



Intelligent Automation in Oil & Gas Strategy Playbook 2022

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Industry Report

Growth of intelligent automation in oil and gas industry

Intelligent Automation (IA) combines future technologies like artificial intelligence, machine learning (ML), and natural language process (NLP) with robotic process automation (RPA). It has the ability to interpret information extracted via process mining and make decisions and adjust the standard governance applications to customize the application further through self-learning. It delivers business outcomes more efficiently for the business.

The majority of oil and gas companies globally are distressed with their current manual operating systems. Businesses are implementing Robotic Process Automation (RPA) and embracing other primary automation technologies to digitalise their core assets for favourable outcomes.

The Deloitte Global RPA Survey suggested over 53% of businesses have already commenced their automation journey, with the first movers having earned 4 times the return on investment. It is expected automation will achieve 'Universal Adoption' if the RPA growth rates remain consistent in the next five years if structured data can be fast-tracked.

According to research conducted by CX Live in April 2021, the most popular structured data applications are data analytics, IA and business process management, and machine learning. As per Mordor Intelligence, the investment in AI by oil and gas companies was valued at USD 2,040.89 million in 2019, and it is expected to reach a value of USD 3,349.89 million by 2026 while registering a CAGR of 10.14% during the forecast period (2021-2026).

How to accelerate IA adoption in the oil and gas industry?

Most innovative enterprises commence their automation journey with routine and rules-based tasks. Subsequently, they expand while drawing self-learning by:

- Incorporating artificial intelligence and machine learning architecture
- Inserting layers of cross data utilisation and governance
- Integrating functional and industry knowledge into automation initiatives

The data allows the business leaders to comprehend the benefit obtained from efficient and effective feedback of asset allocation, increase production, reduce employee burden, achieve higher safety levels and generate higher ROI. The oil and gas industry already has a wealth of data from machinery such as logging tools, sensors, geophones to create comprehensive information sets that provide automation value. IA offers an advanced way to leverage these data streams for critical insights and deliver enterprise-wide connectivity.



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Oil and Gas have clear benefits to adopt intelligent automation across upstream, midstream, and downstream operations.

Upstream Oil and Gas

Upstream activities prioritize enhancing exploration, ROI, and risk management at the vanguard.

- Machine learning algorithms and AI control the precise drilling performance when optimizing opportunities by scanning and identifying the optimum property
- Cutting-edge data management help the decision-making process for field engineer
- Continuously analyse the situation and provide a vast quantity of rich data
- Fast-tracking virtual assistance or chatbots led search optimization for field employees

Midstream and Downstream Oil and Gas

In comparison to the upstream and downstream, midstream value chains have observed intelligent automation technologies to:

- Use manufacturing functions across system assistance such as inventory control, management, asset downtime management, supply chain monitoring, and generating insight at positive affect
- Conversation automation enables NLP and NLG to contribute value in marketing and sales teams' outcomes.
- Cross technologies over conversation, vision, and intelligence have made a critical objective during the current COVID crisis, as the need for remote work increased substantially.



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By leveraging IA organizations can give a flawless alert to EHS personnel when risks are expected to breach limited levels.

Benefits from intelligent automation

Intelligent automation systems extract data and regenerate precise data insight, resulting in efficient business implementation. Key advantages include:

1. Cost savings and productivity improvement:

IA runs with background data and is scalable quickly without increasing risk, compromising quality, or straining the existing workforce.

2. Consistent accuracy:

IA has a massive benefit in generating valuable data insight where the system pushes high probability decision-making. Also, AI is the system that can handle large volumes of tasks without hesitation, freeing up trained employees to focus on cutting edge innovation.

3. Enhance customer experience:

Enhancing business value, routing internal FAQs, maximising revenue by add-on products and services by agile reaction to market demands, and creating a positive customer experience thus creating a competitive advantage.

4. Increased scalability, agility, and continuity of service:

Intelligent automation enables numerous applications to access vast amounts of data in minutes thus providing faster and more accurate responses. It also allows employees to focus on revenue-generating tasks.

Intelligent automation value chain within an organisation

The value of intelligent automation amplifies as interfaces allow for businesses to achieve efficiencies in their workflows. In the last couple of years, businesses have expedited digital transformation efforts, fueling more investment to support the automation of key business processes.

As the future of work evolves, roles will continue to grow, but low-level employment will be restructured to fulfil and measure these solutions and other higher-level tasks. Automation will explore skills gaps, and all stakeholders will need to adapt to constantly changing work situations.

The IA adoption is beneficial not only for the front line, service level functions but also for those functions where data volumes are high and data flow is relentless. It also helps middle management strengthen interconnection between stakeholders and discover the unknown in the business environment.

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Where to Next?

There is no doubt IA will enable enterprises to stay competitive and determine the future of work. As a result, business leaders can reap triple wins ie cost redemption, efficiency gains and preparing work for future readiness.



Researched and Developed by Customer Experience Live.

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