

Optimizing efficiency through digitalization in chemicals, petrochemicals and refining  
31<sup>st</sup> Oct – 1 Nov 2018, Sands Expo & Convention Centre, Singapore

## SPEAKER INTERVIEW



**Bryan Eunson**

SVP Asset Integrity  
Solutions  
**WOOD**

---

### 1. Please introduce your role at Wood

I'm the senior vice president responsible for Wood's asset integrity solutions business. This is a global role, managing teams in countries from Eastern Australia to Western Canada, and 22 others in between. The strength and depth of Wood's asset integrity business is unparalleled, and we continue to grow our capability through a blend of deep technical expertise, advancement in digitisation and our development of new technologies and methodologies.

### 2. What does the subject of digital transformation and IoT mean to you?

To me, digital transformation is the logical extension of the proliferation of computing into all aspects of our lives. Industrial transformation through technology is far from new, it was the basis for the original industrial revolution of course. The current game changer is the ability to gain deep insight into complex, high data volume areas of engineering and enable better knowledge-based decision making off the back of these insights. There are challenging elements of digital transformation, as the societal changes associated with potential shifts in employment and quality of working life also need to be considered in such a swiftly moving field.

### 3. What's the greatest impact IoT, data analytics and AI will have on the industry? What lies ahead of operators and how will they adapt?

As we continue to better utilise data, great advances can be made to provide diagnostic and advisory information. This information stream, which is a welcome divergence from the usual reality of D.R.I.P (data rich, information poor) that most plants suffer, enables better decisions to be made on a regular basis. These improved decisions (when to make an integrity intervention, when to shut down a plant, when to change the way you maintain something) provide incremental improvements in uptime, and in turn, increase the value of the assets.

**4. How do you see the role of the Industrial Internet of Things in refining, petrochemicals & chemicals? What are the key benefits and opportunities of using IIoT solutions in downstream operations?**

As is well understood, the benefit of IIoT is that machinery can more reliably capture, collate, assess and respond to complex datastreams than humans. That is not to say that humans do not have a part to play in operating a plant, but rather that small variations of quality, throughput, efficiency or a myriad other metrics can be identified more quickly and reliably in a IIoT-enabled environment. Clearly there are benefits to be had in manufacturing and refining processes, where quality of the output is a fundamental metric of an acceptable (and saleable) product. Minimising variation, maximising uptime, anticipating outages – these are all achievable goals of an IIoT enabled facility.

**5. How will this paradigm shift affect talent in manufacturing & downstream industry overall?**

The ability to gain deep understanding of how the interactions between variables lead to more (or less) efficient operations, and how best to operate and maintain the plant under this enlightened regime, will lead to a less stressful steady-state. It is still the case that there is a great deal to be done, and learned, about the best way to run any process, and this is where the future lies for talent.

**6. What does workplace innovation look like at your organization?**

At Wood, innovation comes from many different talent pools, it cannot be mandated just from the top. To encourage this innovative culture, and to incubate and accelerate innovative thinking and solutions, each leader within Wood has a responsibility to provide a learning and nurturing environment where such innovation can thrive. This means that it is okay to suggest things that may not turn out to be great revenue generators – it is okay to try and to fail, it is important to value the attempt, as well as the outcome. It is the instinct of the engineer to innovate. Enabling that to happen, and taking the attempt seriously is the first step. From there, I have instigated a process of discovery and incubation within my global team, led by two of my more senior technical leaders, to help form and encourage as many of the good ideas as we can. It may take ten years for a good idea to become established if it is not encouraged, but we are attempting to make the same progress in months and weeks instead of years.

**7. How does this impact your customers?**

Our customers want two things from us with regards to innovation – reliability and pragmatism. We are not in the business of experimenting on our customers' businesses to see if things work. We are in the business of providing proven innovative approaches to the norm, collaborating with thought leaders within our customers and partners' organisations to better meet their aspirations for change. The market is certainly open to disruptive ways of working, but remains equally interested in not going down blind alleys in their search for the future.

**8. What are the latest technology adoptions by downstream operators in Asia? Are there any success stories that other operators can learn from?**

Sometimes the most mundane items on a process plant can be improved the most by innovation. As an example, one of our customers in Asia is now specifying our proprietary pipe clamps as standard. You may not think that this is a technology adoption, until I explain that this clamp is constructed with innovative materials that provide multi-spectral damping across multiple vibration frequencies. This means that, unlike standard clamps, the Wood's specialist DamperX clamps have been proven to attenuate over 70% of unwanted vibration on a plant. This in turn has led to the ability to use plants at higher throughput, and save millions in dollars in deferred production. All from the use of innovative materials technology on a humble clamp.

**9. What does Industry 4.0 mean for your company?**

Wood is now a partner with IBM, facing the future with technology. Wood brings deep domain knowledge in operations, maintenance, integrity, as well as design, construction and manufacture. IBM brings advanced technology and tools to provide fundamental shifts to the way that we provide our combined services. Continuously monitoring and analysing plant data with IoT solutions to identify potential machine problems, prevent downtime, and increase quality and yield. Automating the design processes, leading to swifter, more efficient plants. Laser survey linked with additive manufacturing, leading to much more accurate maintenance replacements in a fraction of the time. Virtual presence expertise in the field. These are all innovations underway now in Wood, with help of our partners.

**10. Will Artificial Intelligence replace humans working in oil and gas?**

It is inevitable that AI will replace some humans working in oil and gas. Just like it was inevitable that the horse would be replaced by the internal combustion engine. We will still require the deep operational knowledge and hands-on practical expertise of our talented people.

**11. What impact does Big Data have on operational efficiency and how is Big Data changing the industry?**

Big data has come with a big problem when it comes to integrity. For most plants, historically there has only been limited importance placed on the accuracy and careful logging of integrity data. In many cases the data is in very poor condition, has not been well maintained, is not in an easily accessible electronic system, etc. Even on new plant, this is still seen on a regular basis.

The impact on operational efficiency of big data can be fundamental. As mentioned in my answer to question 9 above suggests, there is uptime to be had in properly applying data analytics to process data and the myriad of sensor information available on today's plant, without even considering the myriad of online sensor packages and diagnostics available to assess the real-time condition of the plant that are on sale.

**12. With these radical changes looming what opportunities lie ahead for manufacturers?**

Maturity of operational effectiveness leads to lower \$ per tonne manufacturing cost. With automated diagnostics, efficient use of the inspection, maintenance and reliability data available to them, it is possible for manufacturing plants to become significantly more efficient. My advice is not to rush to change, but to first resolve the question around the quality of the current data you're capturing. There is no point in applying data analytics on data which is unreliable; at best you're wasting time and money, at worst you will make decisions that are dangerous or costly.

**13. What will the future workforce look like in the digital age?**

The workforce in a digital age will still look very similar to today's workforce. Hard work and technical expertise will still be needed, and it will not always be efficient to automate all processes. What will change will be the confidence with which efforts will lead to results – information enabled, the workforce of the future will be able to make less mis-steps, and be able to better plan interventions with confidence.

**14. What will be the highlight of your presentation at Asian Downstream Summit 2018?**

As a speaker on one of the panels, I will be most interested in hearing the wider views of the participants on the subject of how digitisation is changing the operating environment of the industry. It is always good to hear from other experts in the field, and hopefully have a healthy debate on the timing of such changes in an existing plant.