

PTC's LiveWorx 2020 Virtual Event

CIMdata Commentary

Key takeaways:

- *PTCs first virtual LiveWorx drew an estimated 20,000 participants on the live stream.*
- *PTC's on-going transition to SaaS and cloud-delivered solutions (e.g., Onshape) should provide their industrial customers multiple options to update their development, production, and service environment to better work in the "next normal" resulting from the impact of the COVID-19 pandemic.*
- *PTC offered details on their plans for the PTC SaaS platform (Atlas), built using Onshape technology, that is the future home of all PTC SaaS solutions.*
- *The partnership between PTC and Rockwell is getting deeper and broader, benefiting both companies.*
- *PTC introduced the concept of spatial computing, "the ultimate example of physical and digital convergence" enabling 3D digital twins of people, products, processes, and place to be captured.*

On 9 June 2020, CIMdata participated in PTC's first 100% virtual LiveWorx 2020 event. LiveWorx continues to grow in size as more individuals and companies—manufacturers, service and maintenance providers, technology solution developers, systems integrators, consultants, and others—want to learn more about PTC's expanding product suite and its partnerships. Due to the COVID-19 pandemic, LiveWorx was held as a virtual-only event and consisted of nine live streaming sessions and many on-demand sessions covering PTC's products and industry offerings. According to PTC, there were over 20,000 individuals logged in to the live streaming and on-demand sessions during LiveWorx 2020.

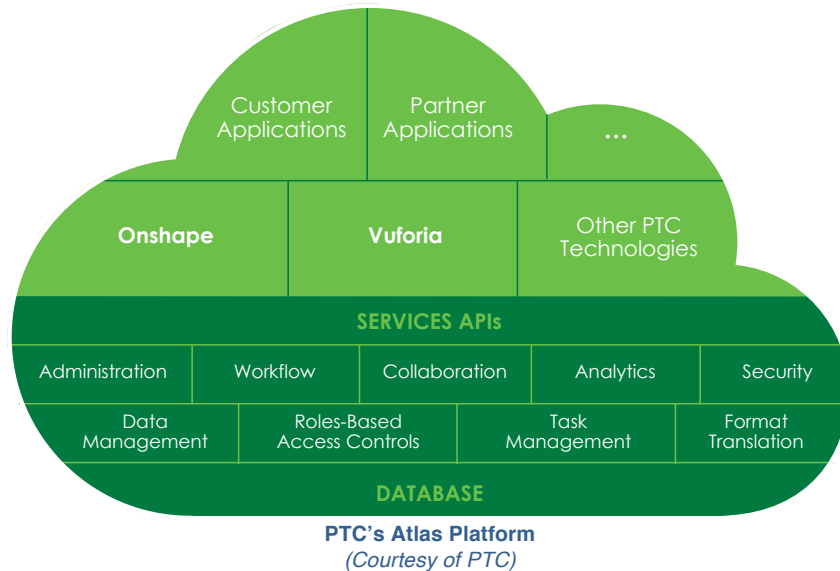
Mr. James Heppelmann, PTC's President and CEO, kicked off the event with a keynote titled "Disrupted: Lessons Learned and The Path Forward." One of the key messages of Mr. Heppelmann's keynote was how PTC's investment in Onshape and its move to a SaaS business model has been instrumental in helping their customers reduce the impact of the COVID-19 pandemic. He provided several excellent examples (including GreyOrange, Fresenius Medical Care and Francisco Gavidia University) of how organizations were able to use PTC cloud and SaaS-based solutions to quickly develop products to be used in the fight against COVID-19. Mr. Heppelmann stated that even before the COVID-19 pandemic became an issue, PTC had already concluded that things needed to change—all of their solutions needed to go to the cloud. That is why they bought Onshape. He stated that PTC's goal is to evolve to pure SaaS CAD and PLM to support their customers. He provided new details on the PTC Atlas platform (see the figure), built on Onshape technology, and said that all future PTC SaaS applications will be built on and run on this platform. Mr. Heppelmann also introduced PTC's vision for what they are defining as spatial computing, saying that it is the ultimate example of physical and digital convergence. He stated that insights obtained from spatial computing can provide a powerful opportunity to improve performance across all the dimensions of assets, workers, processes, and space. Mr. Heppelmann said that their initial offering around spatial computing is based on the Vuforia Spatial Toolbox which supports motion and image capture to help produce a 3D digital twin of people, products, processes, and place. While Vuforia has been a nice addition to the PTC family, the need to be productive in virtual environments could not be more valuable in a future requiring social distancing and

the support of more complex supply chains. PTC and its customers should be well positioned to address the challenges of the evolving “next normal.”

The day was closed by Mr. Blake Moret, Rockwell Automation’s President and CEO, and his keynote “Expanding Human Possibility.” He stated that COVID-19 is forcing all of us to change the way we live our lives and conduct our businesses. He noted that Rockwell Automation wants to be more valuable to their customers and help them ensure employee and customer safety is job 1. Mr. Moret stated that Rockwell’s TechConnect remote support team is helping their customers resolve technical issues by using Live View powered by PTC Vuforia Chalk, an application PTC is offering for free through August 31, 2020. Chalk enables Rockwell Automation to share real time instructions and guidance without requiring service personnel on-site—delivering needed service while providing a healthier environment for plant and service personnel.

In a sign of the deepening relationship between Rockwell Automation and PTC, Mr. Moret announced that Rockwell Automation, PTC, and Microsoft are going to deliver a new offering called Factory Insights as a Service. He also spoke about another offering, Rockwell Automation FactoryTalk Innovation Suite powered by PTC, a combination of Vuforia Expert Capture and Vuforia Chalk that Rockwell sees helping to improve workforce productivity by providing step-by-step instructions based on expert performance capture. CIMdata is excited to see the PTC and Rockwell Automation relationship move beyond its initial offering and begin to provide more comprehensive, integrated solutions for their customers and prospects.

During the live stream session “SaaS: The Architecture of the New Normal,” Mr. Jon Hirschtick, EVP of SaaS, provided an illustration of the PTC Atlas Platform, built on technology obtained with the Onshape acquisition (see the figure). He stated that Atlas is built on common services and will enable easier data sharing across applications as they are added to the platform. Mr. Hirschtick said that PTC has started building on and/or moving some of their solutions to the Atlas platform citing work underway on Frustum and Vuforia.



CIMdata was pleased to hear Mr. Hirschtick emphasize the user benefits of SaaS with regard to increased agility, scalability, and collaboration, as well as how these characteristics have become even more important in today’s evolving “next normal.” CIMdata believes that with its cloud-native, SaaS architecture, and services, Atlas can provide a strong platform for PTC’s

solutions that their customers can use to build flexible, adaptable manufacturing business environments.

In an on-demand session, “SaaS is in Your Future: How Onshape Drives Innovation in Product Design,” Mr. Hirschtick stated “A cloud SaaS platform is a good idea for CAD...but it’s an incredibly awesome idea for data management, workflow, admin, security, collaboration, analytics, viewing, etc. The COVID crisis amplifies the need for new thinking in product development processes and tools—remote work, resiliency, agile processes, mobility—rethinking everything.” CIMdata agrees that, especially with the COVID-19 pandemic, companies of all sizes have to re-evaluate how and where they work and whether using the cloud is the right choice for them.

Several on-demand sessions presented PTC product release content and, more importantly, each product suite’s forward strategy and roadmap. CIMdata found these sessions to be very informative and gave good insight as to PTC’s future direction and potential new solution capabilities. Particularly helpful were sessions on Creo, ThingWorx, and PLM.

The session “PLM Roadmap 2020: The Backbone for Digital Transformation” was delivered by Mr. Mark Lobo, VP PLM Product Management. During this session Mr. Lobo presented a roadmap of Windchill releases and a compatibility chart of Creo and Windchill releases—both information that CIMdata was glad to see and thinks will be very helpful to their customers making go forward plans. Mr. Lobo noted that PTC was continuing to make Windchill and Navigate more fully available on the cloud, as well as investing in the areas of automation, infrastructure, and self-service. He stated that new Windchill features would include improvements in:

- Change intent and planning
- Closed loop quality management
- Manufacturing engineering
- Administration

In the “ThingWorx Platform and Solutions Roadmap” session, Mr. Joe Biron, General Manager of IoT, described several new capabilities to be available in ThingWorx this summer and stated that their future investment areas would be:

- Continue to expand solutions in engineering, manufacturing, and service
- Digital thread evolution: PLM, IIoT & Analytics
- AI-driven solutions
- Evolving the Digital Twin with AI
- Unifying Distributed IIoT Architecture
- Push the envelope of hyperscale, hyper-availability, manageability

CIMdata has always thought that ThingWorx is a strong IoT platform and is glad to see PTC making continuing significant investment in its functionality and performance.

Mr. Paul Sager, VP CAD Product Management, hosted a session titled “Creo Roadmap: What’s New and What’s Coming Soon.” He discussed the recent release of Creo 7 and new capabilities in generative design, simulation-driven design, multi-body design, and productivity enhancements. CIMdata approves of PTC’s foray into generative design and their emphasis on the user workflow rather than just the technology. PTC’s move to provide multi-body design constitutes the last of the major CAD solution providers to do so, and CIMdata believes it will enable increased flexibility for Creo users.

Throughout the day, several of the live stream keynote speakers delivered a variety of interesting and thought-provoking presentations. These included:

- Ms. Rana el Kaliouby, Founder and CEO of Affective, gave a fascinating talk on using AI to read human emotions. She described the deep research that was done to derive emotions from underlying facial expressions and presented two examples that seemed extremely useful.
 - The first was a drowsiness detector for cars that should have a huge impact on safety and is applicable to any safety critical human interface.
 - The second was an augmented reality application that enabled an autistic child to have emotions identified while interacting with people. Inability to read emotions from facial expressions is a common issue with autism.

Ms. el Kaliouby predicts that AI will be the primary interface to applications in about a decade. This is an area of AI that CIMdata will be following closely.

- Ms. Kimberly Bryant, Founder and CEO of Black Girls CODE, described the impact her company has had teaching over 20,000 young women to program. She started the non-profit in 2011 and has a goal to reach 1,000,000 trained programmers by 2040. CIMdata salutes Ms. Bryant and others like her, who are committed to improving lives and recommends supporting such worthy organizations with our time and resources.
- Mr. Nir Eyal, Entrepreneur and Best-Selling Author of “Hooked: How to Build Habit Forming Products,” gave a summary of lessons learned from his book. He went deep into the psychology of how the brain works and how to use that knowledge to make products that customers want to buy and use. It was fascinating to hear the power that can be leveraged from the human mind. CIMdata will be looking into applying some of the strategies he described in our organizational change management methodology and tools.

Finally, CIMdata would like to commend PTC for showing support for Black Lives Matter prior to each keynote. As inhabitants of this planet, we all need to act in a positive way to make a safer, more accepting world.

In conclusion, LiveWorx felt more like TED than a technology conference and we think that's a good thing. The keynotes were thought provoking and introduced some really smart people doing ground breaking work to make the world a better place. Mr. Eval and Ms. El Kaliouby presented topics that were intriguing on one level and scary on another. The power and influence that technology can have over humans without them being aware is something to pay attention to. No longer focused on just IoT, LiveWorx showcased the full range of PTC solutions and partnerships. CIMdata thinks that PTC's strategic relationships, e.g., ANSYS, Rockwell Automation, and Microsoft, continue to deliver new and valuable capabilities for their customers. PTC continues to maintain its position on the forefront of IoT and AR development and adoption while making a strategic move to SaaS delivery of its solutions.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at <http://www.CIMdata.com> or contact

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