

Siemens PLM Software: Building Out Their Platform

CIMdata Commentary

Key takeaways:

- *Siemens PLM Software has made significant strides in building out their comprehensive vision for how manufacturing companies will operate in a digitized world*
- *Siemens is expanding its emphasis on education, working with academia and industrial companies to help students solve epic challenges to increase their interest in the sciences, technology, engineering, and mathematics (STEM)*
- *Siemens' SIMATIC IT organization will become part of Siemens PLM Software as of October 1, greatly expanding their Smart Innovation Platform portfolio of PLM enabling solutions to include Siemens' discrete and process industry tools, and further enabling their top floor to shop floor integration strategy*
- *Active Workspace is being fully incorporated within all of Siemens PLM Software's solutions to provide users with an efficient, consistent, and graphically-rich experience*

CIMdata recently attended Siemens PLM Software's Analyst and Media Conference held in Boston, MA September 3rd and 4th. During the event, Siemens PLM Software (Siemens) introduced their concept of a Smart Innovation Platform to enable digitalization of manufacturing companies and announced the move of SIMATIC IT into the Siemens PLM Software organization. Siemens and the keynote speakers presented how Siemens is expanding their commitment to education, not just by providing software but by also supporting programs that engage students in design and problem solving. With each product suite and industry program update, they illustrated their progress in delivering solutions that are easier and faster to deploy and that provide a context driven user experience.

In the opening address, "Realizing Innovation," Chuck Grindstaff, Siemens' CEO and President, described how Systems-Driven Product Development (SDPD), smart product, and the digitalization of the manufacturing industry are transforming the way new products are designed, manufactured, and supported. To Mr. Grindstaff, digitalization includes smart models (a product model that sets the objectives needed to produce itself); the digital twin (a full digital product definition that simulates reality); and optimized, distributed production (autonomous production with embedded intelligence). He referenced Eric Berlow, a TED Senior Fellow and co-founder of Vibrant Data Labs, who has stated that we need to step back and focus on the simple things that will make a difference and that to succeed at innovation we must manage the intersection of people, processes, and products.

Mr. Grindstaff described the challenges that Siemens believes manufacturing industries must address. He discussed the need for SDPD, creating a model-based enterprise, and the importance of linking ideation and utilization. One of the issues Mr. Grindstaff stressed was the need to understand the difference between digitalization and having a digital business. A major factor in this differentiation is the importance of people participating in critical planning and decision-making. This reinforces the need, as CIMdata has stated many times in the past, to have clear, concise, and valid information readily available in context so that workers at all levels are able to make needed decisions in a timely manner. CIMdata has stated that automation will not solve everything and that people will continue to be an important part of the development process and necessary to support Siemens' definition of digitalization.

Mr. Grindstaff also described how Siemens is bringing together all the elements needed to define and create a complete digital factory—from ideation through manufacturing—in support of the German Industry 4.0 initiative. Siemens AG’s SIMATIC IT organization, which will be formally integrated into the Siemens PLM Software this October, will help Siemens drive integration between the formulation, specification, and other SIMATIC IT applications and Teamcenter. CIMdata believes that this will enable companies with combined products (i.e., products that include formulated consumables or elements) to more easily manage the full product definition within a single environment. Additionally, SIMATIC IT’s MES functionality will strengthen Siemens’ ability to further close the loop between the top floor and shop floor. CIMdata believes that Siemens is doing a good job in bringing together and leveraging technology, products, and expertise from multiple Siemens AG divisions, enabling them to provide more complete top to bottom development and production solutions for their customers.

The morning’s Keynote address was delivered by Dr. Michael Richey, Associate Technical Fellow of The Boeing Company and Dr. Charles Carmada, Senior Advisor for Innovation, Office of the Chief Engineer of Johnson Space Center. Dr. Richey described Boeing’s AeroPACE initiative—Aerospace Partners for Collaborative Engineering. Dr. Carmada delivered a very interesting presentation on how a consortium of academia, industry, and Siemens are giving students epic challenges to interest them in STEM related fields of study and how these students have responded with innovative solutions in record setting times. The challenge described was how drones could be quickly deployed and used by first responders to emergencies. Students from three universities worked in teams to create and fly drones as part of the challenge. Having this STEM education presentation during prime time on the event agenda clearly demonstrates that Siemens’ commitment to the topic goes well beyond donating software to universities.

Over the last several years, Siemens has worked to develop their industry Catalysts, a packaging of tailored products, data models, processes, and implementation methodologies designed to help get existing and new customers rapidly up to speed in leveraging Siemens offerings. These Catalysts better enable customers to address the key use cases and processes specific to their industry while achieving faster time to value and ROI on their PLM investments. CIMdata believes that creating better industry-specific solutions can have a significant impact on the value that companies can obtain from their PLM investments, thereby closing the typical gap that exists between the potential benefits and those actually realized. Throughout the two days of the event, both customer and industry speakers presented how Siemens and their solutions are enabling companies to achieve improved product development processes and faster return on their PLM investments.

Steve Bashada, SVP Industries, presented the major challenges faced by each of the eight industry segments that Siemens is addressing and how their industry solutions, templates, and Catalysts are designed to help their customers meet those challenges. Each of the solutions is built on process pillars specific to that industry. For example, a major challenge in aerospace is to verify compliance for thousands of requirements before delivering the first production article. Mr. Bashada also introduced Siemens’ concept for a Smart Innovation Platform—a theme echoed and supported by both the industry and solutions programs and technology. This platform is built on four concepts:

- Engaged Users—right information, right time, right context
- Intelligent Models—representing reality, understanding connectedness
- Realized Products—virtual product definition, real production environment

- Open Systems—easy deployment today, flexibility for tomorrow

Mr. Bashada and other Siemens presenters described how solutions such as Active Workspace are designed to support this innovation platform to delivery better value and faster results to their customers. Active Workspace, with its underlying mobile architecture and role and context interface, supports the trends CIMdata has described as driving the user experience of the future. Having that user experience be common across all Siemens solutions should improve both individual and group productivity and provide faster time to adoption of new capabilities by the user community. During the day, Siemens did a good job of interweaving customer presentations in each industry with updates by the Siemens industry leads.

During the second day Siemens presented updates on each of their major business segments (i.e., Product Engineering, Lifecycle Collaboration, Digital Manufacturing, Specialized Engineering, Mainstream Engineering, and Simulation & Test Software). These segment updates highlighted the evolution of their solution suites with new technologies and associated capabilities, and how they support and enhance their industry solutions. The business segment presenters also illustrated how their segment is supporting Siemens' Smart Innovation Platform approach. Siemens presented examples of how the Active Workspace user interface paradigm is being fully incorporated throughout all the Siemens' solutions. Based on HTML5, Active Workspace provides users with an easy consistent way of accessing and using information regardless of the application and device being used. CIMdata believes Active Workspace is significantly improving the user experience of all Siemens solutions and helping them achieve a consistent, immersive decision-making environment that supports their HD-PLM strategy introduced a few years ago.

Jim Rusk, SVP Product Engineering Software, emphasized three strategic missions of the Product Engineering business segment: (1) to provide users with tools that offer them ways to deliver a more immediate response to changing market demands, (2) to better understand the impact of change, and (3) to minimize risk and maximize return on investment. He highlighted a number of on-going projects in support of those strategies, including embedding Active Workspace in NX, multi-touch screen support, and advanced blending and surface manipulation. Multi-touch support enables the complete NX solution to be used without a mouse or 3D controller. CIMdata sees this as an enabling technology to support next generation user interfaces and one that should make today's CAD users sit up and pay attention.

Eric Sterling, SVP Lifecycle Collaboration Software, described how Teamcenter has evolved to be an applications platform designed to support maximum deployability with an improved immersive user experience. He stressed how Teamcenter has been changed to provide customers with a simpler approach to PLM. Key to this change is the ability to mix and match different applications and versions of Teamcenter application modules and functionality without having to update the Teamcenter core system. New functional capabilities are available on multiple versions of Teamcenter simultaneously so that a customer only has to upgrade when it is right for them—and then only upgrade what they need at a given point in time. Mr. Sterling highlighted the fundamental concepts of Active Workspace: Personalized, Proactive, Intuitive, and Everywhere. He showed how Active Workspace can be accessed in other applications, e.g., Active Workspace running inside Siemens NX, LMS, and the Teamcenter Rich Client. Active Workspace is also used to support role-based solutions such as service work instructions, a supplier collaboration portal, and a CAPA solution. Additionally, Mr. Sterling described how the Teamcenter platform can be used as a common

framework for integrating third-party applications and their support of multiple standard frameworks such as SOA, REST, JSON, XML, and OSLC. This broad standards support strengthens Teamcenter as an enterprise PLM platform that can provide improved support for a heterogeneous environment as well as distributed data repositories.

The Siemens PLM Software Analyst Conference brought PLM industry analysts and media professionals together from around the world to hear what Siemens is doing today and their views and vision on where the PLM market is going. CIMdata has followed Siemens and its steady progress in developing and delivering a broad and deep set of PLM-enabling solutions for much of CIMdata's 30 years. CIMdata views Siemens capabilities and offerings like Active Workspace, Industry Catalysts, and the delivery of Teamcenter as their PLM platform enabler to be an excellent demonstration of Siemens' solution that should deliver quantifiable value to their customers. We expect that companies in multiple industries will benefit from deploying them. Since the acquisition by Siemens AG, the PLM group has been able to expand its capabilities by both incorporating technology from other Siemens AG groups as well as by leveraging and integrating the products and solutions of those groups to deliver a very comprehensive suite of manufacturing solutions to their customers. CIMdata believes that Siemens and its customers have gained significant value from this merging of capabilities and will continue to do so for the foreseeable future.

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 CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.