PROTOTEK CASE STUDY
ADVANCING DIGITAL MANUFACTURING QUOTING
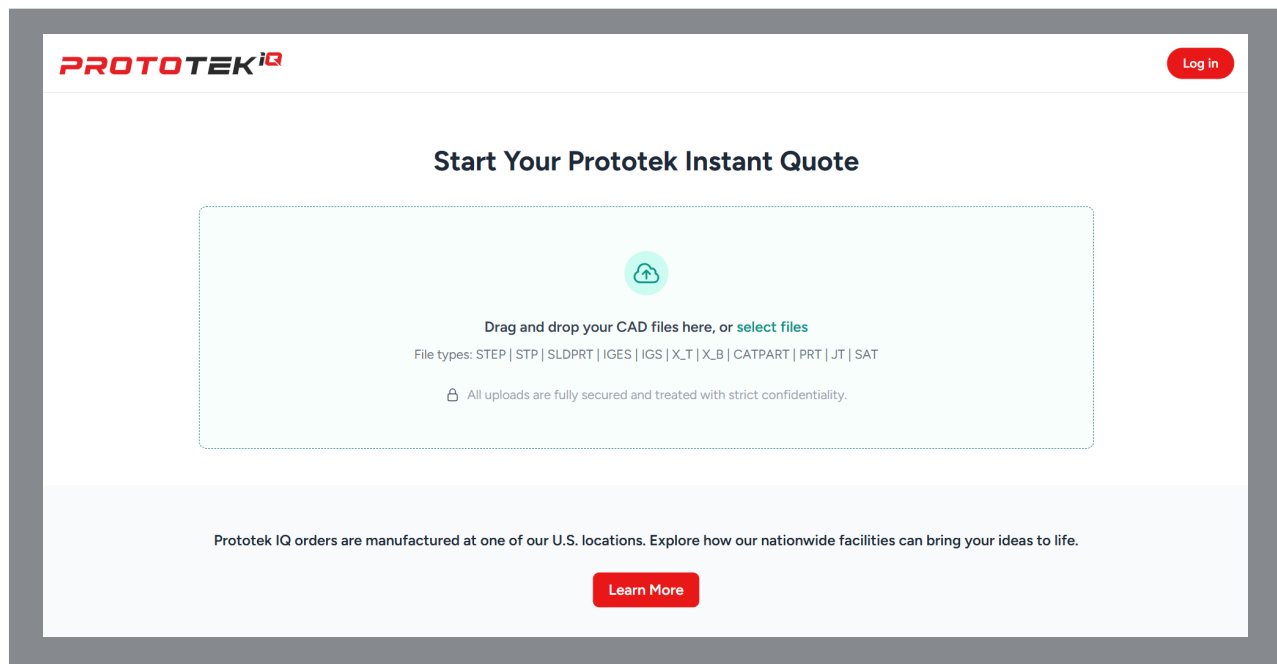
Market
Manufacturing
Services

Product & Services
3D InterOp, CGM Modeler, HOOPS Communicator

Foundational SDKs Support Innovative Quoting Tool

Prototek IQ, empowered by Spatial components, saves customers' time, alleviates administrative tasks, and opens new market segments in digital manufacturing.

SUMMARY

Manufacturers looking for instant quoting capabilities for custom-manufactured parts can rely on high-quality, automated Software Development Kits from Spatial.

THE COMPANY

Founded in 1987, Prototek is an American provider of rapid prototyping and low-volume production services, specializing in precision machined and sheet metal fabricated parts. Prototek's mission is to be the leading full-service digital manufacturer providing a one-stop shop for high-mix, low-volume production and prototyping. Prototek is committed to delivering high-quality solutions with unmatched speed, ensuring their customers receive the best value, superior technology, and unwavering quality.

Their comprehensive services include on-demand 3D printing, CNC machining, sheet metal fabrication, casting, and molding. With a fleet of over 140 machines and multiple facilities across the United States, Prototek caters to a diverse customer base in industries such as aerospace, defense, medical, robotics, electronics, consumer, and general industrial sectors. The company stands out from the competition by offering instant and engineer-assisted quotes, 100+ choices of metal and plastic materials, 40+ surface finish options, and quality prototypes and end-use solutions.

> By leveraging Spatial SDKs to launch our Instant Quoting software, we achieved our goals efficiently and successfully launched within just seven months of signing the contract—a testament to the smooth and well-coordinated integration process.
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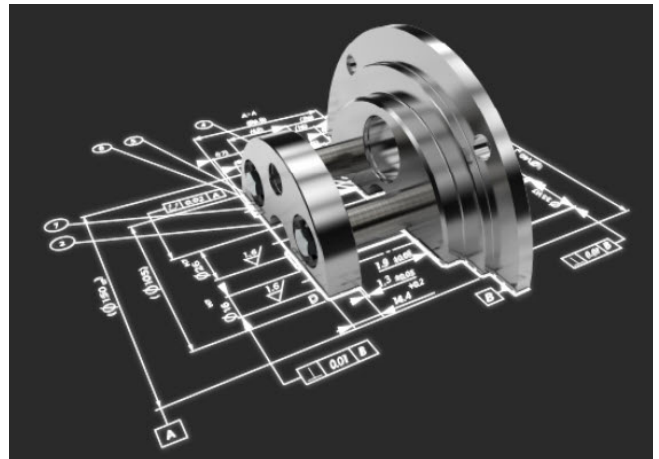> — **Mitchell Eaton , Director of Product**

CHALLENGE

Implementing a robust automated quoting tool to meet industry and customer demand

As the manufacturing industry shifts to a digital future, Prototek recognized the need for digitization, automation, and speed in quoting, ordering, and production. With increasing requirements for on-demand manufacturing, customers expect seamless digital experiences. Prototek aimed to position itself as a modern, customer-centric company by developing an Instant Quote tool.

Dealing with customizable and technical components, Prototek sought to automate complex quoting processes to ensure accurate pricing based on material, design complexity, and production methods. Traditional manual quoting was slow and inefficient, often requiring back-and-forth communication. The Instant Quote feature focused on faster turnaround times, transparency, and accuracy to enhance customer satisfaction.

With competitors offering similar tools, Prototek wanted to develop its own Instant Quote feature to remain competitive and meet market expectations for convenience and speed. To accomplish their goals, they knew they needed a solid foundation of 3D software components to power their dynamic quoting tool.

SOLUTION

Foundational software and dedicated technical support create a seamless integration process

Prototek found their solution partner in Spatial with their innovative Software Development Kits (SDKs). After reviewing technical documentation and example codes, they determined that Spatial could easily meet their needs in a timely, efficient, and cost-effective manner. Spatial's commitment to customer and post-sale support were also important factors in Prototek's choice.

Examples of Prototek quote options

PROTOTEK IQ

Prototek IQ is our innovative instant quoting platform, designed to streamline your manufacturing process. You can obtain accurate quotes for 3D printing and CNC machining (two separate platforms) with just a few clicks. Our user-friendly interface, powered by AI, enables you to make informed decisions. Experience the benefits of Prototek IQ and unlock the efficiency your business deserves.

We encourage customers with extensive project, 3D printing, and CNC experience, as well as those with repeat orders, to use our instant quoting platform. Alternatively, you can choose our engineer-assisted quote option for other technologies, high quantities, specific quality requirements, expedited delivery, or specialty finishing needs.

Prototek IQ - 3D Printing

Prototek IQ – AM is our non-ITAR **3D Printing Instant Quote Platform**, which includes the following technologies:

- Laser Sintering
- Multi Jet Fusion
- Stereolithography
- Fused Filament Fabrication
- Material Jetting

Prototek IQ - 3D Printing

Prototek IQ - CNC

Prototek IQ – CNC is our non-ITAR **CNC Instant Quote Platform**, which includes the following technologies:

- 3 Axis CNC Milling
- 4 Axis CNC Milling
- 5 Axis CNC Milling
- CNC Turning
- Surface Finish Treatments

Prototek IQ - CNC

Engineer-Assisted Quote

Please use this form if you have questions or if your project requires certifications and registrations (ITAR), high quantities, quality requirements, expedited delivery, or specialty finishing requirements.

Our **Engineer-Assisted Quoting** includes all of our technologies!

- 3D Printing
- CNC Machine Shop Services
- Sheet Metal Fabrication
- Casting & Molding
- Assembly
- Welding
- Visual Models

Engineer-Assisted Quote

Prototek utilizes Spatial SDKs in its Prototek IQ platform, particularly for Prototek IQ-CNC and Prototek IQ-3D Printing. These tools play a critical role in enhancing the well-known Prototek Instant Quote feature by enabling advanced geometry analysis, automated manufacturability checks, and precise cost estimation. This integration allows the company to provide accurate and immediate customer quotes, streamline the manufacturing process, and ensure optimal part quality.

Prototek worked with Spatial to determine the right mix of SDKs to meet their goals:
- 3D InterOp
- CGM Modeler
- HOOPS Communicator

CGM Modeler empowers Prototek to automate and accelerate development with advanced features like Feature Recognition and Sheet Metal Unbending. Its robust geometric querying capabilities enable custom algorithms to generate accurate, industry-standard quotes quickly and efficiently. This industry-proven 3D kernel provides the backbone for Prototek's quoting system.

For interoperability, 3D InterOp enables an application to work with an extensive breadth of CAD formats in a seamless, unified way. 3D InterOp is the industry-leading 3D CAD data translation SDK designed to exchange visualization, exact B-rep geometry, and metadata from various CAD formats.

Web visualization needs are met through HOOPS Communicator, a browser-based 3D modeling and cloud CAD SDK for high-quality rendering and seamless integration in design, engineering, and manufacturing. With customizable APIs, it accelerates web app development, offering optimized performance, comprehensive 3D data access, and out-of-the-box functionality.
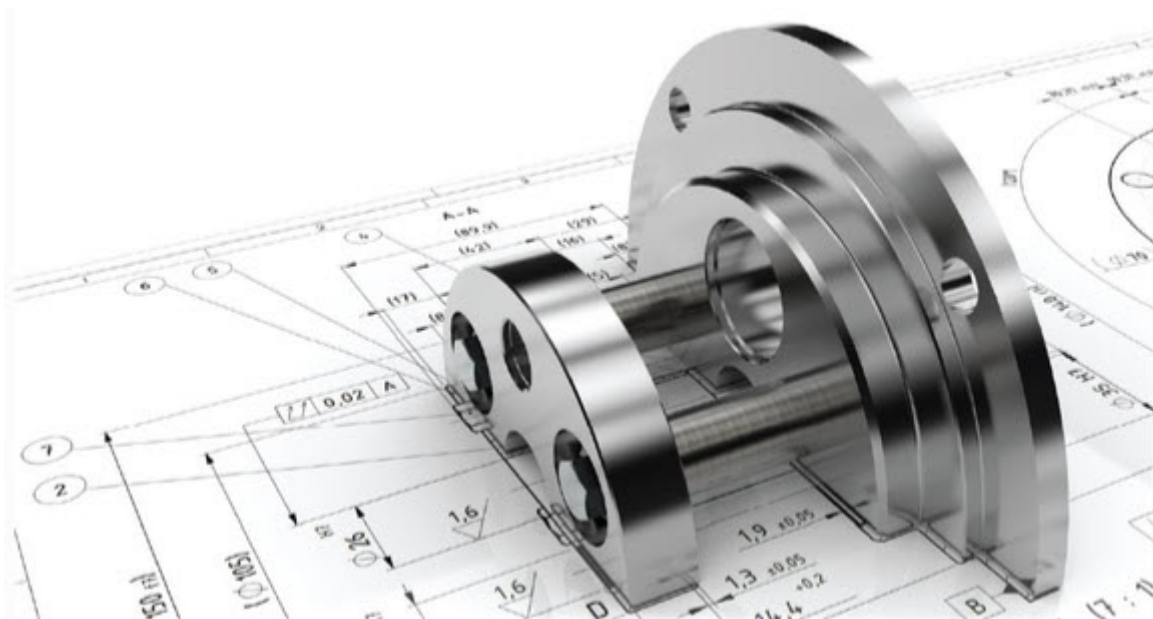
Spatial 3D SDKs are foundational pieces that allow Prototek IQ to instantly quote custom-manufactured parts. With the detailed documentation and example code provided within Spatial's libraries, Prototek integrated Spatial at the ground floor level to build on top of their existing code.

Integration Process with Spatial SDKs

Spatial ensured a well-structured and collaborative integration process for Prototek. Developers at Prototek conducted a comprehensive evaluation of the Spatial SDKs during which they were supported by the Spatial Technical Account Managers (TAMs) who provided valuable guidance and expertise. Weekly calls with the TAMs allowed the team to work through any issues and bounce ideas off each other. The robust documentation and sample code provided by Spatial further enabled Prototek to quickly develop and validate a Proof of Concept that aligned with their vision.

The continuity in support and familiarity with the Spatial ecosystem allowed Prototek to quickly advance the development of their Instant Quoting software, leveraging Spatial SDKs to achieve their objectives efficiently. As a result, Prototek successfully launched its software within seven months of signing the contract with Spatial, reflecting the smooth and well-coordinated integration process.

Prototek's integration experience highlights the value of Spatial's comprehensive resources, technical support, and the enduring partnership with its TAMs. These factors enabled the development of innovative solutions like Prototek IQ.

KEY INSIGHTS

Comprehensive SDKs empower accelerated development

By leveraging Spatial SDKs, Prototek demonstrates its commitment to innovation and excellence in digital manufacturing, delivering seamless and efficient solutions to meet the evolving needs of its clients. Spatial's all-in, comprehensive CAD kernel provided the robust base needed for Prototek to accelerate the development of the Prototek IQ platform. By using Spatial, in combination with Prototek-developed Machine Learning models, Prototek can accurately estimate pricing for hundreds of materials and finishes for customers' custom-manufactured parts.

Prototek customers can now instantly procure custom manufacturing quotes online through the Prototek IQ platform, while still being able to submit traditional engineer-assisted RFQs. Getting an instant quote through Prototek IQ now takes seconds, compared to hours when done through traditional quoting methods. Customer wait time for quotes has continued to decrease dramatically, allowing customers to make quicker decisions and get their products to market faster.

The 3D modeling, interoperability, and visualization components from Spatial are part of the formula for Prototek IQ's success as a best-in-class leader in Digital Manufacturing.

About Spatial Corp

Spatial Corp, a Dassault Systèmes subsidiary, is the leading provider of 3D software development toolkits for technical applications across a broad range of industries. Spatial **3D modeling**, **3D visualization**, **3D Meshing** and **CAD translation software development toolkits** help application developers deliver market-leading products, maintain focus on core competencies, and reduce time-to-market. For over 35 years, Spatial's 3D software development toolkits have been adopted by many of the world's most recognized software developers, manufacturers, research institutes, and universities. Headquartered in Broomfield, Colorado, Spatial has offices in the USA, France, Germany, Japan, China, and the United Kingdom. For more information on Spatial's latest updates and product offerings, please visit **www.spatial.com**.

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