Case Study: High-Tech Manufacturer
European manufacturer’s reimagined processes enable a step change in growth and operations

Data capital, consistency and new structures for collaboration and frictionless data exchange are vital for enabling digital product continuity

Every large enterprise must embrace change in today’s highly competitive and increasingly connected world. Even in the specialised field of large scale, high technology manufacturing, digital technologies and capabilities open up opportunities for the smart operator.

One European high tech manufacturer that has an intricate product portfolio with lifecycles spanning decades highlights the continuous engineering changes the company faces.

The company’s lead on product continuity knows that for a global and complex manufacturer, “digitisation of the organisation’s data from multiple sources along with the digital capacity to operate more efficiently and effectively offers growth opportunities in new services and new markets.”

Recognising an opportunity for streamlining its internal processes and supply chain, they highlight how the company is transforming.

To address the impacting trend of digitalisation, the European manufacturer put in place a digital transformation unit for each of its core business operations. Each works together and across all parts of the organisation with the goal of driving consistency, shared focus, best practices and coordination. And, in keeping with its safety critical regulatory directives, an end-to-end product lifecycle management (PLM) process with security embedded is a cornerstone of the company’s operations in the growing digital economy.

Change is not without its barriers, especially within an organisation with a strong trading history, market track record and well established product lines. However, with the committed support of the business leaders, the head of product continuity states – “We have a convincing business case for change – competition is getting tight and tense.” Realigning processes to supply products and services competitively to the market, serves to deliver one act of transformation. Intelligently leveraging the vast amounts of data from an array of data sources is the other. The latter gives rise to what he sees as “a burgeoning business of information services.” This level of data capital clearly presents financial opportunities and a path for future business prospects.

Automation is crucial in the highly connected world of a successful digital operator. The manufacturer’s digital transformation units know this. Importantly, they recognise the responsibility for what the company sees as sustaining its future –supporting end-to-end PLM processes, data analytics and platforms such as cloud.

Agile and DevOps strategies and tooling, such as those used to support continuous integration and delivery, present an obvious value and goal for the development of software solutions. But shifting mind sets in some traditional operations can be slow even when software products are developed in trial approaches. And despite agile being adopted more widely in software creation, in the design phase of physical assets, paper documents still dominate. This makes consolidating the design baseline difficult.

The case for data digitisation – with all the data exchange, reuse and interoperability that entails – is clear to the manufacturer’s head of product continuity. “Imagine a future where we have full digital representation of our product in the form of a digital twin in the design phase.”
This will enable better product orientation, reuse and greater opportunity for true end-to-end agility and more efficient PLM.” Shared learnings meanwhile help to minimise reinventing wheels that have already been developed in other parts of the enterprise.

Process efficiency across the supply chain and seamless transition of data at the boundaries of the different business and operational domains is where bottom line development savings can be made. The objective for the head of product continuity is – “to make sure that we organise the end-to-end product life cycle from a process point of view, without being tethered to technology concerns.” Any new processes must ensure that an integrated data model and governance flows through all dimensions of the operational workflow, especially with respect to security. “This level of system data models is very important and is being established as a new element.”

A team capable of reimagining new processes offers a powerful advantage. There is always the danger in the manufacturer’s experience of “trying to digitise traditional processes with new technological means. This may result in considerably more effort being expended than improvement gained”.

Success is predicated on having the right mix of people with the right creativity and imagination and an open mind set in working together. When it comes to product continuity, the European manufacturer’s leadership team sees their creation of a structure that sees representation from across the various engineering domains with lead roles that “know our architectures and business processes and understand the art of their technology, mixed with those from project and supply management, quality, testing and integration,” as instrumental to achieving this. The opportunity for reimagined interactions, end-to-end PLM processes and data exchange then comes – “through the support of IT lead roles with the technology skills, vision and practical experiences of the new ways of working in the digital landscape.” The difficult step product continuity leadership recognises is to imagine which combination of process changes, data and new applications can make a significant step change – “People who can see that step change are the people you need to find, keep and nurture.”

Bringing people to work together in their processes is as important for the purchasing of software solutions and tools as it is for the building of the specialist tools that the company creates to develop, manage and maintain its own embedded software portfolio. It is also essential that downstream experiences such as those acquired in manufacturing and maintenance and field services are fed back into the design phase. Equally important too is the flow of ideas and oversight. A good mixture of strategic top-down governance combined with the bottom-up creation of ideas is required – “We’re a large enterprise so you cannot oversee everything so you have to leave room for that bottom-up innovation.”

While technology for technology sake should rarely be a driver, it can underpin and support new ways of working. With the right digital capability, the European manufacturer’s product continuity teams can develop and decide on how they make digital services and assets available to people. With more technology available than they can use, it’s important that “we pick the right technologies for what we need to optimise our end-to-end processes.” Making sure that the selection of the backbone applications across the lifecycle – e.g. manufacturing, enterprise resources planning and database systems – is harmonised with integration and interoperation done correctly, is another collective requirement.

The company continues to expand its digitalisation efforts with clear targets for the benefits it expects to be delivered. “The business need is to have a lead time reduction for the market of 30-40%, and we need a 50% reduction in development effort.” Already a team is in place and halfway through its journey in delivering on the end-to-end PLM processes that will seek to achieve this.
About this series

This interview was conducted by Creative Intellect in November 2017 with one of the product continuity leaders of a European high-tech manufacturer. It is part of a broader global study, “Don’t Let an Outdated Software Strategy Hold You Back” that was sponsored by CA Technologies and conducted by Freeform Dynamics in July 2017.

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