

Innovation and Business Transformation

Article from the AICC(WA) and Curtin University Oil and Gas annual event held on 27 May 2017, on the topic of how the rapidly advancing convergence of technology will shape the future of oil and gas business. This event was sponsored by Curtin University, Woodside and Cisco.



From L to R - Mr John Cluer, Chief Executive, Australia-Israel Chamber of Commerce (WA), Mr Shaun Gregory, Senior Vice President & Chief Technology Officer, Woodside Energy Ltd, Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea, Mr Neil Kavanagh, Chief Science & Technology Manager, Woodside Energy Ltd, Professor Deborah Terry AO, Vice-Chancellor, Curtin University and Mr Mark Patterson, Western Australia State Director, Cisco Systems Australia Pty Ltd

This year GE celebrated its 125-year history since being incorporated as the General Electric Company. Over this time, GE has had a rich history of invention. In 1896, GE invented the first x-ray machine. In 1941, GE built the first US jet engine, the I-A. In 1969, GE took the first footsteps on the moon — Neil Armstrong's boots were made from GE silicone rubber. And it all started with a lightbulb.

In Australia, GE has contributed to the economy almost as long as the company has been around, from software powering Australia's electricity grid to having technology on every major LNG platform. In this time, the power of globalisation has brought the latest and best technologies to our shores. Take healthcare as an example. In 1976, GE invented CT scanning technology. Only one year later, the company installed the first CT scanner in a hospital at Sutherland, New South Wales. Today, GE is developing the world's first digital anaesthetic dashboard for Canterbury Hospital in New Zealand.



From L to R - Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea, Professor Deborah Terry AO, Vice-Chancellor, Curtin University, Mr Mark Patterson, Western Australia State Director, Cisco Systems Australia Pty Ltd, Professor Claus Otto, Director, Curtin Oil and Gas Centre, Curtin University and Mr Adrian Atkins, Director, McRae Clough Pty Ltd

GE's digital transformation is the result of 125 years of invention and reinvention. The company has endured and evolved due to its strong culture of continuous review and the ability to adapt to change. President and CEO for GE in Australia, New Zealand and Papua New Guinea Geoff Culbert asserted that GE spends "as much time on culture as it does on technology", a formula that he asserts is critical in a competitive environment. "If we don't someone else will. We have the capability; we only need the courage to go and do it."

Over the last 15 years, the company has significantly transformed its portfolio, divesting from some businesses and investing to focus on core industrial businesses. In describing GE's portfolio transformation, Mr Culbert acknowledged the company was not afraid to make big decisions. He also noted the macroeconomic change that has influenced these decisions.

Mr Culbert described how GE identified the rise of the Industrial Internet as the first big driver to disrupt the future of industry as we know it. The company recognised the future impact of the Industrial Internet seven years ago and now has a new business unit, GE Digital, and has developed its Predix platform to deliver analytics that are driving the convergence of hardware and software. He said, "The industrial internet is now mainstream, but still in a growth phase. It is where the consumer internet was in the late 1990's."



Professor Deborah Terry AO, Vice-Chancellor, Curtin University



Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea

Citing the example of a partnership with BP, Mr Culbert described the Plant Operations Advisor System which has improved the efficiency, reliability and safety of BP's oil and gas operations. The system collects data from hundreds of items of equipment to monitor asset management. "We have transformed a process to deliver real time visualisation. The amount of data processing, which if manual would take six months, is now compressed into a window of four hours". The system is now being piloted in the Gulf of Mexico, assisting to proactively identify and prevent asset problems. "The future potential is evident. Today, less than 5% of oil and gas equipment is connected. The average offshore rig has 30,000 sensors that generate data, but less than 1% of that data is being used to make decisions."

Asserting that the future is "here and now" and businesses need to adapt, Mr Culbert also talked about how Additive Manufacturing is shaping the future of industry, sharing the example of 3D printing resulting in decentralised manufacturing. "If you own a 3D printer you are now a manufacturer. The raw materials in the 3D printing process will become the currency". Today, GE has a second new business unit, GE Additive, and an installed base of eleven sites across Australia and New Zealand with additive technology – and that footprint is growing.



Mr Neil Kavanagh, Chief Science & Technology Manager, Woodside Energy Ltd

Mr Culbert concluded that he believes the industrial internet and additive manufacturing are the two major trends that will shape the future of GE, and will also be reflected in the global economy. Applying this in an Australian context, he notes that our prime industry sectors, talent pool, proximity and ties to Asia, and investment in innovation are core factors that will allow Australia to compete and excel in the digital age, acknowledging there are world-class companies like Qantas, South 32, CSIRO and Woodside that are doing just that.

Mr Culbert's presentation was a formidable case study of Australia's innovation journey and the continual need for businesses to both innovate and differentiate.



From L to R - Mr Paul Nicholls, Director, Strategic Projects - Research and Development, Curtin University and Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea

About Geoff Culbert

Mr. Geoffrey Culbert, also known as Geoff, has been the Chief Executive and President of GE Australia and New Zealand & Papua New Guinea at General Electric Company since May 2014. Mr. Culbert is responsible for GE's suite of businesses in the region including Oil & Gas, Power & Water, Aviation, Healthcare, Transportation, Capital and Appliances & Lighting. He also serves as the Chief Executive Officer and President at GE Oil & Gas Australia Pty. Ltd. Geoff served as Vice President and General Counsel of GE Global Growth & Operations at General Electric Company since June 2011. In this role, Mr. Culbert was responsible for growth in GE's global markets, with a focus on driving localization initiatives in Legal and Compliance and partnering with the businesses to help them win in local markets. He joined GE in 2002 as the General Counsel for GE Capital, Australia and New Zealand. In 2007, Geoff moved to Japan to take on the role as General Counsel for GE Capital Asia, leading a team of 60 lawyers across Japan, Korea, Greater China, India, SEA, Australia and New Zealand. In 2011, he relocated to Hong Kong to take on the role of General Counsel for GE's Global Growth Organization, where he led a team of over 150 legal and compliance professionals across Asia, Africa, Eastern and Western Europe, Middle East, Latin America, Canada and Russia/CIS. Before joining GE, Mr. Culbert worked in private practice for 10 years in Australia, Europe and Asia, specializing in international banking and finance. He serves as a Director of GE Capital Australia Funding Pty Ltd. Geoff served as a Director of GE CF & CEF Holdings Proprietary Limited from September 19, 2014 to January 29, 2016. Mr. Culbert graduated from the University of Melbourne in 1992 with a Bachelor of Economics and Bachelor of Law (Honours).



Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea



Mr Mark Patterson, Western Australia State Director, Cisco Systems Australia Pty Ltd



From L to R - Mr Neil Kavanagh, Chief Science & Technology Manager, Woodside Energy Ltd, Mr Evan Nicholas, Director, Strategic Engagement, Curtin University and Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea



Top Left clockwise: Mr Lauchlan Wallace, Data Science Manager, Woodside Energy Ltd, Ms Jane Coole, Director, Regional Engagement, Curtin University, Professor Moses Tade, Deputy Pro Vice-Chancellor, Science and Engineering, Curtin University, Mr Neil Kavanagh, Chief Science & Technology Manager, Woodside Energy Ltd, Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea, Mr John Cluer, Chief Executive, Australia-Israel Chamber of Commerce (WA), Mr Lauchlan Wallace, Data Science Manager, Woodside Energy Ltd, Mr Geoff Culbert, President and CEO, GE Australia, New Zealand and Papua New Guinea

