

## Contents

<b><i>CIMdata News</i></b>	<b>2</b>
CIMdata to Host Free Webinar on Digital Engineering at Cummins	2
JWI: Going Global from China – A CIMdata Commentary	3
<b><i>Acquisitions</i></b>	<b>8</b>
Hexagon broadens its Smart Factory Solutions portfolio with the acquisition of Volume Graphics	8
Siemens adds material modeling to Simcenter through acquisition of MultiMechanics	8
<b><i>Company News</i></b>	<b>10</b>
Accenture Opens Innovation Hub in Perth, Australia, to Help Mining and Energy Companies in Digital Technologies	10
Cadence Named the #1 Tech Company on Investors Business Daily List of the Top 50 ESG Companies	11
Five Technology Trends in 2020 Poised to Transform the Future of Work, According to DXC Technology	12
Lantek signs a worldwide collaboration agreement with the manufacturer of laser cutting machines HSG	14
OpenText Expands Cloud Infrastructure in Japan to Support Enterprise Solutions	15
Rockwell Automation and Accenture Industry X.0 Combine Forces to Create Digital Solutions	16
Rockwell Automation and PTC Celebrate First Year of Partnership	17
Siemens opens Additive Manufacturing Network	18
TCS Collaborates with Qualcomm to Launch Innovation Hub to Develop Next-Gen AI Solutions with 5G	20
TCS Launches Microsoft Business Unit to Help Enterprises Accelerate their Business 4.0 Transformation Journeys	21
Trimble, Hilti and Boston Dynamics Partner to Explore the Use of Autonomous Robots in Construction	22
<b><i>Events</i></b>	<b>23</b>
3D Systems Unveils New Production Solutions; Ushers in Era of True 3D Production at Formnext 2019	23
3D Systems Continues to Announce New Materials - Opening New Production Solutions for Broad Industry Adoption	24
Autodesk & ANSYS at AU: Embracing the Opportunity for Better in Design & Manufacturing	25
CEAD and Siemens bringing new AM Flexbot solution to Formnext	26
Infor China Kicks Off Digital Innovation Forum for Manufacturing Industry in Guangzhou	27
<b><i>Financial News</i></b>	<b>28</b>
ESI Announces Third-quarter 2019 Sales	28
<b><i>Implementation Investments</i></b>	<b>29</b>
Autodesk and Airbus Demonstrate the Impact of Generative Design on Making and Building	29
Autodesk and Virgin Hyperloop One Announce Joint Effort to Explore Advanced Route Optimization, Transportation Design, and Construction Technology	31
Helly Hansen Innovates with Centric Software	31
SAP and Mercedes-Benz EQ Formula E Team Power Up Their Business Performance Partnership	32
Skystone To Build Tallest Modular Marriott Hotel With Autodesk Portfolio	33
Tesco Selects Centric Retail PLM	35
VEMAG opts for CONTACT Software: Innovations repackaged	35
YKK AP Selects the Aras Platform to Support Sustainable Business Growth	35
<b><i>Product News</i></b>	<b>36</b>
Altair Launches Design and Simulation Solution for Additive Manufacturing	36
Autodesk Ushers in New Era of Connected Construction with Autodesk Construction Cloud	37

# CIMdata PLM Late-Breaking News

---

Centric Connect Concepts to Consumers with Centric 8 PLM v7.0	39
Hexagon Leica Geosystems, Autodesk further collaborate to bring even more efficiency to building construction industry	40
Mastercam Launches Signature Parts Series for Manufacturing Community	42
MSC - New Generative Design Solution Cuts Additive Manufacturing Design Processes by up to 80 Percent	42
OpenBOM announces enhanced CAD integrations with Autodesk Fusion 360 and introduces an Autodesk Eagle plug-in	44
Siemens introduces AM Path Optimizer technology integrated in NX for additive manufacturing	44

## CIMdata News

### ***CIMdata to Host Free Webinar on Digital Engineering at Cummins***

19 November 2019

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces an upcoming free webinar, “Digital Engineering at Cummins.” The webinar will take place on Thursday, December 5, 2019 at 11:00 a.m. (EST) and will last for one hour.

As part of CIMdata’s on-going research on digital transformation and PLM we are talking to leading industrial companies that are willing to share their insights and experiences on this important topic. Cummins, a global leader in power generation, has been quite public about its efforts in digital transformation. In this webinar, CIMdata’s Vice President, Stan Przybylinski, will be joined by Michael T. Hughes, Program Director, Digital Engineering/Transformation at Cummins. The discussion will focus on the engineering side of Cummins’ digital transformation journey.

Attendees at this webinar will:

Be provided with an update on CIMdata’s research into digital transformation and PLM.

Learn how Cummins applies systems engineering principles to product definition.

Learn how the use of models and model-based systems engineering can improve cross-functional collaboration.

According to webinar host Stan Przybylinski, “The results of our research on digital transformation and PLM largely agree with our industrial consulting experience: many companies are pursuing digital transformation (DT) strategies but in most cases DT and PLM are not well connected. Companies see digital twins as vital across the product lifecycle and adoption is ramping up. Many are looking to model-based systems engineering to improve product development of their increasingly smart connected products. Cummins is working in all of these areas, and more, and I look forward to speaking with Mike Hughes to dig further into these topics.” This webinar will be useful to product planners and managers, design engineers, manufacturing engineers, PLM team leaders, PLM team members, PLM users, field service personnel, product managers, IT leadership, solution providers, and anyone else who wants to learn more about product cost management processes.

During the webinar attendees will have the opportunity to ask questions about the topics discussed. To find out more, visit: <https://www.cimdata.com/en/education/educational-webinars/webinar-digital-engineering-at-cummins>. To register for this webinar please visit: <https://register.gotowebinar.com/register/2500260157693908227>

 [Click here to return to Contents](#)

## ***JWI: Going Global from China – A CIMdata Commentary***

21 November 2019

### *Key takeaways:*

*China's PLM market continues to rapidly expand, exceeding US\$2.35 billion in 2018, up 16.2% from 2017. While the global PLM market grew by 9.4% and reached US\$47.8 billion in 2018, China's PLM market share increased at an even faster rate, from 4.6% in 2017 to 4.9% in 2018.*

*World-class manufacturers require accurate, traceable product information to meet innovation, as well as efficiency requirements.*

*The JWI Platform, developed in China, is based on a modern microservice architecture, runs on-premise and in the cloud, while supporting real-time app-based solutions across extended enterprises.*

*JWI's vision to competing globally requires state of the art software development and business practices that are good for the local market, as well as for the global market.*

The roots of PLM can be traced back to the support of product development and manufacturing. Efficient bills of material generation, subtractive machining processes, and accuracy were early objectives. Modern objectives of multinational manufacturers focus on improving the front end of the lifecycle with tools like Model-Based Systems Engineering (MBSE), Simulation & Analysis, and capturing profitable aftersales revenue by managing the as-maintained lifecycle state. Market and mindshare leaders in PLM from the United States and Europe are investing heavily in ensuring their platforms meet the extended lifecycle requirements of their customers.

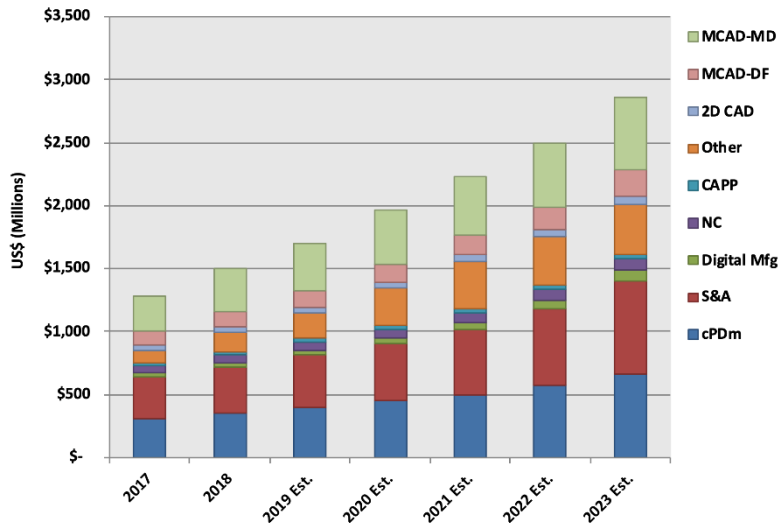
While capable and proven, many of today's leading PLM solution providers have complex software systems built using architectures designed for on-premise deployments, often including rather complex technical baggage within legacy code. The forward-thinking ones are migrating their platforms to be more service-oriented and leveraging microservices to take advantage of cost and performance potential of cloud native services.

At the same time, a new generation of cloud native solutions are being built by some solution providers on raw cloud platforms such as Microsoft Azure, AWS, and Alibaba, or application focused clouds such as Force.com or Forge.com. Most of the new generation of cloud platforms are focused on the design portion of the lifecycle. They support parts, EBOM, change management, and ERP integration, a high value, very visible portion of the lifecycle. The typical customer is a high-tech electronics firm that outsources manufacturing, most often to China. As the new generation matures, CIMdata expects them to add manufacturing capabilities, improved CAD integration, and aftersales support.

As Chinese companies advance in maturity from pure manufacturing and make-to-print operations, they are taking on higher value activities including change management and product design, and in a few cases marketing their brands globally. ERP was the only solution required for contract manufacturing,

but CIMdata now sees a rapidly growing market for PLM in China to support the move up the valuer chain. Figure 1 shows the expected growth for the mainstream PLM market segments through 2023.

China's PLM market exceeded US\$2.35 billion in 2018, up 16.2% from 2017. The global PLM market grew by 9.4% and reached US\$47.8 billion in 2018, while China's PLM market share increased from 4.6% in 2017 to 4.9% in 2018.



**Figure 1—Development of China's Mainstream PLM Market Segments and Forecasts from 2017 to 2023**

*(CIMdata Market Research Estimates)*

With the advancement of the smart manufacturing strategy and the development of the industrial software market, the growth of the Chinese PLM market in 2019 is projected to be 14%, led by EDA, which is growing even faster than other segments. While the global market leaders have a head start in revenue capture, China has a vibrant startup culture that is producing solutions used in the local market and CIMdata expects they will mature to compete globally.

As part of CIMdata's research we keep track of emerging PLM market participants including service and solution providers. We recently reviewed a new solution from a leading Chinese implementor that released a new product innovation platform, an area of significant interest and focus to CIMdata.

## Introducing JWI

JWI was founded in 2007 and is based in Shenzhen, China's innovation hub. JWI has a long history implementing PLM solutions and has been one of the largest implementers of PLM solutions in China.<sup>1</sup> They developed their platform to overcome issues they faced every day while implementing other solution providers' PLM solutions. Mr. Per Johnsson, founder and CEO of JWI, spent many years working for PLM mindshare leaders in China, and has used his knowledge of PLM and the Chinese

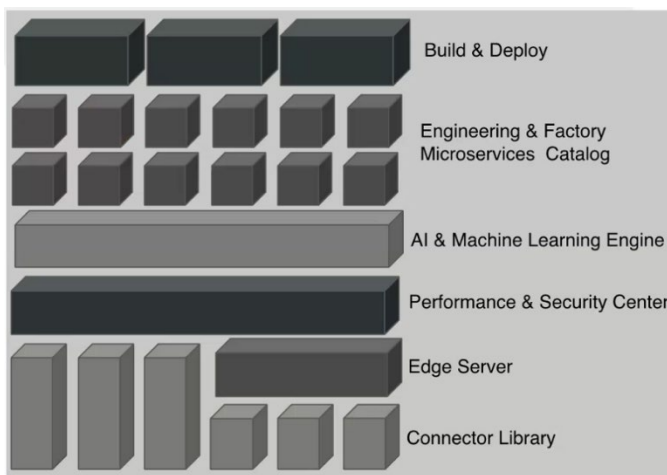
<sup>1</sup> Research for this commentary was partially supported by JWI.

# CIMdata PLM Late-Breaking News

market to create a new solution. The JWI PLM Platform was designed to meet the needs of local Chinese companies as well as architected to meet the requirements of multinational innovators.

## The JWI PLM Platform

[Product innovation platforms](#)<sup>2</sup> are the best-in-class approach to support sustainable PLM. Predicting business needs more than a few years out is difficult, so the best approach is to have a flexible solution that can adapt to unforeseen needs. While there are many important elements in a platform architecture, [Gartner recently published](#)<sup>3</sup> three technology critical enablers, mesh app and service architecture (MASA), an API platform, and event processing that should be supported for long-term sustainability. CIMdata agrees that these capabilities are important and must be addressed for long-term platform sustainability, and the JWI PLM Platform includes these capabilities within its core.



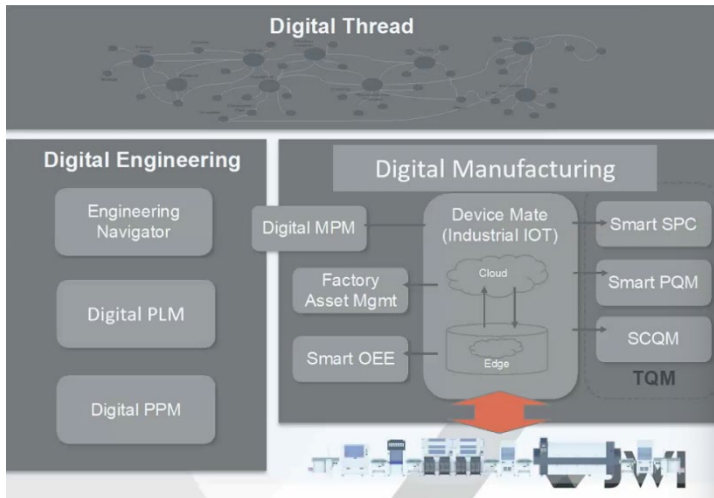
**Figure 2—JWI Cloud Platform**  
(Courtesy of JWI)

In reviewing the JWI PLM Platform architecture, shown in Figure 2, CIMdata sees a state-of-the-art architecture strategy that supports performance and security and uses Artificial Intelligence (AI) and machine learning (ML) at its core. This is a key advantage for the future as AI and ML are built in rather than pasted on. JWI demonstrates how the AI capability connects a product digital thread through inferred relationships rather than explicit data modeling, something we have not seen elsewhere.

JWI is especially proud of their real-time event processing built into the core of their platform. This was done to facilitate Industrial Internet of Things (IIoT) support. The benefit is that it enables efficient closed-loop processes from production back to the innovation processes. Incorporating IIoT as native services on the platform is a major strength.

<sup>2</sup> <https://www.cimdata.com/en/resources/about-plm/a-cimdata-dossier-plm-platformization>

<sup>3</sup> <https://www.gartner.com/en/documents/3970797/top-3-trends-in-application-architecture-that-enable-dig>



**Figure 3—JWI Applications**  
(Courtesy of JWI)

From an application perspective, JWI uses a microservice architecture to support both engineering and manufacturing as shown in **Figure 3**, an important requirement for the Chinese market. JWI’s Digital Engineering solution is focused on capturing design parameters that allow evaluation of design for manufacturing (DFM) to optimize the product design to support the manufacturing portion of the digital thread. This should help them achieve early success and generate revenue to help fund the development of a complete end-to-end digital thread/digital twin solution.

The microservice catalog is a clever approach to facilitating app development and is architected to support engineering and manufacturing. Since support of production is critical in China, the digital thread support starts with microservices to interrogate, view, and consume a product design. Digital Manufacturing Process Management (MPM) is able to transform an engineering BOM into manufacturing process plans that can be consumed by digital factory models. A viewer service is incorporated into the digital engineering solution. CIMdata views MASA, and especially the microservice approach, as a sustainable way to build out a product innovation platform. We look forward to seeing how JWI extends the platform to fully support Digital Engineering requirements.

From an IT perspective, JWI uses a modern open cloud stack including Docker and Kubernetes in a DevOps environment. Deployments can be on premise, in the cloud, or a hybrid mixture of both. Graphical tools are used to create workflows, model data, and assemble services into apps from the microservice catalog. Larger organizations often assemble their own apps, while smaller customers configure the out-of-the-box solutions. The microservice architecture employed by JWI enables easier deployment, upgrade, and improvements for both types of customers and all deployment types. CIMdata believes strongly in the low code approach to configuring solutions and is impressed with the catalog approach to present services to developers.

Figure 4 shows JWI’s implementation of a production line digital twin. The definition of the factory is managed and the Device Mate module (i.e., JWI’s IoT solution) brings production data into the digital model in real time demonstrating an approach to smart manufacturing. JWI’s digital thread support for

high-tech electronics manufacturers is extensive and supports surface mount technology, surface mount devices SMT/SMD, as well as injection molding and sheet metal processes.



**Figure 4—Production Line Digital Twin**  
(Courtesy of JWI)

Mr. Johnsson stated that he believes “the real-time capabilities of our solution made possible by the architecture improve insights and enable faster more accurate decisions.” CIMdata concurs and believes that improving the speed and quality of information within feedback loops will help any company’s digital transformation. Furthermore, we look forward seeing how the Digital Engineering area of the platform develops. The real-time integration with the factory and AI capabilities will likely produce some interesting capabilities.

## Conclusion

Many high-tech electronics are manufactured in China and the sophistication of production lines has grown dramatically to meet market expectations. Chinese production facilities can be as complex and capable as any in the world. As complexity grows, PLM is being adopted, CIMdata has seen this play out over and over in the past three decades.

According to our measurements, the Chinese mainstream PLM market is currently over US\$1.5 billion growing over 15% per year and should approach US\$3 Billion by 2023. This market growth shows that the need for PLM is there, as well as the opportunity for local solution providers. The PLM platform launched by JWI this year has the capabilities needed to support local Chinese requirements and is architected to provide the support multinational manufacturers require as well. CIMdata is impressed by the JWI platform’s real-time microservice based architecture and the apps that have been released to the market. It is a great start and we look forward to tracking JWI’s growth.

For Chinese and Asian companies looking for a PLM solution, JWI should be on their short list. For global companies with operations in China or Asia, pay attention to JWI, as it may fit your needs today or likely will in the future. PLM mindshare leaders should also pay attention to competition from the east!

 [Click here to return to Contents](#)

## Acquisitions

### ***Hexagon broadens its Smart Factory Solutions portfolio with the acquisition of Volume Graphics***

22 November 2019

Hexagon AB announced the signing of an agreement to acquire Volume Graphics, a market leader in the industrial computed tomography (CT) software industry.

Volume Graphics brings over 20 years of experience in non-destructive inspection and testing software development. The company's high-end analysis and visualisation CT software enables manufacturers to produce three-dimensional external and internal representations of scanned objects. Using CT, they're able to "see" inside the complicated structures of components, otherwise inaccessible with traditional inspection methods. This allows hidden or hard to reach internal features to be measured and inspected for dimensional deviations and flaws without destroying the parts and compromising the integrity of the data in the process.

"Volume Graphics offers an invaluable toolset for leveraging CT data across many use cases - from flaw detection and failure analysis to reverse engineering applications. We look forward to merging our capabilities so that customers can ensure the highest product quality throughout product development and production," says Hexagon President and CEO [Ola Rollén](#). "Additionally, industrial CT scanning is fast becoming a critical asset to manufacturers as more and more industries embrace additive manufacturing. The addition of CT software capabilities strengthens our portfolio in this growth area."

Today, a broad range of global customers from the automotive, aerospace, and electronics industries use Volume Graphics software for quality assurance. Founded in 1997 and headquartered in Heidelberg, Germany, Volume Graphics employs around 160 people worldwide. Subsidiaries in Japan, Singapore, China and the USA, supplemented by an extensive reseller network, deliver its software to customers in more than 50 countries.

Volume Graphics will operate as part of Hexagon's Manufacturing Intelligence division. Completion of the transaction (closing) is subject to regulatory approvals. 2018 sales amounted to 25 MEUR.

 [Click here to return to Contents](#)

### ***Siemens adds material modeling to Simcenter through acquisition of MultiMechanics***

18 November 2019



Siemens announced that it has signed an agreement to acquire MultiMechanics, Inc., developer of MultiMech finite element software that helps companies virtually predict failure in advanced materials at an unprecedented level of speed and accuracy. The company plans to integrate MultiMechanics into Siemens Digital Industries Software, which will add the ability for customers to create a digital twin of materials by closely integrating materials engineering with part design, performance engineering, and manufacturing through the unique TRUE Multiscale™ technology for a broad range of material-driven applications. MultiMechanics' technology helps companies to efficiently predict material properties and behavior, including failure starting at the microstructural level, at an unprecedented level of speed and accuracy. This unique technology will be incorporated into Simcenter™ software within Siemens' Xcelerator portfolio, implementing materials engineering into the digital workflow and establishing a pervasive link between material developers, manufacturing process developers and part designers.

“The addition of this technology enables our customers to build a digital twin of materials, which will help to shrink the innovation cycle of new products and materials, possibly saving millions of dollars and several years in development and certification in aerospace, automotive and other sectors,” explains Jan Leuridan, Senior Vice President, Simulation & Test Solutions, Siemens Digital Industries Software. “Customers will have the ability to fully exploit the potential of advanced materials to optimize weight and performance in an efficient way that is not possible with classical, test-based, approaches.”

“We are excited to join Siemens and the Simcenter family,” says Flavio Souza, President and CTO, MultiMechanics, Inc. “The combination of the TRUE Multiscale technology of MultiMechanics with Simcenter 3D software will provide a strong basis for further innovation, enabling an expansion of scope of structural simulation to include multi-physics support for applications such as minimization of part distortion, prevention of voids during material flow, and prediction of visco-elastic acoustic properties.”

Digitalization, or the fourth industrial revolution, is happening today, causing disruption in the process and discrete industries, and blurring boundaries between domains, merging the virtual and real world, hardware and software, and design and manufacturing. In this dynamic environment, the ability to meet rapidly changing consumer preferences and requirements with insights and data is essential and can only be achieved through digital twins that represent and validate what is possible through a complete end-to-end workflow. Siemens' acquisition of MultiMechanics further expands the ability to create the most comprehensive digital twin by integrating structural computer-aided engineering (CAE) with detailed materials modeling through TRUE Multiscale technology, for a broad range of materials, including polymers, metals, composites, and ceramics. Manufacturing technologies such as injection-molding and additive manufacturing will see immediate applications, as the digital twin of materials can account for manufacturing variability and imperfections, identify the root cause of material failure at microstructure level, optimize material microstructure for best performance, and enable the creation and virtual testing of new material systems.

“We are confident that as part of Siemens, MultiMechanics' technology can accelerate innovation in, and adoption of, complex materials, including the further penetration of composites in the automotive and aerospace industries,” said Nicolas Cudré Maroux, Chief Technology Officer of Solvay, a major customer and shareholder of MultiMechanics.

“The accuracy and speed afforded by MultiMechanics, and its efficient integration with commonly used commercial finite element software packages is changing the way we develop new materials and interact with our customers,” added Mike Blair, EVP Research and Innovation Composite Materials at Solvay.

[!\[\]\(3dfb8d66e81160ad61421a3452093d1b\_img.jpg\) Click here to return to Contents](#)

## Company News

### ***Accenture Opens Innovation Hub in Perth, Australia, to Help Mining and Energy Companies in Digital Technologies***

21 November 2019

Accenture opened an innovation hub for mining and energy companies in Perth, Western Australia. At this location, clients can work with Accenture professionals and designers, technology providers, venture start-ups and academia to quickly turn ideas into solutions that can improve business performance.

The innovation hub is designed to help mining and energy companies address the challenges and opportunities of digitalization. These include improving sustainability, cybersecurity, health, safety and productivity of workers, and the performance of machines.

To this end, the facility brings together service design, advanced digital technologies, data science and industry knowledge under one roof. Clients can explore technology innovations including cloud computing, artificial intelligence, the internet of things, virtual and augmented reality, quantum computing, blockchain and drones.

The innovation hub expands Accenture’s global network of Industry X.0 innovation centers. Industry X.0 is Accenture’s approach to using digital technologies to improve how companies engineer and manufacture products and services and operate industrial facilities.

The Perth location is the latest Accenture innovation hub in Australia, joining others in Sydney, Melbourne and Canberra. These locations are also connected to more than 100 Accenture innovation hubs and centers around the globe, bringing the best of Accenture’s capabilities, experience and thinking to clients in Australia.

“The new hub delivers innovation to our clients’ doorsteps here in Australia,” said Bob Easton, chairman of Accenture in Australia and New Zealand. “We invest locally and leverage Accenture’s global capabilities to develop innovation that puts Australia on a world stage.”

One example is Accenture’s new Mobile Innovation Studio, due to launch in 2020. The mobile studio enables clients to develop and test new products, services, and strategies on their operational processes from any location, as Accenture can ship the portable studio space to remote mining and energy sites across Australia.

“With this new innovation hub, we are helping raise the innovation profile of Western Australia and

Australia overall,” said Ann Burns, who leads Accenture’s Resources sector in Australia and New Zealand. “We believe that the Western Australian energy and mining sectors can become world leaders in digitalization. Crucial to this is a focus on what we refer to as ‘triple zero’: ideas, design and technologies that help achieve zero harm to workers and machines, zero loss across the value chain, and zero waste for sustainability.”

Jean-Marc Ollagnier, group chief executive of Accenture Resources, said, “The energy transition, circular economy, and sustainability provide opportunities to change business models, improve operations, and attract and retain talent. At the innovation hub, we will help clients apply digital technologies to create value across their enterprises.”

Located at the Exchange Tower, 2 The Esplanade, the innovation hub has been designed to host sessions that go from developing an idea to building a prototype and planning how to deploy the full solution. It includes a Liquid Studio, where clients can rapidly develop prototypes; a new design studio from Fjord, Accenture Interactive’s design and innovation consultancy; and a MakerLab space for 3D printing.

The space’s visual identity represents materials, colors and values of Western Australia, for example, work by Indigenous artists, The Molony Brothers. Accenture commissioned them to create several pieces of art that were inspired by the land and celebrates the local flora and fauna. The juxtaposition of creative design and digital technology is designed to inspire new thinking and fresh ideas.

 [Click here to return to Contents](#)

### ***Cadence Named the #1 Tech Company on Investors Business Daily List of the Top 50 ESG Companies***

22 November 2019

Cadence Design Systems, Inc. announced it has been named to Investor’s Business Daily’s first-ever Top 50 Environmental, Social and Corporate Governance (ESG) Companies list. The list, which ranks the companies with regard to sustainability and ethical impact, has Cadence ranked #1 in the technology category and #5 overall on the list. For more information on Investor’s Business Daily’s Top 50 ESG Companies, please visit <https://www.investors.com/research/best-esg-companies-top-stocks-environmental-social-governance-values/>.

To compile the list, Investor’s Business Daily identified companies with ESG ratings of AAA or AA from MSCI ESG Research as of Sept. 11, 2019. The 50 companies that made the list had the highest IBD Composite Ratings, reflecting broad strength in fundamental and technical areas linked to price performance. Nearly all have a Composite Rating of 80 or higher, putting them in the top 20% of stocks. These ESG leaders span a wide range of businesses, from retail, software and medical products to building products and geothermal energy. Besides recognizing the Best 50 ESG Companies overall, IBD also highlighted the top three in seven broad business categories.

“We are very pleased by the recognition from Investor’s Business Daily for our extensive efforts to provide products that advance the development of sustainable technologies and our work on improving the environmental footprint of our global facilities,” said Lip-Bu Tan, CEO of Cadence. “ESG is an important initiative for us, and we’re honored to be named the #1 company in the technology category and to be #5 overall.”

“Cadence earned the #1 position in the technology category, which was one of the largest categories in IBD’s Best ESG Companies list,” said Susan Warfel, managing editor, Investor’s Business Daily. “Cadence held an IBD Composite Rating of 98 at the time of our analysis, putting it in the top 2% of all stocks in the measure, which reflects broad-based strength in fundamental and technical characteristics linked to stock performance. The company’s solid earnings growth record, margins and return on equity were factors in the Composite Rating.”

 [Click here to return to Contents](#)

## ***Five Technology Trends in 2020 Poised to Transform the Future of Work, According to DXC Technology***

22 November 2019

Five technology trends are poised to transform the future of work beginning in 2020, DXC Technology announced as part of an annual forecast. The rapid adoption of emerging technologies such as artificial intelligence (AI) and machine learning (ML) – coupled with trusted data ecosystems, empowered interconnected teams and tech-evangelist leaders – promises to produce new levels of workforce efficiency, productivity and growth across enterprises.

“The notion of accelerated productivity will force enterprises to rethink their technology decisions and investments across the enterprise technology stack, which, in turn, will drive a sea change in how enterprises are led and structured, make informed decisions and engage employees and customers,” said Dan Hushon, senior vice president and chief technology officer, DXC.

“Tech-evangelist leaders will define new interactions between AI and people to create high-performing teams and shape digital strategies that unlock an organization’s full potential – securely and confidently modernizing applications, optimizing data architectures and moving workloads to the cloud to produce new and better business outcomes.”

### AI redefines professional services

The pervasive use of AI and ML in business is revolutionizing professions such as legal, accounting, healthcare and education by democratizing access to data and expert services. AI is extending customization and personalized services to a broad base of customers through low-cost intelligent agents. Additionally, AI benefits professionals in their decision-making because it can provide new insights, manage information overload and reduce human error.

Hushon noted that while AI and ML democratize professional services, organizations should stay vigilant to guard against the potential loss of critical skills while using increasingly sophisticated, AI-powered decision support systems.

“As these decision-support systems become more sophisticated, businesses need to continue to build critical skills in organizations,” said Hushon. “Additionally, enterprises should protect against unintended consequences by training people to quickly detect and correct improper bias or unsafe behavior from AI. Overall, AI will illuminate intelligence hidden in systems, empower consumers and complement professional expertise.”

### Design thinking shifts from IT services for people to IT services for machines

The thinking behind systems design is shifting as IT services are increasingly being built for machine-

to-machine interaction, and as processing moves closer to where data resides. This will further expand “The Matrix” – the pervasive, intelligent IT infrastructure beyond the cloud that includes edge computing, internet of things (IoT) platforms, machine intelligence, augmented reality/virtual reality and more. It will usher in new design choices and transformational architectures, and push companies to more aggressively pursue IT modernization.

“Microprocessors capable of decisions in nanoseconds, stream and batch processing architectures and analytics moving to the network edge (where the data is) – all of this will enable enterprises to make better, faster, data-driven decisions more cost-effectively,” Hushon added.

### Data’s value increases in ecosystems

Enterprises are pooling data in ecosystems to achieve outcomes that benefit both the individual and enterprise. Data ecosystems will flourish as they adopt trust mechanisms that validate an individual’s right-to-share and an enterprise’s right-to-consume data. Self-sovereign identity standards and blockchain-based consent with trading partners, for example, are helping to facilitate responsible data sharing and drive the rapid growth of data exchanges.

“As these capabilities become more pervasive, manufacturers, service providers and consumers will be more willing to share data in exchanges and ecosystems,” Hushon explains. “In turn, CEOs will seek to identify and pursue ecosystem-centric business models and trading partners that deploy trusted and compliant data-sharing practices.”

### Teams, not superstars, are the high performers

In 2020, companies will recognize that achieving their full potential means developing and nurturing a network of high-performing, interconnected teams consisting of multidimensional individuals, rather than siloed groups of single superstars.

Enterprises will restructure to expand team linkages across the organization. The shift from superstar individuals to high-performing teams will require new strategies for talent acquisition and development.

According to Hushon, “Enterprises will put greater emphasis on communication, adaptability and decision-making empowerment; double-deep expertise in business and technology; and collaboration tools that promote productivity and learning.”

### New wave of tech-savvy leaders accelerates business transformation

A shift in business leadership will gain momentum in 2020 as technology-driven markets proliferate and new leaders advocate for technologies that can improve enterprise speed, agility, productivity and innovation advantage.

“Emerging technology evangelists will work at the CXO level to shape digital strategy. At the same time, they will spearhead major initiatives with smart products, mergers and acquisitions, intellectual property development and learning initiatives for accelerated business transformations, value and outcomes,” Hushon concludes.

 [Click here to return to Contents](#)

### ***Lantek signs a worldwide collaboration agreement with the manufacturer of laser cutting machines HSG***

22 November 2019

Lantek announced that it has signed a collaboration agreement with the multinational HSG Laser Group. This agreement will involve the use of Lantek software in HSG's high-end sheet metal fiber laser cutting machines, a segment in which the company is growing significantly worldwide.

The agreement reached by the companies will allow HSG customers worldwide to use powerful, scalable and open software to get the most out of their investments in machinery and software.

As Alberto López de Biñaspres, CEO of Lantek, explains, "The agreement reached with HSG is part of our policy of partnerships with sheet metal cutting technology manufacturers worldwide. Thanks to this partnership, we will integrate our software into the broad base of fiber laser sheet cutting machines that HSG has all over the world, making our market knowledge and experience available to its customers."

Through these solid product integrations, the company seeks to boost and strengthen both its relationship with partners and customers and generate greater synergies with them. It also aims to maximize and simplify implementations and improve interoperability, increasing the capability and productivity of users. Lantek currently has more than 100 cutting machine manufacturing partners worldwide.

Under this agreement, HSG and Lantek will be able to better address the opportunities and growth of the sector, as well as to satisfy the demands of the global market in terms of productivity and competitiveness. This collaborative agreement with HSG will make it possible to integrate the Lantek Expert CAD/CAM solution with its different fiber laser cutting machines, which are available in power levels up to 12 kW.

López de Biñaspres adds, "The sheet metal and fabrication industrial sector is at a critical moment and must take a step towards digitalization. To ensure they are not left behind, companies need to interconnect their machines, processes and plants distributed around the world, by using technologies that allow them to meet production needs in real time, anticipate possible incidents and perform more efficient maintenance. The open, scalable and versatile nature of Lantek's software solutions makes this possible."

He continues, "At Lantek, we want to help companies in the sector with their digitalization, adapting ourselves to their needs and different levels of digital maturity. We are continuing to focus on improving our customers' competitiveness and doing so by anticipating their needs with value proposals that allow them to be more efficient and profitable in the digital ecosystem. In this regard, our offer of a cloud platform responds to the challenges posed by the digital transformation, making production processes much more efficient."

Yang Liu, CEO of HSG, says, "The agreement reached with Lantek is a great opportunity for all our customers, who can now use one of the most advanced CAD/CAM software solutions on the market."

"The integration of Lantek Expert software in our laser cutting machines offers significant added value to our customers. This solution makes it easier to optimize processes, shorten times and work efficiently, guaranteeing the highest quality and the shortest response times on our most powerful machines," concludes Yang Liu of HSG.

 [Click here to return to Contents](#)

## ***OpenText Expands Cloud Infrastructure in Japan to Support Enterprise Solutions***

21 November 2019

OpenText announced an expansion to the OpenText Cloud in Japan, with expanded domestic data centers in Tokyo and Osaka. Building on a legacy of delivering OpenText Business Network services in the Japanese market, this expanded capability will help customers transition EIM workloads to the OpenText Cloud, while strengthening capacity for disaster recovery and security.

“Japan is a strategic market for OpenText. This expansion allows us to bring the full power of the OpenText Cloud to our Japanese customers.” said Mark J. Barrenechea, OpenText CEO & CTO. “Modern next-generation EIM applications, strategic partnerships with major network providers and enterprise-grade cloud infrastructure provides the most secure platform for innovation and content collaboration available to Japanese enterprises.”

Japanese companies must adhere to new regulations and standards for the storage of personal information, while maintaining the flexibility, agility and capacity for innovation cloud infrastructures offer. To meet these requirements, Japanese customers are looking for new deployment options which keep their data and applications in domestic data centers. With today’s announcement OpenText will offer customers a full range of domestic hosting options.

The OpenText Cloud also ensures Japanese customers are prepared in the event of natural disasters such as earthquakes or flooding. OpenText is expanding the disaster recovery options available to cloud customers with real-time system fail-over capability between data centers in Tokyo and Osaka. This augments disaster recovery enabled between Tokyo and the United States.

Even the most highly-regulated and security-conscious companies can rapidly deploy advanced EIM cloud solutions without the need to invest in their own cloud infrastructure.

“When migrating large volumes of diverse information and content to the cloud, customers are considering the governance and security benefits of using domestic data centers. In industries with heightened regulation such as government agencies and financial institutions, highly-available enterprise infrastructures are necessary to meet these compliance demands,” said Koichiro Sorimachi, President of OpenText Japan. “OpenText has experience in delivering cloud for sophisticated global enterprise customers and today’s announcement ensures we can meet more Japanese customers’ cloud needs.”

 [Click here to return to Contents](#)

## ***PTC Named a Top Place to Work for Third Consecutive Year***

22 November 2019

PTC announced that The Boston Globe named the company to its annual “Top Places to Work in Massachusetts” list for the third consecutive year. Onshape, developer of the Onshape® Software as a Service (SaaS) product development platform, which was acquired by PTC in early November 2019, also made its debut on the list.

The “Top Places to Work” list recognizes the most admired workplaces in the state, as voted on by the

people who know them best—their employees. The survey measures employees’ opinions about their respective company’s direction, execution, connection, management, work, pay and benefits, and engagement. Companies are placed into one of four groups, based on their number of employees in Massachusetts: Small, for employers with 50 to 99 employees; Medium, for 100 to 249; Large, for 250 to 999; and Largest, for companies with 1,000 or more employees based in Massachusetts. In its inaugural appearance this year, Onshape ranks #5 in the “Small” category.

“We are immensely pleased to receive this honor again from The Boston Globe,” said Jim Heppelmann, president and CEO, PTC. “It has been a monumental year for the PTC team, with major milestones including the relocation of our global headquarters to Boston’s Seaport Innovation District and our welcoming of fellow ‘Top Places to Work’ company Onshape to the PTC team. Our culture drives our innovation and employee life, and I am confident that with such a strong, talented, and engaged team, we will not only continue to develop industry-changing technologies but will do so as an organization that champions employee life.”

For over 30 years, PTC has enabled customers to stay ahead of the competition, and continues that tradition today with a portfolio of award-winning computer-aided design, product lifecycle management, industrial internet of things, and augmented reality technologies. As a digital transformation technology leader, PTC’s vision and portfolio are aligned on the same core belief: opportunities for industrial innovation live at the convergence of the physical and digital worlds.

PTC’s benefits offerings help employees thrive, both during and away from work, with a holistic program designed to support professional and personal growth opportunities. The company prides itself on searching for new thinkers that display both brains and passion, with employees at every level receiving encouragement and recognition for “taking a fresh look” at the work they do daily. As a key part of driving that innovation, PTC maintains and champions inclusion and diversity initiatives designed to build a work environment where all employees feel the freedom to come to work as their true authentic selves. PTC is proudly committed to increasing diversity across the company globally and contributing to diversity in technology, thereby enabling better service for employees, customers, and the communities in which we serve. To view current open positions, please visit: <https://www.ptc.com/en/careers>.

The rankings in Top Places to Work are based on confidential survey information collected by Energage (formerly WorkplaceDynamics), an independent company specializing in employee engagement and retention, from nearly 66,000 individuals at 323 organizations in Massachusetts. The winners share a few key traits, including offering progressive benefits and giving their employees a voice, all while encouraging them to have some fun in the process.

 [Click here to return to Contents](#)

### ***Rockwell Automation and Accenture Industry X.0 Combine Forces to Create Digital Solutions***

19 November 2019

Rockwell Automation, Inc and Accenture’s Industry X.0 announced plans to team up to develop a digital offering to help industrial clients move beyond existing manufacturing solutions to transform their entire connected enterprise.

The engagement is designed to capitalize on the expertise of both companies to deliver new capabilities for greater industrial supply chain optimization. By providing customers with a single, trusted provider of digital solutions, the collaboration will enable clients to more effectively leverage the Industrial



Internet of Things (IIOT) and ultimately drive measurable growth outcomes.

Encouraged by initial industry feedback to these types of digital offerings, the two companies have begun working together to develop solutions and services that create value along the industrial value chain. To date, the collaboration has yielded, among other early-stage successes, a prototype for supply chain management designed to deliver supplier cost optimization and an improved ability to track the exact movements of products – two particularly important areas of investment for industrial companies seeking growth.

“Our customers are looking for measurable business outcomes when they invest in our software, products, and solutions. Together with Accenture, we will be able to help industrial companies quantify the financial benefits of their investment and to capture this value at speed and scale,” said Blake Moret, Rockwell Automation Chairman and CEO. “By teaming up, we reduce complexity, reduce risk, and achieve better results with comprehensive enterprise-wide expertise.”

Rockwell Automation will provide leading industrial automation technology and domain expertise, including FactoryTalk InnovationSuite IIoT software, and analytics solutions. It will also bring network services, operational technology security, and application development, installation, integration and support.

Accenture will provide enterprise business and technical capabilities, including consulting, analytics, application development, systems integration, change management and support.

“Industrial companies that want to grow need faster and more efficient production and operations processes. These processes also need to allow them to develop new types of products and services,” said Mike Sutcliff, group chief executive of Accenture Digital. “Our collaboration with Rockwell Automation will offer digital solutions and services that will go a long way in helping our clients achieve this enterprise transformation.”

 [Click here to return to Contents](#)

## ***Rockwell Automation and PTC Celebrate First Year of Partnership***

18 November 2019

Rockwell Automation announced strong market momentum for its PTC partnership and joint digital transformation solutions. This performance includes a year of major achievements spanning new customers and use cases, innovations designed to accelerate the integration of OT and IT systems, and wide-spread industry recognition for the two companies’ combined industrial software suite, FactoryTalk InnovationSuite™, powered by PTC.

“In the past year, the Rockwell Automation and PTC teams have worked closely to integrate and optimize FactoryTalk InnovationSuite to the needs of a very fast growing, dynamic market,” said John Genovesi, Senior Vice President of Enterprise Accounts & Software at Rockwell Automation. “We’re very pleased to see the results in terms of the rapid growth of new customers and the significant industry recognition of our solution as highly innovative and a leader in modular and integrated capabilities spanning MES, analytics, Industrial IoT and augmented reality.”

Since the inception of the partnership in 2018, FactoryTalk InnovationSuite, powered by PTC has experienced:

Rapid customer adoption and global growth. Customer engagements for FactoryTalk InnovationSuite, powered by PTC have grown significantly across 21 countries, including some of the world's largest automotive, consumer packaged goods, healthcare, oil & gas, and pharmaceutical companies. Leading use cases include Digital Workforce Productivity, Enterprise Operational Intelligence, Intelligent Asset Optimization, and Scalable Production Management.

Operational and Information Technology integration. OT/IT integration is the key to accelerating innovation and achieving productivity gains at digital transformation scale. The joint offering delivers the industry's most advanced OT/IT integration capabilities including asset and system auto-discovery, data model sharing and re-use, integrated analytics, and AR empowerment.

Broad industry recognition. Rockwell Automation, PTC, and the combined software suite have been widely acknowledged in numerous analyst research reports over the past year, including reports from Gartner, Forrester, IDC, and ABI Research. Most recently, the companies' FactoryTalk InnovationSuite was recognized as Leader in Gartner's Magic Quadrant for Manufacturing Execution Systems for the Second Consecutive Year, and received the IoT Innovator Award: Manufacturing & Factory from Compass Intelligence.

"We're delighted with the progress in our partnership, but more importantly the help that we've provided to so many new customers with their digital transformation initiatives," said Catherine Kniker, Divisional Vice President, Strategic Alliances and Technology Partnerships at PTC. "We will continue investing significantly in this strategic relationship with Rockwell Automation and look forward to continuing to drive customer success."

FactoryTalk InnovationSuite, powered by PTC improves connectivity to operational technology (OT) devices on the plant floor, natively supporting the rapid, scalable and secure connection of most industrial equipment. Combined with data from information technology (IT) applications and systems, decision makers can now gain a complete digital representation of their industrial equipment, lines and facilities from anywhere in the enterprise. Utilizing advanced innovations in machine learning, IIoT and augmented reality (AR), this comprehensive suite conceptualizes and connects data to make it accessible and insightful for operations personnel.

"All this hard work by Rockwell Automation and PTC has led to significant results, with a large number of new joint customers over the past twelve months," said Matthew Littlefield, President and Principal Analyst at LNS Research. "This certainly puts them among the top few IIoT providers in the space today, and clearly market momentum is on their side. Among industrial clients, there is hardly a one pursuing a transformation strategy that isn't considering the PTC-Rockwell Automation joint solution. It's quickly becoming the benchmark for the industry."

 [Click here to return to Contents](#)

### ***Siemens opens Additive Manufacturing Network***

21 November 2019

Siemens announced the official launch and general availability of the Siemens Additive Manufacturing (AM) Network, following pilots and successful implementations with customers and partners, including Decathlon, Siemens Gas & Power, Siemens Mobility, HP and Materialise. The Siemens AM Network provides an advanced cloud-based solution to foster collaboration and process orchestration between engineers, procurement and suppliers of 3D printed parts. Providing an end-to-end digital process that connects the demand for parts with a supplier network helps enable globally distributed manufacturing.

The Siemens Additive Manufacturing Network will be featured at Formnext 2019 in Frankfurt, Germany.

Siemens' AM Network is designed for enterprises, suppliers and partners that are looking to accelerate the adoption of AM for industrial processes and applications. It digitalizes the order-to-delivery process by aligning the engineering and commercial processes for high-quality AM functional prototypes and serial production parts. The system connects buyers with a global supplier network which streamlines the process, fosters collaboration and engagement, and orchestrates the workflow to increase throughput and reduce operational costs. As part of the Siemens' suite of Software as a Service (SaaS) solutions, the AM Network meets the most stringent requirements for security, availability and regulatory compliance.

“Siemens' additive manufacturing experts and industry veterans have developed the additive manufacturing network based on a clear understanding of the complexities and needs of the industry, fostered by a sincere passion to promote the adoption of AM in the industrial domain,” said Zvi Feuer, Senior Vice President Manufacturing Engineering at Siemens Digital Industries Software. “As buyers, sellers and partners continue to plug into the ecosystem, they will find a streamlined, modular solution that can grow with each company's individual needs.”

Early adopters are already realizing the benefits of the AM Network. Decathlon, the largest sporting goods retailer in the world with over 1500 stores in 49 countries, uses the AM Network to manage their Additive Manufacturing ordering process and control production progress as part of their strategy to scale their use of 3D printing globally and ramp up production, while maintaining high standards of quality. At Siemens Gas & Power, the AM Network is helping the business be more agile and respond to inquiries in real time to help ensure customers get exactly what they ordered, on time.

“We have full confidence in the AM Network to help us facilitate a smooth flow of information among the various functions within the organization,” said Andreas Graichen, group manager, AM industrialization and digitalization, Siemens Power & Gas, Service Distributed Energy. “It will also allow us to effectively connect to our external customers, while providing a detailed outlook on costs and production time from beginning to end.”

## Expanding Strategic Industrial Alliance

Earlier this year Siemens and HP continued to build on their long standing strategic alliance with the introduction of a joint additive manufacturing solution targeting the automotive industry and other key industrial markets. The partnership is expanding with the integration of HP's advanced 3D printing technology with the Siemens AM Network, and with the addition of HP's Digital Manufacturing Network partners to the Siemens AM Network. The HP Digital Manufacturing Network is a global community of digital manufacturing service providers with the capabilities to help design, produce, and deliver high quality plastic and metal final parts at scale leveraging HP's Multi Jet Fusion and Metal Jet 3D printing solutions.

“Siemens and HP share a collective goal to help accelerate the journey to digital manufacturing for

customers,” said Rob Mesaros, Global Head of Services and Alliances, HP 3D Printing and Digital Manufacturing. “Adding HP Multi Jet Fusion Solutions and HP Digital Manufacturing Network plastic production partners to the Siemens AM Network is a strong enabler for customers looking to use 3D printing for industrial production.”

“We believe that collaboration among AM industry leaders is key. It increases the adoption of 3D printing and it supports companies in their digital transformation,” said Ben Cassiman, Global Key Partner Manager at Materialise. “As a member of HPs Digital Manufacturing Network, and as a supplier joining the Siemens AM Network Supplier’s community, we’re expanding our successful partnerships with Siemens and HP, advancing AM series production and mass customization.”

The Additive Manufacturing Network is one more way in which Siemens is facilitating access to the latest knowledge and technology to ease the adoption of industrial additive manufacturing for customers to digitally transform business operations. Siemens will showcase the complete solution at Formnext 2019, highlighting features such as digital Inventory, part analysis, RFQ process, supplier network, cost analysis, order intake, customer communication, production tracking and scheduling, and data analytics, dashboards and reports.

 [Click here to return to Contents](#)

### ***TCS Collaborates with Qualcomm to Launch Innovation Hub to Develop Next-Gen AI Solutions with 5G***

22 November 2019

Tata Consultancy Services announced the launch of a first-of-its-kind Innovation Hub in Hyderabad, India. With support from Qualcomm Technologies, Inc., an industry leader in wireless technology, the new hub will be used to build domain-specific solutions that utilize the combinatorial power of AI, IoT and 5G technologies to help global enterprises across industries accelerate their digital transformation journeys.

Designed to facilitate massive data flows with very low latency and ultra-high reliability, 5G and edge computing are expected to transform every industry in the coming years. The technology industry ecosystem anticipates a new wave of technology investments from progressive enterprises looking to harness the power of 5G, AI and other emerging technologies. The new hub will utilize TCS’ expertise in digital technologies, along with Qualcomm Technologies’ depth in 5G, edge AI and edge devices to build solutions to entirely new use-cases.

The Innovation Hub will explore the possibilities opened up by 5G in different industries – such as healthcare, automotive, manufacturing, retail, utilities. Solutions developed at the hub will help customers embrace new business models, offer differentiated products and value-added services, deliver sophisticated customer experiences, and generate new revenue streams.

“The convergence of 5G, AI and edge computing will open unprecedented opportunities for value creation in industrial automation, autonomous vehicles and other industries,” said V Rajanna, Global Head, Technology Business Unit, TCS. “The new Innovation Hub brings together TCS’ and Qualcomm Technologies’ world-class technology expertise to unlock the potential of transformational solutions in this emerging space to help global enterprises explore the art of the possible and accelerate their

Business 4.0™ journeys.”

“Artificial Intelligence coupled with 5G has the power to transform the world, simplifying and enriching our daily lives. Qualcomm Technologies has been working persistently to achieve this transition by creating the essential components that will help enable the development of these exciting new experiences. We are thrilled to extend our long relationship with TCS into a more strategic collaboration through the Innovation Hub and explore new and innovative use cases of 5G technologies and AI relevant to India and enterprises across the globe,” said Rajen Vagadia, Vice President, Qualcomm India Private Limited and President, Qualcomm India & SAARC.

 [Click here to return to Contents](#)

## ***TCS Launches Microsoft Business Unit to Help Enterprises Accelerate their Business 4.0 Transformation Journeys***

20 November 2019

Tata Consultancy Services announced the setting up of a new Microsoft Business Unit (MBU). Offering a full complement of services and solutions around Microsoft technologies, and catering to all stakeholders in the enterprise, the new unit will work with customers worldwide to accelerate their Business 4.0™ transformation journeys.

The new unit will leverage TCS’ deep domain knowledge across industries and global talent pool of nearly 50,000 engineers trained on Microsoft technologies, to help customers leverage the power of AI, automation and cloud to enhance customer experience, re-imagine employee empowerment, optimize operations and spur innovation. Moreover, TCS’ unique Location Independent Agile model will help customers accelerate their transformation journeys and achieve superior outcomes with unmatched speed to value.

For customers looking to scale up their innovation efforts, the new unit will provide a ready means of plugging into TCS’ extensive co-innovation ecosystem and pushing the boundaries of possibilities using the full stack of Microsoft technologies to establish competitive differentiation.

TCS’ Microsoft Business Unit will be led by Siva Ganesan. With TCS for more than 29 years in various global leadership roles, he has built and run high growth businesses such as the Assurance Services Practice and, more recently, the Travel, Transportation and Hospitality Business Unit.

“We have been partnering customers across the world in their growth and transformation initiatives, leveraging our deep contextual knowledge of their businesses to creatively harness the power of new technologies, Location Independent Agile and our Machine First™ Delivery Model to reimagine their businesses and foster greater innovation,” said Krishnan Ramanujam, President, Business and Technology Services, TCS. “Our latest business unit dedicated to Microsoft technologies will deliver enhanced experiences and outcomes to our customers globally.”

Jean-Philippe Courtois, Executive Vice President and President, Global Sales, Marketing & Operations at Microsoft Corp. said, “Entire industries are transforming, and today every company is becoming a software company. Through this expanded partnership with TCS, we are significantly increasing our ability to enable our customers to take advantage of the opportunities to transform and accelerate into the digital era.”

“To remain competitive and achieve our ambitious growth targets, our vision was to rationalize,

consolidate and digitally transform part of our sales processes across all our geographies into a unified, nimble, online and efficient system based on Microsoft Business Applications Platform. Despite the massive scale and complexity, TCS demonstrated exceptional transformation capabilities during this implementation," said Robert Leindl, CIO, Infineon. Congratulating TCS on the formation of MBU, he said Infineon is looking to continue the partnership with TCS to harness the power of Microsoft Dynamics to deliver elevated user experience, accelerate sales cycle, business agility and overall competitiveness in the market.

Dipak Sahoo, Regional Head of IT, Generali Asia, said, "Generali Asia has partnered with TCS to modernize our Regional Data & Analytics platform, by leveraging the power of Azure. Leveraging TCS' deep Azure and domain capabilities, this program has established the foundation for self-service BI, increased automation and intend to bring real time availability of data to stakeholders for improved decision making."

TCS is a Microsoft Gold Competency Partner, signifying the highest-level in the Microsoft Partner Network community and with best-in-class capabilities to deploy Microsoft business solutions. Additionally, it is designated a Microsoft Azure Expert Managed Service Partner, recognizing TCS' proven expertise in delivering the highest quality of service on Azure.

 [Click here to return to Contents](#)

### ***Trimble, Hilti and Boston Dynamics Partner to Explore the Use of Autonomous Robots in Construction***

20 November 2019

Trimble Hilti and Boston Dynamics announced today a collaboration to explore the integration of Trimble's and Hilti's construction management software solutions, GNSS technology and reality capture devices with Boston Dynamics' Spot Robot platform.

Autonomous robots can play a significant role in construction, specifically in production and quality control workflows by enabling automation of routine and tedious tasks, reducing workload and improving safety. The companies will collaborate to develop a "proof-of-concept" solution. Equipped with Trimble's and Hilti's reality capture devices as its payload and directly communicating with a cloud-based construction management application, the Boston Dynamics Spot Robot will be able to provide consistent output, deliver improved efficiency on repeatable tasks and enable up-to-date as-built data analysis. The autonomous, terrain-agnostic capabilities support the dynamic nature of the construction environment, enabling the robot to by-pass obstacles and maintain its defined path to support routine tasks such as daily site scans, progress monitoring, asset management and remote support. Multi-directional communication between the robot, Trimble's and Hilti's payloads and the cloud application support a continuous flow of information and closes the loop for the construction environment.

"Utilizing robots for routine tasks in hazardous environments to improve safety, efficiency, and data capture consistency is part of our digital transformation vision" said Aviad Almagor, senior director for Mixed Reality and Brain-Computer Interface (BCI) at Trimble. "We are excited for this latest collaboration and looking forward to the potential integration of our hardware and software solutions with the Boston Dynamics' Spot Robot to enhance field-oriented workflows, reduce amount of rework and facilitate on-site tasks."

"Trimble's and Hilti's domain knowledge, market leadership and technologies are a great fit for our robotic platform," said Michael Perry, vice president of Business Development at Boston Dynamics.

"Deploying an integrated solution in the real-world environment doing dirty and dangerous work, before, during and after the construction stage is a common vision for the three companies, which can help drive the transformation of the construction industry."

[!\[\]\(d84e7ea36f695d92cb39ec32c307ac93\_img.jpg\) Click here to return to Contents](#)

## Events

### ***3D Systems Unveils New Production Solutions; Ushers in Era of True 3D Production at Formnext 2019***

19 November 2019

At Formnext 2019, 3D Systems is showcasing its new, application-specific production solutions for the Healthcare, Aerospace, and Automotive industries. The company has the unique ability to architect solutions specific to customers' needs through a combination of its breakthrough materials, hardware platforms, software, and professional services - creating a path forward to integrating additive into traditional production environments. As a result, manufacturers are able to achieve design freedom, increase agility, scale production, and improve overall total cost of operation.

"In 2016, I shared my vision and strategy for how 3D Systems would make 3D production real. It would require customer collaboration and innovation, with the experience and expertise of our people as a driving force," said Vyomesh Joshi, president and chief executive officer, 3D Systems. "Today, we're executing on that strategy to position 3D Systems as the premier production solutions company in the industry. In fact, we have already surpassed 175 million production parts created by our customers, and we are on our way to 200 million parts created in 2019 using 3D Systems' solutions."

3D Systems' customers realizing the benefits of the company's production solutions span a range of industries including Healthcare, Dental, Aerospace, Automotive, and Durable Goods. Some examples include:

Align Technologies incorporates 3D Systems' technology to help produce more than 430,000 Invisalign aligners per day – the single highest volume additive workflow in the world.

NuVasive – an orthopedic device company – that capitalized on 3D Systems' production solutions to move from design to market of Modulus® (now a full implant line) in just over one year.

Delft Aerospace Rocket Engineering team at the University of Delft partnered with 3D Systems to develop an innovative rocket exit nozzle as a single part, 3D printed in titanium. Firing tests of the completed nozzle proved to be successful, placing them one step closer to achieving their mission of sending a rocket into space.

#### **Production Solutions Accelerating Adoption of Additive Manufacturing**

3D Systems partners with customers to help them progress through their additive manufacturing journey and accelerate the adoption of additive within their existing production environments. This process begins with the customer's application in mind; designing the best possible solution to achieve their needs and successfully address challenges.

3D Systems encourages customers to begin their additive manufacturing journey by engaging with one

of its Customer Innovation Centers (CIC). There, a customized production workflow solution will be designed to accelerate the development of advanced applications by providing customers with access to bespoke solutions, domain expertise, and state-of-the-art technology. The process begins with the company's software as the core to the overall solution. Customers will be able to scan and digitize solutions – if digital files do not exist – and then prepare their CAD file to optimize it for 3D printing. This preparation step includes importing part data, orienting the part on the build plate, optimizing the geometry and creating optimal supports to ensure the final part matches the design intent. From this point, the part is created using 3D Systems' additive manufacturing hardware platforms. After printing, it is post-processed and 3D Systems' software comes into play again to inspect the part.

[!\[\]\(34b4f260a8587d2e97eeaee361cc357b\_img.jpg\) Click here to return to Contents](#)

### ***3D Systems Continues to Announce New Materials - Opening New Production Solutions for Broad Industry Adoption***

20 November 2019

At Formnext 2019, 3D Systems is announcing general availability of VisiJet® M2S-HT90 - the latest enhancement to its portfolio of engineering-grade plastics for the ProJet® MJP 2500 Plus. This announcement has followed on quickly after 3D Systems' other recent materials announcements. In September 2019, the company announced Figure 4™ Production Black 10 (PRO-BLK 10), Figure 4 HI TEMP 300-AMB, among other production materials. This newest material is 3D Systems' 10th material to launch since September, and the company continues to open new production solutions for broad industry adoption.

VisiJet M2S-HT90 provides best-in-class heat deflection temperature of 90°C while meeting USP Class VI 93 standards. This strong, rigid, transparent material is designed for durable goods and automotive applications - ideal for functional prototyping of parts that operate in high temperature environments such as appliances, enclosures and housings, as well as testing parts or assemblies with heated fluids and gasses. Due to its biocompatibility, VisiJet M2S-HT90 is also optimal for healthcare applications including medical devices that include fine features and small internal structures designed for fluid flow.

Biomedical engineers at Antleron (Leuven, Belgium), an R&D company with a mission to enable living therapies, are using 3D Systems' VisiJet M2S-HT90 to develop bioreactors as part of their personalized manufacturing 4.0 strategy. "Antleron is excited to be here in 3D Systems' booth at Formnext to showcase - for the first time - what is in store for next-generation medical applications with the ProJet MJP 2500 Plus printer and VisiJet materials," said Jan Schrooten, chief executive officer, Antleron. "The combined mechanical and biocompatible properties of 3D Systems' VisiJet M2S-HT90 are enabling us to accomplish innovations in cell biology – moving from 2D to 3D and beyond. We now can rapidly translate our 'out-of-the-box' cell processing ideas into new ways to develop products for life science applications."

In addition to VisiJet M2S-HT90, Figure 4 PRO-BLK 10, and Figure 4 HI TEMP 300-AMB, the company also announced six additional materials for a range of applications including: Figure 4 EGGHELL-AMB 10, Figure 4 FLEX-BLK 20, Figure 4 MED-AMB 10, Figure 4 MED-WHT 10, Figure 4 TOUGH-BLK 20 and Figure 4 RUBBER-BLK 10.

3D Systems' also recently announced on November 1 that its new biocompatible denture material, NextDent® Denture 3D+, received 510(k) clearance from the U.S. Food and Drug Administration (FDA). The combination of this new dental 3D printing material, NextDent 5100 dental 3D printer, and industry-leading intra-oral scanning and dental software solutions yields an end-to-end



digital dentistry solution. As a result, customers can expect more precise, predictable results than through analog techniques - enabling more efficient, cost-effective creation of dentures for patients.

“At Formnext 2019, 3D Systems is showcasing application-specific, production workflow solutions that help companies design and create new and improved products, while gaining efficiencies,” said Vyomesh Joshi, president and CEO, 3D Systems. “We collaborate with our customers to design the solution that best fits their needs. This begins with understanding their application, and then selecting the material which will enable production of their desired part. Blending our expertise in materials science, application engineering, 3D printing technology and software allows 3D Systems to deliver unprecedented solutions that keep them ahead of the competition.”

 [Click here to return to Contents](#)

### ***Autodesk & ANSYS at AU: Embracing the Opportunity for Better in Design & Manufacturing***

20 November 2019

This week during Autodesk University’s Design & Manufacturing keynote, Autodesk CEO Andrew Anagnost and ANSYS CEO Ajei Gopal will join me on the stage to discuss their shared vision for the future of our industry.

Anagnost and Gopal will discuss a new collaboration between our companies aimed at advancing simulation technologies within design and manufacturing software platforms to help professionals around the globe conceptualize, design and innovate with newfound freedom and agility. Autodesk and ANSYS are committed to improving accessibility, interoperability and the user experience to establish a brighter future of work for people who design and make things.

The partnership is being built with a variety of universal industry challenges in mind, addressing everything from increased customer demand for personalized solutions to eliminating silos in the design-to-make process. With this connected workflow, users can smoothly utilize Autodesk Fusion 360 alongside ANSYS Mechanical and accelerate the time it takes to go from idea to production. Together we are making it a priority to provide cost-effective and sustainable solutions, allowing customers to rapidly adapt and keep pace with market trends and new technologies.

One of the opportunities that I’m most excited about is the impact this endeavor will have on generative design. The new workflow will allow users to simultaneously create multiple design options using generative design in Fusion 360 for a specific set of functional requirements, materials, and manufacturing criteria, then continue to explore performance across a wider range of operating conditions and environmental factors using ANSYS Mechanical. Users can take advantage of the new workflow with either a standalone subscription to Fusion 360 or via our full Product Design and Manufacturing Collection, and a license to ANSYS Mechanical.

“As the market leader in simulation, ANSYS enables customers across industries to develop the most amazing products imaginable,” Gopal said. “We believe in an open ecosystem that allows our customers to make the right business and technology decisions for their unique needs. This technology and API partnership will help customers seamlessly move between Autodesk and ANSYS products – and further our vision of an open ecosystem.”

“It’s time to truly embrace the opportunity for better, and the only way to accomplish that is to look beyond our own company and collaborate with our industry peers and partners,” noted Andrew Anagnost, president and CEO of Autodesk. “Like ANSYS, we’re ultimately focused on delivering value, along with improved experiences and outcomes, to set up the next generation for success.”

See below for an early look at what some Autodesk and ANSYS customers are saying about the collaboration:

“At Cornell University, we are educating and training the next generation of world-class engineers — our students will someday revolutionize industries,” said Lance Collins, Joseph Silbert Dean of Engineering. “We use both ANSYS and Autodesk solutions in our classrooms and are thrilled to see the two companies collaborating. Beyond discovering both products, our students will learn to use them together to achieve stronger results and – ultimately – innovate faster.”

Hege Kverneland, CTO of National Oilwell Varco, offered, “NOV is actively driving innovation in the Oil & Gas industry. To help innovate and gain efficiency in the product development and manufacturing process we leverage technologies such as those from Autodesk and ANSYS. We are eager to see the active collaboration between industry leaders, Autodesk, and ANSYS, to break down the barriers between design and engineering. Such an initiative will improve our team’s ability to accelerate the development and validation of new designs and leverage new manufacturing methods.”

 [Click here to return to Contents](#)

### ***CEAD and Siemens bringing new AM Flexbot solution to Formnext***

18 November 2019

CEAD, a Netherlands-based provider of large-scale, composite 3D printing, and Siemens are expanding on an existing collaboration and will be jointly presenting their latest development, the AM Flexbot, at Formnext next week. The new system is a modular, hybrid technology for precision, large-scale parts. Specializing in polymer and fiber-reinforced 3D printing, CEAD is perhaps best known for its CFAM Prime 3D printer. Based on its patented Continuous Fiber Additive Manufacturing (CFAM), the gantry-based 3D printer is capable of printing fiber reinforced parts measuring up to 4 x 2 x 1.5 m at rapid rates (average of 15 kg/hour). The CFAM Prime, which was named as a finalist in the JEC Innovation Awards, is powered and controlled by Siemens’ Sinumerik 840D sl, which enables accurate deposition movement.

The new AM Flexbot is also controlled by Siemens’ technology. In this case, however, it integrates Sinumerik CNC with Run MyRobot/Direct Control as well as a Comau robot arm and CEAD’s single screw extruder unit. The hybrid machine, with both additive and CNC components, can build parts up and achieve higher precision by milling the print down to its final dimensions.

According to the partners, the AM Flexbot’s robot kinematics are fully integrated into a CNC system with the Comau and Sinumerik RunMyRobot/Direct Control solution. The system is thus able to deposit material with a degree of precision and then have the part milled to an ever greater degree of accuracy. CEAD is also reportedly planning on adding other features to the new solution as well.

“By using Siemens’ Sinumerik Run MyRobot /Direct Control together with a Comau robot arm in our latest solution, we are able to deliver a modular system scalable to fit our customer’s needs as many different functions can be added at any time,” said Lucas Janssen, Co-Founder and Operations Director at CEAD. “We are very pleased to work with Siemens and their reliable products.”

As mentioned, the new system will be on show at Formnext next week. After the event, Siemens plans to install a CEAD 3D printing system at its Additive Manufacturing Experience Center (AMEC) in Erlangen, Germany. There, the system will demonstrate to clients and potential clients the potential of large-scale 3D printing with thermoplastic composites.

“We are delighted showing an industrial solution from CEAD for multi-axis composite printing combining Comau’s robotics, CEAD’s Additive Manufacturing and our best in class CNC technology,” added Dr. Karsten Heuser, Vice President Additive Manufacturing at Siemens Digital Industries. “The end-to-end offering integrated with our Digital Enterprise portfolio addresses an important need for large scale, highly flexible and economically efficient industrial applications at the same time.”

 [Click here to return to Contents](#)

### ***Infor China Kicks Off Digital Innovation Forum for Manufacturing Industry in Guangzhou***

20 November 2019

Infor has successfully held Infor 2019 Digital Innovation Forum for Manufacturing with the theme of “Exploration, Interconnection, Innovation” recently. Nearly 180 attendees were at the forum where Infor shared its corporate strategy, innovative product solutions and end-user case studies with guests, helping to contribute to digitalization uptake in Chinese manufacturing companies.

Digital transformation has become a global trend. In this process, digital and innovation capabilities are the core elements, and lead traditional enterprises to face changes in terms of industry structure, industry chain and business model, thus accelerating the transformation and upgrading of traditional industries. Taking the manufacturing industry as an example, the business model of Chinese enterprises has gradually shifted from original equipment manufacturing (OEM) to independent research, development and design, and achieved steady growth in product value and profitability through mastery of new technology and advanced digital management. Therefore, digital transformation is also in full swing throughout enterprises across China. In the process of transformation, traditional enterprises need to deeply understand the essence of digitalization, and use digital tools to achieve breakthrough innovations in management mode and business model. Based on this, companies need to select the right management software to respond agilely to the changing market and keep up their competitive advantage.

Becky Xie, Infor vice president of sales for Greater China and Korea, and Chong Lu, Infor director of business consulting for Greater China and Korea, shared global digital strategy trends and the latest developments at Infor, including an analysis of the blueprint of the company's business model and future growth in the digital era.

The summit also invited partners and customers to discuss ways to leverage digital tools to continuously innovate and optimize business management models, and also showcased the advantages of Infor solutions in helping companies grow through various use cases.

“Infor LN and Infor EAM help standardize business processes and data, achieving synchronous production system, real-time manufacturing traceability, and business and finance integration. These fully meet the planning objectives of Dongfeng Motor’s 'Digital Equipment' project. With the roll-out of the new Infor ERP solution, the entire business process of Dongfeng Motor has been greatly optimized,” said Mingqiang Fang, chief officer of IS planning and management, Dongfeng Motor Co., Ltd.

“In today's enterprises, the information department is far from being the IT department in the traditional sense. Rather, it could affect business development, providing the basis for decision-making and helping enterprises complete their strategic transformation. Take the manufacturing industry as an example: The market is changing rapidly, and manufacturing companies have to speed up the pace to master new tools. Infor's deep expertise in micro-verticals and innovative technologies can help companies realize

customer needs and create more precise, purpose-built solutions to ensure the competitive advantage of the industry. At present, Infor's cloud-based and industry-specific enterprise solutions boast of many high-profile use cases around the world. I believe that Infor will also become a good partner for Chinese manufacturing companies, and help them realize successful IT transformation," Becky Xie said.

 [Click here to return to Contents](#)

## Financial News

### ***ESI Announces Third-quarter 2019 Sales***

20 November 2019

ESI Group, Paris, France today released its sales for the third quarter of 2019 (period from August 1 to October 31, 2019).

ESI Group provides mission critical software and solutions to leaders in several industries including Automotive, Aerospace, Heavy Industry, Energy and Defense. Specialist in material physics, ESI has developed a unique proficiency in helping industrial manufacturers replace real prototypes with virtual prototypes, allowing them to virtually pre-certify, manufacture, and maintain an asset, thus boosting both asset and organization performance.

#### 9-month comparison

Over the first nine months of the 2018/19 financial year, ESI Group recorded sales growth of +2.7%, supported by a favorable currency impact (-0.1% cer i.e. constant exchange rates).

Revenues from License sales increased by +2.6% (-0.5% cer), representing 74% of total revenues. The rental installed base increased by +5,7% supported by the strong recurrence of the Licenses activity (82,5%). The New Business showed a slight cyclical decrease. The growing relative weight of recurring revenue increases both the predictability and sustainability of the business.

Sales of Services (Consulting) increased by +2.9% and represented 26% of sales over the period. Such consulting engagements habitually drive subsequent implementation of Licenses for new or existing customers.

ESI Group's global value proposition and its ability to operate in global markets is a highly valuable competitive advantage in supporting its clients. Over the first nine months of the year, sales growth was achieved in all regions: Americas (+6.2%), Asia (+3.0%) and EMEA (+0.9%).

#### Third-quarter year to year comparison

Q3 2019 sales were nearly stable (+2.1%, -0.9% cer), compared to a strong double-digit growth in Q3 2018. The change breaks down into stable License sales (+0.5%, -2.9% cer) and higher Services (+6.6%, +4.5% cer).

Cristel de Rouvray, Chief Executive Officer of ESI Group, comments:

"We continue to strengthen our business model based on a high revenue recurrence. We generate ever more synergies on our installed base, particularly with our largest customers. These long-standing partners, like Renault-Nissan and Volkswagen, face their own transformation juggling between innovation and productivity: It's all about their performance! In this context, they reaffirmed the strong strategic dimension of our support in recent months. Our operational transformation is in full swing and continues to be one of my top priorities. We are confident in our ability to grow over numerous years to come and return to a stronger dynamic of profitable growth."

 [Click here to return to Contents](#)

## Implementation Investments

### *Autodesk and Airbus Demonstrate the Impact of Generative Design on Making and Building*

20 November 2019

Both Autodesk and Airbus are dedicated to pushing the boundaries of advanced technologies in the pursuit of innovation and a more sustainable world. So, it should come as no surprise that the two companies are teaming up to fundamentally change how things will be manufactured and built in the aerospace industry of the near future.

Today at Autodesk University in Las Vegas, Airbus revealed details of how it's using generative design to tackle complex engineering, architectural and systems challenges. Solving those challenges will enable a smarter, more efficient, and more economical business, while better catering to the needs of its workforce and with less negative impact on the environment.

See how generative design is inspiring the future of space exploration.

As part of an ongoing effort, Airbus is reimagining multiple structural aircraft components, applying Autodesk generative design to develop lighter-weight parts that exceed performance and safety standards. In an industry where less weight equals less fuel consumption, using this approach presents a huge opportunity to reduce the adverse effects of air travel on the environment.

Airbus is also looking beyond airplane parts to the processes and spaces for making them, employing generative design for the layout of adaptable, DGNB and LEE certified factories with streamlined logistics to facilitate improved employee work conditions and greater productivity.

#### Bionic Partition 2.0

Back in 2015, Airbus unveiled its first generative design proof-of-concept. The "bionic partition" is a next-generation version of the wall and jumpseat support structure that divides the passenger compartment from the galley of a plane.

The initial design was promising – 45 percent lighter than the traditional part yet just as strong. Airbus estimated the new design approach could save nearly half a million metric tons of CO2 emissions per year if rolled out across its backlog of A320 planes.

Originally the intention was to fabricate the new partition using metal additive manufacturing. But due to a range of variables in the manufacturing market and materials requirements, it became clear that an alternative fabrication process would be necessary. Fortunately, Autodesk generative design technology has continued to mature and is now capable of optimizing for multiple advanced manufacturing

techniques during the design phase of product development.

For Airbus, this meant they could use generative design to create a plastic, 3D-printed mold for the partition, and then cast the part in an alloy that's already qualified for flight. Bionic partition 2.0 is just as strong and light as its predecessor and can be fabricated at scale more affordably.

“The revised design makes the bionic partition much more viable for production. The first prototype is in production, which we hope to finish before the end of the year,” said Bastian Schaefer, the designer at Airbus who has been leading the collaboration with Autodesk. “The process and technology have evolved to where we can now manufacture multiple units at a considerably lower cost.”

Airbus is in the process of utilizing generative design to rethink other structural aircraft components, including the leading edge of the vertical tail plane (VTP) of the A320. The purpose of a VTP (or vertical stabilizer) on an airplane is to provide directional stability and reduce aerodynamic inefficiency caused by side-to-side movement.

### Factory of the Future

Positive responses to what generative design could do for aircraft components led Airbus to explore what the technology might do for other parts of its business. Earlier this year, the team began thinking about how generative design could be applied to the building design, layout and workflows of its factories.

First, they looked at an assembly line for A350 wings where a significant amount of human labor and several different tools are required. The objective was to figure out how a single factory bay could be configured for multiple wing variations from the different generations of the A350, with optimal tool locations and travel paths, and minimal congestion and bottlenecks.

A video shows the Airbus wing factory logistics flows and configuration with generative design.

Based on the success of that pilot project, Airbus is now turning its attention to an entirely new factory for assembling engines, to be built next year on an empty plot of land at its campus in Hamburg, Germany. The goal is to ultimately assemble engines more quickly with more efficient logistical flows and a more content workforce, in a factory that is expandable and adaptable to meet Airbus' needs both today and in the future.

The team identified 10 constraints for evaluation by the generative design system, some weighted more heavily than others, such as efficiency and cost.

Generative design provided two paths that Airbus is currently considering: a bigger building with an unconventional footprint, or the same factory elements optimized to fit into a smaller rectangular footprint.

“Generative design is helping us create a more sustainable architectural design that better accounts for critical human factors and work conditions,” said Schaefer. “It has also expanded our way of thinking and our approach to design by overcoming preconceived notions and blind spots. Whichever design we choose, we know the factory will function more efficiently and will be less costly to build.”

For Airbus, it appears the future of making and building has arrived.

 [Click here to return to Contents](#)

*Autodesk and Virgin Hyperloop One Announce Joint Effort to Explore Advanced Route Optimization, Transportation Design, and Construction Technology*

21 November 2019

[Autodesk, Inc.](#) and [Virgin Hyperloop One](#), a leader of hyperloop technology and the evolution of how the world moves people and goods, announced an alliance to explore new opportunities in extending the value of [Building Information Modeling](#) (BIM) for transportation route optimization and improved digital engineering and construction workflows.

“Virgin Hyperloop One is pushing the boundaries of transportation efficiency,” said Josh Giegel, Co-Founder and Chief Technology Officer of Virgin Hyperloop One. “Together, with our global teams and shared customers, Virgin Hyperloop One and Autodesk will explore ways to optimize hyperloop routing and operations – in a way that not only propels the hyperloop industry forward, but also has ancillary benefits to more traditional forms of transportation such as railway and highway route optimization.”

Virgin Hyperloop One’s visionary technology features depressurized tubes that carry on-demand passenger or cargo pods at speeds of up to 670 miles per hour, powered by magnetic-levitation and electric propulsion. Its depressurized tube infrastructure eliminates the impacts of air-drag and friction, requiring less energy and cost to operate, and allows travel to occur at exceptionally high speeds.

“Autodesk technology is in the DNA of much of the built world everywhere – and I mean everywhere,” said Nicolas Mangon, Vice President of AEC Business Strategy at Autodesk. “With the global population expected to hit 10 billion by 2050, the way infrastructure is designed and constructed, and how we move people and goods, must change. We have a choice to either accommodate the expected growth or become overwhelmed by it. I believe Virgin Hyperloop One and Autodesk together will help to tackle the challenges ahead.”

Since 1984, Autodesk continues to be a recognized leader in BIM and an innovator of technology used by architects, engineers, and construction teams globally. Autodesk technology connects all stakeholders on infrastructure and building projects from design through construction to operations and maintenance. Autodesk technology has been used on some of the most complex building and infrastructure projects on the planet, including [Pan Borneo Highway Sarawak](#), [New York Metropolitan Transit Authority’s East Side Access](#), the [San Francisco Airport Terminal 1](#) redevelopment, Dubai’s [Museum of the Future](#), and the world’s tallest skyscrapers including the [Shanghai Tower](#), and many others around the world.

By bringing in the context of the real world into the design and engineering phases of a project, Autodesk and Virgin Hyperloop One hope to more efficiently calculate costs across the entire lifespan of a project – design, construction, operations, and maintenance.

More advanced design and engineering tools may allow for simpler optioneering. For example, quickly determining whether a hyperloop system should be placed adjacent to an existing highway or beneath the ground or above – and how these decisions may impact the adjacent cities or communities.

Virgin Hyperloop One currently leverages many Autodesk solutions in design, including Civil 3D, InfraWorks, Revit and Inventor. Virgin Hyperloop One is also adopting Autodesk’s BIM 360 [project delivery platform](#) and global cloud collaboration tools.

 [Click here to return to Contents](#)

*Helly Hansen Innovates with Centric Software*

21 November 2019

Helly Hansen was founded in 1877 in Norway by sea captain Helly Juell Hansen and his wife Marguerite, who discovered an effective way of keeping sailors and fishermen dry and warm in the harsh Norwegian weather. Today, Helly Hansen gear is worn and trusted by professionals in sailing, skiing, mountaineering and on worksites, as well as nature-lovers across the world who enjoy outdoor pursuits.

Ferdinand Diener, Process and Quality Manager, reflects on the challenges that faced the rapidly growing business, particularly the difficulties with version control and a lack of integration across multiple platforms:

“We struggled to keep up with growth and our workforce found it difficult to keep to deadlines and follow process steps. Even with another Product Lifecycle Management (PLM) in place, people were still using Excel spreadsheets and constantly making updates to versions in multiple places.”

Today, with the single source of truth provided by [Centric’s Outdoor PLM solution](#), Helly Hansen is experiencing improved visibility, traceability and speed in product development, making it possible to focus on the innovation and quality that distinguishes the brand.

“Because Centric PLM is so fast and easy to use, people are able to do a more thorough job, create more products and improve quality oversight. We’re a quality-driven, innovation-focused brand, so this is critical.”

Helly Hansen sees a bright future with Centric, “we will continue growing together. Centric is molding the system around us, and we are molding around the system.”

 [Click here to return to Contents](#)

### ***SAP and Mercedes-Benz EQ Formula E Team Power Up Their Business Performance Partnership***

19 November 2019

SAP SE announced that the Mercedes-Benz EQ Formula E team is using the SAP HANA platform and the SAP Sports One solution to prepare for season six of the ABB FIA Formula E Championship.

The Mercedes-Benz EQ Formula E team will make its debut at the first race of the season in Diriyah, Saudi Arabia, on November 22, 2019.

“Ever since SAP became our official business performance partner in May 2018, our collaboration has proven to be an exciting opportunity for both brands to explore together and jointly develop innovative technologies,” said Ian James, team principal, Mercedes-Benz EQ Formula E Team. “With the start of season six of the ABB FIA Formula E Championship, we are thrilled to put this technology into practice.”

#### **Implementation of SAP S/4HANA Across the Team**

SAP and the Mercedes-Benz EQ Formula E team use SAP S/4HANA to develop customer-specific technology solutions that help the team analyze large volumes of data and monitor overall business performance. With the complexities, technology and number of parts required to build a Formula E car, SAP is enabling the team to increase efficiencies comprehensively, from product procurement and supplier evaluation to performance monitoring. In racing, everything is set against the clock. The business and operational side of racing is no different, with delivery dates and supply cycles of paramount importance to ensure the team is optimally prepared when it takes to the track at each race.

#### **Optimizing Team Performance with SAP Sports One**



The development and implementation of SAP Sports One is another key product of the partnership between SAP and the Mercedes-Benz EQ Formula E team. SAP Sports One helps clubs and organizations digitalize sports performance management by coordinating all administrative, training and team management as well as talent development and medical processes.

In a sport like Formula E, where winning can depend on a tenth of a second, optimizing every aspect of team performance – including human performance – is essential. Traveling around the globe and racing at speeds of 175 mph is tough on the mechanics, engineers, data analysts and drivers, all of whom must remain perfectly focused. The SAP Sports One solution helps them monitor, understand and act on human performance data input through wearable technology, including fitness trackers, that collect an array of biometric data displayed on an easy-to-read dashboard. This customer-specific solution gives the team greater visibility into drivers' health, analyzing sleep deprivation, determining jet lag, and measuring hydration levels, to help ensure the team operates at the highest possible level.

### A Future-Oriented Technology Partnership

SAP's involvement with the Mercedes-Benz EQ Formula E team is a combination of conventional marketing and technological partnership. SAP provides access to its innovative technologies, and its brand is featured on the vehicles and drivers' clothing.

“SAP is excited about the debut of the Mercedes-Benz EQ Formula E team, and we are proud to be an integral part of the team as its Official Business Performance Partner,” said Michael Kleinemeier, Member of the Executive Board of SAP SE, SAP Digital Business Services. “Mercedes-Benz and SAP have been trusted business partners for many years, with both companies fueled by a philosophy of driving innovation and advancing technology. Our collaboration with the Mercedes-Benz EQ Formula E team is now taking this partnership to a new level.”

Looking forward, SAP and the Mercedes-Benz EQ Formula E team will evaluate further technology use from the perspective of customer experience and experience management business. As a brand-new team with a start-up mentality, the Mercedes-Benz EQ Formula E team benefits from the exciting opportunities SAP offers as it attends to growing its fan base. As part of the partnership, SAP will work with the team to understand its fan base better, including fans' interests, desires and experience.

 [Click here to return to Contents](#)

### ***Skystone To Build Tallest Modular Marriott Hotel With Autodesk Portfolio***

20 November 2019

New York City construction company Skystone is erecting the world's tallest modular hotel. When the doors of the new AC Marriott New York Hotel open to guests, the 168-room, 26-story hotel will represent another extraordinary, record-setting project by the global contractor.

Skystone is reinventing how buildings are constructed. Skystone is offering cost efficient, higher quality to developers in a compressed timeline with the added benefits of less waste, noise and congestion-causing shipments and staging of materials versus traditionally constructed projects. Skystone is manufacturing fully completed modular hotel rooms including all finishes, furniture and equipment, in a manufacturing facility in Poland, and shipping them to New York City on a single vessel.

Steel modules are created the controlled environment of a factory, resulting in greater efficiency.

At Autodesk University 2019, Skystone shared its not-so-secret recipe for success in going for “tallest” this time: Autodesk solutions for end-to-end project delivery. From AutoCAD and Revit for design to Assemble for preconstruction, and BIM 360 for construction management, Autodesk is proud to be

part of the DNA of the soon-to-be tallest volumetric modular hotel in the world, and future Skystone projects worldwide.

Skystone sought a fully-connected platform to keep all its project data – and there’s a lot of it – and its teams connected throughout the project from design conception through completion. Skystone turned to Autodesk’s BIM 360 platform. While Skystone wasn’t always using Autodesk construction software, the company ultimately saw the benefits of using a single platform rather than its old software tools, which offered limited, single-point solutions for each part of the project.

How do we feel about being the tech partner behind Skystone’s project? Pretty darned proud.

Once the modular rooms arrive in New York, they’ll be loaded onto flatbed trucks, hauled across the Brooklyn Bridge in one impressive spectacle you might otherwise expect from a Barnum & Bailey’s Circus caravan, and lifted into place by crane, one by one. Just imagine how the builders of the Brooklyn Bridge back in 1883 would react to the cavalcade of modular rooms crossing the bridge.

What are the benefits of modular construction? A modular approach makes a construction process more like a manufacturing one, taking some of the work away from the unpredictable environment of a construction site and making it more predictable, like a well-run factory. This means fewer delays due to weather, less foot traffic at the job site and less risk of injuries. It also means higher quality and quicker delivery for developers.

The idea of modular isn’t new. In fact, Sears, Roebuck, and Company sold modular homes more than 100 years ago, from 1908 to 1940. But times have changed, and the construction industry is quickly evolving from modular homes and traditional analog methods to commercial towers and digital processes. Rather than building outside in inclement weather – heat, snow, rain, wind – building is now taking place indoors, which improves safety, quality and predictability. This approach, which we liken to traditional manufacturing processes, is called industrialized construction.

As the global population increases and cities become even more crowded than they are today, we need to build things faster. The convergence of manufacturing and construction is redefining the future of making, changing the way the industry builds. In Skystone’s modular approach, buildings are built better and nearly 25 percent faster, and workers are able to work more efficiently in a controlled environment on the front end, rather than work harder on the back end.

However, it’s the hotel developers and franchisees and the brands they work with to flag their properties – such as Marriott International – that are encouraging a movement toward modular. According to a Marriott International executive, modular makes sense because it helps to deliver a high-quality product with less on-site waste and a better guest experience, due to more robust soundproofing.

With that in mind, Marriott International set an ambitious goal of taking a modular approach to construction for 25 percent of its select-service-hotel pipeline in North America. Marriott International is a catalyst and champion for educating the hotel development and franchise world about the benefits of modular and is even providing financial incentives for eligible modular projects.

When the parade of disassembled hotel rooms traverses the Brooklyn Bridge, we’ll be there physically, gazing in marvel, and also be present in the digital DNA of each component.

We look forward to tracking Skystone’s progress and helping them build the world around us – one modular room at a time.

 [Click here to return to Contents](#)

## ***Tesco Selects Centric Retail PLM***

18 November 2019

Tesco, a leading UK retailer of consumer goods, has partnered with Centric Software®. Choosing to implement Centric's market-leading Retail Product Lifecycle Management (PLM) solution, Tesco aims to share information more efficiently across internal teams and with external suppliers. "With Centric Retail PLM in place, we expect to experience a much more simple, efficient way of working. We want to enable our colleagues to trust the data they work with and collaborate in real time" comments the Tesco PLM Programme Team. Chris Groves, President and CEO of Centric Software says of the partnership: "We are very excited to announce that Tesco has selected Centric Retail PLM. We are looking forward to working with Tesco to implement Centric for the F&F teams and suppliers and beginning a productive partnership."

 [Click here to return to Contents](#)

## ***VEMAG opts for CONTACT Software: Innovations repackaged***

22 November 2019

VEMAG is a leading manufacturer of machines for the food industry. Growing demands from the grocery sector and consumers as well as strict legal requirements require fast and flexible innovation processes.

The food industry is one of the largest in the world. The increasing demand for processed food and individual and sustainable packaging as well as strict packaging regulations challenge the industry.

VEMAG Maschinenbau GmbH, based in Verden, Germany, is one of the leading machine manufacturers for filling, portioning, dividing, forming and depositing pasty foods, doughs and masses. 650 employees develop and produce highly industrialized applications and modular production lines.

In order to further increase its competitiveness, the company opts for CIM Database PLM from CONTACT Software and thus replaces its previous system. As a central data hub, CONTACT's solution ensures end-to-end processes along the entire product development process. The focus is on valid Multi-CAD data management with seamless integration into VEMAG's existing ERP infrastructure. In the future, a high degree of automation will reduce the administrative effort for documents, parts lists and change processes.

"CIM Database supports the agility we need in this dynamic market," emphasizes Matthias Mach, Manager Engineering Support at VEMAG.

The next phase is the expansion of CIM Database to include state-of-the-art processes for the planning, control and execution of projects such as hybrid project management.

 [Click here to return to Contents](#)

## ***YKK AP Selects the Aras Platform to Support Sustainable Business Growth***

22 November 2019

Aras announced that YKK AP, manufacturer of a diverse line of architectural products, has selected the Aras platform to support sustainable business growth through variation management, code management,

and project management.

Prior to selecting the Aras platform, YKK AP had managed its product development process using a heavily customized packaged system that could not adapt to user requests for shorter development cycles or maintain a high standard for data quality—factors that YKK AP knew would be important to continue innovating in the future. In order to successfully manage product information across the lifecycle and give itself the advantages needed to stay ahead of the competition, YKK AP required a system that could support current product development and adapt to new business environments as current processes evolve and new ones are created.

YKK AP selected the Aras platform for its advanced architecture, flexibility, upgradeability, and value of the subscription model. Unlike its previous system, Aras' platform may be customized to suit YKK AP's requirements while also including future upgrades, reducing the effort required to make business changes and ensuring that YKK AP will always have access to the latest software and innovations. This will provide YKK AP the opportunity to utilize its technology at a predictive cost.

“The business environment surrounding YKK AP continues to change drastically. Even with that, we plan to maintain our commitment to providing the highest quality product and services,” said Shintaro Sugama, Executive Vice President of Research & Development and Quality Assurance, YKK AP. “We needed a system that was able to grow and change with us, and felt that the Aras platform had the ability to support current needs, but also adapt to our future unknown business initiatives.”

 [Click here to return to Contents](#)

## Product News

### ***Altair Launches Design and Simulation Solution for Additive Manufacturing***

19 November 2019

Altair announced it has launched its new manufacturing simulation solution for additive manufacturing, Inspire Print3D.

Inspire Print3D provides a fast and accurate toolset to design and simulate the manufacturing process for selective laser melting (SLM) parts. The easy-to-use, advanced thermo-mechanical solution enables design engineers to develop parts ready for additive manufacturing. Designers can optimally generate designs that meet performance requirements as well as evaluate and easily modify critical process variables in one single immersive environment. Reducing expensive trial and error by simulating part build, cooling, cutting and springback, Inspire Print3D delivers designs having the fewest support structures, optimally oriented on any 3D printer.

“Inspire Print3D is the latest of our manufacturing tools, and we are very excited to present it to the design engineering and additive manufacturing communities,” said James Dagg, Altair chief technology officer, design and simulation solutions. “With Inspire Print3D, companies can now reduce development and manufacturing costs by minimizing part supports and reducing material usage, print times, and post-processing.”

Engineers working with Inspire Print3D will be able to quickly understand and correct potential defects

such as part deformation, delamination, and overheating before printing. Inspire Print3D will also allow engineers to create best performing designs for the SLM process by applying advanced thermo-mechanical simulation to reduce post-processing and avoid expensive trial-and-error.

Key features of Inspire Print3D include:

**Part and Support Design** – Generate support structures as part of the design process; interactively create and edit supports within the same environment as the designed part.

**Easy-to-Learn Environment** – The intuitive, process-driven user experience enables users to gain deep manufacturing insights quickly, driving faster and better design decisions.

**Printing Analysis** – Run the embedded thermo-mechanical solver to accurately simulate the entire printing process from building and cooling to cutting and springback.

**Defect Identification** – Easily detect and plot defects including large deformation, excessive heating and delamination to aid design or process modification.

**Ready for Printing** – Assess parts, layer-by-layer, to validate geometry even before any 3D printing analysis is performed, then export a file containing the prepped part and supports.

“M&H has been using Altair Inspire for additive manufacturing generative designs for several years and every year we strive to improve our designs,” said Dr. Jukka Pakkanen, additive manufacturing specialist at M&H CNC-TECHNIK GMBH. “The introduction of Inspire Print3D adds new possibilities and greatly enhances the capabilities for us to evaluate our designs and customer parts prior to manufacturing in order to react accordingly to any arising problems upfront. Failed prints are expensive because you may lose money in all areas like raw material, machine time, labor, and more. Being able to make unique parts correctly the first time is a competitive advantage promised with Inspire Print3D.”

Inspire Print3D will be introduced to the global additive manufacturing and design engineering community during Formnext in Frankfurt, November 19-22, 2019. M&H will also be presenting some of its generative designs at the Altair booth during Formnext. To learn more, visit Altair at Formnext in hall 11.1, booth E11 and visit [altair.com/inspire-print3D](http://altair.com/inspire-print3D).

 [Click here to return to Contents](#)

### ***Autodesk Ushers in New Era of Connected Construction with Autodesk Construction Cloud***

19 November 2019

At Connect & Construct Summit, Autodesk, Inc. unveiled Autodesk Construction Cloud™, which combines advanced technology, a unique builders network and predictive insights to connect people and data across the entire building lifecycle, from design through operations.

At the center of Autodesk Construction Cloud are best-of-breed construction solutions Assemble, BuildingConnected, BIM 360 and PlanGrid. Autodesk Construction Cloud brings these solutions together, and with Autodesk’s established design authoring tools, connects headquarters, office and field teams to increase collaboration and productivity.

Autodesk Construction Cloud includes more than 50 new product enhancements, as well as deeper integrations between each product to allow data to flow across all stages of construction. It also includes powerful new artificial intelligence functionality that helps construction teams identify and mitigate design risks before problems occur — reducing delays, rework and costs.

Autodesk Construction Cloud includes three core elements that give construction companies a competitive advantage in the industry:

**Advanced Technology:** Best-in-class software solutions built for simplicity and power — uniting headquarters, office and field teams from design through construction and operations.

**Builders Network:** The industry's largest network of owners, designers, builders and trades, enabling each to connect with the right partners and projects.

**Predictive Insights:** AI-driven analysis of previously siloed project data provides builders with powerful insights to predict outcomes and reduce risk.

"Despite the tremendous challenges construction companies face to connect huge volumes of data and people, no one has delivered on the promise of unified construction from design to operations — until now," said Jim Lynch, vice president and general manager, Autodesk Construction Solutions. "With Autodesk Construction Cloud, we're introducing a new era of connected construction and offering unrivaled integration between headquarters, office and field teams. We've never been more dedicated nor clearer in our mission to empower designers, contractors and owners to meet the world's rapidly expanding construction needs, while helping to make building more predictable, safe and sustainable."

"We need to be able to measure ourselves, look to the future and anticipate project risk. This insight is what's missing today, and is a key driver in moving the industry forward," said Jenny Moshea, head of technology at Sellen Construction. "Autodesk Construction Cloud brings together advanced technology—which Autodesk has always been known for—with the network of the building community—which is the core of what we do as an industry—underpinned by predictive insights. This is the next evolution, the connected tissue that brings it all together so the construction lifecycle is no longer disjointed."

1. Autodesk Construction Cloud increases technology depth with 50+ new enhancements and makes data flow with integrations across all products

As part of the launch of Autodesk Construction Cloud, the company is unveiling more than 50 new product enhancements that span the entire building lifecycle from design through operations. Most enhancements are available today, with a few rolling out over the next several weeks.

Highlights of the new innovations include:

Expanding support within Assemble for the latest version of Autodesk design tools AutoCAD, Revit and Navisworks.

Empowering subcontractors to immediately quantify 2D views in BuildingConnected BidBoard Pro.

Enabling greater collaboration, field teams can now take videos directly within the PlanGrid app. Along with improved photo management, teams are able to provide richer commentary from the jobsite.

Enhancing all BIM 360 modules, along with deeper feature integrations – such as between Construction IQ and BIM 360's design review capabilities, called Design Risk Management, which helps reduce the likelihood of RFIs and change orders originating from design issues.

To empower construction teams to reduce miscommunication, errors and rework, Autodesk is focused on providing the entire construction team with access to crucial data whenever it's needed. Over the past 18 months, the company has rolled out 18 different integrations, allowing data to flow between all its construction products. These include integrations between Revit and PlanGrid, BIM 360 Design and Civil 3D, BuildingConnected and PlanGrid, and BIM 360 and Assemble, to name just a few.

Built with BIM 360's common data environment (CDE), Autodesk Construction Cloud ensures the

whole team is collaborating on an integrated record set. Beyond the current capabilities, Autodesk is investing in supporting our customers in meeting ISO-19650.

 [Click here to return to Contents](#)

## ***Centric Connect Concepts to Consumers with Centric 8 PLM v7.0***

18 November 2019

Centric Software announces that the latest release of its flagship Product Lifecycle Management (PLM) solution, Centric 8 PLM version 7.0, is now available. Centric Software provides the most innovative enterprise solutions to fashion, retail, footwear, outdoor, luxury and consumer goods companies to achieve strategic and operational digital transformation goals.

Developed with Centric Software's customer partners and Customer Advisory Board, Centric 8 v7.0 offers a variety of powerful innovations designed to bring brands, retailers and manufacturers closer to consumers by accelerating digital transformation, speeding time to market and increasing agility. Centric PLM users now can source a product from multiple suppliers with only a few clicks, orchestrate sophisticated workflows to speed time to market, leverage 3D assets directly from within Centric, respond to more complex sizing requirements from consumers and more. Centric also recently announced 3D integration with Browzwear, CLO and EFI Optitex making Centric PLM a hub for end-to-end 3D product development.

As is Centric Software's long-standing practice, all innovations are market-verified by Centric customers from around the world.

Centric 8 v7.0 empowers brands in the fashion, retail and consumer goods industries to rapidly respond to an evolving marketplace enabling faster product innovation, closing gaps between product inception and time to market while creating more unique, high-quality and personalized products to get closer to consumers than ever before.

Retailers and brands often source the same product from multiple suppliers for a variety of reasons such as proximity, capacity, costs, convenience and compliance. Global companies can now easily source the same product from multiple suppliers to speed time to market, reduce their environmental footprint, lower shipping costs, enable the production of additional products last minute and more.

"With Centric v7.0, teams source a product from multiple suppliers with a few simple clicks; product specifications are created once and then tailored to different vendors and specific supplier requests issued," explains Ron Watson, VP Product at Centric Software. "This facilitates detailed collaboration with each vendor while creating a massive time saving for sourcing teams."

Other innovations in sourcing save time and streamline vendor communications with the ability to duplicate or update an existing supplier request when evaluating proposals and samples.

"We work with multiple suppliers and products at the same time which means managing an incredible amount of information. Being able to easily update our original supplier request seamlessly as concepts evolve will save us of a lot of time, reduce errors and improve collaboration with our external vendors," says Ryan Shuster, VP of Global Sourcing at Big Lots.

Centric 8 v7.0 improves team agility and market responsiveness allowing users to seamlessly integrate

workflows in PLM with the addition of a powerful workflow and decision automation platform, compliant with the Business Process Model and Notation (BPMN) 2.0 standard. Improved workflow means that teams are more efficient with consistent execution, reduced errors, improved collaboration and easier achievement of product development milestones to get products to market faster.

Building on the recent development of several 3D-enabled features in Centric PLM, Centric 8 v7.0 offers new 3D visualization enhancements that can be used with or without a connection to a 3D CAD solution, even for users not specifically trained in the art of 3D development.

"With Centric's 3D viewer, it's now possible to visualize the texture and drape of a material and also adjust its physical properties to see how it will look and move in real life," says Watson. "The addition of other realistic elements, such as adding trims and changing colors, further reduces dependence on physical samples and fit reviews. Photorealistic 3D models can be shared with suppliers before production; especially useful when creating personalized products. This cuts the cost and time associated with sampling and ultimately speeds time to market for improved market responsiveness."

Centric 8 v7.0 also supports the creation of high-quality and better fitting products consumers demand. Companies with complex sizing requirements will benefit from the addition of a 2-dimensional sizing matrix on Bills of Material (BOMs), showing a visual 2-dimensional correlation (or pattern) between product sizes and the material/component sizes used in the product.

"Our lingerie customers and others who offer a large range of sizes, collections and fabrics to meet the needs of their customers will benefit from the new visual sizing matrix. Complex sizing can present challenges when creating product specifications for suppliers. The ability in Centric PLM to see how similar components will fit in different sizes will save time, maintain quality standards and make material sourcing more accurate and cost-effective," says Watson.

"The latest release of Centric 8 PLM delivers new innovations based on market feedback that creates an even more powerful digital platform for shortened time to market and increased responsiveness," says Chris Groves, President and CEO of Centric Software. "Centric 8 v7.0 enables greater focus, agility and improved product innovation capabilities so brands, retailers and manufacturers can get closer to consumers."



[Click here to return to Contents](#)

### ***Hexagon Leica Geosystems, Autodesk further collaborate to bring even more efficiency to building construction industry***

20 November 2019

Leica Geosystems, part of Hexagon, announced today a new collaboration with Autodesk, integrating the Leica iCON iCT30 construction layout tool and Leica Viva TS13 and TS16, and Leica Nova TS60 and TM60 total stations with the Autodesk BIM 360 Layout App.

With a focus on bringing more efficiency through digitalisation to the building construction industry, Autodesk and Leica Geosystems are collaborating on various projects to integrate technologies. In this latest collaboration, users are experiencing quicker and more productive time by connecting layout tool and total stations directly to the BIM 360 Layout app, now also available in Android, for immediate use on the site.

“Being able to accurately measure onsite, and now having those measurements directly in the BIM 360



Layout App, we are seeing less time spent on layout and more time spent on value-added activities for our construction clients,” said Chad Lansford, an estimator at Sare Electric, Inc., and long-time user of Leica Geosystems total stations. “We are expanding digital layouts to more and more projects, and we are seeing the increased benefits of adopting digital technologies throughout the industry.”

### Digital construction layout for entry-level to survey-grade

Expanding upon the Leica iCON iCR70 and iCR80 robotic total station integrations last year, the iCT30 construction layout tool is an easy-to-use and affordable solution to increase productivity by minimising labour time and mistakes, while increasing accuracy and speed. The iCT30, just released earlier this year, is an entry-level construction layout tool built for one-person layout tasks in construction. The Viva and Nova series total stations have long been found throughout construction sites for their well-known survey-grade accuracy and reliability. Integrated into the BIM 360 Layout App, Autodesk’s unified construction platform for collaborative design, planning and management, the collaboration brings a new era of efficiency to the industry.

“Autodesk is empowering construction companies to increase efficiency by allowing data to seamlessly flow from design through to building and turnover,” said Josh Cheney, Industry Manager, Construction Technology at Autodesk. “Our collaboration with partners such as Leica Geosystems makes it easier for any construction team member, not just those with specialized training, to manage the layout process and take advantage of best-in-class technology. Together, we’re helping close the communication gap between the office and field so teams build accurately the first time.”

“In the building construction industry, we are seeing a move to become more digital on site, leaving analogue methods, especially in layout, behind,” said Bernd Moeller, Leica Geosystems business director for field software solutions. “To support this move, we are consistently looking at ways to bring more digital solutions to the field. Our continued relationship with Autodesk is just one such way, bringing both our customers and theirs in the industry new ways of working more efficiently and productively.”

Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems, part of Hexagon, creates complete solutions for professionals across the planet. Known for premium products and innovative solution development, professionals in a diverse mix of industries, such as aerospace and defence, safety and security, construction, and manufacturing, trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world.

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.



[Click here to return to Contents](#)

## ***Mastercam Launches Signature Parts Series for Manufacturing Community***

19 November 2019

CNC Software, Inc. has launched the Mastercam Signature Parts Series to benefit CAD/CAM manufacturers. The series was initiated to showcase the power of Mastercam through the manufacturing process using realistic parts. Each part is designed to keep Mastercam Resellers, customers, and partners informed about new features, best practices, tips and tricks, and special applications related to the Mastercam product.

“The art of machining is more than just CAM. It is process planning, fixture design, tool selection, toolpath creation, machine setup, and machining. Our Manufacturing Lab® allows us to go through this whole process to truly test our software in a shop environment,” shares Strategic Technical Specialist, Karlo Apro.

Apro leads the development of the Mastercam Signature Parts Series. His role is to plan, design, collect, review, and help deploy the series. He coordinates efforts between departments, gathers feedback from the field, and makes changes in a continuous endeavor to deliver relevant new materials to the manufacturing community.

The Signature Parts Series will continue to develop and already includes many parts such as a chain guard, spiral staircase tread, hot runner nozzle, aerospace latch, optical mount, and more. These specially selected parts provide effective demonstration of many of the capabilities of Mastercam to streamline and advance CAD/CAM for manufacturing. In several video segments, applications engineers (AEs) from the Mastercam Manufacturing Lab present various new, popular, and important features in Mastercam.

According to Apro, “Our AEs are instructed to use creative ways of manufacturing using all the power of Mastercam. We are constantly testing the software and cutting parts. Now through the Signature Parts Series, we can share our experience in ways that enable us to help the manufacturing community learn more about the capabilities of Mastercam in a practical context.”

“The Signature Parts Series is the most effective way for us to communicate the wide and varied functionality of Mastercam to our customer base, through a collection of different media types,” says Sandy Moffat, Chief Market Officer.

 [Click here to return to Contents](#)

## ***MSC - New Generative Design Solution Cuts Additive Manufacturing Design Processes by up to 80 Percent***

21 November 2019

MSC announced MSC Apex Generative Design, a new design optimisation solution that improves quality through unparalleled automation of design processes with embedded manufacturing knowledge.

MSC Apex Generative Design aims to improve productivity by up to 80 percent compared to classic topology optimisation. The software produces a part design that is ready for additive manufacturing (DfAM) within a few hours – a fraction of time usually required – making reliable additive

manufacturing more cost efficient and accessible.

## Re-thought design optimisation

In MSC Apex Generative Design, the designer only needs to specify the boundary conditions and design objective. Multiple lightweight design candidates that explore the possibilities of the design space will be produced that provide optimal stress distribution and minimize weight. This enhances the creative process, so designers have more time to optimise the product's concept and integrate additional features that add value. The software's intelligent smoothing technology ensures that every candidate has a perfect finish that is ready for print.

“New design freedoms in additive manufacturing require a new generation of software solutions that take full advantage of the new DfAM possibilities. We make the generative design process smarter by producing design candidates that both satisfy the engineering criteria and look as the designer intended when 3D printed,” said

Dr. Thomas Reiher, Director of Generative Design.

## Fully integrated design optimisation process

Conventional topology optimisation workflows require manual work and multiple tools to achieve production-ready results, which can lead to information loss as data is converted. MSC Apex integrates all relevant steps within one Computer Aided Engineering (CAE) environment to improve productivity with a single user experience from design to additive manufacturing preparation.

The design process is workflow-oriented, providing easy and fast model setup from existing geometries or mesh in common CAD, STL, or MSC Nastran BDF formats. Designers can find optimized design candidates and perform design validation within the same CAE environment, simplifying the work process and reducing design iterations dramatically. The result is a fully integrated, automated optimization process in which compatibility for previous and subsequent operations plays a vital role. This unique capability implies the conversion from the CAE mesh to CAD with no manual reconstruction of geometry, considerably simplifying the work process for designers.

## Validated for additive manufacturing

The MSC Apex Generative Design for Additive Manufacturing solution combines print-ready geometries with robust metal (Simufact) and polymer (Digimat) build process simulation from Hexagon's additive manufacturing portfolio. Designers only generate part designs that can be successfully manufactured using their chosen material and print process to eliminate costly prototyping.

“Additive manufacturing promises innovation and manufacturing productivity advances. But to truly transform, the new technologies require automated design workflows with embedded process knowledge. We are integrating our structural analysis, design optimization, and manufacturing simulation solutions to optimise and validate designs for additive processes before a single part is printed.” said Hugues Jeancolas, VP Product Management

 [Click here to return to Contents](#)

### ***OpenBOM announces enhanced CAD integrations with Autodesk Fusion 360 and introduces an Autodesk Eagle plug-in***

18 November 2019

OpenBOM announced the enhancement of OpenBOM integrations with Autodesk line of products including Autodesk Fusion360, Autodesk Eagle and Autodesk Inventor. By doing so, OpenBOM offers unmatched capabilities to manage Parts, Bill of Materials, Vendors, and Purchase Orders and streamlining design to purchase process for engineering prototyping teams and small-to-medium sized manufacturing companies. Unmatched real-time collaboration capabilities of OpenBOM combined with unique data management and availability of OpenBOM from Amazon Web Service infrastructure makes OpenBOM available for teams and manufacturing companies across the globe.

Autodesk strategy of cloud platform development is well aligned with OpenBOM multi-tenant SaaS data management and Bill of Materials management capabilities helping manufacturing companies to organize product data, collaborate in real-time and plan purchase orders. “Expanding Autodesk Fusion360 integrations and offering an improved user experience and support Fusion360 drawings dramatically expanding customer workflows. Combined with Autodesk Eagle and Autodesk Inventor integrations, OpenBOM is providing a unique way to manage purchases and collaborate using a multi-disciplinary BOMs” said Oleg Shilovitsky, CEO and co-founder of OpenBOM.

“With this announcement, OpenBOM provides the Autodesk customers an easy and powerful way to manage downstream BOM management and purchasing process,” says Jim Quanci, Senior Director of Autodesk Development Network.

Marc Schomann a developer of Blackbox Open Source Tool Changing 3D Printer is using Autodesk Fusion 360 and OpenBOM. The team designs entirely with Autodesk Fusion 360 then captures product structure, item, and vendor information using OpenBOM’s purpose-built Fusion 360 Addin where they create and maintain all the related Catalogs and Bills of Material for the project. Later, the team shares it all to the open-source community using OpenBOM’s powerful Share function – there are no Excel files or emailing of designs here – it’s all in the Cloud with Fusion 360 and OpenBOM!

“Our distributed team used OpenBOM to capture product structure and assembly and part data from Autodesk Fusion 360 then create bills of material for purchasing the components we needed to build the printer,” Marc said. “The OpenBOM Fusion 360 integration made it easy to create and update BOMs and Part Catalogs and to identify and specify vendors as the design moved forward.”

To learn more about the Open Source 3D printer visit Hackaday project Blackbox website and LayerShift website.



[Click here to return to Contents](#)

### ***Siemens introduces AM Path Optimizer technology integrated in NX for additive manufacturing***

19 November 2019

Siemens Digital Industries Software today announced Additive Manufacturing (AM) Path Optimizer, a beta technology integrated in NX™ software, to help customers solve overheating challenges and help

reduce scrap and increase production yield to achieve the industrialization of AM, or the use of AM at the industrial scale. Siemens has developed this next generation advanced simulation technology to help maximize the production yield and quality of powder bed fusion manufactured parts. This latest extension of Siemens' end-to-end additive manufacturing solution feeds the digital thread, informing each step of the industrialized additive manufacturing process.

Building on the Simcenter Additive Manufacturing Process Simulation solution announced in November 2018, AM Path Optimizer complements Siemens' strategy for the digital twin of the manufacturing process and addresses errors originated from suboptimal scan strategies and process parameters. These can lead to systematic failures due to overheating, which can cause scrap and inconsistencies in component quality.

Siemens has had success demonstrating this beta technology with TRUMPF as a partner. "With the AM Path Optimizer, Siemens and TRUMPF can push industrialization of additive technologies further forward," said Jeroen Risse, AM Expert at TRUMPF. "In our demonstrations we saw an improvement of geometrical accuracy, elimination of re-coater errors caused by overheating, as well as a more homogenous surface quality. Also, the scrap rate is expected to be reduced significantly."

The technology uses an innovative approach combining physics-based simulation with machine learning to analyze a full job file in few minutes before execution on the machine. This technology is expected to help achieve "first time right" prints and drastically reduce trial and error. It can also help reduce printing costs and enable the printing of components that are nearly impossible to achieve today.

"AM Path Optimizer is the latest innovation in Siemens' end-to-end additive manufacturing solutions, and one that we feel will have a great impact on the use of additive manufacturing for powder bed fusion manufactured parts," said Zvi Feuer, Senior Vice President, Manufacturing Engineering Software of Siemens Digital Industries Software. "The combination of NX for AM and our Simcenter AM technology within the Xcelerator portfolio provides our customers with key capabilities to assist manufacturers in designing and printing useful parts at scale, which is unmatched in the market."

 [Click here to return to Contents](#)