BRINGING IMAGINATIVE PRODUCTS TO MARKET

Cool Gear, Inc. Uses Rapid Prototyping to Provide Quick Turnaround for Customers

"We couldn't survive without rapid prototyping."

— John Mason, Senior Product Developer, Cool Gear, Inc.

Cool Gear, Inc. is known for its ability to conceptualize and develop ideas, so the idea to move its modeling function from hand-crafted clay models to CAD and prototyping came naturally.

Since 1986, a team of talented graphic artists and designers at Cool Gear have been creating innovative, imaginative products such as food storage containers and colorful water bottles. While a water bottle may not appear to have a complex design, there are elements of Cool Gear products that make them unique. The caps, for example, are designed with a built-in straw that makes them easier to use. Some water bottles contain a freezer stick to keep water cold and a water filter that filters up to 150 gallons of water.

Taking these products from concept to market was once a lengthy and expensive process involving manufacturing plants outside the United States. "In the past, we used Adobe Illustrator or other drawing applications and did the best we could," said John Mason, Senior Product Developer. "Then we sent the files to countries such as China to make models out of clay or plastic. This process took several months, and instructions often got lost in translation."

The process was especially problematic because of the multiple iterations that Cool Gear designers put into each product. The purchase of a Dimension 3D Printer enabled designers to put more time into the design and see the results of their efforts in a physical sample almost immediately.

How Does 3D Printing Compare to Traditional Methods for Cool Gear?

Method	Lead Time	Cost
Traditional Methods	13 weeks	$500 per unit
Dimension 3D Printing	2 days	$206 per unit
SAVINGS	12.5 weeks (96%)	$294 (59%)

Mason was looking for something reasonably priced yet fast. "We looked at several printers," he said, "but the Dimension was easy to operate, the cost was right and the speed of build was great. We can digitally make these products, print them out and have a prototype in hand in a couple of days."

Another feature Mason wanted in a 3D printer was the ability to use strong material. "The majority of our products are plastic," he said, "so we wanted a material that could hold up for us. The ABS material gives us what we need."

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The Dimension printer from Stratasys uses Fused Deposition Modeling (FDM) technology, an additive manufacturing process that builds plastic parts layer by layer, using data from CAD files. During the FDM process, a plastic filament is fed into an extrusion head and heated to a semi-liquid state. Following a tool path defined by the CAD file, the head deposits the material accurately in layers as fine as 0.005-inch thick. The model is built from the bottom up, one layer at a time.

"The Dimension has given us a competitive advantage," said Mason. "It has given us a quicker turnaround for our customers." Today, Mason and his team use CAD software and the Dimension printer to create a variety of products, including drinking containers, coolers, molds for freezer treats, even tags for water bottles.

With a background in digital sculpting, Mason had some experience with CAD applications and rapid prototyping. He said moving to a Dimension printer was a "natural progression" for Cool Gear. "It is nice to have something in our hands in a relatively short period of time. The process has dramatically changed what we do because now we can bring our designs to the next level of form and function."

"Sometimes we are pushed by larger clients to produce something quickly," said Mason. "We couldn't survive without prototyping. It is a key element of our development process and has changed the way we work. It enables us to put more time into the design. We can look at something on a screen for a long time, but we can't see the issues we can see with prototyping. This could be something as simple as sizing or how a product feels in someone's hand. Sometimes it's just the overall size of a bottle or how a cap might interfere with someone's face while they are sipping."

"As an industry leader, we try to create the best products for our customers," said Mason. "The Dimension helps us design a better product and gives us a competitive advantage. I don't know how we did it before."

John Mason, Senior Product Developer, explains the unique attributes of several Cool Gear products, including lunch boxes and water bottles. These samples were made with the Dimension 3D Printer.

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