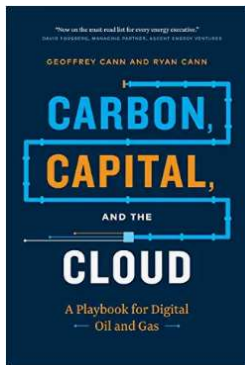


Book Review



Carbon, Capital, and the Cloud

A playbook for the Digital Oil & Gas

Geoffrey Cann and Ryan Cann (authors)

MADCann PRESS, pp 293, \$ 24.95 (USD)

Carbon, Capital and the Cloud by Geoffrey Cann and Ryan Cann

Carbon, Capital and the Cloud, is the second book on the survival of the oil and gas industry from the author of the versatile Bits, Bytes and Barrels- Geoffrey Cann. His reflections on the industry and its future prospects, especially in the context of the energy transition, and digital transformation fostering the global decarbonization agenda, are derived from his long innings in the oil and gas industry and witnessed five market routs since 2000. The primary objective of this book is to help the industry accelerate adoption of digital innovation for its survival and the suggestions given toward this end are indeed very practical.

The introductory first chapter sets the stage and lists the forces of change in the oil and gas industry. Digital transformation is an understanding and awareness that digital tools and innovations are a means of reducing operating costs, ensuring better productivity and reducing emissions and ensuring regulatory compliance, safety and sustainability. It has become mature enough to attract capital markets and win the confidence of industry operators. Still, according to the author, even in the midst of an uncertain future, the pace of adoption of digitization in the oil and gas industry to capture its full value, is too tardy.

The general understanding across the globe is very clear that energy transition is inevitable and most corporate entities are aligning their future policies for growth with this as the prime intent. Fossil fuels will get replaced as we move ahead in the decarbonization path and their use will be restricted as feedstock for petrochemical products. Environmental, social and governance factors are going to be the prime objectives in deciding energy sources and consumption patterns. Therefore, agile organisations and proactive managements are to essentially embrace digital innovations.

Chapter two deals with a digital framework. Such a framework with core (data and analytical capabilities) and foundation (platforms like cloud computing, enterprise systems or

blockchain) is to be built as an initial step towards the organizational move to digitization. Remote sensors deployed in process units gather data from operating systems, digitize them and the framework analyses and interprets them to arrive at decision points. Here the skill of the operating and decision-making team becomes important. Already oil and gas industry is facing disruptive changes enabled by digital technologies. New competitors and service providers are in the horizon challenging conventional ones.

The third chapter dwells on new business models, alternative sources of capital and emerging investor confidence. Traditionally oil and gas industry is risk averse, most companies operate individualistically and so do not easily venture into and adapt new changes, be it in operations or management. Even those new models adopted are mostly in the supply chain of goods and services and not in the core industrial operations.

The fourth chapter deals with conditioning the workforce and making digitization a people-driven process. The reluctance of industry managers arises out of a lack of trust in the capabilities of smart machines and algorithms and has to be overcome by digital empowerment of the already talented workforce through an appropriate reskilling program. The commitment of the senior leadership toward this inevitable transformation is also necessary.

The fifth chapter deals with case studies. The cases are so selected that it covers a good mix all along the value chain and companies operating in a wide range of geographies. It includes an international equipment supplier for the US, an upstream operator company, a midstream start up, one downstream products company, an integrated international producer and a service provider.

The following facts emerge out of these case studies:

Most oil and gas companies are aggressively repositioning their business to a more digital future. Over fifty percent of the oil and gas companies have fully deployed digital technologies in their business. Digital innovations have started impacting everywhere including the core business activities of the company -operations, customers and suppliers. Corporations have become aware that energy transition and digitization are opening up an unprecedented opportunity for the industry to increase efficiency and sustain growth. It is true that the pandemic necessitated and accelerated its adoption and acceptance across different segments. There is no shortcut or ready built solutions that can be procured from the market to get companies branded as 'digital' or 'connected'. Unit-specific strategies for digitization have to be evolved by combining operation and information technologies with due efforts. The entire organization shall engage with the transformation initiative and a direct monitoring, evaluation and control at CEO level would be better for its success.

Oil and gas is no longer a sunset industry and the advent of digitization has only just begun. It will continue and advance faster, enabled by more and more digital tools and systems and still hold ample opportunities for young professionals to find fortunes in the industry.

On the whole, written in a playbook style this is a unique handbook, concise, well-articulated, and with lot of practical insights and studded with case studies to equip the industry operator

to implement and reap the benefits of digitization. Engineers and executives responsible for the future of the oil and gas industry will find it a handy companion.

Each of the chapters is enriched with wide bibliographical notes, a glossary of terms and abbreviations, and is well-indexed.

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