

IN-HOUSE INNOVATION

Eletro Zagonel's 3D printer keeps designs confidential, agile and excellent

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— Roberto Zagonel
President, Eletro Zagonel

Eletro Zagonel founder Roberto Zagonel and the Objet30 Desktop 3D Printer.

Eletro Zagonel, a leading Brazilian electronics company, grew from the simple wish for a good, hot shower. In 1992, fed up with low-quality shower heads on the market, electrical engineer Roberto Zagonel set out to create a reliable one. His Master shower head provided excellent flow and easy, practical temperature exchange.

Since then, the company has grown. Eletro Zagonel's Linea model has become the best-selling shower head in Brazil. Its products now include faucets, flashlights and lamps — and its reach has expanded into Mexico and Africa.

Prototyping Progress

As his company has expanded, Zagonel, now president, has progressed through several prototyping methods in search of the best way to innovate. He prototyped his first product on a lathe. More recently, the company leapt into the 3D CAD world, first by outsourcing projects to a local provider. Next, with the need to keep early designs agile and confidential, Zagonel assembled an in-house department with engineers and designers running SolidWorks.

But even with advanced 3D CAD capabilities, whenever the team reached a stage in development that required physical prototyping, they had to outsource. Eletro Zagonel's first vendor produced prototypes so frail that Zagonel sent employees to pick them up by car to avoid damage during delivery.

Precision was also lacking, and Zagonel looked across the globe for better prototypes. In many trips to China, suppliers familiarized Zagonel with 3D printing and the technical know-how to generate prototypes. For much of 2010, Eletro Zagonel sent 3D CAD data for each new project overseas and received functional prototypes in return. But lead time was long. The team typically waited 45 to 70 business days for prototypes to arrive at its Santa Catarina, Brazil headquarters.



Shower head prototype created with PolyJet technology

The last straw came in the form of a betrayal. “The Chinese service provider had total access to our project. And somehow one of our projects was leaked,” Zagonel said. His team saw its own work manufactured first by a competitor.

Secure Innovation

Faced with this reality, Zagonel decided to internalize prototyping. After extensive research into technical capabilities and cost, including equipment, materials and facility considerations, he chose an Objet30 desktop 3D printer for its speed and ability to produce prototypes sturdy enough for functional testing.

“I managed to turn the time it took to produce functional product prototypes from months into a few hours,” Zagonel said. For Eletro Zagonel, 3D printing is about more than just making products more quickly. It’s about making products better. Zagonel says building a variety of prototypes in-house gives rise to new product ideas and new engineering strategies. It’s “giving our designers wings and allowing them to be even more creative and inventive.”

Engineers often add electrical components to their 3D printed prototypes for true functional testing. Zagonel even tested a recent prototype in his home, bathing for several days with a 3D printed shower head.

Further, 3D printing has reduced mold and die costs. “I realized that it was no use saving on prototyping and then later wasting too much on molds,” Zagonel said. The company’s mold and die costs for a new product vary between 400 thousand and 1.5 million BRL (about \$176,000 to \$658,900 USD). Without 3D prototyping, engineers had to produce multiple mold and die iterations until the design achieved the desired quality. Now, Zagonel’s team solidifies design in prototyping, ensuring only one mold is needed.

Proud Creators

“Everyone is in love with this machine,” Zagonel said. “We can develop a new showerhead in one day and go home. On the morning of the following day we will find the prototype of that new product inside the 3D printer with the appearance and functionality that we were looking for.”

Like all creators, Zagonel wants to touch, see and interact with his creation. “For us project developers, each new Eletro Zagonel product is a child. Now, thanks to Objet30 Desktop, they will be born more quickly.”



Shower head prototypes made easy with PolyJet 3D Printing technology.

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