THE DIGITAL THREAD COMES TO LIFE AT PTC LIVEWORX 2017

LiveWorx 17 opened with quite some flash… literally. A dazzling and intricately choreographed laser show, complete with dancing industrial robots and audience participation through LED wrist-bands, wowed journalists, analysts and industry professionals in attendance at this year's opening keynote.

Many customers involved in the IoT space may primarily associate PTC with its IoT application enablement platform, ThingWorx. However, PTC is also a leading provider of CAD software and product lifecycle management (PLM) with its Creo and Windchill product offerings, respectively. According to MachNation forecasts, worldwide IoT application enablement and device management revenue will be USD2.0 billion in 2017 growing to USD83.4 billion by 2025 at a 59% CAGR.

ThingWorx, Creo and Windchill place PTC in a unique position to weave a "digital thread" (aka, a digital twin) throughout the entire lifecycle of a product's development, deployment and operation. During the opening keynote, PTC's CEO, Jim Heppelmann stated, "IoT is PLM or

machnation

at least it's the next generation of it". But what does he mean?

It wasn't until after the theatrical fog had cleared, that the answer started to become evident. On stage was the Bosch Rexroth CytroPac, a compact industrial hydraulic power unit and a selection of mock-employees each responsible for a different aspect of the product's lifecycle. PTC illustrated three use-cases.

Engineers used a combination of sensor data and analytics provided through ThingWorx Core to identify real-world customer use-cases that were exceeding the design limitations of the first revision CytroPac. To fix this problem, one had to just pull up the CAD design in Creo, rapidly prototype and redesign the affected component using 3D printing and deploy the changes back into the manufacturing chain through WindChill.

Creating a sales enablement application leveraging metrics pulled from a customer's own fleet of devices was also swiftly accomplished through ThingWorx's Mashup views.

PTC also illustrated the way a servicing technician might learn to change the filter on the CytroPac. He simply pointed his smart device at the CytroPac in question and an on-screen overlay animation appeared detailing the exact filter replacement process leveraging pre-existing CAD models from Creo and an AR integration through ThingWorx Studio.

PTC envisions that IoT-enabled devices and IoT-enabled business processes are simply two sides of the same coin. None of the individual technologies on display were particularly new or revolutionary to IoT followers, but the comprehensiveness of the PLM integration and the real-world business value demonstrated indicate the direction PTC is keen to take moving into the future.

In addition to the typical LiveWorx informational sessions, partner booths and hands-on demonstrations, PTC announced the latest version of their ThingWorx platform with ThingWorx 8. Highlights include native platform support for real-time anomaly detection, expanded integration for industrial connectivity and increased support for integration with Microsoft's Azure cloud and Amazon's AWS cloud. PTC also announced improvement to one of their fastest growing products, ThingWorx Studio, with native support for Microsoft's HoloLens.

PTC has clearly sighted industrial manufacturing as a market of key strategic interest. PTC took the opportunity at LiveWorx 17 to announce a set of ThingWorx Manufacturing Apps comprised of Controls Advisor, Asset Advisor and Production Advisor. Essentially a collection of pre-configured user interfaces built on top of the ThingWorx Mashups architecture, the apps are tailored towards controls engineers, plant managers and maintenance technicians, respectively. ThingWorx Manufacturing Apps fall into a MachNation-defined IoT technology seg-

ment called [Platform-Enabled Solutions (PES)](#). Each app provides a set of customized monitoring or operations views tailored specifically to each business role.

We look forward to seeing the continued successes of PTC with its integrated platform and application strategy.

MachNation is the only insight services firm exclusively dedicated to covering the future of Internet of things (IoT) middleware, platforms, applications and services. MachNation specializes in understanding and predicting these technology sectors including their impact on digitization, hardware, communication services and support tools. MachNation specialists have provided guidance to the majority of the world's leading IT and communications firms.