CASE STUDY

Market: General purpose 2D and 3D CAD for professional and hobbyist markets

Product: 3D ACIS Modeler, PHL V5, Deformable Modeling, 3D InterOp Translators

Challenge: Needed a 3D geometry kernel and CAD file format translators that accommodated both PC and Mac platforms

Solution:

- 3D ACIS Modeler provides foundation for cross-platform development of conceptual design applications
- Model deformation facilitates innovative surface modeling
- PHL V5 is integral to drawing generation tools
- 3D InterOp translators provides high quality import and export of native CAD files

Results:
Spatial enables Punch! to cost-effectively deliver high value, feature-rich CAD software packages to a variety of markets; at the high end to complement much more expensive CAD tools in precision demanding environments.

Punch! Software

Punch! Software is a leading provider of cross-platform 2D and 3D CAD tools and the market leader in home and landscape design software

COMPANY

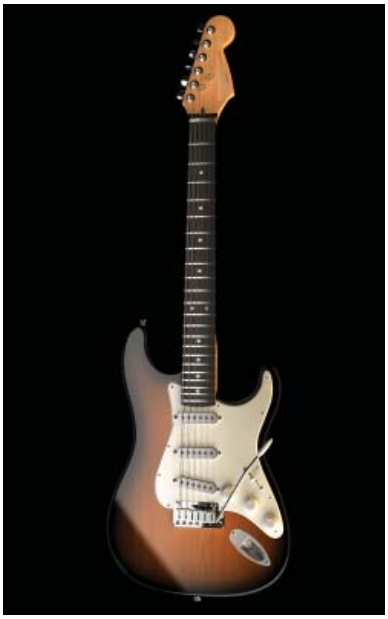
In 1994 Punch! Software Vice President Development Tim Olson was responsible for the design of CAD development at Lockheed when he learned of a new geometry kernel that performed precision solid modeling and worked on a PC. Olson was so excited about the kernel's potential that he decided to leave Lockheed after more than a decade and form his own company – CADSoft Solutions Inc. (CSI). CSI hit the market in 1996 with a suite of 3D conceptual design tools that ran on both PCs and Macs for professional engineers.

Ten years later, in 2006, the dominant home and landscape design software producer, Punch! Software with more than three million customers, acquired CSI to enter the complementary CAD market, quickly becoming a leading provider of general purpose cross-platform CAD tools for professionals and hobbyists alike. Professionals, ranging from product and conceptual designers to woodworkers and jewelry designers use Punch! Software's Shark precision design and drafting tools for 2D drawing and 3D modeling. The Shark software features high end file format translation capabilities to share data with other high end CAD systems, analysis or manufacturing programs. Soon after introducing Shark, Punch! developed the ViaCAD product line off of Shark's code stream for the hobbyist needing precision 3D digital modeling capabilities. Both software lines are sold internationally through a value-added reseller channel.

What differentiates Punch! Software's family of CAD software products from its competition is the value obtained for the price, as well as the ease of use and flexible interface with which to access an integrated collection of 2D, 3D, surface and solid modeling tools.

A typical Shark user conceptualizes an idea; then uses Shark to convey the idea by creating a digital model. From there he might make a prototype; create a photorealistic rendering; or make a 2D drawing; and the model data could be passed along to someone else for import into numerous design, analysis, rendering, documentation and manufacturing solutions.

> "(My Spatial account rep and tech support contacts) are phenomenal – they're quick and provide great feedback, and are always willing to help us solve problems. Spatial is a company that is there for you and I recommend them wholeheartedly."
>
> *Tim Olson*
> *Vice President Development*
> *Punch! Software*



Fender Stratocaster Guitar modeled by Gilles Brai Design in SharkFX

CASE STUDY - Punch! Software

RF-101 Voodoo modeled by Ed Kocialski in ViaCAD

CHALLENGE

When Olson started CADSoft he had already been through the process of developing a geometry kernel at Lockheed and knew he didn't want to go through that again. It required too much staffing and lost time getting a product to market. "If you can source something that's stable and mature you are saving a lot of time and money and you're able to focus on your core strengths," says Olson. He had become aware of Spatial's ACIS geometry kernel while at Lockheed and also considered Parasolid, but discounted the latter technology because it wasn't available for the Mac, and ACIS provided more in-depth surface modeling APIs at that time.

SOLUTION

When CADSoft licensed ACIS release 1.2 in 1995 to serve as the geometry kernel for the cross-platform predecessor of Shark, the company became one of the early adopters of ACIS. Fast forward almost 15 years and the next versions of Shark and ViaCAD to be released will be based on ACIS release 20. Besides its cross-platform capabilities, what sold Olson on ACIS originally? "ACIS lets a small team accomplish a lot because all the nitty-gritty stuff is taken care of by the kernel," he observes.

Spatial's 3D InterOp suite of file format translators, including Pro/E, CATIA v4, CATIA v5, STEP and IGES are another integral part of Shark, because Punch! Software's professional customers often need to import and/or export models as part of their workflow. For example, the technical illustrations group at Lockheed, by no means CATIA "jocks," uses the 3D InterOp CATIA translator to bring models into Shark, manipulate views and get them ready for technical illustration; or they create a prototype and then export the model to CATIA or another system prior to manufacturing. "Being able to share data seamlessly with other CAD, manufacturing and analysis systems is important to our customers; the InterOp translators enable Shark to facilitate that," says Olson.

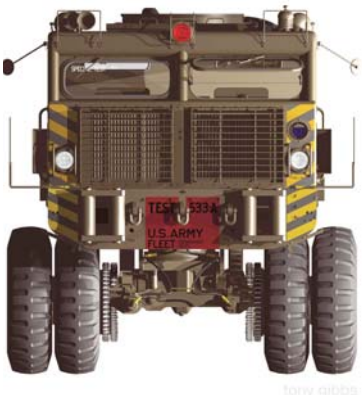
Throughout the almost 15 year relationship, Olson and his developers have relied continuously on their Spatial account manager and tech support. "They are phenomenal – they're quick and provide great feedback, and are always willing to help us solve problems," notes Olson. "Spatial is a company that is there for you and I recommend them wholeheartedly."

RESULTS

Through the acquisition of CADSoft, Punch! Software has been able to evolve from its dominant position in the home design software market to quickly become one of the fastest growing CAD companies. And Spatial functionality and components have proven critical to the company's ongoing development plans. All Spatial components run on PCs and Macs, enabling Punch! to satisfy both platform communities with strong offerings. The Spatial 3D InterOp suite enables Shark customers to share precise data with other applications, including the ability to read native CATIA and Pro/E Wildfire parts, a unique solution for Mac users.

In addition, ACIS' deformable modeling allows Punch! customers to interactively sculpt shapes that automatically adhere to rich sets of constraints for surface modeling and PHL V5 for flexible control of hidden line accuracy, which is key to all of Punch! Software's drawing generation tools.

Going forward, Olson is excited about ACIS' multi-threaded application development– which provides the Spatial developer community the ability to attain linear performance increases by leveraging the available processing power of the computer. "As Spatial delivers multi-threaded capabilities there is very little work on our part because they safely integrate the functionality into the kernel for us," concludes Olson. "Most things with ACIS are pretty straightforward for third party applications to utilize."



T26 Tank Transporter modeled by Tony Gibbs in SharkFX

SPATIAL
310 Interlocken Parkway, Ste. 200
Broomfield, CO 80021
Tel: 1+303-544-2900
Fax: 1+303-544-3000
www.spatial.com