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Rethinking the Future of Digital Utilities
The CXO's Imperative

Australia's utilities have entered a period of rapid change, and the choices CXOs make today about their technology strategy and investments will have significant implications in the years to come. So how can CXOs ensure they are building agile and responsive organisations that use data to their best advantage? This question was the focus for the webinar ***Rethinking the Future of Digital Utilities – the CXO's Imperative,*** hosted by OpenText and 6 Degrees Media, where guests including the Chief Digital and Business Transformation Officer from the **Australian Energy Market Operator (AEMO), Joe Locandro,** and the Senior Industry Strategist for the Energy Sector for **OpenText, Nick Revelas,** discussed the strategies CXOs could implement to help design and progress their transformation agendas.

Guest Speakers (left to right): Joe Locandro, Chief Digital and Business Transformation Officer, AEMO; Nick Revelas, Senior Industry Strategist, OpenText; Brad Howarth, Journalist and Moderator

Throughout the 20th century Australia's utilities were simply expected to provide continuous and consistent services, and they tended to focus their investments accordingly.

But as we passed 2000, utilities encountered a new range of expectations. For example, the rapid growth of renewables has significantly disrupted the energy sector, and all utilities have faced increased pressure to boost their environment credentials to meet both the expectations of customers and the regulated requirements of government.

At the same time, the rise of digital technologies has led customers to demand better service and more sophisticated offerings. Coupled with the deregulation that took place in the late 20th century, and the resultant emergence of new competitors, many utilities have found themselves forced to invest to improve customer service.

As a result, most utilities have changed their business strategies significantly in the last 20 years and have turned to digital technologies to help them do so. But many still find themselves in the early phases of transformation, with important decisions yet to be made. According to the Chief Digital and Business Transformation Officer for the Australian Energy Market Operator (AEMO), Joe Locandro, there are five megatrends that are having the greatest impact on utilities today.

Megatrends to Watch

The first of these was the push towards digitalisation. While Locandro said this was initially apparent amongst fast moving consumer goods and banking organisations, pressure was now being placed on asset-intensive industries such as utilities to move away from legacy systems and re-platform on contemporary technology.

The second megatrend discussed was the rising importance of data, with Locandro noting that the top companies of this century's *Fortune 500* were all built on data. For utilities to follow suit they would need to build their skills in curating data and extracting value from it.

The third megatrend flowed from the growing prevalence of sensors and other IoT devices. Locandro said that while current estimates placed the number of IoT devices at 23 billion, that number was likely to grow to 75 billion in the next four to five years.

Hence, it was important that CXOs considered how they would tap into the opportunity they presented, and how they might build the data processing capability needed to derive value from them.

Fourth on his list was the mobility of the workforce. While the COVID-19 pandemic had led many organisations to pivot to remote working, Locandro said growth in the percentage of millennials in the workforce would force managers to introduce greater workforce flexibility.

And finally, he highlighted the growth of cybercrime, whose associated costs were doubling every few years.

"What that means is that CXOs and industries have to continually spend a disproportionate amount of their IT budget to try and get their defences and their recovery in a good state," Locandro said.

He added: "The federal governments in different countries are starting to legislate for the industry sector to be mindful of cybersecurity and set standards that will impose more and more burden on CXOs and their security posture as we go forward."

Capturing the Value of Digital

For many CXOs, Locandro said their ability to respond to these megatrends would be mediated by their existing infrastructure, which together with budget constraints would govern how quickly they could implement strategies and migrate to new platforms.

"Untangling bespoke legacy systems is not a trivial exercise," Locandro said. "In the utility industry there are a lot of things that were built in the 1990s that are still in place today. There is an inertia there that has to be moved and funded, but sometimes can't be justified in low margin businesses."

But according to OpenText's Senior Industry Strategist for the Energy Sector, Nick Revelas, despite these challenges, oil and gas and utility companies around the world were stepping up to the challenge – often by choosing specific functional areas like engineering, operations and supply chain as entry points to broader re-platforming work.

He described one large utility client in the US that was delivering intelligent work order tracking by updating its content management in the cloud; and another in the nuclear energy industry that had invested in IoT technology for equipment monitoring. A further example in Thailand was using intelligent data capture of engineering content to support initiatives in operational improvements.

The final example that was highlighted as best practice in digital engineering was a global upstream oil and gas operator which Revelas said had adopted a centrally led model to guide its path to information management maturity and the onset of digital engineering. "Digital tools have been available for many years but operators' intent to on-board and scale across the enterprise has been slow in terms of adoption and confidence with operational content in the cloud."

Joe Locandro, AEMO

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> – Joe Locandro, AEMO **"**

Mitigating Challenges and Fostering Resilience

Revelas said these kinds of digital projects were opening new possibilities for utilities and energy companies, causing them to think about new data sharing partnerships and introducing new technologies to unlock greater capital and operational efficiencies.

This process often started by having CXOs ensure that different functional stakeholders had a strong understanding of the data they possessed, and how it could be used to add value to their function or the business overall. Potential opportunities included using data to improve process safety, boost demand forecasting, reduce risk, reduce costs in maintenance work, and manage projects better.

Hence, he said one of the critical areas of focus for many utilities was content management, to ensure that stakeholders could access the information they needed.

"There's a maturity level of getting the content right and getting it in a central repository, and enabling an intelligent approach where people have access to content, regardless of where they are or what functional role they play," he said.

Technology for Differentiation

When it came to nominating technologies that could deliver an immediate uplift, Locandro named artificial intelligence (AI) and machine learning (ML) as the two technologies with the greatest potential benefit – both for their ability to cleanse and curate data, and then mine it for insights.

"There's a great amount of scope, and as these technologies mature, they will have a bigger impact in the sector," he said.

Pressure to build a stronger data capability within utilities was also coming from outside factors. Locandro described the twin impacts of legislated changes to data management and the rising expectations of data-savvy customers, and how these were coming together in the Australian Government's Consumer Data Right (CDR).

"The democratisation of data is coming upon us pretty quickly, whereby the consumer will have ownership of their data," Locandro said. "The forward-thinking retailers are using AI and ML to project forward consumer consumption, and to look at seasonal patterns to determine load.

"Once they do that, they're using consumer behavioural science to suggest – based on past and future consumption – what things consumers would do to reduce their consumption patterns, and then combine statistical analysis with behavioural analysis to proactively deliver suggestions to the consumers to reduce their energy bills."

Creating this capability would require utilities to invest in both the underlying infrastructure needed to support rapidly growing datasets, and in the analytics and AI technology that would be applied to them.

Locandro said AEMO's own response to these requirements had seen it re-architect its data strategy, including data governance, storage, and processing. As an example AEMO is rebuilding its industry settlement system to cater for 5 minute meter reads. This will increase the current annual meter reads from 88 million per annum to 2.3 trillion.

"That's a real big data issue for us" Locandro said.

"The key message out of that is you need to architect for the different parts of your environment. What we've done internally is we've given the business units BI tools to then interrogate data, but we've also started using

AI and ML to interrogate our databases, to do some probabilistic forecasting and a whole lot of other things to determine patterns and unreliability measures."

Locandro also nominated Blockchain as a technology with exciting potential, in application such as a distributed energy renewals (DER) register, and for managing the recording and settlement of data from smart meters.

"It will help us with verifying source of energy, much the same as it's used in verifying the source of food from farm to table," he said. "Having an immutable record will help streamline and reduce cost to serve in that area."

Another trend that retail utilities needed to consider was the expansion of their business model, with many companies already looking for opportunities in adjacent sectors. Locandro said this trend would be encouraged by the CDR, which would give consumers more power when choosing their providers.

Getting Future Ready!

All of these trends were placing greater pressure on CXOs to make strategic decisions regarding technology acquisition. Locandro noted that the ramifications of these choices would be felt for some time, and so he advocated standardisation, interoperability, and focusing on the projects that would have potential for growth as being the best basis for investment decisions.

"I would say that data is common to all parts of the supply chain, and how you extract that will be the issue," Locandro said. "There's a plethora of choices out there, and interoperability becomes a problem between the technologies over the long term. If you can standardise, you may not get all of what you want, but you'd get a majority."

Revelas also recommended that CXOs spend as much time as possible in the company of their peers, and also talking to those people out in the field and interacting with customers, to ensure their decisions were aligned with desired business outcomes. He said this was especially important when CXOs were left to interpret the mandate to 'go digital'.

"It may force a shift in business models to some degree, and it may pose questions around culture and alignment at an executive level," Revelas said. "Those are some of the things that need to be embraced internally at an executive level. So, really embed yourself within the business, at the pointy end of the stick. That where the end user customers and recipients are."

Building a Utility 4.0

Many of the topics discussed related to the concept of Utility 4.0, which describes a utility that can master its own data flow. According to Revelas, success in the Utility 4.0 world would come down to an organisation having control over its content and data and being able to use that for whatever purpose it saw fit.

"A lot of them (utilities) are still working out where they are on the maturity curve with information management and data ownership and competency, so they can actively start accelerating and doing some really smart things," Revelas said.

Locandro added that this capability would be essential as other trends became more prevalent, such as consumers having mastery over their own data through CDR – or as new competitors moved into the retail market.

"The only way to survive is to change to become a platform-based business and be able to plug-and-play different companies and tools into your ecosystem," Locandro said.

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