “Without lowering the price of these devices, the technology would always remain out of reach for most amputees.”

Gibbard founded the Open Hand Project in 2013 with the goal of fabricating a robotic hand as functional and robust as the current market leaders but for a fraction of the cost.

“I thought, if I can prove that this business model is successful, then other areas of the health industry might follow, which should improve global healthcare.”

“Without my LulzBot printer, I would never have been able to accomplish my goals.”

Joel Gibbard
Founder, Open Hand Project



Freedom to design

Gibbard initially began his quest using folded aluminum to create the prosthetics, but once he bought a LulzBot AO-101, and was later given a TAZ 2.0 as a donation from LulzBot, he was able to rapidly prototype and get the hands to a state where he could demonstrate them.

“I was able to produce plastic parts that are strong and durable,” Gibbard said. “By varying the fill density of the parts, I can experiment between weight and strength to find what will best suit my application, which has made my designs neater and safer. My LulzBot gave me the freedom to design much more intricate objects with a repeatable process. Without my LulzBot 3D printer, I would never have been able to accomplish my goals, and the development would have taken too long and been too expensive.”

Reaching a broad audience

With his prototyped samples, Gibbard created so much buzz in the crowdfunding world that he was able to raise the funds he needed to complete his project. More than 1,000 people contributed to his Indiegogo campaign. And he credits LulzBot for a lot of his success.

“Leading prosthetics can cost up to \$100,000. With 3D printing, we can cut that down to under \$1,000. That’s two orders of magnitude cheaper and means that these devices can reach a far broader audience. The LulzBot solution has saved me tens of thousands of dollars, which has meant far more efficient development and much higher productivity.”

Open Hand Project At a Glance

www.openhandproject.org

Industry

Prosthetics

3D printing application

Rapid prototyping

Key challenges

High cost and weight of current prosthetics

Key benefits

The high speed and low cost of development

3D printing software tool chain

Blender>Netfab studio>Slic3r>Pronterface

Material(s) used to print

ABS

Operating system/computer system:

Windows 7

For more information on 3D printers, parts, and plastics,

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