Tech-Clarity Insight:

PLM's Role in Enabling Design for the Environment

Taking a Platform Approach to Product Sustainability

Tech-Clarity

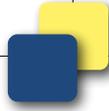## Table of Contents

*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.

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Executive Overview

Today's manufacturers face severe social and business sustainability pressure as the environmental impacts of industry become more visible and concerning to customers and investors. The spectrum of sustainability challenges is extensive, although manufacturers typically prioritize compliance with regulations focused on eliminating hazardous and restricted substances in products. These regulations put the business at tangible risk today, carrying the potential for market exclusion, fines, and brand damage.

Addressing environmental compliance regulations is now a critical capability to maintain profitability in the manufacturing industry. "*Environmental compliance is just good business,*" explains Brian Martin, Senior Director of Corporate Product Environmental Compliance for electronics company Seagate. "*It's about making sure we can sell our products across the world without any impediments.*" Despite the potential impacts to top and bottom line performance, today's manufacturing companies are at very different levels of maturity with their sustainability practices. At a minimum, however, they must comply with a myriad of complex regulations including RoHS, REACH, and the Dodd-Frank Act governing conflict minerals.

> *Manufacturers need to approach sustainability with a proactive, holistic approach to get products right the first time*
> *if they hope to address compliance efficiently.*

Addressing current environmental compliance regulations can be a time-consuming and expensive undertaking. Manufacturers need to approach sustainability with a proactive, holistic approach to get products right the first time if they hope to address compliance efficiently. This "design for the environment" (DFE) approach addresses product-oriented requirements early in design. It allows engineers to make sustainable choices based on timely feedback as the design evolves. This allows them to make optimal choices at the time materials and components are selected, before windows of opportunity close and make these decisions more costly and disruptive

Better practices and enabling technology are the keys to effective and affordable DFE. An integrated, platform approach based on Product Lifecycle Management (PLM) meets sustainability demands at much lower cost. In fact, Tech-Clarity and Aberdeen research indicate that better compliance practices yield better results, yet actually cost less. The capabilities, data, and processes put in place for environmental regulatory compliance can also serve as the foundation for manufacturers to extend up the sustainability maturity curve by adding additional requirements including improved recyclability and reduced energy consumption. They can even go beyond sustainability to improve their ability to design for optimal cost, quality, supply chain risk, and more as the world economy and the business strategy dictate.

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Conclusion

Sustainability is an important social and business imperative facing the manufacturing industry. Today's most critical demand is addressing environmental compliance regulations to protect market access and reduce business risk. Developing an organizational competency to address the sustainability imperative is critical to current and future profitability.

Manufacturers today have very different levels of maturity in their ability to meet sustainability demands. Companies must assess their current state develop a roadmap and strategy that allows them to compete in their industry, or perhaps take a competitive advantage. In order to address sustainability effectively, manufacturers must implement a DFE approach to design compliance into products the first time. To support DFE cost effectively and without burdening designers, manufactures must turn to cohesive, integrated platform, processes, and data. This platform approach helps manufactures address today's compliance demands and tomorrow's continued sustainability requirements. At the most advanced level, companies can reuse the platform, data, and processes to optimize additional aspects of their product and achieve higher levels of business value.

Recommendations

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

- Determine which regulations are applicable to your products and your industry
- Determine where you stand on the maturity framework
- Target an appropriate maturity level and develop a strategy and roadmap to achieve it
- Address sustainability requirements early in design using a DFE approach in order to reduce the impact of late changes
- Enable DFE with a platform approach that integrates requirements and processes and allows data to be reused to analyze additional requirements over time
- Integrate the sustainability platform with PLM to allow access to product configurations and real-time compliance checking
- Extend the platform to new business problems (analytics)

About the Author

Jim Brown is the President of Tech-Clarity, an independent research and consulting firm that specializes in analyzing the true business value of software technology and services. Jim has over 20 years of experience in software for the manufacturing industries, with a broad background including roles in industry, management consulting, the software industry, and research. His experience spans enterprise applications including PLM, ERP, quality management, service, manufacturing, and others. Jim is passionate about improving product innovation, product development, and engineering performance through the use of software technology and social computing techniques.

Jim is an experienced researcher, author, and public speaker and enjoys the opportunity to speak at conferences or anywhere that he can engage with people that are passionate about improving business performance through software technology.

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