Internet of Things jumpstarts asset allocation in Oil & Gas Sector

Endress+Hauser
People for Process Automation

For too long businesses in the resources industry have worked in operational silos; with the left hand rarely knowing what the right hand is doing, there is often no clarity from production to planning.

This issue is compounded when managing a business' inventory and supply chain, as decisions made on the ground can have major impacts at the top; as such, this aspect of the business is one of the most challenging.

Unfortunately, when it comes to fuel control and management this lack of transparency and clear communication is all too common, having a direct effect on your ability to effectively manage and control your tank farms and fuel terminal and remain agile and scalable to react to changes in demand.

Having great assets is one thing, but a disciplined focus combined with innovative technology is also required to create sustained value and lift productivity.

The development of the Internet of Things (IoT) is helping to shift the oil and gas sector into a new era of asset utilisation.

According to a recent research report from Berg Insight, the forecast growth of the IoT through the installed base of wireless devices in industrial applications will grow at a CAGR of 27.7 per cent from 14.3 million connections at the end of [2015] to 62 million by 2021, with a large number of these being in the resources industry space.

However, while existing sensors and process control equipment do give accurate insights into current and historical operational trends, the exchange of this process from process to business has been difficult as operations need to gather data from each individual piece of equipment, then the data requires collation and transformation into usable information to make high-level business and supply chain decision.

It is typically a convoluted, heavily manual process, and operations tend to be overwhelmed with the amount of data, and unable to transform their data into competitive advantages.

There was previously little an operator could do to rectify these issues, which would have flow-on effects not only on production but right to the bottom line.

However, new technology – coupled with the existing Big Data capabilities – is enabling deeper and completely scalable inventory monitoring and supply chain solutions through enhanced sensors and equipment through to software and analysis programs, providing full data exposure and breakdown from production through to the planners' level.

This is helping to evolve operational knowledge from the simple sensor data stage through to an inventory management phase to the eventual business optimisation process level.

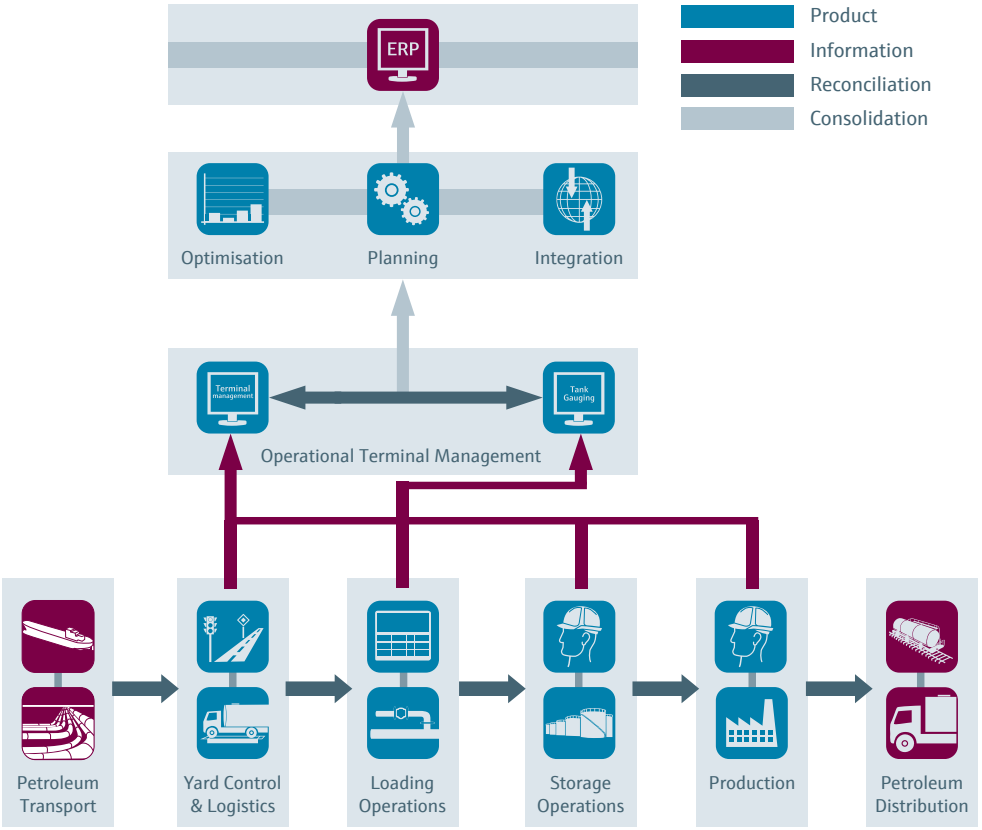
These new developments are innovative solutions that have been developed to lift best practice dynamic benchmarks that ensure not only reliability in reporting, but reliability in repeatability and efficient operation.

On top of this, new systems such as tank monitoring software, supply chain software, and programs that allow for the collation of information from multiple sources are providing visualisation of the data, providing operators with information not only on the quantities and tank gauges trending, but also alerts when stock levels reach critical points both to prevent tanks running out as well as overfill situations.

The visualisation of the data also allows for the easier analysis and breakdown of information, allowing for quick, mission-critical decisions to be made.

One of the major efficiency gains in ensuring inventory transparency is access to real time data and diagnostic capabilities.

By ensuring there is a consistent, and measurably reliable flow of data from trusted field instrumentation – which can be standardised to provide not only wider operational overviews, but also down to the individual tank measurement – you can truly gain control of your operation from every point, from the sensor right up to the business system.

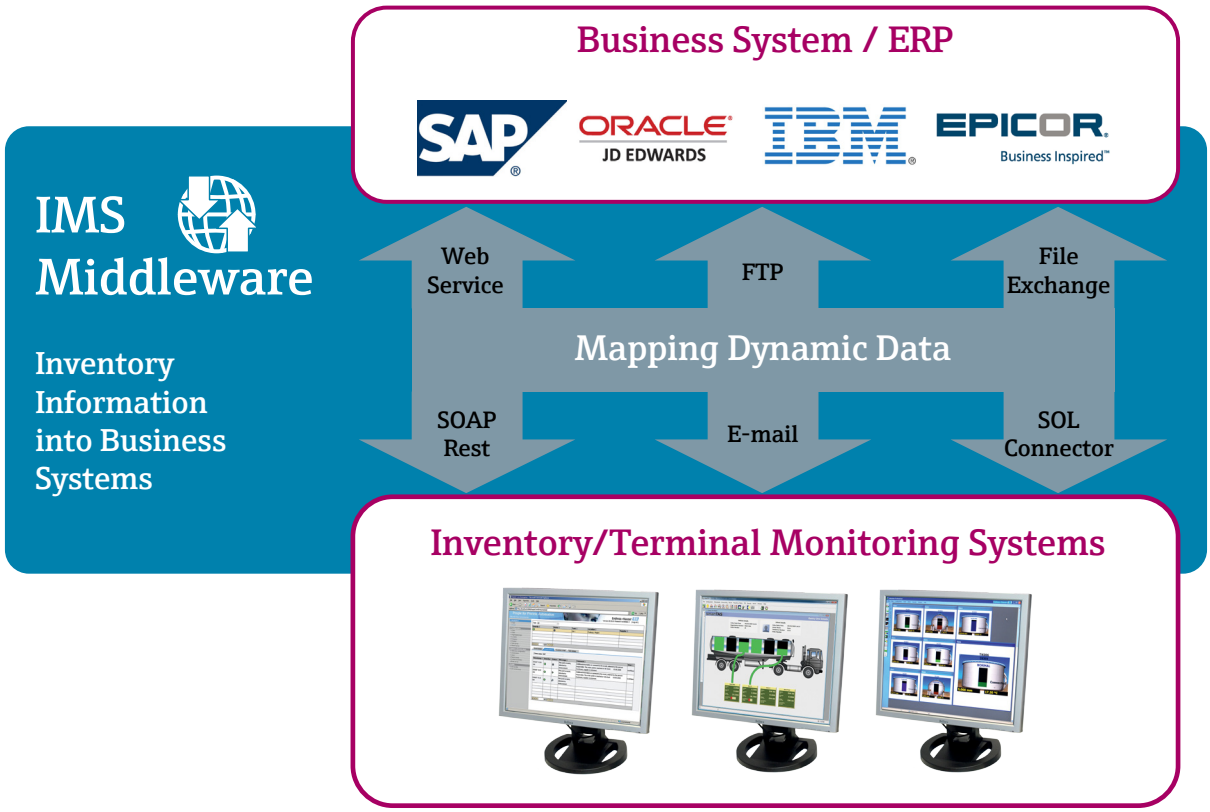


This technology – utilising open fieldbus protocols – allows for later expansion and migration possibilities, essentially future-proofing your plant.

It allows you to move from your tanks merely being static assets, to being active sources of information.

Additionally, as the instrumentation itself wireless, it removes yet another layer of infrastructure complexity, which in turn allows operators greater scope for scalability.

It also bridges the gap between the tanks and depots to the office where decisions are made, filling the ERP hole.



With real time data capabilities at your fingertips, which is also available remotely, you can have complete inventory visibility, 24 hours a day, seven days a week, anywhere in the world on any device.

By now having the capability to utilise a range of products, software and middleware products that can record, collage, and translate the information from your resources levels in the field, which can then communicate this to your ERP programs which can carry out complex operations such as billing and stock management, you can control your assets to their fullest and proactively manage your inventory, and in turn control your supply chain agility and scalability can give your business a competitive edge in what is currently an extremely tight market place.

In essence, it will help you to lift your productivity, and as Nobel Prize winning economist Paul Krugman put it: "productivity isn't everything, but in the long run...it's everything".

To regain control of your business and understand your own resources, Endress + Hauser has developed an educational information source outlining how they can help you not only address the inherent inventory management and operational transparency issues in your operation, but also in a safe, efficient, and wholly flexible way.

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