



TECHNOLOGY AS SUSTAINABILITY DRIVER FOR THE OIL AND GAS INDUSTRY



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Governments across the world are setting targets for net zero carbon emissions and proposing new legislation concerning the presence of renewables in their national energy mix. These developments are prompting the Oil and Gas industry to prioritise technology and other clean tech innovations to navigate the future energy landscape.

In recent decades we have seen Oil & Gas companies employing an ever-widening range of technologies to make them more sustainable, minimise operational costs and help them achieve sustainability goals. Oil and Gas producing nations are increasing the pace of their economic diversification strategies and pushing hard for the faster adoption of sustainability targets. This global trend leaves the Oil and Gas industry with no other option but to accelerate the rate at which it is pursuing technological solutions for achieving a lower carbon footprint.

Data, Data and Data

International advisories regularly highlight that the Oil and Gas industry has a considerable performance gap. McKinsey produced research in 2017 indicating that the average offshore installation runs at 77% of maximum potential. At the time, they predicted that within five years (now in 2022), data analytics would become intelligent enough to solve most of the issues that cause platforms to underperform.

And while everyone is looking at AI, Machine Learning and Digital Twins to solve the problem, it is often underappreciated that these systems need vast amounts of data:

- Historical data to train on
- Data from different platforms to establish benchmarks
- Real-time data for digital twins, simulation and predictive analytics.

Increased efficiencies result from better use of data and directly translate into greater sustainability.

Sustainability Enhancing Digital Technologies

Operators realise that not all innovations will lead to cleaner and greener processing and extraction. The insight is that technologies which lead to greater cost efficiencies allow more to be produced with less, translating directly into sustainability gains.

Digital technologies unlock efficiencies that allow companies to pursue sustainability targets measurably.

The industrial Internet of Things (IIoT) forms the backbone of technological interventions by connecting the control room with the physical equipment, allowing for increases in:

- Volumes of quality data
- Monitoring and control capabilities
- Automation and autonomous process management
- AR and VR capabilities to bring the plant directly into the boardroom
- Industrial Artificial Intelligence to convert data into actionable insights
- Digital Twins for simulations, condition monitoring and predictive maintenance

Digital Twins

Every year we see industries getting excited by new technologies that turn out to be more hype than reality. As technology professionals, we keep an eye on the future while keeping our feet planted in current and proven technologies.

Digital twins and their spinoff, the metaverse, are examples of this hype versus reality phenomenon. The potential of digital twins to create digital replicas of reality will transform the world. Digital twins are pioneering the way for the coming metaverse, and this process is not without vast and considerable challenges.

We are learning that even small operations have considerable complexities, but at the same time, we are incrementally learning to solve their problems. The exponential rate at which digital twin technologies are growing is a reason for optimism.

Your Next Step

Advances in cloud computing, AI and ML, the IIoT and other high bandwidth communication technologies will ensure that digital twins will soon live up to their hype. Becoming the technological norm for companies serious about their future, collections of digital twins will eventually constitute realistic digital representations of entire operations, paving the way for the metaverse.

At 4Sight Operational Technologies, we know that early adopters of these technologies will be the winners in the long run. As such, we have a team of engineering professionals ready to map your operation's optimal path to ensuring success and a sustainable future for our planet.



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Incorporated in 2017, 4Sight is a JSE AltX (ticker: 4SI) listed, multi-national, diversified technology group. Our purpose is to leverage our extensive product and services portfolio, focused on 4IR technologies, people and data-focused solutions to design, develop, deploy and grow solutions for our partners (customers and vendors).

The company's mission is to empower our partners to future proof their businesses through digital transformation to make better and more informed decisions in the modern digital economy.

4Sight's business model enables its partners to take advantage of products and solutions within its group of companies, which will allow them to enjoy turnkey digital transformation solutions across industry verticals.



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