

Data Can Save the World: Hexagon Live 2019

CIMdata Commentary

Key takeaways:

- *Hexagon Live highlighted Hexagon's corporate commitment to climate change and how the firm can address the problems AND be financially successful.*
- *The smart factory is a journey, not a destination, one that starts with brownfield environments that have data that can be harvested.*
- *Autonomous vehicles are 90% there and still have 90% to go.*
- *Hexagon continues to make investments across all of their business units that will serve them well in reaching their corporate mission and vision.*

CIMdata was pleased to attend Hexagon Live 2019 from June 11-14, 2019 in Las Vegas, NV. This global event brought together more than 3,000 attendees from Hexagon's customers and partners.¹

Mr. Ola Rollén, Hexagon's President and CEO, kicked off the event Tuesday afternoon with a presentation entitled "Your Data Can Save the World." Last year's message about autonomous connected ecosystems (ACE) still saw some play at this year's event, but the focus was squarely on addressing climate change. (ACE is still core to Hexagon's stated corporate mission.²) Mr. Rollén believes that we have the technology to cut CO₂ emissions by 33%, if we only had the will to leverage the data that could help us create efficiency in key industries like agriculture, automotive, and the construction sector. All sectors can benefit, claimed Mr. Rollén. Their vision: "a future where data is fully leveraged so that both humanity and sustainability thrive." He echoes the message of many business leaders that companies can reduce their environmental impact, and the impacts of their customers, and be quite successful doing it. Hexagon stands ready to help manufacturing firms investing to address climate change issues.

On Wednesday we had a "Welcome to the Smart Factory" from Mr. Stephen Graham, President of Metrology Software and Vice President of Marketing. According to Mr. Graham, Hexagon's Manufacturing Intelligence (MI) business unit, is almost synonymous with the smart factory. CIMdata agrees, particularly given all of the top-notch acquisitions Hexagon made since 2001 to build their portfolio. But, Mr. Graham continued, a factory implies a physical space, but it is really not a destination but a journey. A quite complicated journey, given that each plant is unique and a brownfield in its own way. Hexagon's goal is to make it smarter. Mr. Graham dated the start of MI to their 2014 acquisition of Vero Software, when they started to consider production, and then they added MSC Software in 2017, which provided entre to design and engineering. In fact, Mr. Graham stated, the smart factory is really a virtual construct linked together by data. It is more likely to span multiple buildings in sites around the world. To be successful, solutions need to go beyond a company to embrace their suppliers and customers, as suggested in Figure 1. The rest of his presentation focused mainly on the MSC portfolio and how it supports co-simulation, closely-coupled multi-physics to improve performance and accuracy.

Mr. Luca Casignani, Autonomous Driving Strategist at Hexagon, delivered a sobering presentation entitled "From ADAS to Autonomous: Today and Tomorrow of Mobility." The news is full of reports talking about our impending autonomous future. He claimed that 94% of serious

¹ Travel and/or other expenses were provided by Hexagon.

² "Putting data to work to enable autonomous connected ecosystems that boost efficiency, productivity, and quality for our customers."

crashes are due to human error (based on NHTSA data). If we could just get those pesky humans out of the picture things would be perfect. Not so fast, said Mr. Casignani. Autonomous vehicles (AVs) will still cause fatalities, but likely in different ways from their human counterparts. In 2016, the Society of Automotive Engineers proposed a five level automation hierarchy, from No Assistance (0) through to Full Automation (5). Level 5 is a dream, said Mr. Casignani, and he claimed no one is working to implement Level 0 and 1 capabilities. What is meaningful to driving in the real world? Level 2, partial automation, is delivering some value. He believes that tomorrow’s vehicles will get to level 4. It is Level 3, said Mr. Casignani, where lies danger. Unfortunately, the Wall Street Journal’s recent assessment is probably right: driverless cars are 90% there and there is 90% left to do.³ CIMdata hears many presentations about how the future of autonomous driving is here today or about to be. Problems are to be tackled using the products and services lauded in the presentation. Yes, there are technologies and services that are critical to future success. But this presentation was more realistic about the work left to do. Mr. Casignani questioned whether our investments in AVs were about safety at all. He claimed that enforcing seat belt use could increase survivability 670%. He further stated that 34% of U.S. traffic fatalities are alcohol related vs. 9% in Germany where they have acted to reduce them. The real reason for AVs? To give us free time! In vehicle mockups you often see the front seats swiveled to face the rear, or to the side to watch video on the wall. Based on this presentation, it might be good to face front and grip the wheel at 10 and 2 for the foreseeable future.



Figure 1—Ecosystem for a Smarter Factory
(Courtesy of Hexagon)

Mr. Norbert Hanke, President and CEO of Hexagon MI, echoed Mr. Rollén’s focus on data in his keynote entitled “Smart is Hiding in Plain Sight, Finding the Data in Your Factory—and putting it to work.” Mr. Hanke’s scan of the news yielded a range of smart products: Smart Water, smart egg tray, smart toilet, Nest, and virtual assistants were mentioned. If everything is so smart, Mr. Hanke asked, why is smart manufacturing so far off? That was the point of his presentation. Mr. Hanke believes there are smart elements hiding in plain sight, in unused data, for instance. He claimed there are mountains of data to be mined, an assessment that matches CIMdata’s industrial consulting experience. Companies can benefit from this data, if they could just see the forest for the trees. Mr. Hanke claimed that manufacturing is obsessed with the trees, with each constituent tending their tree while we all want to see the forest. He emphasized that Hexagon is well positioned to support both the virtual and real of the

³ <https://www.wsj.com/articles/driverless-cars-are-90-here-theres-another-90-left-to-go-11558717322>

manufacturing environment, with metrology providing the bridge between them. Their ability to capture real-world data helps them converge the virtual and real, and to provide feedback upstream in the product lifecycle to drive improvements.

Thanks to the efforts of the analyst relations team, CIMdata was able to sit down with several Hexagon executives to get brief updates on the MI business. Our conversation with Mr. Steve Sivitter, recently named President and CEO of Hexagon Production Software, focused mainly on his previous role as CEO of Vero Software, Hexagon’s computer-aided manufacturing (CAM) business. Vero was built through acquisition by its previous owner, Battery Ventures, and has a wide range of CAM solutions. Has Hexagon been able to develop any synergy between the solutions to reduce R&D spend and complexity? Yes, claimed Mr. Sivitter, their solutions are increasingly harmonized underneath. Vero, and their other recent acquisitions of Spring Technologies and FASYS, have been rebranded as Hexagon Production Software. FASYS and Vero each had their own tool databases, now there is one consolidated database. According to Mr. Sivitter, postprocessors will be the biggest challenge. Hexagon is acquisitive, and two recent acquisitions brought Vero value-added resellers into Hexagon. This was necessary, Mr. Sivitter claimed, because they served important markets, including Italy, the fifth largest consumer of machine tools in 2018 according to Gardner Research.⁴

Mr. Brian Shepherd, Senior Vice President Software Solutions, Hexagon MI, who joined Hexagon after 20 years at PTC, spends most of his time at Hexagon working on smart factory topics. Part of his job is to help span the silos of Hexagon’s three business units: MI, Geospatial, and Power, Process, and Marine (PPM). At last year’s Hexagon Live, they announced Xalt, their “framework for accelerating digital transformation.”⁵ Much like SAP Leonardo, Xalt is a framework for introducing new, potentially disruptive technologies that leverage the Internet of Things (IoT), like data visualization, cloud, mobility, and artificial intelligence. The business units were all working in parallel on these technologies, and Xalt served to bring them together. It is Mr. Shepherd’s task to bring common technologies and practices to the silos, using Xalt to build them into Hexagon’s platform for the smart factory. Mr. Shepherd believes that things have worked well to date, supported by a choice to use an “open source” approach within Hexagon, e.g., when the MI team creates something useful it is shared into the Xalt code base for use by all business units. Of course, the goal is positive network effects where contributed code is enhanced over time by the community of users, in this case other Hexagon groups. An important goal but Hexagon is just getting started. They are taking the right steps to get there, like empowering a governance team to review the contributions to see if they really fit, if they are the right things to add and at the right level of quality. Nothing kills network effects like poorly planned or executed shared code.

CIMdata also spent some time with Mr. Paolo Guglielmini, the CEO of MSC Software. Hexagon acquired MSC Software in 2017 and the change since then is exciting. While owned by Symphony Technology Group, an American private equity firm, from 2009 to 2017, the company had limited opportunity to invest in their simulation and analysis (S&A) business during a time of intensive merger and acquisition activity in S&A and rapid S&A market growth. Becoming part of Hexagon allowed them to drastically accelerate their roadmap for MSC Apex, their unified environment for computer-aided engineering for virtual product development. They are continuing to invest in their core solutions, like Adams and Marc, and Mr. Guglielmini spoke of a new non-linear technology in development. They have had some success with SimManager, their simulation data and process management solution, but implementing their

⁴ <https://www.gardnerintelligence.com/Economics/post/2018-global-machine-tool-consumption-up-48>

⁵ <http://news.sys-con.com/node/4280897>

current version of SimManager requires too much customization. While this can work for large firms, Mr. Guglielmini said they are working to make it easier to implement for smaller firms. This is an important capability and CIMdata hopes it continues to get needed investment.

In conclusion, this commentary only scratches the surface of Hexagon Live 2019. CIMdata only really participated in the MI track, even though our PLM definition has always included Intergraph, a stalwart of their PPM business unit. CIMdata agrees that climate change demands attention, and that there is money to be made by addressing this issue at multiple levels. Companies like Hexagon help their clients be more efficient and effective in manufacturing, an industry segment with large potential climate impacts, as suggested by empirical data presented by the Hexagon speakers from Mr. Rollén on down. Based on the presentations and conversations at the event, Hexagon is well positioned to be one of those winning firms.

About CIMdata

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