THINGS YOU MAY NOT KNOW ABOUT ME...

Happily married (still) for 37 years to Marjorie, & proud father of Bridget & Ryan.

- I own 15 hats, one for every occasion, and each punctuated with a tale about a place, a person, and a possibility.
- My love affair with food smolders at a distressing level of indulgence thanks to the pandemic.



March 2021

Geoffrey Cann in Professional speaker on the topic of digital innovation in oil and gas

digital trends to watch in oil and gas:

Per Geoffrey Cann

- Autonomy and robotics Shell is trialing Boston Dynamics robot dogs in its refineries. BP uses Al to run entire oil fields autonomously
- Blockchain transforming supply chains, enables track and trace for molecules
- 3 Digital twin advances optimize complex network assets Digital twin — advanced analytics that help
- Edge computing small footprint remote computing — small restaurable to the computers running assets using machine learning
 - Machine learning optimization of rotating equipment, pressured processes, build assets using algorithms

How much time/\$ will digital tech save operators in the future?

Digital innovations will lower industry costs by 20%, improve productivity by 20%, boost reserves by 5% or more, and reduce emissions. The BP business case in the US is illustrative of the emissions impacts, by cutting methane emissions by 74%.

These are estimates from the IEA, and depending on the specific business, they can be significantly understated. NAL Resources improved cycle times on many specific internal business processes by 95% or better.

What are the challenges to operators implementing digital?

Operators are quick to buy digital, but are averse to being digital. Buying digital (buying some solutions to try), does not lead to lasting change, and results tend to fall short of the potential. To be digital, operators need to embrace new and quite foreign ways of working, including agile methods, low code, user experience and design thinking. These are significant cultural changes that need to occur.

Operators tend to view the trial-and-error method of advancing digital innovations to be inappropriate and quit projects too quickly.

Operators focus digital efforts on back office areas (HR, supply chain, finance, admin, IT), and avoid impacting operations. Back office gains are faster to realize, but not material. Front office changes (operations) are much larger, but harder to implement.

PEOPLE ARE TALKING



"I did not think we could get someone like that."

- CEO, Permian-focused Operator



"This relationship has worked out VERY well so plan on us being in contact on a regular basis."

> - HR Director, Old Private Permian Operator



Another New Age of an Old Industry

Digital Innovation in oil & gas

Geoffrey, what is your background?

Following an early career with Imperial Oil, I joined Deloitte, where I carried out several hundred consulting assignments around the world, eventually leading a number of businesses, services and industry programs. Today, I specialize in digital innovation, produce a weekly article and podcast on digital issues in energy, and teach an executive course on digital awareness. I published my first book, Bits, Bytes and Barrels: The Digital Transformation of Oil and Gas, in January 2019. I am also a contributing author to the just published Machine Learning and Data Science in Oil and Gas: Best Practices, Tools and Case Studies. I am the independent Director on the Board of Adappcity, a blockchain start up, and am an advisor to several digital technology companies in such areas as analytics, blockchain, and mobility.

What are your objectives and how do you make money?

My mission is to accelerate the energy industry's journey to digital. I believe that digital innovations are the only tool available to the industry that can help reduce cost, boost productivity, build reserves, and transform carbon profiles at the same time. I believe that the supply of innovation available to oil and gas is strong, but the demand is weak. I help close this gap between supply and demand by calling attention to the opportunity that digital innovation presents through writing and broadcasting, by educating business on how to embrace digital innovation through training, and by supporting their efforts through inspired keynote speeches and presentations.

I make money by delivering speeches & presentations, by conducting virtual and on-line digital awareness training, by facilitating the development of digital strategies, & by monetizing intellectual property (books & articles). 'CLICK HERE' to learn more about Geoffrey's activities & services.

What is a practical approach to getting started on implementing digital?

I advise companies to follow a 5 step program to get started. 1) Develop a digital North Star. Define where you think your industry will be because of digitally driven change. This is your general directional heading, and it should be big and challenging. It should be intuitively plausible but technically impossible. An example from mining is that the mining value chain becomes entirely autonomous (unmanned underground mines, autonomous trains, unmanned port operations, robotic ships). 2) Develop a business driven roadmap. Focus on specific pain points to solve. Any business area that hasn't materially changed in 5 years is a candidate for change. Set targets of 90% improvements in cost, productivity, cycle times. Move fast, taking small steps. Keep investments small until proven, then scale up quickly. Link projects to the North Star. 3) Boost your data acumen. Digital is about data, & oil & gas is generally rubbish at data. Hire in data science talent. Make data the centerpiece of management discussion. Link performance goals and targets to data quality.

4) Train your people. On digital, agile methods, design thinking, data areas. Expose them to Silicon Valley, local ecosystems for digital innovation such as incubators and accelerators.

5) Put foundations in place. These include enterprise resource systems to replace the patchwork quilt of systems. Pay the accrued technical debt & rationalize systems where possible. Enable cloud computing. Collapse the IT & OT functions to speed up change in OT.



"I have not and will not work with any other agencies on this one."

- HR Director, small public company

Have an Oil & Gas position to fill or want to learn about our openings?

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