

# BLOWING THE COMPETITION AWAY

3D printing strengthens Chimei's competitive edge by speeding new products to market

*"Having an in-house 3D printer helped lower prototyping cost approximately 10 to 20 percent."*

— Design manager and spokesperson, Chimei

*Chimei used 3D printing to quickly and cost-efficiently verify the function of this remote-controlled fan.*

Chimei Group innovates by combining contemporary style and user-friendliness into its consumer product designs. Established in Taiwan in 1960 as a manufacturer of acrylic sheets, Chimei has grown in leaps and bounds since branching into home appliances in 2006. Now a reputable home appliance brand in Taiwan, Chimei has introduced several popular products like its LED desk lamp and DC energy-saving fan.

While the appliance division offers incredible growth potential, it also gives Chimei designers and engineers tremendous pressure to meet tight deadlines. Every product must undergo stringent testing down to the last function and detail before mass production. So Chimei management sought a way to boost productivity and speed new products to market.

## Moving Prototyping In-House

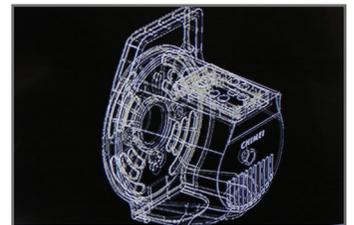
Before incorporating 3D printing into its product-development cycle, Chimei outsourced prototyping to service bureaus, which took six to 10 days and sometimes longer, depending on the size of the design. One prototype could cost as much as \$700, and shipping time often prolonged the verification process.

"Extensive R&D is required before finalizing a design. Multiple design iterations are generated throughout the process with prototypes created to verify every detail, and it may take months to achieve satisfactory results," says a design manager of Chimei. "Quick turnaround time and accurate models are critical to optimize our design validation process, thereby shortening time to market and ultimately, sustaining our competitive advantage."

So management decided to move the prototyping process in-house. "The uPrint® 3D Printer was our first in-house 3D printer. The ABSplus™ material that it uses to prototype allows us to perform various functional testing at a reasonable cost," the design manager explains.



*An early prototype for the remote controlled fan revealed a design flaw that Chimei quickly corrected.*



*This STL file of the fan shows where the remote controlled sensor rests atop the fan motor.*



*The ABSplus material works well with traditionally manufactured parts.*

## Driving New Product Development

The in-house 3D printer shrank prototype production time to a couple of hours per part, and lowered cost to approximately 10 to 20 percent. Instead of waiting for parts to be created and shipped from the service bureaus, designers and engineers can now quickly hold and feel the printed parts, provide feedback and make revisions.

The new process improved prototyping for the brand's latest floor fan design. Most fans have control buttons fitted at the stand, but Chimei designers placed a remote controlled sensor at the back of the fan, so users needn't kneel down to reach switches. The team 3D printed its first design with an open end and immediately discovered a flaw – the sensor could easily slip off when the fan was moving. The team immediately corrected the design and 3D printed a second prototype for validation.

## Confidentiality and Effective Business Planning

Confidentiality of new product designs is vital to Chimei. Today, all proprietary information relating to concepts and designs is stored within Chimei's office. This practice reduces the risk of leaking business strategy to competitors and lowers back-and-forth communications for designers, engineers and senior management.

Since incorporating 3D printing into the design cycle, Chimei has gained tighter control over its design schedule and product quality, leading to more effective business planning. Chimei plans to introduce a second Stratasys® 3D printer to drive R&D efforts.

"With the cost and time saved from the uPrint 3D Printer, I am proud to say that we had made the right decision. Stratasys has helped us a lot to visualize our designers' concepts, and has given us far more than expected," the design manager says.



3D printed prototypes of the fan next to their finished counterparts.



Moving prototyping in-house allowed Chimei to perform functional tests quickly and at a reasonable cost.



Chimei's popular LED desk lamp helped earn customers' trust in their product designs.

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