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ADVANCED VISUALIZATION TECHNIQUES FOR REAL TIME PRODUCT DATA ANALYSIS IN PLM

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ABSTRACT

In the realm of Product Lifecycle Management (PLM), the ability to analyze real-time product data is crucial for informed decision-making and enhanced operational efficiency. This study explores advanced visualization techniques that facilitate the effective interpretation of complex data sets generated throughout the product lifecycle. By leveraging tools such as interactive dashboards, 3D modeling, and augmented reality, organizations can transform raw data into intuitive visual formats that highlight key performance indicators and trends. These visualization methods not only aid in identifying potential issues early in the product development process but also enhance collaboration among cross-functional teams by providing a common platform for data interpretation.

The integration of real-time data feeds with advanced visualization tools empowers stakeholders to make proactive decisions, thereby reducing time-to-market and improving product quality. Additionally, this research examines the role of artificial intelligence and machine learning in optimizing visualization techniques, allowing for predictive insights that further drive innovation. By implementing these advanced visualization strategies, businesses can significantly enhance their PLM processes, leading to more agile and responsive product development cycles. The findings of this study aim to provide a comprehensive framework for organizations seeking to adopt these technologies, ultimately contributing to a more data-driven approach in PLM practices.

KEYWORDS: *Advanced Visualization, Real-Time Data Analysis, Product Lifecycle Management (PLM), Interactive Dashboards, 3D Modeling, Augmented Reality, Data Interpretation, Key Performance Indicators, Artificial Intelligence, Machine Learning, Predictive Insights, Product Development, Collaboration, Data-Driven Approach.*