Mission Critical: CM2 Eliminates Single Points of Failure in Military-Grade Manufacturing

The Challenge

For years, this electronics manufacturer operated on "intellectual capital" and a reliance on individual experts rather than documented standards. The organization faced a critical challenge: transforming enterprise operations from a stand-alone "pdf" manual planning methodology into a modern, integrated digital ecosystem.

The stakes were high. Customers expected improved delivery compliance, yet the company suffered from a lack of standard work across the enterprise. The existing environment was fragile, characterized by "single points of failure" where process expertise resided with just a few individuals.

As one stakeholder described the state of affairs: "People have incredible brains. We don't document well. There is no process to ensure this is done. It's very hard to get repeatability. We need data traceability."

The project scope was ambitious: implement product structure (EBOM/MBOM) within a seldom-used PLM system and interface it with a new ERP implementation within 24 months. However, the team faced extensive resistance to change, as few teams had ever used a PLM system to develop or store product data.

The Approach: A Methodology Grounded in Collaboration

We approached this transformation not just as a software install, but as a cultural shift. The engagement began with deep discovery, interviewing a wide cross-section of PLM users to understand current practices and perceived gaps.

Key elements of the IpX strategy included:

Visual Alignment:
- Using six sigma tools and KJ analysis charts (affinity diagrams) to prioritize steps and creating process flow charts for current and future states.

Data Integrity:
- Working closely with the ERP team to identify necessary data and cleansing attributes prior to implementation.

Engagement:
- Conducting multiple weekly meetings with PLM and ERP teams using a joint tracking tool, alongside face-to-face cross-functional workshops.

We differentiated ourself through hands-on implementation directly within the PLM environment. Rather than providing theoretical advice, the team developed procedures using the customer's own format and pulled in PLM tool experts to train the client's subject matter experts (SMEs).

THE CM2 FRAMEWORK: THE ENGINE OF TRANSFORMATION

Adaptation: Navigating the "Long and Winding Road"

The path to digital transformation was not linear. As the client noted, "getting to that future state was a long and winding road". IpX and the client had to adapt along the way:

Iterative Structure:
- The product structure was revised multiple times as the ERP team gained a better understanding of their environment.

Scope Management:
The joint team recognized that the preferred amount of change was too great for the initial implementation. Consequently, they reduced the scope, specifically removing the addition of supporting product documentation within the PLM structure, to ensure success.

IpX Services

Let's Talk.

The Value: A Single Source of Truth

The collaboration successfully established a single source of truth for data managed in PLM and utilized in the ERP system. By the end of the project, product structures (EBOM and MBOM) were defined in the PLM tool for production products.

Key Outcomes Delivered:

- Strategic Alignment: The digital transformation aligned with client customer expectations and became a significant part of their long-term digital roadmap.
- Standardization: Standard work was completed, driving future team alignment and eliminating the reliance on a small group of SMEs.
- Quality Improvement: Product documentation errors and gaps were identified and fixed.
- Cultural Shift: Leadership recognized that procedural expectations are foundational for success, reinforcing the need for top leadership buy-in during transformation.

The client expressed appreciation for the excellence of execution, highlighting the comprehensive approach that integrated requirements planning, training, and hands-on product expertise, while progressing at a pace their organization could absorb. They also commended the ability to quickly understand a complex organization, something they had believed a third party could not achieve.

Beyond the immediate technical implementation, this engagement established a robust infrastructure for long-term operational resilience. By replacing ad-hoc "tribal knowledge" with documented standard work and a definitive single source of truth, the client has moved from a reactive, manual environment to one that mirrors the best practices of their industry counterparts. This new digital baseline not only bridges the gap with customer expectations but provides the necessary stability to drive continuous improvement, ensuring their digital roadmap remains agile and effective for years to come.