

**Tech-Clarity**

**Tech-Clarity Insight:  
Containing CAD Costs in A&D**

*How CAD Consolidation  
Leads to Cost Reduction  
and Strategic Differentiation*



## Table of Contents

Executive Overview .....	3
Considerations for A&D .....	*
Consider CAD Consolidation to Reduce Cost.....	*
Low Cost of Solution Ownership .....	*
Improve Collaboration with Suppliers/Customers .....	*
Increase Reuse .....	*
Support Lightweight Aircraft Design .....	*
Capture a System Level View .....	*
Identify Problems Early .....	*
Extend Access to Engineering Information Beyond Engineering ...	*
Conclusion.....	3
Recommendations .....	4
About the Author .....	4

**\*This summary is an abbreviated version of the report and does not contain the full content. A link to download the full report is available on the Tech-Clarity website, [www.tech-clarity.com](http://www.tech-clarity.com).**

**If you have difficulty obtaining a copy of the report, please contact the author at [michelle.boucher@tech-clarity.com](mailto:michelle.boucher@tech-clarity.com).**

## Executive Overview

The Aerospace and Defense (A&D) industry faces significant pressure to manage costs. In an industry fraught with cost overruns and missed deadlines, those who are most successful removing cost enjoy competitive differentiation and greater profitability. One strategy to remove cost from the development process is to consolidate Computer Aided Design (CAD) applications. Past research from Tech-Clarity shows there are significant cost savings from CAD consolidation. This report builds upon that research with a focus on A&D.

While cost may be the initial reason for considering CAD consolidation, the benefits go far beyond cost. As Tech-Clarity's Consolidating CAD – The Benefits of a Unified CAD Strategy points out, “Cost savings are attractive and are certainly attainable through consolidation. Beyond cost savings, though, are even greater strategic benefits.”

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With this in mind, it is important to ensure the unified CAD solution supports best practices in A&D design. This will have the twofold impact of driving innovation as well as saving costs. Part of these savings comes from the ability to take advantage of proven, repeatable processes. It's easier for the entire team to be following the same repeatable process when using consistent tools. Repeatable processes mean greater efficiency plus less risk that will drive up costs. Selecting the right tool is an important part of making sure those processes and best practices are supported. The right tool is one that has the breadth of solution to support those design practices to not only support today's needs, but also the ability to carry A&D companies decades into the future.

## Conclusion

A&D companies are under a lot of pressure to reduce costs and risks. This can be achieved by eliminating a multi-CAD environment in product development. By deploying a single CAD/PLM solution enterprise wide and using a standards based visualization format for customer/supplier interoperability, companies will be well positioned for long term efficiency gains and greater profitability.

The benefits of a unified CAD solution not only provide tactical IT savings in reduced license and infrastructure costs, but there is also strategic value. A consolidated tool suite leads to consistent, repeatable processes that are more efficient and less error prone.

After making a decision to consolidate, the right solution must be selected. To do this, A&D companies should select a solution, with the right characteristics, that will support

their best practices and modern design needs, including collaboration with suppliers participating in the design process.

## Recommendations

Based on industry experience and research for this report, Tech-Clarity offers the following recommendations:

- Understand the complete cost of operating multiple CAD systems
- Evaluate the opportunity to consolidate CAD systems to reduce cost, recognizing the multiple cost drivers go well beyond software license fees
- Consider the IT advantages of CAD consolidation, including improved business support and focus, in addition to cost savings
- Help workgroups and third parties collaborate by providing common processes and tools, including visualization formats
- Empower greater reuse by ensuring CAD data continues to be useable regardless of how old it is to take advantage of time and cost savings
- Provide support for a virtual system level view of mechanical, electrical, and software components early on and throughout the development cycle to avoid issues such as downstream system integration problems
- Enable a broader PLM approach, leveraging product development solutions that are integrated with a central CAD environment
- Ensure that your solution will enable you to take advantage of composite materials, while managing the cost with greater manufacturing predictability
- Take advantage of the virtual environment for early verification, validation, and testing at both the component and system level

## About the Author

Michelle Boucher is the Vice President of Research for Engineering Software for research firm Tech-Clarity. Michelle has spent over 20 years in various roles in engineering, marketing, management, and as an analyst. She has broad experience with topics such as product design, simulation, systems engineering, mechatronics, embedded systems, PCB design, improving product performance, process improvement, and mass customization. She graduated magna cum laude with an MBA from Babson College and earned a BS in Mechanical Engineering, with distinction, from Worcester Polytechnic Institute.

Michelle began her career holding various roles as a mechanical engineer at Pratt & Whitney and KONA (now Synventive Molding Solutions). She then spent over 10 years at PTC, a leading MCAD and PLM solution provider. While at PTC, she developed a deep understanding of end user needs through roles in technical support, management,

and product marketing. She worked in technical marketing at Moldflow Corporation (acquired by Autodesk), the market leader in injection molding simulation. Here she was instrumental in developing product positioning and go-to-market messages. Michelle then joined Aberdeen Group and covered product innovation, product development, and engineering processes, eventually running the Product Innovation and Engineering practice.

Michelle is an experienced researcher and author. She has benchmarked over 7000 product development professionals and published over 90 reports on product development best practices. She focuses on helping companies manage the complexity of today's products, markets, design environments, and value chains to achieve higher profitability.