

# aPriori Helps HARBEC Accelerate Quoting for Precision Manufacturing Products

CASE STUDY

HARBEC's senior management had long identified an automated quoting process as a valuable operational goal. They needed a tool that could speed up quoting to enable superior response times while ensuring consistent, accurate cost models.

## THE CHALLENGE

### Diverse Manufacturing Processes Drastically Slow Down the Quoting Process

HARBEC's business requires quoting of precision-manufactured products across multiple industries. Their quoting group navigates the challenge of developing accurate cost models across unusually diverse manufacturing processes. They generate quotes for injection molding, mold building, CNC machining, additive manufacturing/3D printing, and more, with multiple specialty processes available under each of these categories. **Along with manufacturing to tight tolerance specifications, HARBEC offers a variety of specialized, high-performance materials (including over 300 resins used for molding and more than 100 different metals for CNC machining).**

This diverse set of manufacturing variables creates a serious business challenge for churning out timely and accurate quotes. Each of these

processes comes with different overhead, burden rates, machining costs, and even more—a variety of complex cost drivers. As a true contract manufacturer, HARBEC often quotes assemblies that include several of these processes within the same product design.

HARBEC historically relied on manual quoting using tools like spreadsheets, generic setup times, and experience-based estimates of cycle times. While their sophisticated quoting team successfully created accurate quotes for customers, the complexity introduced a variety of operational burdens. HARBEC needed to train quoting specialists across a multitude of concentrated manufacturing processes. The HARBEC quoting team emphasized cross-training, but the immense diversity of required quotes inevitably pushed specific team members and working groups to build upon their specialist knowledge for different manufacturing categories. Concurrently, the time demands of complex quoting workflows risked creating chronic bottlenecks.

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## THE SOLUTION

### Identifying the Right Cost Modeling Software for Multiple Manufacturing Processes

HARBEC's senior management team identified an automated quoting process as a valuable operational goal. They needed a tool that could speed up quoting to enable superior response times while ensuring consistent and accurate cost models. The right solution would need to allow all quoting team members to effectively generate quotes, limiting reliance on specialized individual knowledge of various manufacturing processes.

**HARBEC identified aPriori as the cost modeling software that could finally address all of these business-critical requirements, while offering potential for further use cases, like Design for Manufacturability.** Unlike cost estimation tools considered by HARBEC in the past, aPriori could analyze the actual geometry of a component directly using 3D models. And it could be applied across all requisite manufacturing processes.

## RESULTS

### Quoting on "Autopilot" with Accuracy

In a matter of months, HARBEC implemented customized quoting capabilities for their critical manufacturing processes in aPriori. They now benefit from fully automated quoting across injection molding, mold building, CNC machining, and additive manufacturing. New products leaving HARBEC's facility are quoted using aPriori.

HARBEC's aPriori implementation incorporates proprietary formulas, allowing them to capture their preferred quoting approach within the software. **aPriori can then utilize digital manufacturing simulation to generate cost models in a fraction of the time required by manual, spreadsheet-driven quote estimation (in many cases generating a same-day quote).**

HARBEC's new automated approach is resulting in highly accurate cost models for virtually every quote. In addition to dramatically accelerating the quoting process, aPriori has also helped reduce the gap between quoted and actual costs. aPriori is also integrated with HARBEC's ERP system, importing and exporting product data directly to/from the ERP system to streamline the quoting processes as much as possible.



Including full budgetary pricing that allows customers to see precisely how their design choices are driving the quoted price

## WHAT'S NEXT

### Integrating aPriori Across Additional Teams at HARBEC

In addition to cost models, aPriori offers direct feedback on design variables that could be modified to potentially achieve a more cost-effective design. Currently, HARBEC communicates any notable manufacturability issues to customers via screenshot. In the coming months, HARBEC plans to implement a more comprehensive system for reporting manufacturability analyses based on aPriori's digital manufacturing simulations, including full budgetary pricing that allows customers to see precisely how their design choices are driving the quoted price.

HARBEC is also planning to roll out aPriori's capabilities to other teams outside of quoting. The next step will be training engineers to work with aPriori directly. **This additional use case will not only empower engineers to directly quote components for customers, but to begin utilizing aPriori's Design for Manufacturability features to work with customers directly to develop the most efficient possible design.** HARBEC is excited about having the host of capabilities available to their organization, at their fingertips.



300 Baker Avenue | Concord, MA 01742 | Tel: 978.371.2006 | Fax: 978.371.2008 | [info@apriori.com](mailto:info@apriori.com) | [www.apriori.com](http://www.apriori.com)