Case study

AMP'D Gear

HP Workstations streamline design cycles, enable collaboration

Industry
Small business/manufacturing

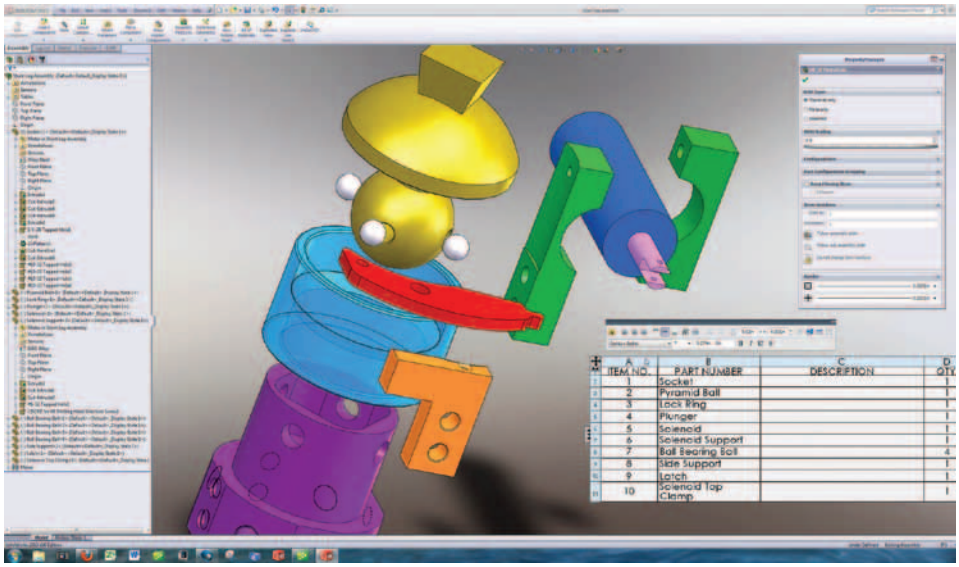
Objective
Design and manufacture highly functional, mechanically smart, affordable prosthetic sporting gear

Approach
Deploy HP Workstation model matching how each partner works, in the office and on the road

IT matters
- Streamline prototyping from weeks to days or hours
- Enable distance collaboration with workstations that can run the same software
- Run multiple applications at once without slowdowns, downtime

Business matters
- Enable business-partner collaboration over distances
- Maintain creative flow through fast device performance, reliable uptime
- Control costs so products can be sold for hundreds of dollars, instead of thousands

HP recommends Windows.



"We break barriers for people, HP breaks barriers for us. My HP EliteBook Mobile Workstation frees me to work effectively while traveling. Bill's HP Z800 Workstation is a multi-tasking powerhouse."

– Casey Pieretti, co-owner, AMP'D Gear, Carpinteria, Calif.

Casey Pieretti was 19 years old when a drunk driver changed his life. A multi-sport athlete with a very active lifestyle and a basketball scholarship, Pieretti was a week away from his first college basketball tournament. Out with friends one night, their car broke down. While Pieretti was helping to push the car on the shoulder of the road, a drunk driver hit him. Pieretti's right leg was severed below the knee.

HP recommends Windows.

Rising to the challenges and concerns of his new life, Pieretti inline-skated across the United States to draw attention to the needs of amputee children, who typically outgrow prosthetics faster than they can be replaced. Lack of affordable prosthetic technologies, he saw, was a barrier to many amputees. For athletes like him, it hampered participation in sports such as rock climbing, biking and scuba diving. While working on this challenge, he met design engineer Bill Spracher. The two launched AMP'D Gear to make performance sporting gear for amputees.

"Better than new, better than you," is AMP'D Gear's motto. To fulfill this promise, the company's prosthetic devices must be highly functional, mechanically smart—and affordable. How do Pieretti and Spracher meet these potentially contradictory requirements? They rely on HP. Pieretti, who's often on the road working as a movie stunt man, carries an HP EliteBook Mobile Workstation. Spracher, the design engineer of the team, uses an HP Z800 Desktop Workstation. These fast, powerful machines run the same software, enabling the partners to streamline design cycles, prototype rapidly and collaborate seamlessly. The result: innovative products, efficient design iterations and prosthetics that cost hundreds of dollars, instead of thousands.

"Casey's got the HP EliteBook Mobile Workstation and I've got the HP Z800 Desktop Workstation. I can prepare my design and he can be across the country, open it up and see exactly what we're talking about. The collaboration is seamless."

– Bill Spracher, co-owner, AMP'D Gear

"We break barriers for people, and HP breaks barriers for us," Pieretti says. "The HP EliteBook Mobile Workstation is great for me because I always have it—on location, in the hotel room, wherever I travel. If I have an idea, I can get it to Bill right away. For Bill, the HP Z800 Workstation brings the speed and power he needs to keep multiple applications open simultaneously, and render designs quickly. It's an ideal collaborative setup. Each of us uses the device best suited to how we work, and the integration between them is seamless."

HP Workstations power demanding small business

Pieretti and Spracher are always racing against project deadlines. Before they acquired their HP solutions, technology was as much a hindrance as help. "I struggled, before. I'd be in the middle of a complicated design, and my computer would just hang up, or crash," recalls Spracher, who also is owner of Spracher Engineering Inc., which manufactures high performance polyurethane parts. "With an unreliable computer, you're stuck. You waste an hour just bringing the thing back up, and maybe you forgot to save your changes."

Spracher's HP Z800 Workstation, in contrast, is fast, reliable and powerful. Designed to optimize the way the processor, memory, graphics, operating system and software technology work together, the workstation delivers the computational power to handle AMP'D Gear's complex workloads. As a small-business owner, Spracher multi-tasks with many applications open at once—word processing, spreadsheets, accounting, computer-aided design (CAD) and 3D printing. "It would be great if I could focus on design only," he says. "But this is a small shop. The phone rings and somebody needs something I've got to take care of, order supplies or whatever. Being able to have all my applications open at the same time on my desktop is really important to me. I just click between them, and at the same time I could be re-rendering an assembly."

This massive processing power comes from the workstation's Intel® Xeon® processors and the Intel® QuickPath Technology. "One of the cool things about the HP Z800 Workstation is its Intel processors," Spracher says. "Having dual processors and multiple cores, it has no problem with all the threads needed to keep up with multiple applications requiring a lot of horsepower. It used to be I had to shut down one application to use another. Now it's all integrated, and rendering is so fast that I don't have to wait for the machine to redraw a complicated assembly."

HP recommends Windows.

"A huge advantage of the HP Z800 Workstation is that I can have multiple programs running simultaneously. Before, I'd have to stop one program and go through a multi-step process. Now it's all integrated."

– Bill Spracher, co-owner, AMP'D Gear

Pieretti and Spracher use SolidWorks 3D CAD software to sketch out product ideas. They send files through Dimension Software to a 3D printer. Or, HSM software allows them to send a SolidWorks model to a CNC milling machine. Their prototyping process has been streamlined from weeks to days or even hours.

The pair collaborated, for example, to create a rock-climbing foot. Each prototype iteration opened ideas for improvement, until the foot also became a great off-road mountain biking device. "We went through eight or nine prototypes on that rock-climbing foot, each designed in SolidWorks on the HP Z800 Workstation, and then printed out on the 3D printer. Then we would make a mold, and make different changes to it. The combination of the HP Workstation and the 3D printer made those changes easy and quick. It opened the door to making the best product possible," Pieretti says. Doing the machining in-house helps keep costs down, as does using existing materials whenever possible.

Pieretti field-tests developing products in a process they call "Research and Destruction." "In general, when he stops breaking stuff, we're ready to go," Spracher says. The most challenging task they ever undertook was to create a stunt leg designed to break in two at the push of a button. Pieretti would use the leg to perform the dangerous stunt of being thrown into the air by a device called an air ram. "If something went wrong it could kill me," he says. "That's what I mean when I say I trust Bill's designs 100%."

HP EliteBook brings power on the road

Thanks to the HP EliteBook Mobile Workstation, the partners can refine their prototypes efficiently, communicating back and forth, even when Pieretti is traveling. Built for durability, power and energy efficiency, the HP EliteBook comes with ProtectTools Security Manager and meets military standards testing for drop, vibration, dust, altitude and high temperature.[1] Dedicated HP Elite Premium Support is included in the cost. "My HP EliteBook Mobile PC is a full workstation in a small package that I can take with me. It has the powerful Intel® processor, and the same video card as the HP Z800 Workstation, so I'm able to share with Bill seamlessly."

Customer at a glance

Application
Office, CAD, CAM, video editing

Hardware
- HP Z800 Desktop Workstation
- HP EliteBook Mobile Workstation
- HP DreamColor Professional LCD Display

HP recommends Windows.

The workstation also enables Pieretti to collaborate with stunt coordinators and film directors. Many of the stunts he does have never been done before. Now, he can shoot an action sequence in high definition video, edit it, sample it down and email it to the customer to demonstrate the idea.

HP DreamColor Display technology enables AMP'D Gear to maintain color accuracy both in onscreen images and in actual products. "With the HP DreamColor Display, we see exactly what we're going to get, and we can run that accuracy every step through production. What's more we send those colors back to the shop where the foreman hand mixes our colors."

> "If one of our computers goes down, that's 50% of our company. With HP, we don't have that kind of downtime."
>
> – Casey Pieretti, co-owner, AMP'D Gear

AMP'D Gear uses HP printers, and benefits across the board from the high quality of HP's customer service. "The HP team has been awesome, always guiding us on the right track," Spracher says.

All the advantages AMP'D Gear gains from its HP solutions—speed, reliability, processing power, mobility—ultimately deliver the business advantage of unleashed creativity, the partners say. "I don't see limits. I only see what I want to do," Pieretti says. "With our HP Workstations, there is no interruption to our creative process."

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