



Game Designer Hits the

JACKPOT with first cut®

International Game Technology in Reno, Nevada is a global company that designs, manufactures, and sells computerized gaming machines. Diane Strachan is one of the company's product designers. The company designs games of chance for placement in casinos, but Strachan makes it very clear that they take no chances in the development of their products.

"In 2008 I was working on a new dual-lock latch assembly for the access door on one of our machines," she says. "It's a small but critical part of the equipment, and I was looking to make it work more smoothly, improve the arc of the pivot plate and reduce the number of parts in the assembly. And, of course, like everyone else we're always looking for ways to control costs. My initial design replaced a folded sheet metal slider bar and three PEM® studs with a single molded plastic part. In order to reduce friction I wanted to use a material that would provide some lubricity and chose Kepital®, an acetal

POM copolymer that also provides good dimensional stability, thermal stability, and wear resistance."

Using ProE software, Strachan developed a 3D CAD model. In addition to reducing the number of parts, the new design improved the angle of the pivot plates and optimized contact points. Knowing that the part would be injection molded, she drafted the appropriate surfaces of the part for ease of ejection. The development process was running smoothly until Strachan tried to get a working prototype. "We wanted to test a sample part made of Kepital or something similar to make sure it would work in the machine. We called around town to see if we could have a couple of sample parts machined, but no one would do it. We offered to take out the draft, which I know can be difficult to machine, and they still wouldn't touch it. We were willing to pay an arm and a leg for a couple of parts and still couldn't find anyone interested. It was very frustrating."

“When I got the quotes I thought I was dreaming. The price for the drafted version was \$133 per part; the undrafted version was even less.”

“My supervisor had recently heard from Proto Labs, so I made a call, and spoke with a Sales Representative who told me about First Cut. What he described sounded great but was also a little hard to believe. We’re used to vendors that look at your drawings and get back to you in a week. The part then takes another two or three weeks. Proto Labs was talking about a quote in a couple of hours and parts overnight, and said they had a generic version of Kepital in stock. You can understand why we were a bit skeptical.”



Skeptical or not, Strachan went online at 9:00 AM and uploaded two versions of her design—one with draft and one without—to Proto Labs’ FirstQuote® online quoting engine. She had quotes back two hours later. “I was

hoping for a price between \$500 and \$600 per part,” she says. “I was afraid they might cost \$1,000 each. When I got the quotes I thought I was dreaming. The price for the drafted version was \$133 per part; the undrafted version was even less. Of course we chose the drafted version so we could test exactly what

we’d get out of a mold. Knowing how hard it is to machine parts with draft, we were pleased that First Cut even quoted the drafted version and stunned at the low price.”

Strachan got a purchase order from her purchasing department at 6:00 PM that evening and immediately called Proto Labs to order two drafted parts machined from her 3D CAD model. At 6:00 AM the next morning, a message on Strachan’s phone informed her that the parts were ready to ship. The finished parts were overnighted and arrived the following morning.

“The parts were everything I hoped for,” says Strachan. “They say you can’t have good, fast, and cheap, but that’s exactly what we got. We got beautiful parts with draft, which only a computerized system like First Cut could have given us. We got a quote back in two hours, and the parts were ready just 12 hours after we placed the order. And the price was a fraction of what I was willing to pay local shops that would have taken weeks to deliver the parts. They should change that triangle to read ‘Amazingly good, amazingly fast, and amazingly cheap.’”

“We started our functional testing down on the production floor using real machines. We found some things that needed to be addressed, specifically a leaf spring that was applying unexpected force to the door, but the machined part itself worked fine. Still, it points out why we need testable parts. Anything that doesn’t work the way we expect, whether it’s the part itself or something else, has to be addressed before we commit to full-scale production. And the nice thing about working with Proto Labs is that, if it’s the plastic parts that need to be changed, we can get new ones in just days.”

“Everyone here has been very impressed and we look forward to the next opportunity to work with them. Who knows, depending on the volume, when we’re done with testing and ready to go into production we might talk to Proto Labs about molding our latch parts for us. We heard that First Cut is now machining aluminum parts using the same process they

“The parts were everything I hoped for,” says Strachan. “They say you can’t have good, fast, and cheap, but that’s exactly what we got. We got beautiful parts with draft, which only a computerized system like First Cut could have given us.”

use for plastic parts and submitted a model for an aluminum part for a quote. It turned out to be just a little too big for their system, but we know that Proto Labs keeps adding capabilities on a regular basis, so we wouldn’t be surprised if that size limitation goes away sometime soon. In the meantime, we’re looking forward to our next opportunity to use their services.”