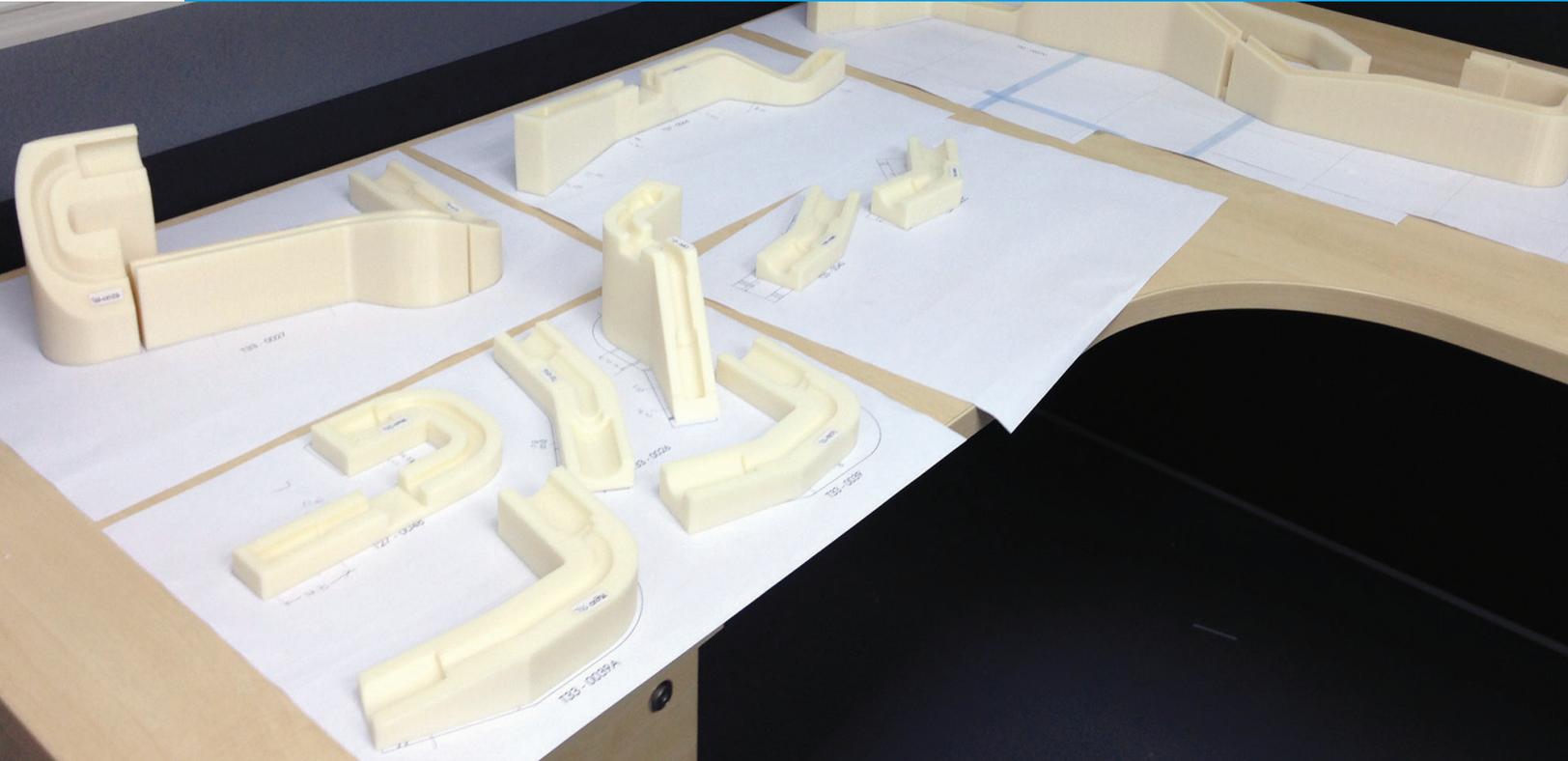




“For us, the most important thing is minimizing turnaround time. It is critical to our business success and 3D printing has proved its capability on this front.”

Gideon Khoo / Solidify Technology Sdn Bhd



CASE STUDY

Pioneering 3D Printing Services

3D PRINTING OFFERS FAST COST-SAVING SOLUTIONS IN DESIGN AND MANUFACTURING

Malaysia-based one-stop service provider Solidify Technology Sdn Bhd (Solidify) prides itself on using a diverse range of tooling machines to offer customized solutions to help local and overseas clients overcome challenges in designing, prototyping, finishing and manufacturing.

Solidify's clients come from a wide range of industries including automotive, electrical appliances, architecture and industrial machinery. The team excels in selecting optimal solutions for clients by assisting them in minimizing time and cost.

Solidify first invested in 3D printers for concept modeling and prototyping, seeking to accelerate production time. As business continued to grow, Giden Khoo, Solidify's owner, invested in additional 3D printing systems to capitalize on low-volume production orders and produce customized jigs or tools like special adaptor heads, drills and connectors and end-use parts, including remote control covers and stop buttons for car or bus manufacturers.

Leveraging Speed and Strength

The adoption of 3D printing allowed Solidify to provide solutions for low-volume production quickly. For example, Solidify was producing spare parts for a European automotive client whose car had gone out of production, but still required spare part supplies for a few more years. The client's actual demand was 1,000 pieces, but the minimum order required by the original supplier was 20 times more. Instead, Solidify 3D printed the master part and added it to traditional manufacturing processes, including soft tooling, silicon rubber molding and plastic injection molding. After 3D printing the master part, silicon rubber molds were created for the first 200 pieces and the order was completed using injection molding. This integrated approach cost four times less than that of the original supplier.

Apart from providing solutions for automotive spare parts, Solidify leveraged 3D printing and their Fortus® system to great success by manufacturing chassis parts for up to 10 double-decker buses a week. The printed parts of the bus chassis were produced using FDM Nylon 12™, a strong material especially suitable for the automotive industry as it offers one of the best Z-axis lamination and highest impact strength among any FDM thermoplastics. The printed parts can withstand vigorous functional tests and will not break when they are assembled into the real chassis.

"The Fortus system offers a larger build tray for us, which helps us minimize assembly, and the associated error and cost, thus improving production efficiency and boosting customer satisfaction," said Khoo.

Need for Speed, Need for Quality

Quick turnarounds have become a critical feature for business success. For example, it would normally take a week to produce a jig using traditional CNC processes, while it only takes one to two days to produce with 3D printing at a lower cost. Recently, Solidify also took on a Navy project that required the delivery of 20 customized, metal power adapter blocks within two weeks. Solidify 3D printed the master part and sent it out for sand casting. Compared to traditional methods that would require a week's time to produce the master part, 3D printing helped the service bureau live up to the customer's expectations with speedy part completion.

Solidify is looking to expand its client base and use the power of 3D printing to help clients save time and money. Solidify is also considering adding more 3D printers, including Stratasys PolyJet™ systems, to make tools or punches for dies and press breaks.

"For us, the most important thing is minimizing the turnaround time. It is critical for our business success and 3D printing has proved its capability on this front," Khoo said.



Solidify leverages 3D printing to make tools and jigs to manufacture parts for the automotive industry.



Solidify 3D printed a master part to create these silicon rubber molds for their automotive client.

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