

The 2022 Siemens Digital Industries Software Media & Analyst Conference

Transforming the Future of Industry

CIMdata Commentary

Key takeaways:

- *Siemens AG is committed to leveraging its combined hardware and software assets to become a technology company—a significant evolution for itself and its operating units, as well as the industries and customers it supports.*
- *Siemens Digital Industries Software (Siemens) is pursuing an aggressive cloud and SaaS strategy and is moving to provide all its solutions via SaaS.*
- *Siemens is focused on increasing their clients' business and operational flexibility through the use of Mendix and composable applications.*
- *Siemens explained their Executable Digital Twin (xDT), a smart, connected virtual representation of a physical asset, that optimizes and updates itself to effect changes in the physical product or system.*

CIMdata recently attended Siemens Digital Industries Software's (Siemens) Media and Analyst Conference (MAC) in Detroit, Michigan April 6 and 7, 2022. Held live for the first time since 2019, this event allowed CIMdata to meet face-to-face with many Siemens' leadership and staff—a very welcome change! While shorter than previous MACs, Siemens still provided attendees with significant interaction with its team, as well as a good look into Siemens' strategy, products, and results.¹

Keynotes

Mr. Cedrik Neike, CEO of Siemens Digital Industries and Member of the Managing Board of Siemens AG, opened the conference by describing how Siemens AG is transforming itself to become a technology company—more than just a software or hardware provider. They want to help companies “Dream it, Make it, Change it” by bringing together Information Technology (IT), Engineering Technology (ET), and Operational Technology (OT), and being first in business areas (e.g., automation, PLC, industrial communications, and others) that support this strategy. Of course, OT in this context includes both the manufacturing insights via Industrial Internet of Things (IIoT) and the customer usage scenarios captured during product use.

Mr. Neike stated that Siemens has a transformation strategy built on:

- Go to market
- Technology—hardware, electronics, software, automation, etc.
- Ecosystems—i.e., Mendix, MindSphere, Supplyframe, etc.
- Business model transformation—creating an open business model

Furthermore, he noted that to become a technology company, Siemens AG invests in technology, e.g., \$2.5B in internal research and development, particularly in cloud, industrial 5G, automated manufacturing, artificial intelligence, and the Industrial Edge. He also noted that the most successful technology companies provide both hardware and software, and the

¹ Travel and other expenses for this commentary were provided by Siemens Digital Industries Software.

investments are leading Siemens to become a full-stack company supporting manufacturing industries.

According to Mr. Neike, to be successful, companies must address the issues of speed, price, and carbon footprint, and Siemens is transforming how it can help its customers meet these challenges by enabling them to combine the real and digital worlds. CIMdata strongly agrees and views the digital thread and digital twin strategies being pursued by Siemens as a critical part of business transformation.

Mr. Tony Hemmelgarn, Siemens Digital Industries Software CEO, followed Mr. Neike and described the theme of this year's MAC—"Transforming the Future of Industry" and how the entire Siemens organization would be enabling that transformation. He also noted that customers are dealing with new things not thought of 10 years ago and creating new business models (e.g., automotive companies are becoming mobility companies and aircraft companies are becoming air transport providers). To become a technology company, he said that Siemens is combining the best of Siemens Digital Industries' automation and software assets to enable their customers to create easy-to-use, open, and integrated business environments.

Mr. Hemmelgarn stated that Siemens Xcelerator portfolio of technology and solutions is designed (and is being implemented) to bring together the capabilities a company needs to develop, produce, operate, and service innovative products and systems. He cited customer Lockheed Martin who expect to cut their cycle time for new aircraft design from 10 years to 3.5 years, as an example. Mendix and Data Hub are key elements in enabling customers to create personalized applications and integrate third-party solutions and data repositories. He stated that Siemens' transformation is continuing its long-stated strategy to close the loop between the top floor and the shop floor—the primary reason Siemens AG acquired UGS in 2007.

Additionally, Mr. Hemmelgarn also spent time reviewing the recent acquisition of Supplyframe and how it is helping Siemens' customers reduce time to market by integrating design, manufacturing, and procurement. The Supplyframe Design-to-Source Intelligence (DSI) network is claimed to have monthly engagement with over 10 million design engineers and sourcing professionals, impacting over 2.5 million annual design cycles, giving Siemens unique insights into supply, demand, and pricing across industries.

Mr. Hemmelgarn also provided an update on their partnership with SAP announced in 2020. Many thought that it would be difficult to get the sales forces together, but they have made some progress. Their respective offerings are in each other's price books, with Siemens offering the SAP Asset Intelligence Network and their first integration with SAP S/4HANA. Working together, they have developed two new accounts. Mr. Hemmelgarn also claimed that their new SAP-Teamcenter integration makes it easier for their key partners like Accenture to support their customers. This is extremely important because partners like Accenture are often in the boardrooms and can position Siemens in ways that Siemens could not do before.

Finally, Mr. Hemmelgarn described how Siemens is working with process industry customers to help them improve flexibility by enabling small batch production and sustainability by helping them get closer to their customers.

Ms. Brenda Discher, SVP, Business Strategy & Marketing at Siemens Digital Industries Software and Strategic Marketing & Communications at Siemens Digital Industries, closed the keynote sessions talking about "transforming the future of work" and how Siemens is committed to drive sustainable, resilient, cultural transformation. She stated that Siemens' goal is to provide choice to its customers by offering interoperability between cloud and on-premises software instances. She stated that the SaaS business had grown 40% over the last year. She

also noted that they had gained over 10,000 net new subscribers in one quarter. To make this possible, Siemens made significant investments in digital infrastructure, a digital store, providing a “digital journey” for customers and prospects, both outbound and inbound marketing capabilities, and leveraging social media to digitally nurture prospective customers. Ms. Discher added that 97% of their portfolio is cloud-enabled now and in the five months since Xcelerator as a Service (XaaS) became available, over 1,000 customers have moved to one of its SaaS solutions, and approximately 80% of those are small to medium businesses (SMBs). Finally, she stated that they expect greater than 10% growth in ARR at the end of their SaaS transition period in 2025.

Sessions

The afternoon session was kicked off by Mr. Tosh Tambe, VP Business Transformation and SaaS Strategy, on the topic of XaaS and the Xcelerator cloud architecture that powers its transition to a SaaS model and cloud-native offerings. Mr. Tambe focused on the transformative aspect of XaaS, noting how Siemens is building a community around the portfolio. He discussed how XaaS enables digital transformation initiatives, especially those focused on business model changes. He also stated that XaaS gives companies expanded choices in both potential business models and how the transformation is supported. XaaS offers cloud SaaS and a hybrid SaaS approach that integrates with applications still on-premises. The focus is to move to a consumption-based model where customers pay for the capabilities they use, providing flexibility, adaptability, and resilience. This approach required a major investment from Siemens—they chose to invest and rearchitect much of their existing portfolio to support cloud-delivered SaaS, rather than just acquire replacement solutions. Siemens has a long history of protecting their customer’s investments. The choice to transform existing solutions shows Siemens understands the value customers place on investments in product data and the processes to manage it.

Mr. Tambe introduced Mr. Bill Lewis, Director of Marketing, who reviewed Teamcenter X changes and some of the recent deployment successes. New industry-specific configurations offered with Teamcenter X include PLM for Machine Builders and PLM for Medical Devices. He then referred to Valeo as a major industrial company developing electric drives for EV powertrains, noting that they have 300 users on Teamcenter X. CIMdata is pleased to see major manufacturers making the transition to Teamcenter X and expects to hear of more making that transition soon.

Mr. Dave Mitchell, VP MindSphere Product, discussed the composable enterprise enabled by XaaS. By leveraging Mendix, it’s possible to assemble data from multiple platforms within their Xcelerator portfolio of solutions to enable better decision-making. He then talked in-depth about how MindSphere, Siemens cloud native IoT platform, leverages lessons learned from Mendix to grow their customer base. By providing a free version they’ve dramatically expanded their pipeline and number of customers, including customers that subscribed without actually engaging with Siemens sales.

The morning of the second day began with a session on Digital Twin led by Mr. Ian McGann, Director of Innovation Office. Mr. McGann presented Siemens’ definition of a comprehensive digital twin and how Siemens transforms and helps its customers unlock the power of a digital twin model across the entire enterprise to drive business value. He then described the evolution of the digital twin to an “executable digital twin (xDT).” An xDT is a smart, connected virtual representation of a physical asset, including its behaviors, that senses what is happening to it, applies a simulation or algorithm, and optimizes and updates itself. Mr. McGann described using xDTs as a way to enable bringing the real world into product design optimization and

transform the value of digital twins across the lifecycle. In September 2021, CIMdata wrote a highlight titled “Siemens: Making the Digital Twin Executable—Predictively Aligning Its Real-World Counterpart.”² Just seven months later, Siemens has a growing group of customers using xDT to change the way they do concept engineering—harvesting performance insights early in product development. This closes the loop by making the digital twin more accurate and complete. Additionally, digital twins are more comprehensive when they can be used to see a system’s behavior and even interact with it.

A major topic that Siemens discussed at the event was refactoring its broad solution portfolio into Packaged Business Capabilities (PBCs). This goes well beyond their work on microservices and containerization used to deploy their offerings on the cloud. PBCs are architected to allow Siemens, their partners, and (eventually) their customers to compose new solutions selecting what Siemens has to offer to support new use cases. This will blur the lines between their traditional brands and offerings. According to Mr. Tambe, PBCs will support the “last mile” of personalization.

After Mr. McGann’s and Mr. Tambe’s sessions, Siemens delivered breakout sessions focused on:

- IC Lifecycle
- Supply Chain Logistics
- Additive Manufacturing
- Supplyframe

Siemens acquisition of Supplyframe brings some exciting capabilities into the Siemens portfolio. Mr. Richard Barnett, CMO Supplyframe and Mr. Andrew Mosely, Senior Technical Marketing, Development Engineer Siemens, presented the breakout session. The company began in 2003 with a focus on creating a better experience around the quoting process for electronics supply. As their membership grew, they evolved the solution to provide Design-to-Source Intelligence. The breadth of support Supplyframe provides is impressive. It provides access to over 600 million parts and components and supports \$120 billion in annual direct materials spend. The speakers claimed that Supplyframe could reduce cycle times and help their customers take out 2 to 3% of their direct costs. Such “digital exhaust” helps provide customers insights into the health of the electronics market. For example, they can see that even “popcorn parts,” simple components usually readily available, are now in short supply.

Over the last several years, Siemens has emphasized how their various offerings are helping their customers build vast global ecosystems. Hundreds of thousands develop on Mendix, delivering applications serving tens of millions of users. MindSphere offers a different type of ecosystem around IIoT applications. Siemens is creating a network/marketplace to support additive manufacturing as well. With Supplyframe they are adding a broadly used platform for electronics development and supply. These approaches fit with the Industry 4.0 vision, which makes sense given that Siemens was one of the original drivers of that vision. It will be interesting to see how Siemens will leverage the proven Supplyframe platform for other aspects of the product lifecycle.

Mr. Ravi Subramanian, Senior Vice-President & GM at Siemens, reviewed the digital transformation taking place within the semiconductor industry and how Siemens EDA (formerly Mentor) is driving that change. He noted key trends within the industry, including:

² See: <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/16725-siemens-making-the-digital-twin-executable-predictively-aligning-its-real-world-counterpart-highlight>

- Software defined semiconductor-based systems.
- A shift in spending where non-traditional companies such as Google, Apple, and Facebook are vertically integrating IC design and thus are spending large sums of money on custom design tools.
- The growth of Systems on a Chip (SOC) that is exceeding Moore's law growth rates thanks in part to ongoing innovation and investment in the kinds of electronic design automation (EDA) tools that Siemens EDA develops and sells.
- AI and ML are transforming and fueling business value creation.

To support these trends, Mr. Subramanian described how Siemens EDA is providing optimization across the whole silicon lifecycle from architecture design through manufacturing, into chip design, PCB design, packaging, and beyond. By providing these integrated capabilities, he stated that Siemens has been able to raise the level of abstraction, help customers reduce complexity and shorten design cycles even as they develop increasingly sophisticated and higher performing processors year after year. This is enabling ever more complex products leading to software-driven semiconductor design—driving new product lifecycle management concepts into this industry.

During the Additive Manufacturing session, Mr. Aaron Frankel, Vice-President of the Additive Manufacturing Software Program and Ms. Alyssa Berger, Senior Manager of Business Development, described Siemens' activities to encourage and increase industrial adoption of additive manufacturing. The Siemens strategy for additive comprises three elements:

- Identifying target market segments which could benefit from the use of additive manufacturing.
- Helping small-to-midsize companies to scale additive production using SaaS-based tools.
- Helping large enterprises target use case exploration.

During this discussion, Mr. Frankel and Ms. Berger identified barriers to adoption of additive including design knowledge (i.e., topology), quality control, and post-printing process management (e.g., cleaning, machining, and heat treatment). Real-world application using Siemens tools for additive manufacturing came from human centric prosthetics producer Unlimited Tomorrow. Each human's interface to a prosthesis is unique—making it an ideal application for additive manufacturing.

During the MAC's closing session, Ms. Suzanne Kopcha, Vice President Strategy, and Mr. Dale Tutt, Vice President Industry Strategy, described how Siemens is going to market by digital threads to bring their portfolio to their customers in industry-specific manners. They described four such threads from across a range of industry types:

- Intelligent Manufacturing
- Enterprise Recipe Management
- Autonomous Vehicle Development
- Advanced Machine Engineering

For each thread, they also illustrated an example of how a customer is using XaaS to meet their business challenges and goals.

Lastly, Ms. Discher closed the event reiterating that Siemens is transforming to be a technology company and is working to bring IT and OT together to help its customers dream, deliver, and support their next innovative product. She noted that every customer is facing incredible

transformation and Siemens wants to be there with them, providing great tools and support that enable the right business models. She noted that during the course of this event, Siemens had provided nearly 30 examples of customers that are transforming with XaaS and how it is the easiest, most open way of accessing the entire Siemens portfolio.

Conclusion

CIMdata was impressed with Siemens AG's commitment to transforming itself into a technology company and believes that, if successful, it will have a significant, positive impact on its customers and industry at large. Siemens Digital Industries has the breadth and depth to continue expanding and delivering on its vision of a closed-loop between the top floor and the shop floor, and now seems to be integrating all the assets they have to achieve that vision. They have a vision for a comprehensive, executable digital twin which includes expanding operational use, which will foster learning and adapting.

Siemens continues to move rapidly to deliver its broad solution portfolio fully via SaaS, as well as continuing to support on-premises uses. Their hybrid approach enables customers to move to the cloud, when, how far, and how fast, as best fits each company's strategy. Siemens' commitment to supporting open ecosystems (implemented with cloud-based and open tools such as Mendix and MindSphere) gives their customers the freedom to implement what they prefer and not require a Siemens "lock-in."

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design, deliver, and support innovative products and services by identifying and implementing appropriate digital initiatives. For nearly forty years, CIMdata has provided industrial organizations and providers of technologies and services with world-class knowledge, expertise, and best-practice methods on a broad set of product lifecycle management (PLM) solutions and the digital transformation they enable. CIMdata also offers research, subscription services, publications, and education through certificate programs and international conferences. To learn more, visit www.CIMdata.com or email info@CIMdata.com.