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SOFTWARE AND SERVICES
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Subsea, Subsurface to Downstream

Bringing digital software solutions to assist complex energy resource development, power generation, distribution and supply chain risk management challenges



We're talking about Many Moving Parts

Power generation is a hallmark of a modern day society. Vast populations of people use cellphones, computer systems, electricity to power their homes, drive their cars, and run their daily lives. While in the west a lot of these processes are seamless, however in many parts of the world, electricity is a scarce commodity making it difficult to harness the

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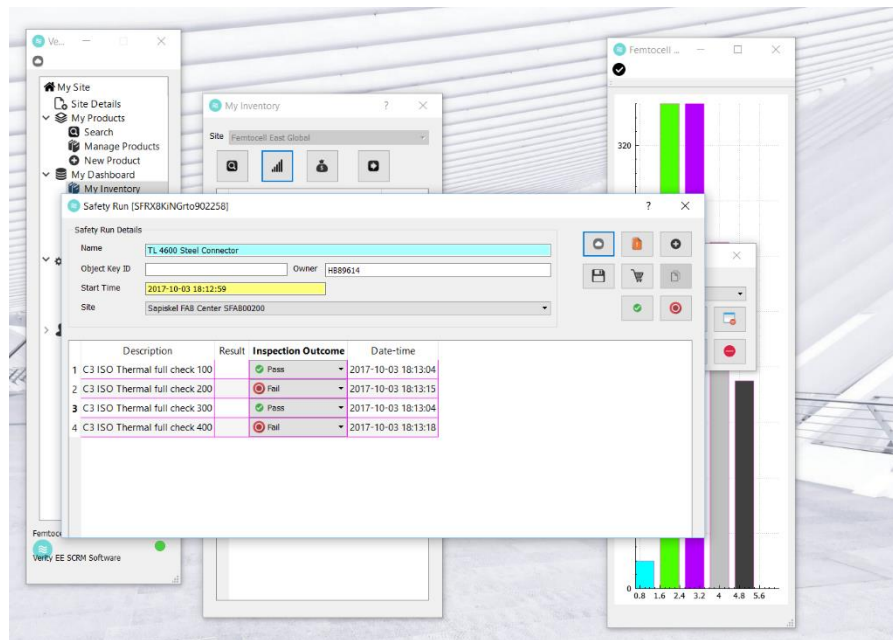


transformational effects of ubiquitous power availability. In the energy industry context there are many players who play a role from the exploration and production of energy resources (upstream), wind-energy generation, transfer of these undeveloped resources to refineries and processing plants, and then from there these energy sources are converted to electricity using a variety of methods and processes, and then distributed to consumers, who use this power to light their homes, power their cars, travel airplanes, charge their cellphone batteries and logging onto the internet for their online banking and e-commerce. The complexity of all such operations is enormous and adopting digital software solutions to help manage, co-ordinate and facilitate the process of power generation and distribution can be very advantageous



Digital inspections, tracking movement, financial costs, digital search

Let's start with the upstream side of the house. Before the energy service provider can begin, a lot of supply chain planning, forecasting, project management and cost control has to be carried out to manage the logistics of the project, equipment, personnel and resources to the energy source wellsite operations. Logistics, managing parts,





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labor, human capital in a coordinated fashion in a manner that keeps tracks of assets, their availability and accounting. In addition in multisite, multiuser environment how do we make it easy to search for what we need and make arrangements to transfer parts and supplies to where there is demand? By adopting the right software tools, managing such complexity can create opportunity for efficiency, cost savings, reduction of error and guaranteeing consistent levels of service quality across the end to end supply chain.

Running clean, sustainable, consistent service delivery

Once assets are in play, it is critical that we maintain them according to standard quality control and inspection criteria to assure that all installed parts, apparatus and systems are coordinated. It is important to routinely inspect, maintain, measure and monitor key performance indicators to measure the health and performance of components, assets and systems. The goal of this exercise is to assure consistent and high levels of service delivery. In addition, by inspecting parts if things need to be maintained, replaced or repaired, the team can co-ordinate the servicing of that components in a safe and efficient manner. These concepts apply to all phases of the energy creation process from E&P subsurface activities, to resource transfer via pipelines and various transport measures, and then to the processing of the resources to generate electrical power and then the distribution and marketing of those converted resources to the end consumer. All these steps in the energy supply chain present opportunity for process improvement via the adoption of digital processes to use software and linked database systems to efficiently manage, measure, track and measure key performance indicators.

CX, Collaboration, Efficiency, Safety and Security

The byproduct of these processes is improved collaboration, health, safety and efficiency of the end to end supply chain. The customer experience (CX) is improved due to higher levels of overall customer satisfaction and engagement. The various teams in the upstream, downstream units, can do their digital workflow inspection processes, share critical knowledge, and then hand off their findings to the counterparts in the distribution team and these in turn hand off high service quality levels to the power generation and downstream teams. The result is a more integrated supply chain, which means better cost-savings and less duplication of effort, and gate checks at critical junctures. Long term sustainability and safety is enhanced because the probability of components failing either as an isolated entity or an integrated element is reduced. In addition, the probability of integrated systems

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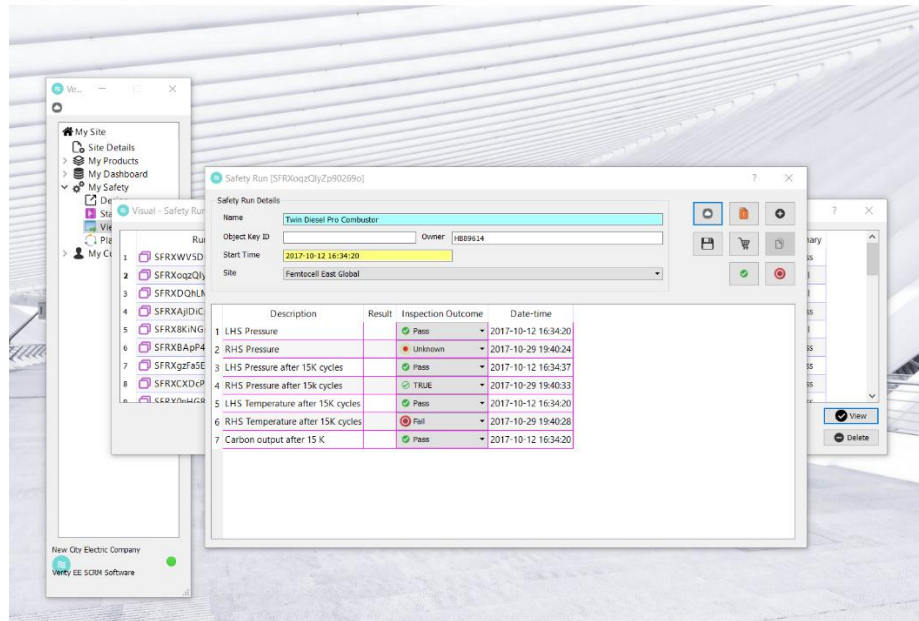


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failing is also reduced because digital inspection workflows are carried out at the component level, and at the integrated systems level.

Unified supply chain risk management software – Verity 3

Our software solution [Verity 3](#), provides a solution to part of the unified supply chain risk management puzzle that aims at making it easier for customers to define digital classes, framework and inspection level criteria, at the component and at the process levels, increasing service quality, and providing adequate coverage in the area of supply chain risk management. Due to increased transparency, teams can better setup KPI's and setup safety design processes for the most critical aspects of their supply chain that presents the greatest risk. Also our software provides a tiered multiuser risk management approach. This allows many sets of eyes to run independent test and validation inspection runs, provide their findings and then the team can come together assess and





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validate those findings. If one group missed something, another might catch it, increasing excellence and leaving no stones unturned. Also from a capital management perspective we can focus on implementing digital on the most critical elements of the supply chain, better managing operations risk. This data can help to guide budgeting and, from a budget stand point we invest limited maintenance and repair resources on the most critical areas. In complex engineering scenarios, it is getting difficult for one person to keep track of everything and employing digital software solutions to help manage and coordinate these activities can spur innovation, create higher levels of service quality through integrated quality control

Leveraging software, to glue it all together: Application Integration, Identity Management, and Service Management

Many established companies have invested considerable amount of capital resources in HR systems for people management, and ERP systems for resource planning and management and Enterprise Financial management, which are critical systems for managing complicated business processes. However an emerging area is how do we tie all these hardware and software systems together so they can communicate? In addition, how do we service these systems and processes during the process lifecycle? Emerging solutions such as [SailPoint](#) and [ServiceNow](#) IT Service management help enterprise glue their various enterprise systems and processes at the identity layer and the service management layer. Grant access to the right people to do their jobs, granting resources and access to the right people, while limiting access rights in accordance with business function. Validate and certify access to ensure teams have what they need. We also have expertise with SailPoint and application software integration



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allowing companies to manage their systems lifecycle in the area of identity and access management, providing better security, availability allows groups to intercommunicate and collaborate as never seen before

Technology and harnessing the power of private cloud

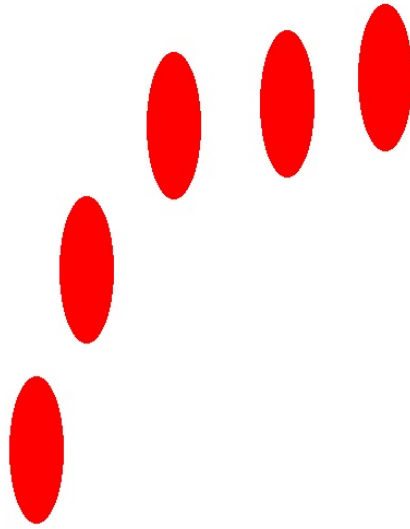
Cloud refers to how data is hosted and stored. Private cloud means that this data can be stored in a centralized location allowing distributed teams to access their applications and databases from anywhere. This allows teams to do their jobs more seamlessly. Verity software uses the power of private cloud to host our application software and databases, including support for [Oracle cloud](#). Many companies are also finding cost reduction by implementing some kind of private cloud virtual machine infrastructure to quickly stand up and bring down required systems to achieve movements and faster service delivery to their customers

Building our people, Spurring innovation, creativity, new market opportunities

These new innovation solutions have one thing in common, they bring people together to identify, tackle and address their most complex challenges in a team centric manner. This allows richer knowledge sharing, higher magnitudes of collaboration which ultimately results in an improved team. With the right software solutions innovation can happen, agility is improved allowing companies to maintain their focus while innovating around ways they can do things better. New offerings launched, new markets created, new creativity unleashed, progress and more momentum across scale



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#integrity #service #teamwork

"Give thanks to the LORD, for he is good; his love endures forever." – Psalm 107:1