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DID YOU KNOW...
An interactive digital version of Insight magazine with added content can be found online.
bit.ly/PPM-insight
The theme of HxGN LIVE 2019 Las Vegas includes the concept of autonomous connected ecosystems.

What I believe is at the core of this concept is improving productivity by automating that which is manual, connecting that which is an island of information and getting organizations working together for the advancement of the industry.

When we speak with customers, it is what they are essentially asking for. When customers are looking for benefits from “going digital” rather than a massive disruption, they’re telling us they want to extract value out of investments they have already made. They also want to create incremental gains by investing in a targeted way to realize the benefit of a more automated connected ecosystem.

They’d prefer to:

- Remove manual work processes wherever possible
- Connect the systems they already have (and don’t duplicate data!)
- Create partnership between all the players

Once realized, this could have a profound impact on capital project delivery and the effective ongoing operation and maintenance of assets.

The first step to digitalizing processes is the digitization of analog information sources. Once you have the data, it is only then that digital technologies can improve capital projects. Data is what these projects need if they don’t start in a digital mode of operation. However, even if they have the data, the trap many capital projects fall into is not doing anything with the information.

What are they missing out on? Well, project data can be used to determine what drives better performance, while inspection reports can be used to improve project quality. Data produced by construction and materials management systems can track supplier performance, perform predictive scheduling and workforce management.

Digital twins – which are real-time digital replicas of physical assets created by laser scanning of a construction site – make it possible to perform site inspections and track progress in real time from the office.

As we work with customers to craft solutions, we realize we can’t do it all by ourselves, so we are seeking partnerships with other industry leaders to discover where we can create the most value for customers, and in turn, the industry.

We are committed to the cause, and we look forward to the exciting journey we are all taking together.

Best Regards,
One workflow to design tomorrow.

- 2D/3D CAD Design Toolkit
- Building Information Modeling
- Product Design & Manufacturing
- Concept Design
- Project Management
- Third Party Applications

Hexagon strengthens its construction solutions portfolio for the AEC (Architecture, Engineering and Construction) market with the acquisition of Hexagon nv of Belgium. We have long been a leader in plant and process design & engineering. Now, the Bricsys acquisition extends our domain expertise into building design, adding a unique Building Information Modeling (BIM) workflow, all in industry-standard .dwg format.

BricsCAD is the familiar design platform for all your needs; 2D drafting, 3D modeling, Mechanical design and BIM.

www.bricsys.com

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MAKING THE BEST DECISIONS

*Putting Relevant Data to Work to Enable Autonomous Connected Ecosystems*

When Ola Rollén introduced the concept of Autonomous Connected Ecosystems (ACE) at HxGN LIVE 2018, he referenced how connectivity in the IIoT era has created too much complexity, with vast amounts of useful data but no clear path of how to use that data to drive productivity and profitability.

Hexagon PPM President Mattias Stenberg unpacks his vision of how this will unfold and what customers can expect as this revolutionary concept is explored.
Insight: What does “autonomous” look like in the large industrial assets that PPM serves, such as construction sites, ships, process plants and oil/gas facilities?

STENBERG: The gap between the production of data and the consumption of that data is growing. Part of our role is to shield our customers from some of that data that isn’t pertinent; the data that they are viewing must be useful. This means they need interfaces with role-based rules so that they can easily and quickly utilize their data to make the best decisions.

Here’s an example of how much data is out there: There were a billion people on Facebook Live for the countdown to 2019 on New Year’s Eve. In that one minute leading up to midnight, there were billions and billions of data points being generated. Was it all useful? Of course not. Our goal is to help people make sense of their data. For the future, we will be assisted in doing that with artificial intelligence, machine learning and autonomous insight.

Insight: In embracing the principles of the autonomous connected ecosystem, will PPM create new solutions, or will we be revamping legacy software to help make better use of the digital data?

STENBERG: It is a bit of both. We want to be innovative and launch new solutions, and we have several examples of that through our own research and development of our complementary acquisitions. However, we see that some customers struggle to adopt technology at the speed in which it is created, so whatever we do, we will focus on making our solutions as user friendly as possible. We are also investing in making customers more efficient and productive with what they already have.

We are looking at the work processes and the outcomes for customers - rather than standalone products – to increase their uptime, reduce safety incidents and improve access to plant information.

Insight: What are the components of that autonomous connected ecosystem?

STENBERG: To be blunt, this approach is in its infancy. Our customers’ industries have been laggards, so we are still determining what we must do to give them exactly what they need. We are making investments, but it will take time to arrive at a true autonomous state.

The potential is huge. Our customer base reflects a $10 trillion-dollar industry, so any improvement can make a huge impact on the economy.

Insight: Give some more concrete examples on what PPM is doing here. What bets are you placing?

STENBERG: We are revamping the user experience for all of our products. We also know that mobility is the first step of data automation, so there’s a sizable investment there. And we have several initiatives surrounding artificial intelligence, most notably auto tagging and auto pipe routing.

Looking at the owner operator market as an example of what we are creating, we really have a strong set of solutions that build upon one another to complete our ecosystem story:

Operational Twin: Promotes the plant’s as-is, transactional and time-series data
Connected Worker: Improves the effectiveness of your workforce with access to the information they need, where they need it
Shift Excellence: Advances continuity throughout shift changes and breaks down traditional departmental silos
Situational Awareness: Shares what has happened, what is happening, what will happen

Insight: When you meet with customers, what are the burning issues they share with you?

STENBERG: I can distill that into two things: Make the user interface simple, and make it work with what we’ve already got. So that’s what we’re doing.

Patricia McCarter is Senior Content Marketing Manager and editorial director for Insight Magazine for Hexagon PPM. She is based in Huntsville, AL, USA.
THE SHIFT FROM AUTOMATION TO AUTONOMY

There's a big, undeniable change happening right under our noses, and most people I know aren't even talking about it. It's strange because there's nothing that gets our attention like a big change. Think about it – when the lights go dark, or the temperature plunges, or our peace is shattered by a loud noise – we take notice.

Recently we've witnessed some of the world's most consequential change of our lifetime. I'm not referring to the shift in global trade relations, the many shakeups in European politics, or even the alarming scientific reports on climate change.
Without a doubt, all are notable and worthy of our attention – but there's something equally powerful that should be grabbing business and industry headlines.

THE AGE OF CONNECTIVITY HAS TURNED OUT TO BE THE AGE OF COMPLEXITY

This change I’m talking about is a direct result of IoT, the so-called Internet of Things. While the promise of the IoT era is anchored in the vast amounts of useful data being generated, the challenge has always been our ability to actually put it to use.

Instead of the IoT generating trillions in value, business and industry have been confronted with a different reality – the sheer volume of data generated daily by connected things has defied our ability to capture, store, see, understand and put it to work.

While the upside of the IoT remains as promising as ever – with connected “things” becoming smarter and more ubiquitous – if we are ever to realize this enormous potential, businesses must tame the complexity they are generating by their very own IoT strategies and the enormous amounts of data they create.

Hexagon is focused on the real IoT breakthrough, uncovering the world-changing solutions that hide in plain sight behind the mountains of data we create every day. To realize this promise, we can't rely on the technologies of the past.

THE NEXT EVOLUTION WILL BE DRIVEN BY AUTONOMY

The single greatest need in business today isn't automation; it's autonomous insight. This means much more than operational line of sight – it means being able to leverage vast amounts of data behind the scenes, where connected devices and machines interpret what's happening and why, and then act accordingly, autonomously.

This shift from automation to autonomy is so monumental, so critical to our collective future that the simple notion of “putting data to work” is our singular focus at Hexagon. This is key as more and more of our customers are eager to move beyond automation and embrace autonomous technologies – a trend we are uniquely positioned to deliver on.

This is the future we are enabling. We call it the Autonomous Connected Ecosystem, or ACE for short.

This is the real value of IoT: To connect, automate, and ultimately ‘autonomize’ entire ecosystems that can self-optimize performance and self-adapt to – and learn from – new conditions in real time to autonomously run entire processes.

THE FUTURE BELONGS TO ACE

The power of an ACE is its ability to evolve and grow along with the changing needs of each business ecosystem – whether an autonomous smart factory, city or fleet of vehicles. ACEs enable organizations to adapt to change in ways that would have been impossible before.

This is why, in 2018, we began rolling out a powerful new framework called Xalt. It represents our commitment to continuous innovation, it accelerates our ability to move our customers beyond the data impasse of IoT, and ultimately, it enables the creation of ACEs.

Our vision is to ultimately underpin all of Hexagon’s solutions with Xalt. This will embed the power of disruptive technologies such as AI, edge-cloud orchestration, mobility and data visualization, to name a few, in the hands of every customer.

In addition to our own R&D, we continue to acquire companies that complement and accelerate our ACE strategy and help sustain our growth. In 2018, our M&A activities focused on three strategic ACE capabilities: autonomous production, autonomous mobility and autonomous construction.

Highlights include NEXTSENSE and SPRING Technologies, both of which complement our autonomous smart factory approach; the acquisition of AutonomouStuff, which makes Hexagon one of the world’s leading suppliers of integrated autonomous vehicle solutions; and, the acquisition of Bricsys, which means Hexagon can now provide the AEC market with an end-to-end platform to connect, automate, and ultimately ‘autonomize’ the entire building and construction ecosystem.

SHAPING SMART CHANGE HAS NEVER BEEN MORE IMPORTANT THAN IT IS TODAY

For the first time in history, it's possible for companies to unlock and harness the full potential of their data. This is the real promise of IoT, and this is where Hexagon is doing its greatest work – shaping smart change.

Looking ahead, we remain confident in our ability to deliver upon our strategy. We all aspire to harness our power to change the world. Only a few of us ever do.
When PGESCo was contracted to build the South Helwan Power Plant - a supercritical thermal power plant that will generate 650MW of electricity - its main goal was to meet the strict deadline while enhancing the quality of engineering deliverables and client satisfaction.

Contracted for the Front-End Engineering Design phase of the plant, PGESCo executed the design in accordance with the latest international codes and standards.

PGESCo Utilizes Hexagon PPM Solutions to Improve Efficiency in Egyptian Power Plant Construction

RULE-DRIVEN AND DATA-CENTRIC
For this, the company searched for software solutions to help improve engineering productivity, as well as accelerate project schedules and enhance quality and accuracy of engineering design.

OVERCOMING CHALLENGES
For this project, PGESCo worked as a client consultant for the owner of the plant. The scope of work was divided into six phases.

Intergraph Smart® 3D and CAESAR II® were used for piping layout, piping support design and piping analysis to carry out the piping design activities and ensure that the detailed design by the contractors was correct. Smart P&ID was used for system engineering to ensure correctness and generate the various engineering deliverables (valve, line and equipment lists, etc.). Smart Electrical was used for cables design, routing and termination as well as generating electrical load list with breaker assignment.

For the structural design checks, Smart 3D was used for clash checking, and GT STRUDL® for analysis of the structural designs.

In addition, the site engineers continuously used Smart Review during the construction management phase for further clarifications and to ensure that what was designed in Smart 3D matched what was constructed on site.

The Hexagon PPM-based system also integrated data from external third-party systems, such as Tekla and ARCHICAD. Structural design and architectural information could be easily exchanged between Smart 3D and the third-party systems easily to ensure fast clash checking.

REALIZING RESULTS
PGESCo chose Hexagon PPM solutions to meet the strict project deadline and enhance the quality of engineering deliverables. The key reasons for choosing Hexagon PPM software included:

• Unique rule-based architecture with the capability to automate engineering processes
• Proactive and efficient support team
• Proven technology with strong references across industries and countries

The rule-driven and data-centric nature of the Hexagon products helped PGESCo improve the overall efficiency of the project delivery. While there were some issues between the integration of the electrical design and Smart 3D, the overall integration between different tools enabled smooth data transfer between different disciplines, supporting better revision control. This in turn allowed PGESCo to eliminate errors to improve the quality of the engineering deliverables.

MOVING FORWARD
For this venture, PGESCo had a team of approximately 60 people working on the project. Thirty of those had access to the Hexagon PPM tools, and only 20 engineers had the ability to modify and delete data; and the rest had viewing rights. PGESCo will continue to work with Hexagon tools in its current projects and expects similar benefits in the future.

Ahmed Nabil, Information & Systems Technology Manager at PGESCo, said, “Digitizing plant information with Hexagon tools helped us in eliminating human errors and data mismatches through automation and integration. “We were able to use the information at the right time and place, with the latest data incorporated. Analyzing plant information was easy and could be done based on the business needs during each step of the project.”
Bobby Hambrick is the Founder, President and CEO of AutonomouStuff; the Chief Autonomous Officer of Hexagon PI; and a pioneer and thought leader in the autonomy and self-driving industry. He founded AutonomouStuff in 2010 to serve the growing interest in automated vehicles in many markets. Hambrick is one of the first to develop and bring to market an automated R&D vehicle. He is a market leader in delivering solutions and platforms for autonomous vehicle development, robotics and data intelligence innovation. AutonomouStuff’s cutting-edge platforms that utilize an expansive portfolio of technologies are deployed in pilot programs worldwide – representing thousands of customers in the automotive and technology sectors across the globe. Prior to founding AutonomouStuff, Hambrick led technical sales at Springfield Electric. He is a serial entrepreneur who holds a Bachelor of Science in Business Administration Management.
**Insight Interview**

**AutonomouStuff**

**With Bobby Hambrick**

*Insight:* We’ve been told that your company had very humble beginnings. Share the story of how/when/why you founded AutonomouStuff.

**Hambrick:** I founded AutonomouStuff in 2010 to serve the growing interest in automated vehicles in various markets including automotive, mining, military, agriculture, aerospace and academia. The company began in a bedroom in my home, then moved to a barn in my back yard. In December 2013, I purchased the first commercial location for AutonomouStuff in Morton, Illinois. Since then, we have expanded four times in Morton, added commercial spaces in San Jose, Calif., and Beijing, as well as added sales and engineering in Detroit, Mich., and Karlsruhe, Germany.

AutonomouStuff now provides the best products, engineering services, automated driving software, R&D platforms and data intelligence solutions to aid in the advancement of robotics and autonomy. The company was 100 percent bootstrapped and has been profitable every single month since its inception in 2010. Today, my team is enabling, accelerating and deploying our solutions for automated mobility to thousands of customers worldwide.

*Insight:* Why did you feel Hexagon was a good fit to acquire AutonomouStuff?

**Hambrick:** Hexagon’s value add to the industry includes its global reach, its toolkit of a large variety of existing technology, along with an aggressive M&A strategy. All of this makes Hexagon a market leader in the autonomous mobility space. As Positioning Intelligence’s CAO, I will make sure Hexagon remains at the forefront of this fast-evolving industry. It takes a company like Hexagon, with its global presence and its many brands with a wide variety of solutions and abilities, to pull it all together. Hexagon has assembled impressive solutions for the advancement of autonomous vehicles, which include HD mapping, simulation, automation software, integration services, R&D platforms and data intelligence solutions.

With the acquisition of AutonomouStuff and others in recent years, Hexagon has made a big statement in terms of its intention to deliver real-world solutions to accelerate advances in autonomous mobility.

*Insight:* Hexagon PPM provides engineering/design/operations/maintenance software solutions for large industrial facilities... huge construction sites, offshore platforms, process plants, oil & gas refineries. How do you think AutonomouStuff can be incorporated into these industries?

**Hambrick:** As technology continues to grow and change faster than ever before, innovation is key. Every industry is looking to automate and become more efficient, while saving money. That’s where AutonomouStuff comes in. We enable, accelerate and deploy automation for a variety of industries.

*Insight:* When you think five or 10 years down the road, what will be automated that isn’t automated now?

**Hambrick:** Anything that isn’t currently automated has the potential to become automated. Technology is maturing at a pace unlike any other time in history. Automation will have a huge impact on every business out there and has the ability to fundamentally change the workplace, making offices, factories and so on, much more efficient. I believe we will see a shift more and more toward mobility as a service and automated delivery of everything. Automation is currently being incorporated into all sorts of industries and the potential is endless.
Hexagon PPM has made a deliberate pivot to how we are addressing the customers segments and industries we serve. Our philosophy is to focus on customer-based outcomes that deliver measurable business benefits.

By focusing on the outcomes, we can better partner with our customers by providing solutions that are targeted to help them achieve the results they require to deliver value and benefit to their shareholders. In the existing markets we serve today, we are working with our customers to define the outcomes that matter most.

With this, we are able to develop solution packaging based on proven technologies that our customers can take advantage of today. This approach changes the conversation from features and functions of a product to industry trends, financial impacts, operating KPIs and business processes that are important to our customers.

For new industry segments and markets, determining the important outcomes helps PPM understand the unique aspects and nuances that are impacting these industries or segments. This allows us to focus on defining solution packages that deliver value to these markets and for PPM to achieve growth in these areas.

Hexagon PPM is committed to partnering with our customers to bring proven solutions that allow them to succeed.

Where do you fit in?

Our customer-based outcomes include:
Digital Fabricator / Operational Twin / Shift Excellence / Connected Worker
Confident Startup / Enterprise Project Performance / Situational Awareness
Technology has made it easier to keep up with the components of our daily lives. Calendar notifications, news alerts, traffic forecasting … our devices walk us through every step of the day. Advancements in tracking have even enabled us to follow the movements of our purchases, from check out to receipt to delivery.

So why can't fabrication processes have the same visibility?

Fabrication is vital, but it is often overlooked from high-level process planning. With better use of available digital information, this step can influence both engineering and construction. Hexagon PPM’s Digital Fabricator solution can help achieve major efficiency gains and earn complete transparency within the process.

This approach is of particular value to pipe shops, steel service centers and shipyards, who will see a reduction in man hours and can combine the sales and production stages for additional productivity. Better visibility means happier workers and better bottom lines.

Consider a typical pipe shop workflow. Currently most fabricators control and manage processes electronically using spreadsheets, which constitutes an electronic workflow, not a digitally revolutionized workflow.

The success of a steel service center relies on speed and accuracy of quotations and time to delivery. The Digital Fabricator solution integrates with 2D/3D design, schedule, material management and machines on the shop floor to enable on-time delivery.

Shipyards often struggle with integration across the different departments needed in the fabrication process. By taking material availability, project schedules, resources and direct connections to fabrication machines into account, a more productive shop floor schedule and a detailed plan can be created.

Enabling workers to become Digital Fabricators opens the door to transforming the pipe fabrication shop into an ultra-efficient operation with improved productivity, reduced waste and full visibility at every step – from initial customer request through the fabrication and inspection processes to final spool packing and delivery.

Quickly assess material availability, workshop status, personnel and machine availability; then perform forward and/or backward planning to ensure accurate and achievable delivery dates during the creation of quotations and on-order receipts. This keeps your customers happy and on target with their plans.

Wake up each day to the notifications needed to manage daily fabrication.

• Speed up quotation calculation with increased accuracy of 30 to 80 percent
• Save up to 5 percent on materials
• Effectively use remnants and reduce storage by 60 percent
• Keep promised delivery times up to 100 percent

bit.ly/HexagonPPM-DigitalFabricator
Optimizing processes and plant information through digital technologies can impact more than just the bottom line; it is an investment in workforce.

Employee satisfaction has become a competitive advantage in the process industry and is anticipated to be one of the top advantages with the increase in the retiring workforce. With strong employee satisfaction, companies will:

- Recruit the best employees to replace the aging workforce
- Improve employee competency and values
- Reduce the expenses associated with overtime, recruiting and training

An Operational Twin is the plant’s as-is, transactional and time-series information. It is the collection of a digital twin specifically needed for operations, dishing up the right workers with the data they need, in the right context, when they need it.

By adopting the Operational Twin strategy, companies will see their employees becoming more productive. It will provide them a more enjoyable work experience without the frustrations associated with searching through legacy data and plant walk-downs.

A plant’s available data is likely stored in a combination of file cabinets, personal hard drives and outdated schematics.

In a time when anyone can quickly find any information about anything on the Internet from any device, shouldn’t workers be provided with the same efficiency to perform their jobs and make decisions?

Embracing the Operational Twin philosophy moves forward a plant’s place on the digitalization maturity curve. Hexagon PPM’s solution will streamline processes while connecting a plant’s existing information, so workers can visually access the as-is model of the facility.

Connecting this trustworthy plant information will reduce risk, improve worker productivity and ultimately improve employee satisfaction. Investment in the Operational Twin will help companies recruit the most skilled workers and empower them to be successful.

bit.ly/HexagonPPM-OperationalTwin

"It’s more than a few hundred thousand euros per year that you can save."

- Danny van der Krogt at Wintershall
What you can’t see CAN hurt you.

If coworkers or automated processes don’t know the location of plant personnel, safety cannot be guaranteed. This lack of visibility also creates deficiencies in productivity.

So ... how can workers be “seen” within the maze of equipment and architectural features inside a process plant? Adopt a Shift Excellence mindset that replaces forms and allows operations personnel to become “human sensors”!

While most plants have control systems to collect real-time information using data historians, the accompanying human processes are often recorded using inadequate tools. These poor operations management processes have caused catastrophic incidents.

The list of fatal incidents due to poor shift handover is tragically long, leaving behind grieving families, wary workers and huge corporate losses. The truly safe facilities require more efficient, consistent, detailed data across day-to-day operations.

Unfortunately, there are still inadequate time-consuming Human System Interface (HIS) data collection methods being used at many industrial sites, such as spreadsheets, white boards and radio calls. The crew forgets to hand over checklist items at the end of a shift; shift supervisors are unable to see shift crew logs; crews become fatigued from manually collecting and collating shift information.

No single event creates more incidents on an industrial site than the handing over from one shift crew to another; these information holes lead to wasted personnel time, employee frustration and increased exposure to injury.

By managing human processes with real-time data on one platform, workers can have more faith in their operations processes. Human sensors are more alert to potential issues, and they’re eager to suggest improvements. Humans see things that machines can’t.

Incoming workers will have the confidence that they are aware of all potential hazards and conditions in the plant, and outgoing workers will have comfort knowing they have completed and communicated shift activities.

Don’t ask your crew to do double work ... writing their processes on paper and then punching it into a system. It creates a perfect storm of miscommunication. Take your operations to the next level by equipping your personnel to become human sensors.

bit.ly/HexagonPPM-ShiftExcellence
Mobility afforded to us by our smart devices isn’t just about convenience. In the process industry, that mobility can be a huge component of a business strategy. Frontline workers who remain connected to the back office – even when in the deepest recesses of the plant – can make faster, better decisions, with increased productivity of almost 10 percent.

Those who remain disconnected can feel like they are stranded on a deserted island, with no resources available to empower them.

ACCENTURE MOBILITY REPORTS

The increase in productivity from connected workers – 8 to 9 percent
The reduction of costs for connected workers – 7 to 8 percent

While management might be hesitant to implement mobile technology because they don’t wish to change what they believe is working OK, it’s costing them. Big.

Industry experts say that wrench time accounts for only 25 to 35 percent of a technician’s shift; the bulk of their time is spent planning or looking for documentation. That’s an unsatisfactory reality for both the company and the staff.

By strategically employing smart devices such as tablets, phones and wearable sensors and adopting simplified work processes to match, industrial facilities can transform the way they do business. In doing so, they can boost productivity without compromising the clear No. 1 priority: Safety.

Historic constraints that have kept the process industry from adopting use of technology in the field are diminishing. The advancement of cellular connectivity (4G networks) and the adoption of WiFi have helped propel mobile usage. Interoperable platforms and modern cloud computing techniques make it possible for front-line workers to have access to the real-time data they need.

The cost of purchasing intrinsically safe mobile devices has drastically reduced in the past few years. Last but certainly not least, organizations are realizing that the incoming workforce is expecting modern technology, like mobile apps, to make their lives easier.

The transition might seem daunting, but it doesn’t have to be. A well-conceived Connected Worker Strategy can guide a gradual implementation that neither fatigues the graying, less tech-savvy employee nor frustrates the tech-adept millennial. Aim to achieve swift victories that grow confidence and can scale into a spiral of ideas.

GARTNER REPORTS

More than 30 percent of industrial businesses will achieve a competitive advantage by connecting workers with digital technologies

bit.ly/HexagonPPM-ConnectedWorker
Let’s face it – for most contractors and owner operators, completions and commissioning are afterthoughts.

Not surprisingly, poor handover processes play a significant role in this struggle to deliver projects on time and within budget. Handover, or the lack of it, continues to generate unexpected costs and delays, resulting in inefficient operations and safety risks.

Projects today are extremely complex, and Hexagon PPM recognizes the need to challenge the status quo of poor project performance and delayed completions. Also to be tackled are disparate handover to operations, the burden on the back end of the schedule, lack of visibility, migration confusion and startup uncertainty.

Digitized teams can work efficiently in the field, allowing workers to validate engineering information while inspecting equipment. This provides clear inventory and targets for contractors by unlocking communication barriers. A fully digital history of equipment, before the operations phase, ensures warranty compliance and improves efficient depreciation and management of assets at custody transfer dates.

Engineering design systems are built to support complex design, globally distributed engineering workshare centers, multiple fabrication yards, hundreds of suppliers and thousands of construction workers.

The many stakeholders – with differing priorities, agendas and drivers – ensure projects will remain complex. However, at Hexagon PPM we believe a comprehensive integrated project delivery ecosystem can take the complication out of the complexity. Regardless of engineering, procurement or construction priorities, the ultimate driver is facility start-up for owners.

Adopting Hexagon PPM’s Confident Startup methodology, along with its other project delivery systems, can yield a data-driven ecosystem that leverages information throughout the lifecycle to the commissioning and startup outcomes on a project that creates:

- Alignment within the project team
- Visibility to create accountability
- Empowerment for success

Getting the right information to the right person, in the right format, at the right time … the Confident Startup methodology can empower its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

bit.ly/HexagonPPM-ConfidentStartup
To run projects, many companies use a web of in-house developed tools, commercial software and spreadsheets.

**BUT IS THIS SILOED AND DISJOINTED APPROACH THE BEST WAY TO SUCCEED?**

Now imagine a singular portfolio and project management environment, seamlessly integrating data between different disciplines, standardizing processes across the enterprise and providing crystal clear visibility into the performance of every project … *in real time.*

Just like an enterprise resource planning (ERP) system delivers a singular view of an organization’s financial performance, this strategic solution would deliver the same for the entire lifecycle of capital projects. Hexagon PPM’s **Enterprise Project Performance (EPP) Strategy** drives superior efficiency, predictability and control across a project’s ecosystem, resulting in reduced project costs, improved schedules and more empowered business decisions.

ERP and EPP run in parallel, seamlessly and automatically exchanging mission-critical data, elevating the importance of accurate forward-looking data way beyond that of commoditized backward-looking data in the ERP.

The EPP then creates a singular management platform for the full project lifecycle – spanning Project Portfolio Management, Project Controls and Contract Management – effectively combining native data with that from any number of external sources.

This strategy is designed to broaden perspective since “on time / on budget” is no longer the only benchmark for success. Ensuring that projects are delivering well-defined business and financial goals is the most critical success factor.

Enterprise Project Performance maximizes margins for contractors and returns for project owners and agencies by reducing project costs, cutting related IT and PMO costs and achieving greater strategic alignment in project selection.

The result? A simplified, integrated home for standardized processes, real-time analytics, improved decision making and optimized resources.

The current industry norm, unfortunately, is for data to be buried in disparate spreadsheets, stored in siloed departments across your plant, where they are unable to provide intelligent, helpful visibility into not only what your operations are but what they could be.

Just as your underground piping system is hidden from view, your information is frequently hidden in documents and drawings, beyond the comfortable reach of those who need it. Maintenance systems, process information, repair schedules, planned outages, permits and job data need to be connected and accessible.

Without one picture that pulls everything together, decisions are based on what one person is experiencing in the moment; not all variables are being considered for the conclusions that need to be drawn.

That’s where the Situational Awareness Strategy comes into play. When your plant’s info is digitalized and interoperable, you can have 360 degrees of situational awareness … all without putting on your hard hat.

We create a common operating picture, fusing different data sources and visualizing across space and time – what has happened, what is happening, and what is scheduled to happen in the future. And this location intelligence isn’t just for your vessels, pumps and valves. It’s also about your people, so you can ensure safety while optimizing efficiency.

Incorporate real-time situational awareness of facility operations into the digital twin, which is imperative for continuously improving the operations and maintenance of complex facilities. In one common interface, you can assimilate all your data for real-time location intelligence and actionable information.

All those words, connecting all that information, in one glorious colorful picture. That’s the power of Situational Awareness!

bit.ly/HexagonPPM-SituationalAwareness
A collaboration working for a common purpose

BY KAYD LARSEN & ANETTE HAVRE

IN TODAY’S FAST-PACED ENVIRONMENT, COMPANIES MUST DRIVE COLLABORATIVE INNOVATION AND STRATEGIC THINKING TO DELIVER COST-EFFECTIVE SOLUTIONS AND LONG-LASTING CUSTOMER RELATIONSHIP.

The partnership between Hexagon PPM and Brownfield Solutions is proving this. This arrangement is delivering customer- and data-centric solutions that are carefully planned and executed to run leaner organizations and generate a greater return on investment while reducing the potential for human error.

Hexagon PPM is the software solutions company, while Brownfield Solutions provides the consultation and support services to integrate information management for owner operators, who then maintain and re-use engineering information throughout the plant lifecycle.

Both companies recognize the benefit of collaboration and strategic partnerships as fundamental to improving business outcomes, and customers benefit from the strengths and offerings they bring together to achieve digital transformation.

DIGITAL TRANSFORMATION, PUT INTO PRACTICE

A few years ago, a customer of Hexagon PPM and Brownfield Solutions experienced a devastating fire which destroyed millions of dollars in operational assets. This event was a critical turning point for the importance of digital information with the client.

Had this client not had the Hexagon PPM tools in place – which generated up-to-date engineering information regarding the affected area – it would have taken two years to rebuild, and it could have cost them over $2 billion in lost revenues.

With PPM’s digital transformation tools in place, the company was able to quickly identify what needed to be engineered and constructed to get it back on the production block in less than a year. This greatly lessened the amount of revenue lost due to the fire.

WHAT’S THE REAL MEANING OF DIGITAL TRANSFORMATION?

To put it simply, digital transformation means getting away from paper trails. It means ensuring all business activities are in an electronic searchable system and transitioned onto devices and in the cloud in a consumable format. Successful digital transformation breaks down the walls between computer systems and artificial intelligence for every aspect of their operations.

Digital transformation helps an organization keep pace with emerging customer demands now and in the future. It allows an organization to better compete in an economy that’s constantly changing as technology evolves. Transformation is necessary for any business that seeks to survive. In the wake of a natural disaster or large event, not having some form of digital transformation solution may lead to very costly mistakes for businesses.

The partnership between Hexagon PPM and Brownfield Solutions can convert issues into successes by simultaneously addressing the needs of the customer and maximizing the potential of employees to fully utilize digital resources.

These two companies have established a common purpose that sets the foundation. Making information more searchable and organized ensures employees won’t waste valuable time and money searching for information that needs to be accessible in an instant.

With the help of the partnership, information storage can be transformed from a weakness to a strength.

Kayd Larsen is president of Brownfield Solutions, and Anette Havre serves as a digitalization specialist. They are located in Calgary, Alberta, Canada and service all of North America, USA.
The newest addition to the Hexagon PPM family is providing new technology to help our customers digitally transform work processes that deliver measurable business outcomes.

The calendar had only recently flipped to 2019 when Hexagon announced the completion of its pursuit of j5 International, a market-leading developer of operations management software.

Billed as “The Only Operations Management Platform with Spreadsheet Configurability and Enterprise Scalability,” j5 Operations Management software is a shift handover, operations, process safety, compliance and mobile solution that is used by multinational companies globally. j5 Operations Management software is used by over 65 percent of the downstream and 100 percent of the upstream oil & gas assets in Japan.

As a result, the solution has been developed in industries with a strong continuous improvement (Kaizen) philosophy.

j5 International was founded in 1998 by Dr. Nicholas Hurley, who first developed an electronic logbook at a gold mine in Australia in 1989. (Hurley has joined PPM as Business Unit Manager as part of the acquisition). j5 International has since grown to a global company with offices in The Woodlands, Texas; Yokohama, Japan; Aberdeen, Scotland; Douglas, Isle of Man; Cape Town, South Africa; Singapore; and Perth, Australia; offering a comprehensive suite of web browser-based applications for operations and process safety.

Many of the plants, ships, mines and generation facilities in operation today were created using Hexagon PPM software. Likewise, many of those same facilities use j5 Operations Management software to manage the information generated by operations during shifts.

j5 International's world-class shift handover technology is the backbone of PPM's new Shift Excellence solution.

Shift Excellence simplifies a process that previously took hours of data entry: Teams now work with the logs, tasks and orders digitally collected throughout the shift to address anomalies and effectively communicate with the next shift.

Shift Excellence utilizes a facility’s personnel by blending digital transformation with human judgment and awareness. It’s about ensuring operators have all the information they need, when they need it, without relying exclusively on disconnected data sources or human memory during shift operations. Aligning shift-to-shift communications gives workers and managers clarity to operate with excellence.

“This acquisition expands our ability to manage the digital twin throughout the lifecycle of the asset by replacing paper, hard copies and spreadsheets normally used in the Operations & Maintenance phase of the business with a data-driven system,” said Hexagon PPM President Mattias Stenberg.

j5 International's operations applications will significantly enhance the value of our HxGN SDx® portfolio, while their owner operator customers now have exposure to Hexagon’s ‘digital twin’ capture and management capabilities.

“It’s a great fit for both sides,” Stenberg said.

Jerry Felts is Global Communications Manager for Hexagon PPM and is based in Huntsville, Alabama, USA.
HARNESS THE POWER OF DISRUPTION

Xalt is a powerful framework that will fast-track a customer’s ability to harness IoT data and ultimately accelerate their digital transformation journey.

ACCELERATE YOUR DIGITAL TRANSFORMATION

#DigitalTransformation