Teradyne Simplifies and Streamlines Parts and Engineering Change Management Globally

Capgemini Consulting unifies supplier's centers with Siemens PLM to create a greener manufacturing system accessible in real-time

The Situation

Teradyne is a leading global supplier of automatic test equipment used to test complex electronic devices in automotive, communications, entertainment, military and defense applications. It manages configurations of a large, complex inventory of commercial and Teradyne-designed parts from development to field support and service.

Teradyne's Engineering Change Management (ECM), to manage part release and Bills of Material (BOM) processes was work-intensive and error prone. Cycle times of change ranged from a few days to three months. Several databases, file servers and email used to support the process were difficult to track and accelerate; most required human intervention. A form was routed for technical review, completed and reviewed again—30% of rejections were for clerical errors with the form being integral to the process.

The next step—to review implementation of the change with Teradyne's manufacturing unit—was facilitated by the document control division (staffed across two design centers) via emails and check lists.

Slow, error-prone change order cycle times and adherence to Environmental Compliance regulations through tighter regulations restricting the use of hazardous substances in Electrical and Electronics Requirements (RoHS/Weee) escalated challenges. Competitors were announcing aggressive strategic plans to produce "Green" testers. In response, Teradyne launched a program to ensure all new products were green. Existing designs were reassessed to identify required changes to meet corporate strategy.

> **"Capgemini's process, technical project management, and system integration expertise was a key enabler to the on-time delivery success of this strategic project initiative. The Capgemini team understood our business needs, had the experience and expertise to ramp rapidly, and delivered against our aggressive goal to re-engineer our existing processes while continuing to get products and product changes out the door to our contract manufacturer without interruption. The team was responsive, accommodating to our needs, and brought global talent and world class best practices to our team."**

Bill Duggan, Manager, Engineering and PLM, Teradyne

Management needed an ability to identify main suppliers and Teradyne parts through approved vendor lists to electronically obtain the material declaration sheets, analyze data for compliance and convey information to the design community to ensure design met RoHS standards. A new compliance database was needed to gather, store and analyze the material content of each part through an electronic data exchange. This evaluation would then set the status at the master part level to convey the RoHS status to the design engineering community.

The Solution

Teradyne called upon Capgemini's proven expertise in Product Lifecycle Management (PLM) to help make its change process "leaner." Working cohesively with key stakeholders at Teradyne, the two teams laid the foundation for a new robust change management process by eliminating error-prone and redundant steps. The new solution was implemented using Siemens Teamcenter Enterprise 2007 PLM.

The Result

With the PLM change solution deployed globally, Teradyne's entire engineering design, manufacturing and support communities now access data for ECM, parts and RoHS status in real-time. It allows *New Products* teams to quickly implement changes to support product development. It provides the latest RoHS status so that new designs meet the "Green" initiative and facilitates improved error checking for new parts and BOMs before they reach a supplier to build.

The result is a 50% reduction in change cycle time, improved data accuracy and reduced errors to manufacturing. Reducing number of databases, file servers and status values has improved cycle times and data integrity. Creating a digital change process enables improved tracking and an audit for future reference and re-use.

Meeting environmental compliance goals has also been improved through aggressive data collection, improved analysis, storage and reporting of the substances used in parts and manufacturing processes. Teradyne now has access to toolsets by Synapsis Technologies, the industry standard for compliance management in the electronics sector.

How Teradyne and Capgemini Worked Together

Unifying parts management and BOMs across global centers and simplifying the engineering change management process were key objectives for Teradyne. The as-is process was documented, and analyzed to determine process steps that added value, those that could be automated (or eliminated) and those that could be merged to streamline the overall process. Capgemini undertook a detailed study to outline the project scope and Teradyne's departmental usage needs. The study identified Siemens Teamcenter as an ideal match. However, implementing the solution at Teradyne's global centers, subsequent training and enabling user access was a challenging task.

Successful rollout hinged on business processes being documented. Capgemini worked with Teradyne to accurately capture processes before a solution was designed. The approach eliminated several project risks and any weaknesses that may otherwise have shown up at a later stage. Legacy systems posed a second hurdle. Siemens Teamcenter processes needed to be interfaced to Teradyne's existing Oracle-based ERP systems. Legacy data from four different systems needed to be migrated to Teamcenter. The challenge was overcome without disrupting existing work or losing data. Capgemini documented processes, mapped them into PLM tools, designed and tested the solution. All configured tools, used for support and those utilized during the testing phase, were documented. Collaborative thinking, underpinned by an effective strategy, was a key element in project success. Capgemini coordinated inputs between the Siemens systems integration team and Teradyne, managing key project decisions, requirements, business process use cases and workflows, onsite PLM project management and application architecture designs.

Migrating Teradyne's users globally to the new solution required extensive training. Capgemini facilitated training of the PLM user base and organized separate sessions for executives on project and tools management to reduce the time to implement and increase adoption, at lower risk.

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TERADYNE

Teradyne is a leading supplier of Automatic Test Equipment used to test complex electronics used in the consumer electronics, automotive, computing, telecommunications, aerospace and defense industries. In 2007, Teradyne had sales of $1.1 billion, and currently employs about 3,600 people worldwide.

For more information, please visit:
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