

HARMAN Uses aPriori Manufacturing Cost Models to Collaborate with Suppliers and Reduce Cost



CASE STUDY

With true supplier cost transparency, HARMAN can work with suppliers to develop long term plans, rationally consider new investments, and communicate more systematically on savings opportunities.

THE CHALLENGE

Develop Manufacturing Cost Models Capable of Driving True Supplier Cost Transparency

The Best Cost Analytics team at HARMAN was founded just three years ago. It has already expanded to a group with over a dozen skilled professionals working to enhance value across HARMAN's diverse product lines.

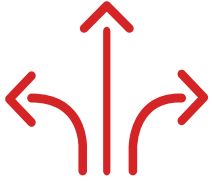
The team primarily focuses on supplier costs. They needed a technology that would offer them powerful transparency into the pricing offered by third party suppliers. This technology would need to offer detailed insight into product cost structure. The Best Cost Analytics team identified the capability to quickly analyze a design and correctly allocate costs using unique, supplier-specific cost drivers as the only way to build a true partnership with suppliers.

As different suppliers have different methods for allocating cost, a consistent touchstone for discussing cost structure would be the key to avoiding contentious negotiations and focus on working collaboratively to identify savings opportunities.

The right technology would need to allow the Best Cost team to work quickly. To efficiently integrate with design and sourcing workflows, it would need the ability to work directly with 3D CAD models. Finally, the technology would need to work with the varied manufacturing processes required by HARMAN's diverse, often complex product offerings.



HARMAN International (harman.com), a wholly owned subsidiary of Samsung Electronics Co, LTD., designs and engineers connected products and solutions for automakers, consumers, and enterprises worldwide, including connected car systems, audio and visual products, enterprise automation solutions; and services supporting the Internet of Things. With leading brands including AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, Mark Levinson® and Revel®, HARMAN is admired by audiophiles, musicians and the entertainment venues where they perform around the world. More than 25 million automobiles on the road today are equipped with HARMAN audio and connected car systems. Their software services power billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile. HARMAN has a workforce of approximately 30,000 people across the Americas, Europe, and Asia.



aPriori's ability to configure custom digital factories for a variety of production processes allows its **flexible** use across a **wide variety** of HARMAN products.

THE SOLUTION

Using aPriori to Quickly Generate Manufacturing Cost Models for Third-Party Supplied Parts

HARMAN selected aPriori as the best technology to support their mission. aPriori's ability to configure custom digital factories for a variety of production processes allows its flexible use across a wide variety of HARMAN products. Simulating manufacturing for products including speakers and digital cockpit, telematics and Advanced Driver-Assistance Systems (ADAS), aPriori provides HARMAN with manufacturing cost models for production processes including plastic molding, stamping, die casting, electro-mechanical components, and others.

True digital manufacturing simulation leverages digital factories that can be configured to reflect important parameters for different products, regions, and suppliers. With these simulated models in hand, HARMAN has reliable targets for the cost of each part. These targets represent a goal that can be achieved through long-term supplier collaboration.

HARMAN's Best Cost team operates based on the principle that sharing this knowledge will help nurture long-term supplier relationships based on trust and win-win negotiations, not gamesmanship. With true supplier cost transparency, HARMAN can work with suppliers to develop long term plans, rationally consider new investments, and communicate more systematically on savings opportunities.

aPriori's ability to work fast was also instrumental in its selection by HARMAN. With the ability to analyze a design to generate a digital twin almost instantly once a 3D CAD is uploaded, aPriori facilitates more transparent sourcing without slowing down the development process.

THE RESULTS

Digitally Simulated Manufacturing Promotes Cost Savings and Streamlined Quoting

HARMAN's Best Cost team utilizes aPriori digital factories to reflect important cost variables for different suppliers. Using simulated manufacturing cost models as a starting place, HARMAN can work with suppliers to identify cost inefficiencies and develop a transparent, mutually shared understanding of that supplier's manufacturing cost structure. aPriori's simulation-driven cost models are being used both for new products and to identify cost optimization opportunities among preexisting designs.

This capability not only helps keep costs down but drives considerable operational efficiencies. Once a supplier's cost structure is clearly defined based on mutual refinement of aPriori's manufacturing cost models, the RFQ process can be dramatically streamlined.

As integration and cost collaboration with suppliers become more mature, HARMAN aims to implement a Zero-RFQ capability.

Rather than wait weeks for a quote, HARMAN could have an extremely fast process for immediately creating a manufacturing cost model which they can confidently use as a target price for upcoming business. Over time, this enhanced modeling capability may mature to a fully automated "Zero-RFQ" process (see below under Next Steps).

The traditional RFQ process not only creates delays but involves substantial expenditures of time and resources for both HARMAN and its suppliers. With aPriori's manufacturing cost models and HARMAN's dedication to supplier collaboration, this overhead will be dramatically reduced.

NEXT STEPS

Automated Quoting through Zero-RFQ

In its current implementation, HARMAN uses aPriori to generate supplier cost targets, but still issues a traditional RFQ. As integration and cost collaboration with suppliers become more mature, they aim to implement a Zero-RFQ capability. Once a supplier and HARMAN agree that the aPriori digital factory is configured to reflect reality, HARMAN and its partners will be able to agree on cost without issuing an RFQ – with full confidence in the simulated price point. HARMAN'S Best Cost team is currently conducting initial experiments with Zero-RFQ processes.



300 Baker Avenue | Concord, MA 01742 | Tel: 978.371.2006 | Fax: 978.371.2008 | info@apriori.com | www.apriori.com