

An Arena Solutions case study



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# Air International US

A Better Way to Manage Outsourced Manufacturing



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Air International (US) Inc. (AIUS) is a division of Air International (AI) Group Limited, a tier-one supplier of heating ventilation and air conditioning (HVAC), seat systems, steering systems, metal pressings, fabrication, modular assemblies and rail and bus HVAC systems to the world's automotive industry.

AIUS, which develops passenger vehicle HVAC systems, works closely with the corporate headquarters in Melbourne, Australia, AI offices throughout Asia and Europe and a global network of suppliers and component manufacturers to serve customers like General Motors and Lear Corporation.

### A COMMITMENT TO OUTSOURCED MANUFACTURING

Since the launch of US operations in 1996, the company has used an outsourced manufacturing strategy instead of maintaining its own manufacturing facilities. This outsourcing strategy provides AIUS with a number of key benefits:

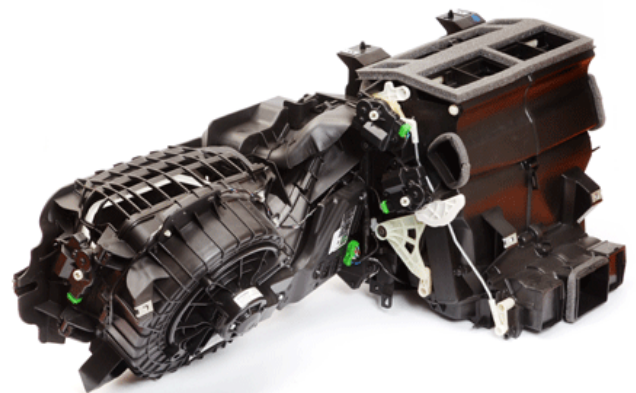
- **Lower overhead costs**—as contract manufacturing fees are less than the labor and burden costs that would otherwise be incurred—which generally give AIUS a 10-20% cost advantage over their vertically integrated competitors;
- **The ability to find the best technology for the best price** by working with component suppliers all over in the world;
- **The flexibility to select the right contract manufacturer**—an existing partner or an entirely new one—for each job.

For the first several years, communication between AIUS and its outsourced partners was manual. Bids were developed on paper and in spreadsheets, and the subsequent rounds of follow-up questions and additional faxes and emails created multiple copies of supporting documents that were error-prone and tedious to track. As a result, AIUS could only obtain a limited number of quotes for any new project—and had difficulty ensuring that it was always taking advantage of the best quotes available. AIUS believed that this increasingly complex manual communication was forming a barrier that prevented it from maximizing the benefits of its contract manufacturing strategy.

“Going with Arena was essentially a no-risk proposition. The ability to simultaneously mitigate our risk and rapidly deploy a new system was critical in an increasingly competitive market with contracting margins and shrinking product development cycles.”

- Michael Repetto  
Program Manager  
Air International US

HVAC system



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### THE DECISION PROCESS

#### Considering a solution to better manage outsourced manufacturing

In January 2002 Michael Repetto, program manager of AIUS, began investigating software solutions to see if any would improve the outsourcing process for AIUS. “With teams working around the clock and around the globe, we were spending too much time on administrative overhead—and we still couldn’t ensure that everyone in our network always had access to the latest information,” said Repetto. The company decided that a solution would need to meet the following requirements:

- **Centralized control of bills of materials (BOMs)** — “To ensure that everyone was working with current, accurate information, we had to move beyond our manual spreadsheet process and centralize our BOM data,” said Repetto. “But we knew this would only work if we could control access so that each partner would see only the information relevant to the work it was doing—no more, no less.”
- **Support for geographically distributed project teams** — The solution would need to streamline communications with AI headquarters in Australia, offices in China, India, Malaysia, Thailand, Japan, Korea and the UK and the company’s global supply base—regardless of geographic location or time zone.
- **Comprehensive change management** — AIUS’s contract manufacturing strategy greatly increased both the importance of sharing change information in real time and the complexity of doing so. AIUS was tracking changes on paper and in spreadsheets—and bringing together the entire 30-person team for one-and-a-half hour weekly change review meetings. The cost of these meetings—in terms of lost productivity and slowed development cycles—was significant: 20% of the company’s annual change review processing costs. Despite the significant time commitment this process entailed, it still only provided a static snapshot of dynamically changing data and slowed the entire development cycle. AIUS wanted a better way to share change information in real time—both internally and with its supply network.
- **Easy to implement and use** — AIUS was planning to implement a solution at the same time it was moving from design to production on an important project. A lean organization, AIUS has limited IT and administrative support staff and wasn’t in a position to divert development resources for a lengthy system deployment. In addition, an easy-to-use interface would be critical to keeping the development team and suppliers focused on the project, not on learning a new system.
- **Affordable** — Because contracts are often won on price in the highly competitive automotive supply business, AIUS could not afford a solution that would require a significant upfront investment—especially before even knowing whether the solution would work. Repetto was also wary of solutions that would require additional expenditures—in terms of fees, downtime and training expenses—every time a new version was released.

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### Considering the Options

After brief consideration, AIUS ruled out client/server systems like eMatrix from MatrixOne for several reasons:

- Large upfront costs that made the decision extremely risky, such as high software license fees, additional hardware and expensive consulting services
- Additional IT staff requirements
- Length and difficulty of implementation
- Difficulty of keeping system up-to-date without costly, disruptive upgrades
- No real-time collaboration for external partners or globally dispersed employees

“We would have had to hire additional IT staff just to set up a client/server system. This would have been a big distraction at a time when our project schedule could not be impacted. We could have given access to some of our partners with additional customization and VPNs, but most of them don’t have the IT infrastructure in place to allow that,” Repetto said. “We needed a solution that could be deployed quickly and would meet all of our functional requirements, while optimizing our current resources. A client/server system would have required significant upfront investment and then taken eighteen months to implement. And we couldn’t even have been sure it would give us a better way to manage our outsourced manufacturing.”

**“A CLIENT/SERVER SYSTEM WOULD HAVE REQUIRED SIGNIFICANT UPFRONT INVESTMENT AND THEN TAKEN EIGHTEEN MONTHS TO IMPLEMENT. AND WE COULDN’T EVEN BE SURE IT WOULD GIVE US A BETTER WAY TO MANAGE OUR OUTSOURCED MANUFACTURING.”**

- Michael Repetto  
Program Manager  
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### Evaluating Arena

In addition to looking at client/server software, AIUS evaluated the on-demand Arena application and ultimately chose Arena for:

- **BOM management functionality** that gives the entire design and supply chain a unified view of all product design information
- **The software-as-a-service architecture** that allows global product teams to collaborate easily and securely
- **Paperless product change management functionality** that ensures everyone in the AIUS network of employees and suppliers can access the latest information
- **Ease of implementation** that allowed AIUS—and its suppliers—to begin using Arena instantly
- **A low total cost of ownership (TCO)** that results from the absence of IT overhead, the cost-effective subscription model, the fact that automatic software upgrades are included in the subscription and the lack of large upfront investment

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Because Arena is an on-demand solution, AIUS had its account activated in, literally, a matter of minutes. Then AIUS simply imported its data, set up the administrative functions and configured access for its key suppliers and manufacturers. In less than a week employees were exploring the full Arena feature set and sharing the latest BOMs with their contract manufacturers—at no cost to any of the suppliers.

“Going with Arena was essentially a no-risk proposition,” said Repetto. “With no large upfront costs and a subscription model, we could evaluate the full system with our own data and be confident that it would work in our environment before making an ongoing investment. The ability to simultaneously mitigate our risk and rapidly deploy a new system was critical for a company like ours in an increasingly competitive market with contracting margins and shrinking product development cycles.” Today, AIUS shares information in Arena with more than 20 suppliers, including its two key contract manufacturing partners and component suppliers in five North American locations (Indiana, Ohio, Pennsylvania, Quebec and Mexico), Europe (United Kingdom) and three Asia-Pacific locations (China, Korea and Thailand).

### USING ARENA TO WIN A NEW CONTRACT

Soon after implementing Arena, AIUS began preparing a bid for a new air conditioning system for a major automotive customer. Repetto and a team of engineers uploaded the BOM information and design documents provided by the customer into the company’s Arena workspace. The purchasing group set up access for chosen suppliers and invited each one to view the information it needed to provide quotes. Without ever faxing a single drawing or e-mailing a single spreadsheet, AIUS had supplier quotes in hand one-third faster than it had had in the past—and with a lot less effort.

With Arena, AIUS also was able to obtain quotes from more suppliers. Instead of preparing individual packets of information for each supplier, AIUS only had to grant each supplier access and email a link to the relevant information in Arena. The improved efficiencies and expanded set of sources enabled AIUS to submit a more competitive bid—one that was 5-10% lower than it otherwise could have offered.

Like every RFP process, this one required several rounds of follow-up with the client. By offering clear visibility into the sources, costs and lead times on which each quote was based, Arena made it much easier for AIUS to react to this dynamic process, obtain new information as needed and prepare updated quotes. Not only did this save time and eliminate confusion throughout the process, it also meant that once a configuration was selected, AIUS could know exactly what was included in that configuration—and have immediate access to all the information required to start the project.

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### RESULTS

AIUS broke even on its investment in Arena in just two months. Repetto estimates that since starting to use Arena to manage its outsourced manufacturing, AIUS has reduced related expenses by 15%. And the benefits continue to accumulate:

- **AIUS is able to offer bids that are 5-10% more competitive**, while improving profitability on the contracts the company wins. Instead of compromising margins in order to deliver the lowest possible quotes, AIUS can locate lower prices and begin making money on contracts right away.
  - AIUS now has the ability to go to more suppliers in less time, meaning the company can more easily choose sources that optimize price for a particular project.
  - Obtaining quotes from suppliers and getting them started on new orders is up to 40% faster with Arena, making AIUS more responsive to clients and providing significant time advantages in competitive bid situations.
- **AIUS has been able to avoid the types of mistakes that can cost hundreds of thousands of dollars in scrap and re-tooling:**
  - Since beginning to use Arena to ensure that contract manufacturers and suppliers always have access to the most current data, AIUS has not encountered any revision-related errors with its supply network.
  - The prototyping phase is much more efficient. AIUS typically evaluates multiple permutations of an assembly before one is selected—and the selected one is not necessarily the last one tested. The revision history in Arena gives clear visibility into exactly which parts and processes are associated with the chosen revision. This reduces delays in development schedules and ends mistakes like one that AIUS had encountered previously while developing HVAC systems for two different vehicles for an automotive client. Without clear documentation, AIUS had produced one prototype for both cars, but because one vehicle had less space available than the other, AIUS incurred \$100,000 in re-tooling costs. Since using Arena, AIUS has not encountered any such problems. Centralizing product data in Arena has ended confusion about which parts, specifications and processes are associated with each assembly.

**LESS THAN A YEAR AFTER ITS DECISION TO GO WITH ARENA, AIUS HAS ALREADY SAVED \$115,000 IN CHANGE REVIEW PROCESSING, CHANGE IMPLEMENTATION AND OUTSOURCED MANUFACTURING COSTS ALONE—22% OF THE ANNUAL COSTS RELATED TO THOSE PROCESSES.**

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- Online revision control has also eliminated the communication challenges associated with time zone and language differences. For example, both AIUS and AI headquarters use a component from AI Korea—but they use different versions. By making it easy to ensure that each office orders the right version, Arena lowers the risk of missed ship dates and other costly delays.
- **The change implementation process is one-third faster**, which AIUS expects will mean an annual savings of 30% of the costs related to that process. Without paper documents to review or lengthy meetings to attend, it's easier for the AIUS network to communicate about changes earlier in the process, and to view and respond to changes more quickly.
- **Less than a year after its decision to go with Arena, AIUS has already saved \$115,000 in change review processing**, change implementation and outsourced manufacturing costs alone. This represents 22% of annual costs related to those processes—and does not include savings the company is achieving through faster quote processing, more competitive bidding, reduced scrap and more.

In addition to the quantifiable time and cost savings, Arena has proven to deliver certain less tangible—but no less important—benefits for AIUS as well. Because Arena gives suppliers a better understanding of a project's scope, they feel more like true partners. Between this closer relationship and the fact that they save time with Arena, suppliers are more likely to meet deadlines and work with AIUS to lower costs. Over time, Repetto expects that Arena will help AIUS lower prices further and become even more competitive. For example, the company is currently considering adding a contract manufacturer in Mexico. Before using Arena, the company's manual information-sharing process created a barrier to doing business with new partners, since any increase in distance tended to increase the chance for errors and jeopardize AIUS's ability to meet deadlines. Repetto feels confident that Arena will make it easy to bring new partners into its global supply network and thus enable AIUS to truly deliver the most competitive quotes to its clients.

"In this business, lost time often means lost money," said Repetto. "Arena gives us a comprehensive view of every one of our projects, which allows us to make informed decisions more quickly. By removing communications obstacles and eliminating overhead throughout the design chain, Arena helps us get the most out of our outsourced manufacturing, which is critical to our ongoing success. Arena gives us a competitive edge that we couldn't afford to be without."

### SALES CONTACT

sales@arenasolutions.com  
p. 1.866.937.1438

### CORPORATE CONTACT

Arena Solutions  
4100 East Third Avenue  
Suite 300  
Foster City, CA 94404  
p. 650.513.3500  
f. 650.513.3511