



Are You Changing CAD Tools?

What You Should Know

Table of Contents

Executive Overview	3
Understand Business Needs for Design	*
What Drives a Change in CAD?	*
Set Expectations for the Change	*
Identifying Top Performers	*
Identify the Right CAD Solution	*
Extend CAD	*
Conclusion	4
Recommendations	4
About the Author	5
About the Research	5

***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, <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.

Executive Overview

If you are competing in today's global economy, it is not easy. Significant global competition plus pressure from new entrants and innovative start-ups make it difficult to stand out. To improve competitiveness, Tech-Clarity's study, Product Lifecycle Management Beyond Managing CAD, finds companies have shifted focus from market factors like time-to-market or cost to product-centric strategies. Design tools, especially CAD, are key to executing these product strategies. With the right design tools, companies are better positioned to quickly bring high-performing, high-quality, innovative products to market. Companies looking to upgrade these tools to keep up with competitors may want to consider switching CAD tools.

So what should you do if you find your CAD tool is holding you back? What if your company needs to update CAD tools? Why would you consider a change? What should you expect? Is it worth the time to convert archived data into a new format? Most importantly, do the benefits outweigh potential risks?

Business reasons rather than problems with CAD tools have become more influential when choosing a CAD tool.

Tech-Clarity surveyed 192 companies to answer these questions. While there are many interesting findings, the most striking is that business reasons rather than problems with CAD tools have become more influential when choosing a CAD tool and are motivating factors behind the need to switch tools. Growing influencers include supply chains, relationships, the vendor's vision for design, and the CAD vendors' full breadth of offerings. This big picture view of CAD indicates higher levels of management make buying decisions and they view CAD as a strategic piece of a larger product development solution.

Management views CAD as a strategic piece of a larger product development solution.

The biggest challenges of switching CAD tools are overcoming the learning curve and reusing legacy data. However, not all legacy data needs to be converted and in fact, companies only convert about half of it, 52%. Despite the efforts involved, companies who have made a CAD change tend to be very happy. Eighty-three percent (83%) rate their satisfaction a 4 or 5 on a scale of 1 to 5.

Since implementing their current CAD tools, Top Performers have reduced development time by 19%, development costs by 15%, and the time to implement an ECO by 16%, putting them at a significant competitive advantage.

The study also identified what successful companies look for. When selecting a new CAD tool, Top Performers are more likely to consider ease of use, Technical Support, software quality, and market share, which includes the size of the user community. Since implementing their current CAD tools, Top Performers have reduced development time by 19%, development costs by 15%, and the time to implement ECOs (engineering change orders) by 16%, putting them at a significant competitive advantage. They have also been able to increase the number of design iterations by 17%, which leads to greater innovation.

Conclusion

An increased focus on products can help companies as they struggle to compete in today's global economy. Quickly developing high-quality, innovative products more economically helps companies differentiate and stand out from competitors. Investments in the design process can help companies achieve this. CAD tools in particular, have a significant impact on the design process. CAD has evolved significantly over the last decade and those who find their existing tool no longer meets their needs or will not support plans for growth, may want to consider switching CAD tools. In many cases, companies have found a switch in CAD tools has had a very positive impact on their business.

Top Performing companies are more likely to consider ease of use and support resources when selecting a CAD tool. This contributes to their ability to realize even more value, in less time, from their new solution.

Recommendations

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

- Understand the business goals of your design process and ensure your CAD tool will support them. If not, consider a change.
- Consider other factors beyond the features and functions of the CAD tool, but also the ability to collaborate with your supply chain, market share including available community, the vendor's vision, the relationship with the vendor, and the needs for other supporting design tools
- Consider extended applications as part of the CAD solution such as embedded simulation, PDM, technical communications, and support for electrical components.
- Avoid overestimating requirements for training and loss of productivity by considering ease of use as well as available resources such as Technical Support, market share, and potential hiring pools.
- Convert only the legacy data you need. It is likely you will only need half of it.

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.

About the Research

Tech-Clarity gathered and analyzed 192 responses to a web-based survey on designing software-intensive products. Survey responses were gathered by direct e-mail, social media, and online postings by Tech-Clarity.

The respondents were comprised of 42% who were individual contributors and 39% were manager or director level, and the remaining 19% were from VP and executive levels.

The respondents represented a mix of company sizes, including 49% from smaller companies (less than \$250 million), 7% between \$250 million and \$1 billion, 13% between \$1 billion and \$5 billion, and 11% greater than \$5 billion. 20% chose not to disclose their company size or did not know. All company sizes were reported in US dollar equivalent.

The responding companies were a good representation of the manufacturing industries, including Industrial Equipment and Machinery (35%), Automotive (23%), Architecture, Engineering, and Construction (20%), Aerospace and Defense (14%), Consumer Products (14%), High-tech and Electronics (12%), and others. Note that these numbers add up to greater than 100% because some companies indicated that they are active in more than one industry.

The respondents reported doing business globally, with most companies doing business in the North America (67%), about one-third doing business in Western Europe (34%), about another one-third doing business in the Asia-Pacific regions (32%), Eastern Europe (13%), and Latin America (10%).

Respondents included manufacturers as well as service providers and software companies, but responses from those determined not to be end users of CAD software (including software vendors and consultants) were not included in the analysis. The majority of companies were considered to have direct involvement in designing and developing products and the report reflects their experience.