CIMdata

PLM Weekly Summary

Editor: CIMdata News Team

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CIMdata News

Strengthening Operational Resilience in Banking

24 January 2020

CIMdata's Vice President, Stan Przybylinski, recently spoke with the Strategic Delivery Lead, Service Delivery and Operational Resilience Centre of Excellence at one of the UK's leading high street banks to find out how it is learning from the manufacturing industry to prevent operational disruptions to critical services and better protect its customers.

Among the topics on the table for discussion were:

- What are the key industry challenges?
- What role does the operational resilience function play in product development to address disruption and how does it drive innovation at BANK A?
- Do you have any programs/initiatives in place to address these issues?
- What benefits/positive aspects do you expect service continuity to bring?

Learn the answers to these questions and more in the full blog post available at: https://www.cimdata.com/en/resources/cimdata-blog/item/13287-strengthening-operational-resilience

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Wipro's EngineeringNXT Auto Summit: Never Been Better - A CIMdata Commentary

23 January 2020

Key takeaways:

- *Wipro's event demonstrated their commitment to the automotive industry by showing recent successes and thought leadership regarding transportation and mobility issues.*
- *Event participation by top-tier technology providers and partners including Microsoft, Bosch, and KPMG, in support of both products and infrastructure, gave attendees a clear view of how broad the industry issues are and the impact of potential solutions.*
- *Wipro solutions, including the ITI PLM-related products and crowdsourcing platform Topcoder, were showcased as special capabilities Wipro has available to help the automotive OEMs, suppliers, and infrastructure providers get their products and solutions to market.*

CIMdata attended the EngineeringNXT Auto Summit at Wipro's offices in Troy, Michigan on December 12, 2019. The format included presentations and a panel discussion to discuss industry issues, followed by a showcase of Wipro's solutions to current and upcoming automotive related challenges and opportunities. The attendees included more than 50 representatives from local OEMs, system and component suppliers, as well as consulting firms and software providers. Mr. Ethan D. Baker, the Mayor of Troy, attended and expressed his appreciation for the support that Wipro gives the automotive industry and the Troy community. It's always heartening to see support given to local communities by large multi-national companies and Wipro's support of First Book as a part the Wipro Cares program is certainly great to see. First Book is a nonprofit social enterprise that provides new books, learning materials, and other essentials to children in need in the United States and Canada.

Travel and/or other expenses related to this commentary were provided by Wipro.

Mr. Dharam Sheoran, Head of Automotive Vertical at Wipro, set the tone and context for the summit. While electric propulsion gets the most press, Mr. Sheoran laid out the key themes that are challenging the industry and society today that will take the next few decades to resolve:

- Connected—Cars, cloud, and infotainment
- Autonomous—Vehicles that think
- Shared Mobility—Future of in-city transit
- Electric—Cleaner, quieter, and safer
- Smart Manufacturing—IoT, 5G, and the future of industry

Wipro created their own autonomous electric vehicle prototype, the Wipod, that demonstrates their capabilities in these key areas. CIMdata follows many PLM-related service providers and believes those that actually use the technologies they support to create physical products are better positioned to help their industrial clients because of their depth of experience.

Mr. Sheoran also reviewed several recent acquisitions and new technology-related services focused on better supporting customers, including:

- Designit—Brand experience development
- Appirio—Salesforce and Workday deployment support
- Topcoder—On-demand digital talent platform
- Wipro Ventures—Strategic investments
- Wipro Holmes—Wipro's organically developed artificial intelligence platform
- International TechneGroup Incorporated (ITI)—Digital engineering and manufacturing solutions company

The acquisitions show that Wipro is willing to make significant investments to acquire great technology and brands to better meet their customers' needs. Many SIs that focus only on using in-house resources end up not being competitive. CIMdata has worked with ITI for many years and supports their solution roadmap and we look forward to seeing the impact of the investment and support Wipro is providing.

Mr. Raj Paul, Regional Automotive Business Leader for Microsoft, gave a presentation entitled "The Future of Automotive, a Microsoft Perspective." Mr. Paul talked about Microsoft's auto industry involvement from early infotainment systems to today's broad product and service portfolio, much of it based on the Microsoft Azure cloud platform. From software development tool chains for product creation to data services for shared mobility, Microsoft is providing services globally at all levels of the auto industry. Perhaps the most exciting statement from CIMdata's point of view was regarding data ownership. Microsoft believes the customer owns their data and Microsoft will not monetize it. That is a big deal when so many providers are monetizing their customers data without giving them the choice to opt out.

"EngineeringNXT—Enabling Auto innovation at scale" was presented by Mr. Rajkumar Madhavan, Wipro's GM and Head of Automotive, Aerospace and Defense, US. According to Mr. Madhavan, Wipro takes a holistic view of transportation and mobility. Mr. Rajkumar cited a key statistic: the average person spends 30 days per year commuting. A multitude of issues arise, well beyond the usual safety issues to include how future commuters might better use this time. To address this breadth of issues, Wipro uses five building blocks to tailor solution stacks including:

- Connected Products
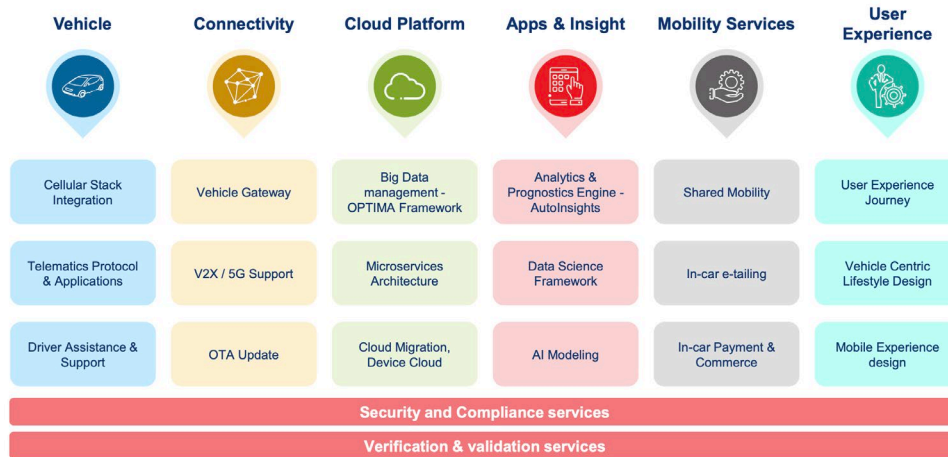- Software
- Wireless
- Data Platforms

Figure 1–The Wipro Transportation & Mobility NXT-gen Vehicle Experience
(Courtesy of Wipro)

- Industry 4.0

The overall guiding principle Wipro uses in tailoring solution stacks is experience maximization. It's easy to see how the building blocks shown in Figure 1 can minimize the time spent commuting through development of infrastructure and smart city-type projects and how autonomous vehicles can enable more productivity when people do need to commute.

The highlight of the day was the panel discussion focused on the topic of "The emerging landscape of Automotive Engineering". The panel moderated by Mr. Sheoran included:

- Mr. Stefan Beurkle—VP Sales, Bosch Car Multimedia
- Mr. Prashant Kelker—Partner and Lead, North America, at ISG
- Ms. Sue Nara—Director, KPMG
- Mr. Rajkumar Madhavan—GM and Head of Automotive, Aerospace and Defense, US, Wipro

Mr. Beurkle noted that his major concerns with autonomous connected vehicles revolve around security, safety, and the criticality of system architecture. He also noted Bosch is using Agile development methodologies and mused that due to the tough milestones, they are not working on minimum viable products, but minimum "liable" products (i.e., as in liability, focused on safety), an interesting observation. Mr. Kelker noted the difficulty in planning for autonomous operations and sees solutions moving to "noticing" (deriving solutions in real-time based on observations) rather than executing pre-planned actions. The leading-edge solutions are incorporating more data sources so they can adapt as data changes. Mr. Madhavan noted that many OEMs are trying to follow the Tesla model and vertically integrate for autonomy, but his view was it's too expensive and commercial platforms and open infrastructure are needed to be successful at scale.

Overall the panel discussion was spirited and information and insight dense. Each unique viewpoint added to the topic of the emerging automotive engineering landscape giving attendees a great perspective.

The day ended with a tour of the Solution and Point of View (PoV) showcase. CIMdata focused on the details of ITI, Product Value Chain Digitalization, and Topcoder. ITI's focus on CAD and PLM data interoperability is a crown jewel within Wipro's PLM consulting practice. The tools and skills ITI brings to Wipro significantly enhance their data platform strategy and ITI's customers get improved access to enterprise consulting and technology. As importantly, they also get the confidence that the ITI products will be supported long into the future.
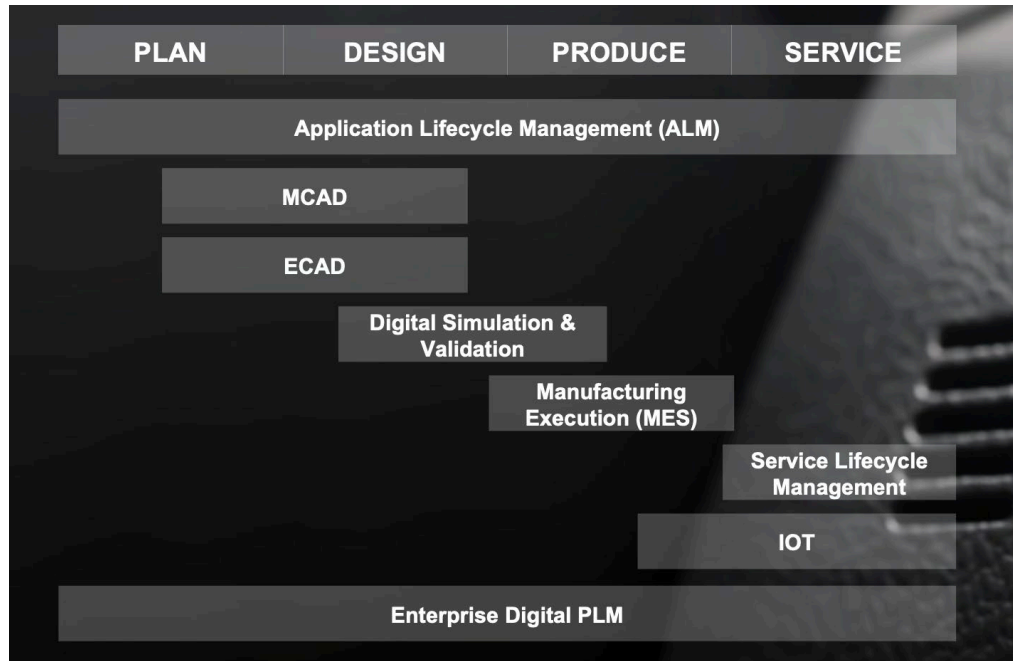
CIMdata PLM Late-Breaking News

Figure 2–Wipro's Enterprise Digital PLM & Digital Thread Model
(Courtesy of Wipro)

Product Value Chain Digitalization is Wipro' take on end-to-end integration across a company and its supply chain as shown in Figure 2. CIMdata has previously reviewed this concept in detail in a previous commentary.[1] CIMdata views Wipro's efforts on [ALM/PLM integration](#)[2] as a differentiator and the demonstration showed how Wipro's investments improve management across the lifecycle.

Operating at scale was the topic of Mr. Madhavan's presentation and Topcoder, their recently acquired on-demand digital talent offering, supports crowdsourcing. Topcoder is a key enabler that helps Wipro get their clients at scale faster. One of the biggest concerns CIMdata hears from clients and in the business news is the skills shortage across product lifecycle disciplines, which is particularly acute in software development. With more than 1.5 million registered members Topcoder acts as a marketplace to bring developers and customers together and provides process support to bring projects to completion. A big risk with crowdsourcing is to ensure that the code generated by the crowd does not infringe on someone else's intellectual property (IP). There are many stories of IP-related lawsuits, including the Waymo-Uber issue within the autonomous space. Wipro noted that Topcoder has been operating since 2001 and this has not been an issue. The quality processes they put in place minimize risk and, if there is an issue, Wipro guarantees the solution and indemnifies the customer.

Wipro invited CIMdata to this event so we could better understand where Wipro is moving to support automotive engineering. The idea that we are in the early stages of a major transformation to transportation and mobility was strongly reinforced. Electric cars are just a single element within this new societal experience. Wipro understands that taking a holistic approach is important and that many participants have different roles to play and will jockey for position. Eventually the transportation and mobility environment will become a commodity but that is in the distant future. Right now, innovation velocity is high and accelerating, and getting products and services to scale will determine winners and losers. Based on what CIMdata saw and heard from Wipro, thought leaders in attendance, and from conversations with attendees at the event, the outlook for our transportation and mobility future has never been better.

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[1] https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/12838-wipro-s-product-process-and-factory-digital-twins-commentary

[2] https://www.cimdata.com/en/industry-summary-articles/item/6156-wipro-unites-software-development-with-plm-a-cimdata-commentary

Acquisitions

VMware Announces Intent to Acquire Nyansa

22 January 2020

VMware, Inc. announced its intent to acquire Nyansa, Inc., a fast-growing innovator of AI-based network analytics. Nyansa will enable VMware to deliver an end-to-end network visibility, monitoring and remediation solution within VMware SD-WAN by VeloCloud that can proactively predict client problems, optimize application and network performance and better assure the behavior of critical IoT devices. The addition of Nyansa's AI/ML capabilities to VMware's existing network and security portfolio will make it easier for customers to operate and troubleshoot the Virtual Cloud Network and further VMware's ability to enable Self-Healing Networks.

"The acquisition of Nyansa will accelerate VMware's delivery of end-to-end monitoring and troubleshooting capabilities for LAN/WAN deployments within our industry-leading SD-WAN solution," said Sanjay Uppal, vice president and general manager, VeloCloud Business Unit, VMware. "Nyansa is a proven solution that solves many of the shortcomings of today's vendor-specific solutions. Nyansa currently analyzes user network traffic from more than 20 million client devices across thousands of customer sites at companies including Tesla, Uber, Lululemon, Rooms To Go, GE Healthcare, SF International Airport, Stanford, Northeast Georgia Healthcare System and many others."

"Joining forces with VMware provides an amazing platform for Nyansa to continue executing on the vision of a new networking paradigm: an analytic-powered and software-defined virtual cloud network that connects clients to containers in dynamic and distributed enterprises," said Abe Ankumah, chief executive officer, Nyansa. "Nyansa and VMware are perfectly aligned in technology, products and culture. Following the close of the acquisition, we will continue to advance our AI-driven multi-vendor network analytics platform and double-down on end-to-end user experience and IoT operational assurance."

SD-WAN is a transformational approach to simplifying branch office networking, enabling optimal application performance, and accelerating cloud adoption. Unlike traditional wide-area networks, SD-WAN delivers increased network agility and with lower costs. As SD-WAN is becoming the de facto connectivity and security platform for distributed enterprises, the overall scope of SD-WAN solutions continues to expand. Customers are now looking for a single platform to provide visibility into network and application performance not only across the WAN, but into the wired/wireless local area network, and back out to the cloud and on premises data centers.

Nyansa Voyance is a vendor-agnostic, cloud-based AIOps platform. The solution consolidates key functionality within conventional network monitoring tools into a single, multifunction analytics platform to deliver visibility into and behavioral analysis of critical device performance across the entire infrastructure. Consolidating network infrastructure monitoring into Voyance dramatically simplifies the way network staff, engineers and architects plan, deploy, and manage the evolving enterprise edge, and can significantly reduce the cost and complexity of managing enterprise networks. With Voyance, organizations can automate the end-to-end analysis and correlation of critical infrastructure data to improve the productivity, performance and security of critical devices on the wired and wireless network.

Company News

Accenture Study - Most Companies Are Facing Limited Growth Due to an Innovation Achievement Gap

21 January 2020

While a majority of CEOs express strong confidence in the effectiveness of their current information technology (IT) systems, most are struggling to achieve levels of innovation that drive growth and revenue, according to a global study by Accenture .

"Your Legacy or Your Legend? A CEO's Guide to Getting the Most Out of New Technologies," is based on Accenture's largest enterprise IT study conducted to date, including survey data from more than 8,300 organizations across 20 countries and 885 CEOs.

The research, which analyzed the adoption of both mature and emerging technologies — such as artificial intelligence (AI), cloud, blockchain, and extended reality — found that just 10% of companies are making optimal technology investment and adoption decisions and realizing the full value of those investments. By adopting new technologies more aggressively and breaking down barriers to effectively scale innovation across their organizations, these leading companies are generating more than twice the rate of revenue growth than those on the lower end of the spectrum.

At the same time, the study found that 80% of CEOs believe they have the right technologies in place to innovate at scale, and 70% claim to be very knowledgeable of their organization's investments in innovation.

"Most companies are risking significant future revenue growth because of the gap between the potential and realized value of their technology investments," said Paul Daugherty, Accenture's chief technology and innovation officer. "Our report offers CEOs a new roadmap to help make strategic investments that narrow this innovation achievement gap and fuel higher growth."

As part of its study, Accenture identified five key factors— or "PATHS" — that distinguish the top 10% of companies from the rest:

Progress: The extent to which companies apply new technology to evolve business processes across the enterprise. One example is the use of cloud and artificial intelligence (AI) to increase the effectiveness of multiple business processes rather than working in silos.

Adaptation: Ensuring that IT systems can adapt and respond to changing market conditions with actions such as decoupling from legacy systems and using cloud services as a catalyst for innovation.

Timing: Creating an appropriate sequence and roadmaps for deploying new technology. This begins with identifying foundational technologies and prioritizing adoption based on their enterprise-wide impact.

Human+machine workforce: Using technologies to augment employees and make work more engaging

while simultaneously realizing efficiency gains. This could entail delivering technology-augmented training that is personalized and experiential for working with technologies of the future.

Strategy: Actively aligning business strategy and IT strategy and weaving technology investments together to better seize opportunities.

ANSYS Announces Winners of 2020 Hall of Fame Competition

23 January 2020

The winning entries of the annual ANSYS Hall of Fame competition showcase how engineers are using ANSYS' cutting-edge simulation solutions to solve critical engineering challenges, ranging from detecting unexploded land mines to simulating the human heart.

The contest grew significantly in 2020, with a 21% increase in total submissions compared to 2019. The submissions, which were sent from nearly 20 countries, were divided into two categories — corporate and academic:

Corporate winners:

Astec, Inc. engineers identified an opportunity to optimize an asphalt drying process in which the phase change of liquid to gas can consume half the energy input. By developing software to capture the mass transfer between aggregate particles and using ANSYS to solve exchanges between the fluid phase, the team designed a more efficient dryer that lowers running costs and reduces emissions.

Druids Process Technology S.L. developed an electromagnetic detector to sense internal cavities that can block production in high temperature copper. Engineers used ANSYS to check the coil configuration and induce currents, monitor the detector's behavior at extreme heat and determine whether thermal and pressure effects could damage the coil shield.

NUM solution created its own flutter tool for automatic blade flutter prediction with ANSYS, leading to a 60% reduction in simulation time and a 95% reduction in pre- and post-processing time. The solution is being used to accelerate the development of a flutter-free blade, which will reduce blade loss and damage in large-scale turbomachinery.

Academic winners:

King Abdullah University of Science and Technology used ANSYS to detect unexploded landmines — a massive problem in some countries — that cannot be detected with conventional radar. Researchers obtained the radar cross section of a 330-milliliter plastic bottle filled with dielectric materials to mimic explosives and applied machine learning techniques for better landmine detection.

Politecnico di Milano simulated an artificial ventricle to develop a computational model that accurately reproduces the hemodynamics inside the left chamber of an artificial heart. The results from fluid–structure interaction simulations led to realistic kinematics of the valve leaflets and membrane.

University of Rome Tor Vergata engineers used ANSYS to perform cardiovascular simulation with

moving walls and applied it to the fluid–structure interaction analysis of a custom valve coupled with patient data. They developed a high-fidelity, fast and accurate way to bring simulation into the clinic.

"Year after year, we are blown away by how engineers leverage ANSYS solutions," said Matt Zack, vice president of corporate development and global partnerships at ANSYS. "The entries we receive offer a glimpse into the revolutionary products and solutions our customers are building. As a simulation provider, there's nothing more exciting or validating than knowing that our products play a critical role in ushering in the future."

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ANSYS Student Software Surpasses One Million Downloads

21 January 2020

ANSYS is paving the way for the next generation of innovation by lowering the barrier of adoption for simulation software through its growing academic program. Free student software — a key component of the program — recently surpassed more than one million downloads since its launch in late 2015, empowering students to develop skillsets they need to compete in the job market, stay ahead of the latest technology trends and make an immediate impact after graduation.

As digital transformation reshapes engineering, companies are relying more heavily on advanced simulation solutions to overcome unprecedented design challenges and recruiting engineers who are proficient in simulation tools. To close this skills gap and help companies innovate faster, ANSYS is engaging with students at every level, both inside and outside of the classroom.

Professors and researchers from more than 3,200 universities in 87 countries leverage ANSYS software, bringing simulation into the classroom for a hands-on learning experience. The ANSYS Academic Program empowers students through free student software, the sponsorship of more than 500 student teams and the ANSYS Student Community, which allows users to ask and answer questions, access tutorials and discuss engineering challenges.

"Simulation is an important tool both inside and outside of the classroom. Students who are proficient in simulation have an easier transition from academia to industry," said Dereje Agonafer, Presidential Distinguished Professor, University of Texas at Arlington. "Students who understand the physics in the lab and can also couple it to simulation are untouchable. Knowing ANSYS gives engineers a major advantage — I see this firsthand as my graduates enter the workforce."

Beyond the classroom and online community, university-based student teams are applying simulation to solve-real world challenges, ranging from electronic design to high-speed transportation. These teams participate in diverse competitions, ranging from Formula SAE, the SpaceX Hyperloop Pod Competition, Human Powered Vehicle Challenge and many more.

"Solar Team Eindhoven competed in the World Solar Challenge this year, designing a vehicle that could carry four passengers with great comfort, safety and reliability," said Michiel van Laarhoven, a structural engineering student at Eindhoven University of Technology. "ANSYS Mechanical and composite solutions played a critical role in designing and validating the composite monocoque to obtain the optimum laminate. With the help of ANSYS, we beat 16 other teams from around the world, taking first place in the Cruiser Class."

ANSYS also supports continued education for engineers at any stage of their career through free Massive Open Online Courses (MOOCs) offered by universities. One of Cornell University's simulation-focused MOOCs has generated 142,000 registrations across 173 countries since its inception.

Registrants range from students just becoming familiar with simulation to established engineers expanding their understanding of ANSYS solutions.

"The ANSYS Academic Program has grown into a truly holistic offering," said Prith Banerjee, chief technology officer at ANSYS and executive sponsor of the ANSYS Academic Program. "Students benefit from access to simulation tools and instructions throughout their academic careers and can take advantage of online courses, student team sponsorships and our industry connections. We also help universities succeed by providing important material for curriculum development and research. We're eager to see what kinds of innovations are brought to life by the bright minds who will put our technology to the test in academia."

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Aras and Minerva Group Announce Strategic Partnership for a Best Practice Industry PLM Solution

23 January 2020

Aras announced a strategic partnership with Minerva Group to launch Minerva PLM, powered by Aras, a PLM software solution based on the Aras Innovator platform with industry best practice features that will serve small to medium sized manufacturers.

As products become increasingly complex, manufacturers need new ways to stay efficient and profitable to maintain and grow their place in the market. The Aras platform links data and processes throughout the entire lifecycle of a product, giving manufacturers a holistic view and enabling them to get more advanced products into the market at a faster pace.

Minerva PLM, powered by Aras, combines the flexible, model-based technology inside the Aras Innovator platform with industry-specific features that have been developed through Minerva's 25 years of enterprise software implementation experience. The solution is a result of the best practices that the Minerva team has established over decades of close collaboration with customers across different industries and incorporates the knowledge and experience from more than 100 successful Aras Innovator implementations.

"We have seen great results working with Minerva to fit Aras Innovator to the requirements of individual customers and adding features that speak to the best practices they have developed for a variety of organizations from different markets," said Peter Schroer, Founder and CEO of Aras. "Minerva is the most successful Aras partner with vast implementation experience across industries, so it was natural to expand our partnership to make the most of Minerva's deep industry vertical knowledge and the resiliency of the Aras Innovator platform."

"We have experienced high growth margins and success alongside Aras," said Asger Thierry, Founder and CEO of Minerva Group. "The natural next step was to implement what we believe to be industry best practice features into Aras Innovator, and enable Minerva Group and Aras to jointly grow to the next level."

Minerva PLM, powered by Aras, will be available for worldwide release in spring 2020.

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Atos named by CDP for leading effort against climate change

20 January 2020

Atos has been commended for its climate action this year, achieving a place on global environmental impact non-profit CDP's prestigious 'A List' for climate change, based on the company's climate reporting in 2019.

Atos was recognized for its actions to cut emissions, mitigate climate risks and develop the low-carbon economy, based on the data submitted by the company through CDP's 2019 climate change questionnaire. Atos is one of a small number of high-performing companies out of thousands that were scored.

CDP's annual environmental disclosure and scoring process is widely recognized as the gold standard of corporate environmental transparency.

A detailed and independent methodology is used by CDP to assess these companies, allocating a score of A to D- based on the comprehensiveness of disclosure, awareness and management of environmental risks and demonstration of best practices associated with environmental leadership, such as setting ambitious and meaningful targets.

Elie Girard, CEO of Atos, said – "Atos is recognized by CDP for the seventh year running for its effort to combat climate change. This recognition reflects our active engagement towards carbon neutral IT. We believe that as a global leader in digital transformation, our role is also to help our customers to better assess the impact of IT systems on climate, and deploy digital solutions powering a low carbon economy."

Paul Simpson, CEO of CDP, said: "Congratulations to the companies that achieved a position on CDP's A List this year, for leading in environmental performance and transparency. The scale of the business risks from the climate emergency, deforestation and water insecurity are vast – as are the opportunities from addressing them – and it's clear the private sector has a vital role to play at this critical time. The A List companies are leading the market in corporate sustainability, tackling environmental risks and setting themselves up to thrive in tomorrow's economy."

In 2019, Atos was also recognized as Industry leader by other sustainability ratings companies such as EcoVadis and the DJSI (Dow Jones Sustainability Index).

The Climate Change A List is published by CDP each year, alongside the A Lists for leadership on protecting forests and water security.

The full list of companies that made this year's CDP Climate Change A List is available here, along with other publicly available company scores: https://www.cdp.net/en/companies/companies-scores

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Aveva Survey Identifies AI, Engineering Design, And Cyber Security as Priorities for Organizations Globally

23 January 2020

AVEVA revealed global survey findings identifying the key investment drivers for digital transformation. The survey was conducted with 1,240 decision makers in ten countries1 in EMEA, North America and APAC across nine industry verticals2.

The research identifies a strong demand across both industries and markets to implement advanced technologies such as Artificial Intelligence (AI) and data visualization to make sense of vast data

streams in real time, with 75% of respondents globally prioritizing investment in AI and analytics.

The research also identified three key global investment priorities for organizations when it comes to embarking upon the digital transformation journey:

1. Making sense of data utilizing artificial intelligence and real time data visualization

The research highlighted a strong demand for technologies that provide predictive outputs from large data flows, with AI and Analytics listed as the most important enabler (75%), closely followed by Real-Time Data Visualization (64%), Augmented, Virtual or Mixed Reality (60%) and Big Data Processing (59%).

AI was a top three enabler across all industries globally, with the greatest importance assigned in Power and Utilities (81%) and Oil & Gas (particularly upstream 79% and midstream 78%).

Japan (88%) and China (84%) prioritised AI highest, with the UK (79%) and US (77%) following closely behind.

2. Fostering collaboration through Advanced Process and Engineering Design

Advanced Process and Engineering Design was the second most important technology (74%) and was in the top three technology priorities across all industries globally, scoring highest among Engineering, Procurement and Construction professionals.

This was perceived as an essential technology for global production, ranked as the most important enabler for Marine Ship Building (75%), Buildings/Infrastructure (74%) and Packaged Goods (73%), with Oil and Gas and Energy all ranking the technology highly.

Japan (85%) and Germany (82%) are early adopters with high importance attributed across all regions.

3. Stepping up cyber security and safety capabilities

Cyber security was the third most prioritised technology enabler (71%) and in particular a focus for Mining (76%), Downstream Oil and Gas (75%), Power & Utilities (70%) and Marine (70%) and the highest priority for Planning & Scheduling specialists.

Improving Safety and Security through technology investment was a priority across all regions, with the Middle East (68%), Australia (63%) and India (60%) particularly highlighting this issue

For global corporates the two most valuable assets are their people and their data. Businesses today have great responsibility to protect employees and customers, with technology that provides the foresight to critical failures before they occur. Lisa Johnston, CMO, AVEVA commented, "As digital transformation moves to the forefront of the industrial agenda, the power of technology to unify data and break silos is allowing specialists to collaborate and change business models. The world's most capital-intensive projects, from sustainable energy production and mining to smart factories and connected cities are now being designed, planned and delivered by global multidisciplinary teams all connected seamlessly through technology."

Other findings from the research included:

Asset Performance Managers (APM) were found to have the most demanding desires for technology investment, requiring a far-reaching product set and visionary approach. APM was set apart from all other professional categories in the strength of their demand for technology to create new services or products; use data to drive new revenue streams; and to enable collaboration with AI and Analytics their most important enabler. APM also identified technology as providing a great potential to upgrade both

safety and security and emergency response times.

Face to face engagement and trust remain key vectors for driving sales success. Face to face meetings with a vendor, either at a vendor event or as an introductory meeting, are most influential across all categories, with personal referrals also particularly meaningful. Experience with a vendor is highly prioritized in UK, China and India while France, Japan and Australia place considerable weight on case studies from the vendor.

Remote Operations Centers and Learning Management and Training scored highest for relevance across global industries. China and Japan see a Command Center as most relevant, while the US and Australia cite Supply Chain Optimization is key to their business.

Delivering cost reduction and enhancing safety prioritised by high growth organisations The countries prioritising cost reduction have been fast to scale over the past decades - China (61%), India (58%) and the Middle East(60%) indicated that significant margin improvement is possible in these geographies from software solutions. This demand for greater efficiency mirrored a requirement to invest in technology to promote safety as these economies continue to mature (China 51%, UAE 68% and India 60%).

"This research was an opportunity to hear from both our existing as well as potential new customers across the globe and our findings mirror the growing demands for technology solutions in the market globally today. Emerging technologies like AI, Machine Learning and Edge Computing which are transforming the technology landscape with vast data streams delivering operable output as well as true business outcomes for our customers today," concluded Lisa Johnston.

Research Methodology:

1 Geographically this survey included EMEA (UK n=121; France n= 112; Germany n= 112; UAE n=112), North America (US n=331), APAC (China n=113; Japan n=113; Australia n=112; India n=114).

2 The global audit was conducted in 2019, targeting 1,240 decision makers across nine industry verticals (Upstream, midstream, downstream, Construction and buildings, Packages, Power & Utilities, Marine & ship building, Mining and growth verticals), with a minimum of 100 per industry.

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Businesses Face a Digital Ceiling in their Transformation Progress, Infosys Digital Radar Reveals
22 January 2020

Businesses globally face a "digital ceiling" when it comes to digital transformation, according to new research from Infosys Knowledge Institute (IKI), the thought leadership and research arm of Infosys. The study reveals that businesses must change their mindsets to achieve sophisticated levels of digital maturity.

Infosys Digital Radar 2020 assessed the digital transformation efforts of companies on a Digital Maturity Index and found year-over-year progress in basic areas, such as digital initiatives to improve a company's efficiency. However, most companies come up against a "digital ceiling" when trying to achieve the most advanced levels of maturity.

The report, which surveyed over 1,000 executives globally, ranked the most digitally advanced companies as "Visionaries", followed by "Explorers" and then "Watchers."

Companies know how to achieve moderate transformation success, with an 18 per cent increase in companies progressing this year from the lowest tier of Watchers to the middle Explorer tier. However,

Explorers struggled to move into the top Visionary cluster, with the top tier remaining the same, indicating a "digital ceiling" to transformation efforts.

The Visionary cluster remains unchanged despite companies reporting fewer barriers to digital transformation than last year. Human, rather than technological, barriers are now the most persistent, with the two of the top hurdles being the lack of talent or skills (34 per cent) and a risk-averse corporate culture (35 per cent).

How to break through the digital ceiling?

The research demonstrates that top performers break through the digital ceiling because they think differently.

Firstly, successful companies focus strongly on people, using digital transformation to make improvements centred on customers and employees.

Most companies (68 per cent) across the spectrum stated operational efficiency and increased productivity as a main transformation objective. But successful companies in the Visionary cluster are particularly motivated to make improvements for their employees. Nearly half of Visionaries describe "empowering employees" as a major business objective for transformation, compared with less than one third of Explorers and less than one fifth of Watchers.

Likewise, Visionaries have an increased focus on customer centred initiatives, being significantly more likely than other clusters to undertake transformation to improve customer experiences and engagement and in order to respond more quickly to customer needs.

Secondly, successful companies have a different mindset when it comes to transformation processes.

Traditional linear transformations result in long transformation timelines, meaning a company's improvements are out of date by the time the process is complete. Instead, top performers demonstrate a cyclical mindset, implementing recurring rapid feedback loops to accelerate transformation and keep updates relevant. The Visionary cluster is far ahead of others in digital initiatives tied to quick cycles: 75 per cent operate at scale in Agile and DevOps, compared with an overall average of 34 per cent for the entire survey group.

Businesses overestimate tech barriers and underestimate the importance of a company's mindset

The importance of culture and a cyclical transformation mindset to breaking through the digital ceiling were underestimated by businesses last year.

In the 2019 Digital Radar report, companies were asked to predict the biggest barriers to their transformation progress for the following year. This year's Infosys Digital Radar 2020 compares these predictions to the actual challenges businesses faced in 2019.

Businesses reported dramatic declines in the impact that technological barriers have on their transformation progress, including:

Inability to experiment quickly (down 49 per cent);

Insufficient budget (down 40 per cent);

Cybersecurity challenges (down 40 per cent).

However, businesses made much less progress against cultural barriers, including lack of change management capabilities (down 7 per cent) and lack of talent (down 6 per cent).

Progress across industries and geographies

The technology and telecom industries continue to rank highest on the Digital Maturity Index this year.

Consumer packaged goods, logistics, and healthcare achieved strong year-on-year improvements. The report's anecdotes from executive interviews suggest that the adoption of telematics, the Internet of Things and smart medical devices contributed to these increases. Likewise, the automotive industry placed fourth by digital maturity and featured the second highest percentage of Visionaries (30 per cent of those surveyed).

The insurance industry lags significantly behind other sectors, featuring the highest percentage of Watchers (17 per cent).

The digital ceiling was most dramatic in China, where 23 per cent of companies moved from Watcher to Explorer (which rose from 64 per cent to 87 per cent), but the percentage in the Visionary category (8 per cent) remained the same.

Salil Parekh, CEO and MD at Infosys, commented: "We've seen enterprises successfully employ emerging technologies to optimise productivity and efficiency, but struggle at the next stage of digital maturity. Faster, better, and cheaper technology alone will not provide the improvements enterprises need. Our research has shown that companies which can keep pace with digital transformation are those that design digital initiatives to improve customer experiences and empower their employees, differentiating themselves and propelling their business to the most advanced levels of progress."

Jeff Kavanaugh, VP and Global Head at Infosys Knowledge Institute, commented: "This year's Digital Radar research revealed significant progress across transformation initiatives – however, traditional programme models are not keeping up with the rapid pace of market change and companies face a distinct barrier in reaching top levels of digital maturity.

"The most successful businesses in our survey have an employee focus and a circular transformation mindset, which enable top performers to kick off a virtuous cycle in the company. The result is a "living enterprise" that is constantly sensing, improving, and attuned to its customers and employees. This living enterprise is suited to serving a larger circle of stakeholders – employees, customers, suppliers, local communities, and larger society – not just shareholders."

For a full copy of the Infosys Digital Radar 2020, please visit: https://www.infosys.com/navigate-your-next/research/digital-radar-report.html

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DXC Cites Digital Twins as Business Imperative for Enterprises Across Sectors
22 January 2020

DXC Technology cited digital twins as a business imperative for the next evolution of digital enterprises.

Digital twins take advantage of the vast amounts of data from connected devices to provide a detailed, data-based model of a physical system. As the internet of things (IoT) connects more and more of these devices within organizations, virtual simulations of physical environments are becoming an increasingly critical piece of an enterprise digital strategy.

 "Digital twins have grown to become one of the most useful tools in an enterprise's toolkit," said Dan Hushon, senior vice president and chief technology officer, DXC. "By simulating physical environments in a virtual world, organizations are able to make predictions and understand things like propensity to buy, performance boosters, even a patient's wellness trajectory."

While pioneering manufacturers first used digital twins decades ago, recent advancements in artificial intelligence (AI) and high-performance computing (HPC) are spurring their use by mainstream

enterprises today. With the vast processing power of HPC, diverse industries have applied digital twins to scale simulations, shorten development timeframes and derive tangible business results. Some of the growing vertical use cases include:

Smart cities: Cities around the world are building models of their smart systems in a virtual world to make predictions, test and learn using data and analytics prior to deployment. For example, they can understand how autonomous vehicles respond to connected traffic lights to make better and more timely decisions that improve outcomes, such as citizen safety.

Healthcare: In a value-based care environment, doctors are under pressure to become increasingly efficient and accurate in their diagnoses. Digital twins can help providers home in on the two or three most important questions to ask a patient to enable a finite diagnosis. Medical device manufacturers can use digital twins to create and test 3D-printed, custom-built orthopedic implants that dramatically decrease a patient's wait time.

Aerospace and defense (A&D): Companies in the A&D industry leverage digital twins to visualize the status of their products at each step of the production process and in the aftermarket. Digital twins have completely transformed the way some ships and aircraft are designed. For example, digital twins assess the quality of airfoil blades in jet engines by providing manufacturers with a comprehensive process view, including the thrust produced under real-life circumstances.

"Initiatives such as digital manufacturing/industrial IoT aim to generate intelligence from volumes of data (from devices, equipment and controllers) beyond what we are used to in the enterprise," said Mike Smart, senior analyst and operations officer, NelsonHall. "HPC will help to address this explosion of data generated by digital manufacturing projects such as digital twins."

Backed by extensive service integration capabilities and world-class HPC experts, DXC helps businesses create replicated models and simulations with digital twins across industries, providing visibility into system performance before physical processes and products are completed.

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MGISS and vGIS Bring Augmented Reality to 3D Mapping and BIM

20 January 2020

The development of Augmented Reality as a tool to manage and visualise hidden infrastructure assets has taken a major step forward following the announcement of a partnership between two technology companies. MGISS, a UK geospatial specialist, has partnered with Canada based vGIS to transform traditional GIS, BIM and CAD data into stunning Augmented Reality visualisations.

Augmented Reality provides an interactive experience of an environment where objects that reside in the real world, such as underground pipes, are displayed and enhanced with additional intelligence such as attribute information and maintenance records.

A specialist in the use of geospatial technology in the utility, infrastructure and environment sectors, MGISS understands the demands for improved spatial data quality and the requirement to communicate complex, asset dense, 3D environments in an easy to consume way. By combining authoritative survey grade positions and associated data with consumer grade hardware MGISS enables users of vGIS to access Augmented Reality visualisations from any suitable smart device.

vGIS is the leading augmented and mixed reality visualisation technology for GIS data. Using the vGIS system, field personnel can see an augmented view that includes holographic infrastructure objects, improving environmental assessments and increasing situational awareness.

"Initiatives such as digital twinning and the expectation of 'Business As Usual' (BAU) operations require the capture and representation of increasing complex real-world environments. Asset owners and operators face a number of challenges and opportunities including the need to improve safety, reduce risk and ensure what lies beneath our feet meets future infrastructure needs," commented Mike Darracott Managing Director and founder of MGISS.

"vGIS truly understand the needs and the challenges facing these sectors. In fact, vGIS goes further than any other Augmented Reality solution by providing a full range of 3D spatial data capabilities; all within a platform that works with existing enterprise systems and data structures," added Darracott.

"Value is often hidden deep within the structure of data. By helping people "see" data in more intuitive ways, they gain new insights and can subsequently do more with that information. That's been the core operating philosophy of vGIS," commented Alec Pestov, founder and CEO of Canada based vGIS. "To achieve this we are building an ecosystem bringing together top experts to work jointly towards a common goal. MGISS possesses deep expertise in the spatial services and solutions sector and we are looking forward to joining forces to deliver augmented and mixed reality visualisations in the UK."

MGISS is a specialist in the use of geospatial technology in the infrastructure, environment and energy sectors.

MGISS independently advises on the smart use of data, software and hardware to underpin the digital transformation of asset management. Delivering a full range of solutions and services, MGISS helps businesses capture, analyse, visualise and inform decision making using geographic information.

MGISS has successfully completed projects on behalf of Northumbrian Water, Laing O'Rourke, Surrey County Council, Sir Robert McAlpine and the National Trust.

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SAP Joins Collective Action to Create a Cleaner Ocean by 2030

24 January 2020

SAP SE announced that it has joined the World Economic Forum's Global Plastic Action Partnership community, which is determined to create a cleaner ocean by 2030.

Reducing the amount of plastics entering the ocean requires cross-industry collaboration armed with data and intelligent technologies. To support this, SAP is planning to launch the next phase of its Plastics Cloud to allow businesses to shift rapidly to alternatives to single-use plastics, scale design for circularity, invest in materials collection infrastructure and ensure a better consumer experience.

"SAP is committed to a significantly cleaner ocean by 2030," said Christian Klein, Co-CEO and Member of the Executive Board, SAP SE. "We want to achieve this objective together with customers, NGOs, governments and partners and will provide them with the tools, insights and solutions to eliminate waste and maximize resource productivity. Many of our customers have also made commitments to a cleaner planet. We will support them in achieving their ambitious goals, and together we can accelerate the move to a restorative and regenerative economy."

Underscoring this, SAP has updated the Plastics Cloud to help companies produce products more responsibly by providing global insights to enable better understanding about what materials are used and their fates. This support will be based on local recycling infrastructures and policies in each city, region and country. It will allow them to calculate more accurately the environmental and business impact of using more recycled or reusable materials and packaging. SAP software systems also help companies adapt to changing regulations, such as extended producer responsibility policies, and stay

current with local markets, global standards and best practices.

The new Plastics Cloud offering links to a secondary materials marketplace based on Ariba Network, which connects packaging and consumer products companies to new sources of recycled plastics and plastic alternatives. This will complement initiatives such as the UK digital waste map announced last year by waste-insights company Topolytics Limited.

Consumers, regulators, investors and employees are fueling the momentum for business to drive responsible growth. Experience management firm Qualtrics, an SAP company, conducted a large-scale global study with the World Economic Forum to understand better the experience citizens around the world are having with various issues on the Forum's sustainability agenda, including the use of plastics. When asked what method they favor for reducing the harmful effects of plastics, nearly 50 percent of the 10,501 research participants said they prefer replacing plastics with other materials. On the other hand, while vast majorities called recycling very important, only 30 percent of participants said recycling was the best solution to the plastics crisis. Read about the study in "New Research: Understanding World Issues Through the Experiences of Those Who Are Living Them."

SAP is part of a growing movement of policymakers, NGOs, social groups and leading companies working together on solutions to create a restorative and regenerative economy. Global leaders from SAP, The Coca-Cola Company, The Ellen MacArthur Foundation and World Wildlife Fund discussed their vision for a plastics-free ocean earlier today at the World Economic Forum Annual Meeting in Davos, Switzerland.

"I am delighted to welcome SAP to the Global Plastic Action Partnership community," said Kristin Hughes, director of Global Plastic Action Partnership (GPAP) and member of the World Economic Forum's executive committee. "As a pioneer in the technology and innovation space, it is fantastic to see SAP channel its expertise and resources into solutions that will strengthen the global response to plastics pollution and drive progress towards a fairer and more sustainable world. We look forward to a long and fruitful partnership."

SAP recently joined The Ellen MacArthur Foundation's Circular Economy 100 (CE100) Network, a collaboration of business, governments, universities and thought leaders working together to accelerate adoption of circular economy practices and processes that maximize the use of resources.

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Synopsys and Finastra Partner to Secure Financial Services App Ecosystem Technology
22 January 2020

Synopsys, Inc. and Finastra announced a partnership establishing an application security validation program for FusionFabric.cloud, Finastra's open platform for developing, deploying and consuming financial applications. The program, powered by the Synopsys Software Integrity Group, ensures that all applications offered via the FusionFabric.cloud FusionStore have passed thorough vigorous security testing assessments.

"By partnering with Synopsys on our application validation program, we're creating a win-win solution for financial institutions and Fintech developers," said Nir Valtman, head of product and data security at Finastra. "Financial institutions can streamline the onboarding process for new applications and bring innovation to market faster, and Fintech providers get third-party validation from an industry-leading application security company."

FusionFabric.cloud is a scalable, open, and collaborative development platform that enables Fintech

providers to create and bring applications to market faster. Synopsys will help validate the security posture of all applications onboarded to FusionFabric.cloud, using solutions that include static application security testing, software composition analysis, penetration testing, and code reviews.

"In today's dynamic threat landscape, security is a requisite component of innovation, especially in the Fintech space," said Steve McDonald, co-general manager of the Synopsys Software Integrity Group. "The application validation program leverages Synopsys' security testing technology and expertise to ensure that applications published on the FusionFabric.cloud platform are designed, developed, and deployed with the highest standards for security. The net result is that Fintech providers can focus on delivering innovative solutions rapidly, and their financial services customers can rely on them with confidence."

Early adopters of the platform, who have already completed the application validation program, include Allied Payment Network and Monotto.

"The FusionFabric.cloud platform has provided us with inroads to Finastra's client base, and has driven demand for the RoboSave app, our automated savings tool," said Christian Ruppe, CEO and Co-Founder, Monotto. "By going through Synopsys' rigorous validation process before being made available on the FusionStore, banks have peace of mind that RoboSave meets the highest standards for security."

Finastra unlocks the potential of people and businesses in finance, creating a platform for open innovation. Formed in 2017 by the combination of Misys and D+H, we provide the broadest portfolio of financial services software in the world today—spanning retail banking, transaction banking, lending, and treasury and capital markets. Our solutions enable customers to deploy mission critical technology on premises or in the cloud. Our scale and geographical reach mean that we can serve customers effectively, regardless of their size or geographic location—from global financial institutions, to community banks and credit unions. Through our open, secure and reliable solutions, customers are empowered to accelerate growth, optimize cost, mitigate risk and continually evolve to meet the changing needs of their customers. 90 of the world's top 100 banks use Finastra technology. Please visit www.finastra.com

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TCS Consolidates its Growth and Transformation Brand Leadership

22 January 2020

Tata Consultancy Services announced that it has been recognized as the fastest growing IT services brand of the decade, and one of the fastest growing IT services brands of 2019, by Brand Finance, a brand valuation firm, in its 2020 Global 500 report.

The report, released at this year's World Economic Forum in Davos, Switzerland, highlights a decade of significant brand growth for TCS, with its brand value increasing nearly six-fold since 2010, to $13.5bn in 2019, making it the fastest growing brand of the decade and positioning it among the Top 3 brands in IT services globally. Further, the year-on-year growth in brand value in 2019 makes TCS the fastest growing among the top 3 IT Services brands.

For the second year running, TCS' Chief Executive Officer, Rajesh Gopinathan has been named among the Top 100 Global CEOs worldwide, as per the Brand Guardianship Index which rates CEOs on how well they measure up as brand ambassadors, based on marketing investments, growth in stakeholder equity and business performance. Additionally, TCS' brand value is seen as the driving force behind the Tata Group's ranking amongst the world's Top 100 Brands.

"Our principal goal is to be the primary growth and transformation partner for our customers," said N Ganapathy Subramaniam, Chief Operating Officer, TCS. "This accolade is further recognition of the strength and depth of our Business 4.0™ framework, which underpins everything we're doing to transform industries and business models."

"There is plenty to celebrate for TCS, which has continued its brand growth trajectory, consolidating its position as a top three global IT Services brand," said David Haigh, CEO, Brand Finance. "As we've seen over the past year, this growth has been driven by TCS' laser-focus on fostering long-lasting partnerships with its customers, but also making enduring and meaningful investments in the communities where it operates around the world."

TCS has continued to build its brand through its global marathon sponsorships portfolio, including the TCS New York City Marathon, TCS Amsterdam marathon, and Virgin Money London Marathon. The recognition from Brand Finance follows a host of awards won by TCS in 2019 for its marketing and communications efforts, including a MediaPost APPY Award and a Red Dot Best of Best Design Award for its marathon apps and platforms, and multiple Stevie® Awards. TCS also won a Diamond in the category 'Building Reputation Through Brand and Differentiation' at the ITSMA Marketing Excellence Awards, and was – for the sixth year running – ranked number one for customer satisfaction in Europe's largest independent survey of IT service providers, carried out by Whitelane Research.

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Events

Espritcam opens Registration for ESPRIT World 2020

24 January 2020

Registration for ESPRIT World is now open. Register now to take advantage of early bird pricing.

In 2020, ESPRIT World is headed to Las Vegas, and registration is now open! Our engineers have been hard at work creating a fresh selection of classes that's yours to customize. Your registration also includes:

Access to ESPRIT Talks, powerful, compelling presentations led by industry pioneers

Two meals per day, plus refreshments

Five days of intensive ESPRIT training personalized to your machine and experience level

Special recreational events

...and a lot more!

Held at the Flamingo Las Vegas, ESPRIT World 2020 is just steps away from many of the city's most beloved attractions. Join us from June 8 until June 12 to unlock the full power of ESPRIT in your shop. Visit the ESPRIT World website for full details and registration.

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Hexagon to Show how its CAD/CAM and MES Software Connects to Measurement and Virtual Reality Tools, at EUROBOIS 2020

23 January 2020

Hexagon will demonstrate its complete one-stop solution, from measurement to 3-5-axis programming for the woodworking and fitting trades at the leading European trade fair, EUROBOIS 2020 February 4

-7.

Visitors to Stand 6F10 will see demonstrations of Hexagon's product portfolio which is constantly being expanded to meet the needs of process optmisation and Industry 4.0 solutions. WORKPLAN, CABINET VISION and ALPHACAM are showing their latest 2020 releases.

WORKPLAN, the production management solution combining ERP and MES functions, interfaces directly with ALPHACAM CAD/CAM and CABINET VISION to optimise and precisely manage production in this rapidly developing sector. Christophe Mas, Product Manager at WORKPLAN, explains: "WORKPLAN's functions such as stock management, nesting import, time tracking, preparation of quotations and purchase orders, bring real added value to its users in the wood sector."

ALPHACAM 2020.1, the CAD/CAM solution that generates machining programs for all types of 3-4-5 axis CNC machines, will present its new interface with WORKPLAN, as well as demonstrating how it integrates with NCSIMUL simulation and verification software. The post-processor engine directly configures and deploys simulation to achieve more realistic movements, as well as the ability to support additional hardware that has been under-used or ignored.

Jean Patrice Groleau, Director of SYSTELL, ALPHACAM's distributor in France, says: "ALPHACAM significantly reduces programming times by automatically managing individual or continuous nesting and machining, according to constraints."

CABINET VISION, an integrated CAD/CAM system specific to interior design, allows carpenters, planners and kitchen designers to manage all projects, from design to the generation of NC programs. The latest release also offers additional functions, including a brand new interface for managing furniture and drawer assembly methods.

CABINET VISION interfaces with Leica Geosystems measurement tools. A new link with Leica 3D tele-meters has been incorporated into CABINET VISION, in addition to the Leica Disto 910. The 3D Disto Leica Geosystems is a unique instrument for capturing and projecting accurate 3D measurements. CABINET VISION can be linked directly to the Leica DISTO S910 laser to provide an integrated measurement solution.

rôme MARANDA, Director of CVF - CABINET VISION's distributor in France says: "Users simply connect the S910 to their computer via a WIFI connection, and select the Leica utilities function in CABINET VISION to take measurements - including doors, windows and openings - easily. CABINET VISION then creates the hang points, allowing the project to be designed quickly, without having to retrace the plans."

Visitors to the stand can also see Virtual Reality in action. In conjunction with VORTEK Spaces, an interactive visualization platform, the project designed with CABINET VISION or Sketchup is displayed in an immersive 3D environment. Users can then explore the impact of the various options by modifying textures, materials and colours.

Jérôme MARANDA, Director of CVF, CABINET VISION distributor in France explains: "This represents a real benefit for the sales teams by allowing customers to modify, visualize and move directly in the project by adding virtual reality. What better way to feel already at home?"

Meet the technical and commercial teams of WORKPLAN and ALPHACAM (distributed by SYSTELL), and CABINET VISION, distributed by CVF, February 4-7, 2020, Stand 6F10.

Financial News

HCL Q3 net up 17%, raises revenue growth outlook

20 January 2020

HCL reported strong growth for December quarter as profit and revenues hit record highs. The company added nearly 50 clients during the quarter. HCL increased the lower end of its guidance and operating margins for the year ahead as business grew significantly faster from sales of products it acquired from IBM.

The firm forecast growth to be 16.5% to 17% for the year to March, with operating margins - a measure of profitability to be 19-19.5%.

"We continue our stellar performance over the years and have now crossed a revenue run rate of $10 billion in this quarter. Our revenues have grown 16.4% YoY in constant currency and we have delivered a strong 20.2% EBIT," C Vijayakumar, President & CEO, HCL Technologies said in a statement. "Within two quarters of its inception, HCL Software has already onboarded 4,600 customers."

In July, HCL completed the acquisition of seven IP assets of IBM, which included its Lotus Notes mail software and Commerce Connections, a platform to help companies sell online. HCL paid $ 1.8 billion for the acquisition, which included 5,000 customers globally.

"HCLT has outperformed the peers (INFY, TCS) in revenue and margin performance. We continue to find HCLT valuation inexpensive in context of strong growth outlook coupled with margin performance & clarity of stable performance in product business. HCLT remains our top pick in IT services pack," said Aniket Pande of Prabhudas Lilladher.

HCL Technologies grew 2.1% in the quarter sequentially, outperforming rivals such as Infosys, TCS and Wipro. TCS grew 0.3%, with Infosys at 1% and Wipro at 2%.

Vijayakumar said the firm had a strong pipeline of deals that it would execute over the coming quarters.

The company also said that for the nine months in the current financial year the company has already clocked a revenue growth of 17.8%. Out of the 17% revenue guidance, 6% is expected to come from inorganic growth while 10.5 to 11% is expected to come from organic growth.

HCL Technologies reported a 17.2% year on year increase in net profit at $426 million for the three months ending December 2019. This came on back of 16.4% year on year growth in revenues which came at $2.5 billion in constant currency terms. Revenues grew 2.1% sequentially — better than smaller peer Wipro which grew 1.8% sequentially and larger peer Infosys that grew 1% in the quarter.

Buoyed by its products and platforms business that grew over 16%, 12 transformational deals across IT and business services, and in the key verticals of high tech manufacturing and financial services, a 50% increase in the number of $100 million clients, the company has increased the lower end of its guidance

from 15 to 16.5%.

DD Mishra, Sr Director Analyst at Gartner said that what's working for HCL is that they have a good portfolio of products and services which is in line with the market requirements.
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North American Semiconductor Equipment Industry Posts December 2019 Billings

24 January 2020

North America-based manufacturers of semiconductor equipment posted $2.49 billion in billings worldwide in December 2019 (three-month average basis), according to the December Equipment Market Data Subscription (EMDS) Billings Report published today by SEMI. The billings figure is 17.5 percent higher than the final November 2019 level of $2.12 billion, and is 17.8 percent higher than the December 2018 billings level of $2.11 billion.

"Monthly billings of North American equipment manufacturers reached a level not seen since June 2018," said Ajit Manocha, president and CEO of SEMI. "The December surge in equipment billings reaffirms the strength of leading-edge logic and foundry investments."

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PTC Announces First Quarter Fiscal Year 2020 Results

23 January 2020

PTC reported financial results for its fiscal first quarter ended December 28, 2019.

"PTC continued to see solid demand for our product development and digital transformation technologies across all major geographies. Sales execution was strong in the quarter, and our partner ecosystem continued to expand our global reach," said James Heppelmann, President and CEO, PTC.

"PTC is entering this new decade with a robust portfolio that positions us to deliver an impressive combination of growth and profitability. We see a lot of momentum in the core CAD and PLM business, while our IOT and AR businesses continue to generate very strong growth," continued Heppelmann.

"The addition of Onshape brings the industry's only multi-tenant SaaS platform into our portfolio, providing significant new opportunities for companies who want to reap the benefits of developing products in a fully cloud-based environment," concluded Heppelmann.

First quarter 2020 highlights]
Key operating and financial highlights are set forth below. For additional details, please refer to the prepared remarks and financial data tables that have been posted to the Investor Relations section of our website at investor.ptc.com.

ARR was $1.16 billion. Growth of 11% compared to Q1'19 reflects solid performance in our Growth and Core product groups, and in our global channel.

Cash flow from operations was $8 million in Q1'20. Free cash flow was $3 million and adjusted free cash flow was $12 million, compared to negative free and adjusted free cash flow in Q1'19. On a trailing twelve-month basis, free cash flow growth was 27%, and adjusted free cash flow growth was 34% in Q1'20, compared to Q1'19.

Operating margin was 9% in Q1'20 on a GAAP basis compared to 9% in Q1'19; Q1'20 non-GAAP operating margin was 26%, compared to 24% in Q4'19, and 27% in Q1'19.

Total cash, cash equivalents, and marketable securities as of the end of Q1'20 was $294 million; total debt, net of deferred issuance costs, was $1.12 billion.

Fiscal 2020 Outlook

"Given our solid Q1 performance, our visibility into the remainder of fiscal 2020, and favorable foreign exchange rates, we are raising our guidance ranges for ARR, Adjusted Free Cash Flow, Revenue and EPS," said Kristian Talvitie, EVP and CFO, PTC.

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Implementation Investments

Jetcam - Systima Technologies see ROI in two months using CrossTrack MTL software

22 January 2020

Systima Technologies, Inc., based in Kirkland, WA, manufactures components for the defense, space and commercial markets. The company was founded in 2008 but has quadrupled in the four years since 2015. Materials and Process Engineer Marc Staiger realised early on that the forecast growth would require them to have better material management; "At that time we had around 20 rolls on-site, which we were managing out time with Excel spreadsheets, but information was not up-to-date and was scattered across PCs across the network. Also, it involved a lot of manual work counting out-time."

At that time Systima had recently purchased JETCAM's Expert nesting software to drive their GFM knife cutter and OMAX waterjet and were made aware that JETCAM also had a product that could replace their spreadsheets with a more elegant, expandable solution - CrossTrack MTL. Said Marc; "The company was already happy with the JETCAM nesting product and its support, so it made sense to look at their material tracking solution."

After an online demo the decision was made to select CrossTrack MTL and a date was scheduled for remote installation and training. CrossTrack MTL uses MS SQL Server database platform and can also use the free SQL Express version. Installation and training was performed in just a couple of hours.

At the time of installation Systima had four freezers but are in the process of adding a fifth. Marc noted that CrossTrack MTL's flexible location creation has allowed them a deep level of granularity for locating material; "We've now got stock logged down to shelf location. So, staff can go directly to a shelf and only have to look at 4-5 rolls on the shelf to find the right one. This is a considerable time-saver. Previously we were easily spending 1-2 hours a day looking for rolls across the different locations."

The ability to sort stock by expiry and location proved immediately beneficial, with Marc citing that the savings in this area alone being huge; "Before there was easily at least one roll or even a batch per month that could be at risk of being expired. This meant either scrapping a roll worth $5000 or going through the expense and tying up the resources of having it recertified. With CrossTrack MTL we can organize by expiry and operate on a First In, First Out (FIFO) basis. The software will have paid for itself within a couple of months in material savings alone."

Marc appreciated the visual elements within the tabular data that CrossTrack provides; "I really like the

percentage status bars that are shown within the grids that display information such as roll length or out-time. These visuals really help you to digest the information easier."

Another useful feature for Marc has been document linking, where documents can be linked to a given material roll, batch, assembly or kit; "This has been useful in keeping all of the receiving information tied to material lots, and has been helpful with interfacing with quality control, pulling up Certificate of Conformity information on the shop floor, etc."

Systima regularly uses CrossTrack MTL's built-in reports engine, which allows users to create complex queries against the database and export the results; "This has been really useful as we can easily export it to Excel. It's helped us with working out volumes, projected usage, etc." A traceability report for a single roll or kit can also be generated within a couple of mouse clicks.

Support through US distributor NestOne has been excellent, with Marc being pleased the few times that he's needed to use it; "Technical support is awesome. We always get a prompt response whenever we have a question." Staff have also taken advantage of JETCAM's 'University' - an online video tutorial system comprising of hundreds of short videos covering all products. Since implementation staff have watched nearly 400 videos, allowing them to get answers to common questions at any time.

Although Systima currently use CrossTrack MTL independently of their JETCAM Expert nesting implementation they have the option of upgrading to a more integrated solution that will provide nest scheduling, automatically select the best roll to cut when a nest is scheduled and track location and life down to ply level. Mobile apps are also available for iOS and Android devices.

The company has seen significant growth in the last few years, with the number of rolls held in stock now over 150 and a second facility opening nearby. Marc concluded; "CrossTrack's flexibility and expandability will make it even more pivotal for us to maintain control over our material and helping with planning, purchasing and quality."

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K-BOXING Forges Competitive Strength with Centric PLM

20 January 2020

K-BOXING, the leading Chinese menswear company, has selected Centric Software®'s Product Lifecycle Management (PLM) solution. 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.

Founded in 1980, K-BOXING is a leading menswear brand in China. K-BOXING is headquartered in Shanghai and focuses on business and casual men's clothing, with jackets as its core product category. By 2016, K-BOXING had been selected as one of 'China's 500 Most Valuable Brands' for 13 consecutive years. K-BOXING has more than 2,000 branded stores across China.

K-BOXING decided to invest in menswear PLM to effectively compete with international and domestic companies who are stepping up digitalization across product development, manufacturing, supply chains and marketing.

"The information flow within our enterprise has never been smooth. Product sales data was not being fed back to the design and research departments in time, making it difficult to implement a quick-response research and development model," says Hong Boming, CEO of K-BOXING. "As the wave of digitalization rolls in, K-BOXING must keep up the pace and embrace the future."

"Centric PLM is the consistent choice for many famous brands in China and across the world," says

Hong Boming. "The flow between our existing research and development, supply chain and sales systems will be opened up through our PLM project to lay a solid digital foundation for K-BOXING. Many impossibilities can be made possible with the help of Centric PLM."

Centric PLM is expected to digitalize K-BOXING's product research and development department, promote more efficient cross-departmental collaboration, improve the accuracy of product introductions to meet market demand and reduce the risks of commercial decision-making.

Hong Boming, CEO of K-BOXING, concludes, "In today's market, digitalization is the weapon for future competitiveness that K-BOXING needs to forge. Promoting the process of digitalization will be our unswerving strategy for the next few years."

"We are very proud to announce that K-BOXING is our fiftieth partner in China," says Chris Groves, President and CEO of Centric Software. "K-BOXING is determined to implement a total digital transformation, and we are delighted to work with them to create a strong foundation for competitive growth."

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Leading Chinese Menswear Brand Lilanz Confirms Tremendous Efficiency Improvements with Gerber Software

21 January 2020

Lilanz, a leading Chinese menswear brand, has always been a leader in innovation and efficiency, striving to provide products with the best sense of quality, design, and fashion at optimal costs. In order to offer their customers the best quality and price, the renowned Chinese menswear brand has been at the forefront of leveraging Gerber Technology's robust pattern design CAD software, AccuMark®, and automated nesting solution, AccuNest™, for better data integration and improved communication.

"Efficiency is a key component to success in today's fashion climate and AccuMark is the #1 choice for many top fashion brands for that exact reason," said Edward Wang, Vice President & General Manager for APAC at Gerber Technology. "With AccuMark, you can quickly develop your pattern and send pattern data directly to your nesting software, ensuring data integrity and greatly improving communication among team members."

Lilanz was founded in 1987 and has since developed into a nationally-renowned menswear brand that integrates design, research & development, production, and marketing with more than 30 years of experience. In 2009, the company became China's first menswear brand listed in Hong Kong Exchanges and Clearing Limited. As of 2018, Lilanz possessed 2670 terminal stores all over China and was selected into CCTV's The Growing of the Great Brand. Lilanz has become the leading enterprise to show the Chinese menswear brand image to the world. Gerber's integrated software solutions will support Lilanz's growth aspirations by ensuring the data being passed throughout the entire supply chain is accurate. Lilanz is able to accelerate their time to market and decrease costs while offering an improved quality allowing them to offer the best design.

"We have a totally independent R&D team with over 500 people. As a menswear brand serving all categories, we must have market insights in fabric and what's trending. And this is why we choose Gerber to seamlessly integrate our workflow from design, development to production", explained Lilanz Developing team.

AccuMark has allowed Lilanz to digitize all of their patterns, accelerating pattern design and improving

efficiency by 20%. Lilanz is then able to transfer their pattern data directly into AccuNest where they'll be able to automatically generate cost and production markers for precise material calculations, which has helped them improve material utilization by 1.5% resulting in substantial savings.

In addition to Gerber's software solutions, Lilanz also leverages a service contract to ensure they're getting the most out of their software. With a service contract, Lilanz is able to get up and running quickly on the latest versions and benefit from the most innovative features of Gerber's industry-leading solutions through expert training and support from Gerber Certified professionals.

"Gerber responds instantly to all our requests and when any problem occurs. We are very satisfied with their software service."

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Lectra delivers new advancements in Versalis Offline to boost production speed and material savings
21 January 2020

Lectra announces the latest evolution of Versalis® Offline, the new digital leather cutting solution developed for leather furniture manufacturers. Designed to maximize the efficiency of the entire production cycle, Versalis Offline enables manufacturers to optimize their cutting process while improving productivity, nesting efficiency and ergonomics for faster furniture manufacturing.

The new Versalis Offline is modular, opening up the possibility to working in multi-site operations. The same cutting solution can be combined with several digitization stations enabling the production tool to produce faster (up to 20 hides per hour) while increasing hide efficiency by up to 10% compared to a manual process. Consisting of a three step process—digitization of the hides, multi-hide nesting (pattern placement) on the hides and cutting the selected parts—Versalis Offline enables furniture manufacturers to achieve significant gains in flexibility and performance by working on each task in parallel. Thanks to the power of automation, cutting-operators are liberated from time-consuming operations and are free to direct their skills towards more creative and higher-value tasks.

Lectra's digitization station with infrared cameras and augmented reality allows the operator to identify hide defects virtually, without physically marking them. Manufacturers can digitize hides faster by working with two operators simultaneously and they can gain up to 2% in material savings by making marks as close as possible to the defects.

A new placement station with the latest-generation of computing power enables manufacturers to nest, cut pieces and test multi-piece placement strategies in a minimum of time; improving efficiency by up to 1.2 % compared to a standard hide-by-hide placement embedded in other Versalis configurations.

The new Versalis Offline cutting solution is now available with one head for cutting large parts or with two heads for more productivity on small and medium parts. The solution is more compact compared to the previous version (3.2m vs 4.2m) to easily fit in facilities that have space constraints. Video projection supports hide repositioning technology to achieve complex and custom cutting orders. In addition, it provides offloading assistance of the cut parts for greater ergonomic comfort and improvements in operator productivity by limiting sorting errors during offloading.

"Industrial Internet of Things offers to boost production speed by connecting cutting room solutions to the IT environment. We are happy to be able to offer these advanced integration capabilities with the new Versalis Offline. Not only will Versalis Offline help increase workforce productivity but its modular options also enables for greater operational flexibility and lower production costs, ensuring a very fast return on investment," explains Céline Choussy, Chief Marketing and Communications Officer, Lectra.

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Lekoil Selects Infor and Progressive TSL to Support Expansion

22 January 2020

Infor announced that oil and gas exploration and production company Lekoil has selected Infor SunSystems and Infor CloudSuite EAM to underpin future growth plans. Delivered and supported by Progressive TSL, business solutions consultancy to the energy industry, Infor's financials and asset management platform will facilitate proactive planning, tighter inventory and tailored reports by asset. The financials capabilities will allow faster month-end and integrated purchasing, while the secure cloud-based infrastructure will remove the need for costly hardware and additional in-house IT staff, as well as accelerating deployment.

Founded in 2010, Lekoil partipipates in four assets across Nigeria: Otakikpo marginal field (in OML11), Ogo field in OPL310, OPL 325 licence situated 50km south of OPL 310, and recently acquired interest in OPL 276. Against this backdrop, robust, scalable reporting and asset management capabilities were required to integrate and consolidate processes, and support ambitious expansion plans in the coming years.

Lekoil selected Infor SunSystems and Infor CloudSuite EAM based on a strong track record of performance with similar-sized exploration and production companies in Nigeria. Progressive TSL was chosen for its in-depth experience of implementing finance and asset management systems in the region, and on-the-ground support with face-to-face client communication. Progressive was able to deploy the Infor solutions on a tight three-month timescale through its flexible oil and gas implementation framework with a staggered rollout.

"Our relationship with Progressive TSL really is a testament to our partnership strategy, which is designed to deliver micro-vertical expertise with the ability to scale," comments Frederic Russo, Infor vice president EAM international. "In an asset intensive sector such as oil and gas, best-in-class asset management capabilities such as those available with Infor EAM not only optimise operational performance through tighter management of the asset lifecycle, but enhance production and profitability, helping companies expand market share."

"Progressive TSL has delivered the implementation of the finance and procurement system for Lekoil in the promised timeframe," says Lekan Akinyanmi, Lekoil CEO. "Progressive TSL is fully committed to Lekoil, with its team being at our offices throughout every stage of the project. Due to their wide experience in implementing similar solutions in West Africa, we felt we were in safe hands. We are impressed with the outcome and are confident the scalability of the finance and asset management systems will support Lekoil as it continues to grow."

"It's great to see Lekoil going live with finance and procurement so quickly," says Progressive TSL CEO Chris Walcot. "This is a great foundation for the company and its ambitious plans for the future. We look forward to the next phase of the rollout."

Sinfonia Technology Selects Aras to Boost Business Operations

21 January 2020

Aras announced that Sinfonia Technology, an international manufacturer of semiconductor manufacturing devices as well as electrical components for aerospace industry, has selected Aras to improve design efficiency and break down siloed IT systems. Aras will provide solutions for document management, Bill of Materials (BOM), and project management.

Remaining innovative and agile is critical to staying competitive in today's fast-paced business climate. Under its previous system, Sinfonia Technology's engineering department did not have adequate time to develop new products and make improvements to its internal homegrown IT system. Sinfonia plans to use Aras' document management, BOM, and project management resources to increase engineering department efficiency and reduce design work time. The platform will also improve data processes for archived data browsing, creating transparency between systems.

Switching to Aras will allow Sinfonia to de-silo critical business information and realize greater integration capabilities, saving the engineering department valuable time and creating greater potential for innovation. The platform is adaptable and able to accommodate current needs as well as meet future requirements as Sinfonia grows. Sinfonia expects approximately 250 employees to use the Aras platform daily.

"We at Sinfonia are looking forward to incorporating Aras Innovator into our operations," said Mr. Makoto Sasaki, Chief of Engineering Group, Toyohashi Plant, Electrical Systems Division, Sinfonia Technology. "From the beginning we knew that Aras would be a good fit for our business thanks to their cost-efficient structure, a flexible system development environment, and high compatibility with other solutions."

"With our flexible, compatible PLM solution, we are confident that Aras will help Sinfonia Technology reach balance in their business operations and continue to foster an effective, innovative environment," said Masahiko Hisatsugu, VP Operations Japan. "As Sinfonia's business continues to grow, our resilient platform will evolve with the company, enabling Sinfonia to adapt to a rapidly changing marketplace while maintaining its competitive edge."

Established in 1917 as an electrical factory of Toba Shipyard, Sinfonia Technology started production of electrical equipment and ship generators for their own factory. Since then, they have contributed to the evolution of the industry through product development around generators and motors. Based on their technology and experience of over 100 years, today they serve customers globally with a wide variety of products and services including semiconductor manufacturing devices as well as electrical components for aerospace industry.

Univar Solutions EMEA Leverages OpenText Enhancements to Optimize Accounts Payable Operations

20 January 2020

OpenText announced Univar Solutions EMEA, a leading distributor of chemical ingredients and services in Europe, is working with OpenText Professional Services to upgrade their deployment of OpenText™ Vendor Invoice Management for SAP® Solutions to further transform its accounts

payable operations with new AI, intelligent capture and automation capabilities.

OpenText™ Vendor Invoice Management for SAP® routes invoices automatically to the right person for resolution, approval and payment. New enhancements to the solution will boost Univar Solutions EMEA's operations by giving the company access to OCR line item recognition, improving invoice training and automating previous manual freight processing and costing.

"Deep integration between OpenText and SAP is helping us continuously streamline our accounts payable processes, while continuing to find productivity gains through automation and innovation," said Brian Morgan, IT director EMEA, Univar. "We are working with OpenText Professional Services to take advantage of new capabilities in AI and process automation, ensuring that our people are focused on the customer-facing work which matters most to our business. The fewer touchpoints on an invoice, the better for our team and our clients."

Powerful optical character recognition combined with machine learning and intelligent automation enables content to be matched against supplier delivery notes. This helps Univar Solutions EMEA continuously identify and remove bottlenecks and automatically correct errors or inefficiencies before they impact customer satisfaction. Advanced analytics and reporting tools give Univar Solutions EMEA greater visibility over its accounts payable processes, helping ensure governance, compliance and clarity.

"OpenText helps companies connect business applications, digital business processes and proprietary company content. With technology that brings together information previously siloed across the business, OpenText can help transform content-intensive processes from complex and costly pain-points to sources of intelligence that boost customer satisfaction and provide an information advantage," said Patricia Nagle, Chief Marketing Officer at OpenText.

OpenText is SAP's largest solution extension partner with more than 20 years of experience helping SAP customers with intelligent integrations for content-intensive business processes and models.

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Product News

Altium Tasking VX-Toolset Certified by Tuv Nord

23 January 2020

The TASKING VX-toolset for TriCore/AURIX has been certified for the development of safety-critical software applications for automotive, agricultural, forestry and railway industries by the safety experts from TÜV Nord. The TriCore compiler toolset fulfilled the requirements for development tools of safety standard ISO 26262, and is certified for the development of software that must meet the highest safety integrity level (ASIL-D). The certified use cases cover tool confidence level TCL 3, which means the compiler provides the highest level of confidence/trust to maintain the safety requirements, even when advanced code optimizations are employed. This reduces the effort for TASKING customers.

The certification enables customers to use the TASKING VX-toolset for the development of safety critical applications without any additional qualifications when following the recommendations

described in the safety manual. This is in sharp contrast to alternative software tools that require the user to execute the tool qualification activities on their own. With this new certification, TASKING users will be able to get their products to market faster, without the costs of additional certification processes.

"The TÜV certification of the TASKING VX-toolset for TriCoreTM/AURIXTM version v6.2r2 represents the next milestone for TASKING in our joint activities to address safety related offerings to the automotive and industrial market," said Gerd Punsmann, Tool Line Manager for 32-bit automotive microcontroller at Infineon Technologies. "It will help our customers in those markets to address safety in their applications more efficiently."

The TASKING VX-toolset also satisfies tool qualification requirements of safety standards: EN 50128 (Railway applications) SIL 3, and ISO 25119 (Tractors) safety level AgPL d.

The TÜV certificate is available for download on TASKING.com. The associated TÜV Assessment-Report can be obtained via your TASKING sales contact, and is free of charge for customers with a valid TASKING Compiler Qualification Kit license.

Visit TASKING at Embedded World 2020, booth 4-371, and see latest tools around safety and embedded development tools for multi core systems.

TASKING is an Altium brand. TASKING development tools are used by automotive manufacturers and the world's largest Tier-1 suppliers to develop embedded microcontroller-based powertrain, body control, and ADAS related applications around the globe for both traditional vehicles as well as electrical vehicles. Customers rely on the TASKING development tools to create richer next-generation applications while achieving optimum reliability, safety, and performance.

AVEVA - AI Technology Delivers Comprehensive Preventive, And Predictive Capabilities for Engineering, Operations and Maintenance

22 January 2020

AVEVA announced a significant enhancement to its Asset Performance Management (APM) portfolio - the launch of AVEVA APM Assessment, AVEVA Asset Strategy Optimization and AVEVA Asset Strategy Library. Today's announcement completes the integration of the recently acquired MaxGrip software solutions into AVEVA's APM Portfolio. As a result, customers are now able to realize greater levels of reliability, availability, safety and efficiency in operating their capital assets, and move from reactive and predictive maintenance to prescriptive maintenance. Adding to AVEVA's comprehensive preventive, condition-based and predictive software capabilities, the integrated solutions will empower the workforce to execute prescriptive guidance across engineering, operations and maintenance resulting in improved efficiency, safety and reliability.

"We have seen customer demand evolve from asset failure prediction to the need for integrated guidance and prescriptive actions. AVEVA is the first vendor on the market to offer the portfolio breadth and domain expertise to help customers fully realize untapped value, gain control of their asset strategy and prescribe and execute the most efficient action," commented Kim Custeau, Vice President of Asset Performance Management AVEVA. "With this set of capabilities, we are redefining the scope of Asset Performance Management to deliver improved business outcomes for our customers."

Empowering the industrial connected worker by improving collaboration and increasing agility
AVEVA's APM Assessment benchmarks a company's current practices against best in class
performance and builds a comprehensive roadmap encompassing people, processes and technology.
These metrics, including asset criticality, are then used in AVEVA Asset Strategy Optimization to
balance risk, cost and performance of assets. This enables organizations to prioritize maintenance
investments and apply the most effective strategy for the workforce to execute.

ADNOC Gas Processing - Leading the way for O&G with Predictive AI
ADNOC Gas Processing is working with AVEVA using predictive AI technology with prescriptive
maintenance. "We value our strategic partnership with AVEVA, they set a very good example for what
a good collaboration is, and the results that come from this are a game-changer for long-term equipment
management and optimization," commented Ahmed Mohamed Al Abri, Vice President, Engineering &
Technical Services ADNOC Gas Processing.

From reactive to proactive, AVEVA's AI-infused software coupled with a rich asset library, provides
the unique ability to empower customers beyond anomaly detection with prescriptive analytics to guide
actions and drive targeted outcomes. By deploying these solutions, organizations can now rapidly
predict asset failure and then prescribe the most economically advantageous action that will remediate
potential asset failures. In terms of business value, these AVEVA's APM capabilities enable doubling
production output, reducing unplanned downtime, and saving $100s of millions in averted asset failures.
For the workforce, it means a safer, more reliable environment and better data to support accurate
decision making.

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Synopsys Announces New ARC HS4x/4xD Development Kit to Speed Software Development
23 January 2020

Synopsys, Inc. announced availability of the DesignWare® ARC® HS4x/4xD Development Kit to
accelerate software development for the ARC HS4x/4xD family of high-performance processor IP.

The ARC HS4x/4xD Development Kit is a ready-to-use software development platform with support for
the Linux kernel and access to the embARC open-source software packages on the embARC website,
enabling designers to start software development prior to SoC availability. The ARC HS4x/4xD
Development Kit includes a multicore ARC HS4x/HS4xD-based chip implemented in a 28-nm process,
and integrates a wide range of interfaces including Ethernet, HDMI, USB, SDIO, I2C, SPI, UART, and
GPIO, as well as a low-power GPU.

The kit also features an on-board WiFi (802.11abgn) and Bluetooth (BT4.0) module. This combination
of ARC HS4x/4xD processors and the comprehensive set of peripherals allow developers to build and
debug complex software on a fully-featured hardware platform.

The ARC HS4x/4xD Development Kit is configurable to support single and dual-core HS45D and
HS47D processors and up to quad-core ARC HS48 processors, giving developers the flexibility to use a
single development board for multiple ARC HS processor configurations. The kit offers an ARC HS4x
processor running at 1 GHz and includes 4 GB of DDR memory to run full software loads. With the
Development Kit's support for the Linux kernel, Yocto, and Buildroot systems, developers can
immediately begin Linux application development.

For bare-metal and RTOS-based development, the freely available embARC Open Software Platform (OSP) provides drivers, FreeRTOS and middleware for embedded and IoT application development.

All software for the ARC HS4x/4xD Development Kit is available on the embARC website, a comprehensive resource for embedded developers that provides a single point of access to free and open source software (FOSS) and tools to accelerate the development of embedded applications for ARC Processors.

The ARC HS4x/4xD Development Kit is supported by Synopsys' ARC MetaWare Development Toolkit, enabling the development and debugging of highly optimized, high-density code. The GNU Toolchain for ARC also supports the ARC HS4x/4xD family of processors. A HapsTrak® connector, enabling designers to easily connect the ARC HS4x/4xD Development Kit to Synopsys' HAPS® FPGA-based prototyping system, extends the platform so that it can be used for prototyping of new IP and associated driver development. The ARC HS4x/4xD Development Kit is also extensible through the available Digilent Pmod, mikroBUS, and Arduino connectors.

"Integrated hardware and software solutions are crucial in helping designers rapidly develop and debug software for their embedded SoC designs," said John Koeter, senior vice president of marketing and strategy for IP at Synopsys. "Synopsys' new ARC HS4x/4xD Development Kit provides developers with a ready-to-use platform and access to a comprehensive set of free and open source software, drivers, and operating systems to reduce development time and effort for their ARC HS DSP Processor-based systems."

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