STS Technical Design

LOCATION
Wisconsin, USA

SERVICES
Fusion 360™

Imagining a 3D-Printed Future With STS Technical Design and The Virtual Foundry

That's what drove this project, trying to see this from a new user's perspective as they experience a new platform and bring a more complicated product to life with 3D printing,

– **Benjamin Heard**
Project Manager and Additive Engineer
STS Technical Design

Image courtesy of [Company Name].

STS Technical Solutions, Design Services and more

Located in Wisconsin, STS Technical Solutions has been operating for nearly 40 years, working with clients on technical design and engineering challenges, as well as specializing in Additive Solutions

With well over 250 employees and recruitment centers all around the US, STS Technical Solutions has grown and adapted with the ever shifting way we make things, offering services with new manufacturing technologies as they emerge.

Marketing your Value as a stealth Company

Being a multi million dollar company is a fantastic place to be, but when your clients are pre-dominantly highly confidential organizations, marketing your services to a new base can be a challenge. For both STS Technical Solutions and their partners The Virtual Foundary, who produce custom filaments and pellets for additive manufacturing, discussing the work they have previously done is not an option. The Virtual Foundary can't even tell you who their clients were.

So how do you bring in new customers by showing them what you're capable of when you can't share past projects?

Rethinking the User Experience

The solution

What the companies came up with was a project that would serve a number of important objectives simultaneously.

First, it would put their collective talents on display, illustrating how the part design, material selection, and software could all work together seamlessly. At the same time, it would showcase the increasingly wide range of opportunities in advanced manufacturing as well as demonstrate how accessible these techniques have become, especially for startups and independent users.

"Fusion 360 made it really easy," he says. "I knew what I was looking for, and I was able to find the functions pretty easily. Normally it takes a lot longer to learn enterprise-grade CAD software. But it was actually fun and by the end of the project I could do most of what I would usually do."

Three Parts for 3D Printing

What the STS and The Virtual Foundry teams landed on was a three-part material handling solution comprising a vessel, a water-cooled work holding device, and a simple base and carriage.

After sintering, the end result is a 99-percent-pure copper 3D-printed part, one that can withstand the rigors of work holding while allowing a cooling agent to pass through its internally printed channels. In addition, the grippers were printed without supports using minimum material.

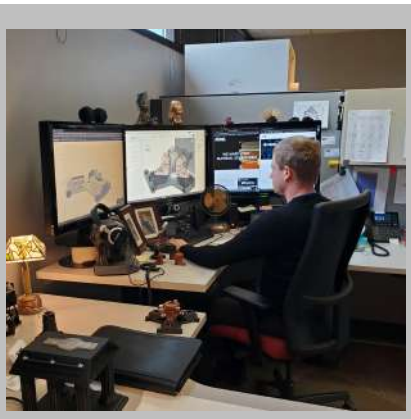

Image courtesy of STS Technical Solutions.

"Typically, to create parts like these, you would start by asking a tooling company to machine the work holding component out of a big block of copper, cross drilling six ways to get the cooling channels. Needless to say, that's a much larger and more time-consuming project."

Using Fusion 360 and the innovative filaments from The Virtual Foundry, however, Heard was able to bypass this approach and create parts that can be printed on an inexpensive fused filament fabrication (FFF) 3D Printer, as opposed to industrial-grade metal 3D printers.

The result

By Using Fusion 360 and leveraging the new additive capabilities therein, Heard was able to design and the parts in under 24 hours, and most importantly, run through the project from start to finish in house. This approach establishes what Heard calls "a low-cost solution to an expensive problem." In other words, the overall affordability of the design software, material, and 3D printer put the formerly cost-prohibitive world of advanced manufacturing at the fingertips of the average user.

Heard also notes that Fusion 360 simplifies versioning and file sharing, both of which streamline collaboration across teams.

Interested in learning more about Fusion 360, and how you might use it for your solutions? Follow the link below

http://www.autodesk.com/Fusion360.

"It's really spectacular that you can make parts like this. If you would've told someone a few years ago that you could make tungsten and copper parts this inexpensively, they simply wouldn't have believed you."

– Benjamin Heard
Project Manager and Additive Engineer
STS Technical Design

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