

3D PRINTING THAT REALLY MOVES YOU



BlueSky Shaves Three Weeks and \$20,000 From Product Development Timeline

"With the 3D printer we develop many iterations before deciding on the ones we machine, which has saved us tens of thousands of dollars in design and manufacturing costs."

— Dianne Goodwin, BlueSky Designs

The Mount'n Mover makes life easier for people with disabilities.

A small R&D shop in Minneapolis that creates products to help people with disabilities once spent more than \$23,000 to have a machine shop build three metal, movable-arm prototypes for a product now called the "Mount'n Mover."

After discovering 3D printing, BlueSky was able to produce eight moveable-arm ABS prototypes for the Mount'n Mover, saving more than \$20,000 in design costs and three weeks in delivery time.

A Small Shop Out to Change Lives

BlueSky Designs, founded in 1997, is an R&D firm that applies ergonomics and universal design to develop products that address the needs of people with disabilities – at work, at play, and at home. BlueSky's products, including the Mount'n Mover – a mounting system that allows individuals in wheelchairs to easily position devices, trays and laptops – make everyday activities simpler and more accessible.

For its first few years of operation, BlueSky produced custom, one-of-a-kind solutions for individuals. Designs were sketched on paper then outsourced for production.

Eventually, the company evolved into a full product development firm – from developing to manufacturing to selling its products. Small Business Innovation Research grants (SBIR) from agencies like the USDA, the National Institutes of Health and the Department of Education financed much of the company's R&D.

"We had a period of growth that spawned a need for production tools that could keep up with the speed of our business and allow us to really innovate, while not costing a fortune," said BlueSky founder and president, Dianne Goodwin.

3D Fuels Design Output, Cuts Costs and More

In 2006, BlueSky purchased a Dimension 3D Printer to more easily and cost-effectively develop and test concepts. "Before purchasing the Dimension printer, we were working with an outside service bureau to prototype. Because of the high expense, we could only afford to develop a few prototypes at a time," says Goodwin.

A prime example of cost and time savings, the Mount'n Mover was BlueSky's first Dimension project. After having spent \$23,000 on outsourcing production of three metal prototypes, Goodwin learned she could print eight ABS prototypes in-house using the Dimension 3D Printer for just \$3,000, while slashing production time by three weeks.

Goodwin also makes a cost comparison to smaller components of the movable-arm prototype production. For the 36 locking mechanisms each assembly required, an outside service bureau quoted \$2,000 per assembly – and that was just to prove the concept and verify functionality. To test and prototype BlueSky's two-dozen different locking mechanism designs would have cost \$48,000. Instead, with the Dimension 3D Printer, BlueSky had the ability to prove out designs for thousands of dollars less before spending the money in the more robust pre-production prototype.

"For a shop of our size – with only a few employees – we never could have done what we've done without the Dimension 3D Printer," says Goodwin. "The cost of exploring and producing different designs was prohibitive and we've found a way to resolve that. With the 3D Printer we can develop many iterations before deciding on the ones we machine, which has saved us tens of thousands of dollars in design and manufacturing costs."



A dual arm version of Mount'n Mover is comprised of 125 parts - 60 of which are custom.



Designers quickly move from idea to concept with a functional prototype.



The Mount'n Mover puts trays, laptops, and other devices within reach.

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