# LTI
## Let's Solve

# Intelligent RPA for the Oil & Gas Industry

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Digital transformation has impacted the Oil & Gas industry in a big way, with companies rapidly adopting a variety of emerging technologies like RPA, AI etc. not just to enhance their business but to survive in a competitive industry. Given the drastic cuts in investments, workforce numbers, and stalled projects, shifting towards automation is the only answer to survive in today's digitally transforming world.

RPA especially has become a vital component encompassing all the three major sectors within the O&G industry viz. the upstream, downstream and midstream. Another advantage is that it can be applied across a wide number of operations. Though RPA is seeing widespread adoption by O&G companies, they still have a lot of ground to cover when compared with other industries, perhaps due to its highly capital-intensive environment and legacy equipment. Some of the areas where RPA has been implemented by Oil & Gas companies are:

- Joint Venture Accounting
- Back Office Accounting
- Inventory Management
- Production Engineering
- Drilling and Well Data Management
- Data Cleanup and Data Integration

# Challenges in adopting RPA

- **Industrializing Automation:** Lack of senior management buy-in and less support from the IT has stunted RPA's potential in Oil & Gas companies. Often, RPA is considered as an overhead. IT has frequently undermined the capability of RPA beyond tactical needs thereby neglecting the requirements that they need to incorporate for a scaled and seamless implementation. Business users' buy-in is of utmost importance to not only succeed in the RPA journey, but also to identify the right business cases for automation or RPA implementation. Organizations should provide a detailed orientation on the overall RPA process and its lifecycle along with the benefits it will entail to get a buy-in across all levels.

- **Build vs. Buy:** Most Oil & Gas companies prefer to build automation solutions / platforms for transforming their business functions considering those as strategic investments .

- **Measuring RoI:** Organizations need to develop a standard tool for calculating their ROI and need to conduct a thorough Cost Benefit Analysis (CBA), to ensure they get the anticipated returns on their RPA investment.

- **Process Standardization:** RPA implementation works best when processes across the organization are standardized and institutionalized. Many business cases performed across different geo-locations can have different set of procedures and applications with different level of complexity. Times like these, SME support and leading Key Stakeholders' support is vital to standardize / streamline the procedures and processes for RPA implementation across different locations and business units. A global CoE or a centralized Automation hub will also play a vital role in institutionalizing processes across scattered locations.

- **Legacy Systems:** RPA initiatives have to be in line with OS migration or other business applications' migration/ upgrade to avoid additional overheads, which is difficult in this industry because of prevalent legacy systems, web apps etc. Key stakeholders should be prepped with a plan to design the new procedures along with a proper governance model coupled with periodic quality checks to avoid delay in the overall success of the RPA program.

- **Absence of a CoE:** Many O&G companies do not have an inhouse center of excellence or a GIC setup for RPA implementation at org. level. Setting up an internal CoE with a core RPA team and identifying owners in the RPA journey viz. the RPA sponsors, RPA champions, change managers et al is instrumental in making this automation journey smooth sailing. Developing a diligent internal audit mechanism or a robust process for bot governance and other internal & regulatory compliance is vital.

## RPA Heatmap to identify key business areas in Oil & Gas Domain

| Employee & HR | Talent Acquisition | Commercials General Accounting | Order to Cash | General Accounting | Finance and Accounting | Treasury | Procure to Pay | IT Services |
|---|---|---|---|---|---|---|---|---|
| Termination and Offboarding | Talent Acquisition Planning | Daily Credited Exposure | Maintain Customer Master Data | General Ledger Reconciliation | Budgeting & Forecasting | FX Trade Capture / Approval | Invoicing | Service Provisioning |
| Compensation | Candidate Engagement | Derivative Invoicing | Maintain AP / AR Ledger | Intercompany Transactions | Business Metrics & Tracking | Trade License Agreement | Payment Processing | PRS and Guardian Access |
| Benefits and Pensions | New Joiner onboarding | Book Reconciliation | Maintain Cash Book | AP Matching | Validate Allocated Volumes | Trader Report Changes | Vendor Management | |
| Payroll | Compensation Management | Pipeline Invoicing | Revenue Assurance Activities | TIPS Reporting | Production Overhead Audit | | Supplier Management | |
| Legal Hold | Workforce Development | Trade License Agreement | Manage Sales Order | Fixed Asset Accounting | License & Registration Risk Mgt. | | Requisition Processing | |
| Substance Abuse - Drug Testing | Candidate Sourcing | Supply Invoicing | Manage Purchase Order | Period Close Consolidation | Administration & Governance | | Emergency Procurement | |
| | Screening Assessment | TDS Provider Invoicing | Manage/Process Collections | Cash Management & Banking | Risk Monitoring | | Travel Expenses Claim | |
| | | Commercial Counterparty Setup | Manage/Process Deductions | Income Analysis | Vendors Statement Review | | Contract Management | |
| | | CXL - Commodity Sales Invoicing | Authorize & Manage Credit | Retail Rebate processing | Accept / Dispute charges on JIB | | | |

**RPA Fitment –** High Medium

Most O&G companies kick off RPA initiatives by automating their peripheral processes of Finance, HR, Procurement and IT as these are low hanging fruits and prove to be quick wins. But organizations are already pushing the boundaries by automating core areas such as hydrocarbon accounting, subsurface digitization and so on. What's interesting is that organizations are opening up to blending different digital technologies such as Advanced OCR, Chatbot, AI with RPA for a bigger business impact. Some of the areas specific to Upstream services where this approach can be leveraged are listed below:

# Leveraging RPA + Complementary Digital Technologies for the O&G Industry

| O&G Process Areas | Worker (RPA) | Scanner (OCR) | Intel (ML & NLP) | Chatbot (AI) | Orchestrator (BPM) |
|---|:---:|:---:|:---:|:---:|:---:|
| Subsurface Data Quality / Integration | ✓ | ✓ | ✓ | | ✓ |
| Drilling | ✓ | ✓ | ✓ | ✓ | |
| Land lease, License & Contract Management | ✓ | ✓ | ✓ | | |
| Environment & Regulatory Compliance | ✓ | ✓ | | ✓ | ✓ |
| Health & Safety Compliance | ✓ | ✓ | ✓ | ✓ | |
| Rig Planning & Scheduling | ✓ | ✓ | | ✓ | ✓ |
| Well Life-cycle Management | | | | ✓ | ✓ |
| Well & Reservoir Modeling | | | | | ✓ |
| Real Time Reservoir Management | | | ✓ | | |
| Production Optimization | | | ✓ | | |
| Well Surveillance | | | | ✓ | ✓ |
| Hydrocarbon Accounting | ✓ | | ✓ | ✓ | ✓ |
| Asset Performance Management | ✓ | | ✓ | ✓ | |
| Operations Management | ✓ | | ✓ | ✓ | ✓ |

# Proven benefits of Intelligent RPA in the O&G Industry

Major O&G companies have started initiating enterprise-wide automation roll-out across Financial Services, HR, Capital accrual services, Advisory and implementation services across Marketing. Areas such as Rebate creation and processing in Sales per month, Reconciliation of inventory products, volumes, charges and yields available within Inventory Management System, automation of Order Processing, Payment Processing, Vendor and Supplier Management in Procurement, etc. are already benefitting by leveraging RPA Most of the RPA use cases involve fetching data from excel worksheet, reading email in outlook and downloading the attachment, copying or comparing the data in different data stores, and updating or creating transactions in ERP system or third party applications. Programming RPA bots with advanced OCR in these areas can greatly accelerate the volume of documents handled and reduce the processing time further.

Intelligent RPA can reduce the risks in processing time and enable cost and effort optimization. Key achievable performance metrics based on our industry experience are as follows:

- Reduction in processing time (10% to 25%)
- Improved Accuracy & Reliability level to 99%,
- Reduction in process errors up to 75%
- FTE Optimization from 5% to 25%
- Reduction on process cost to 30%
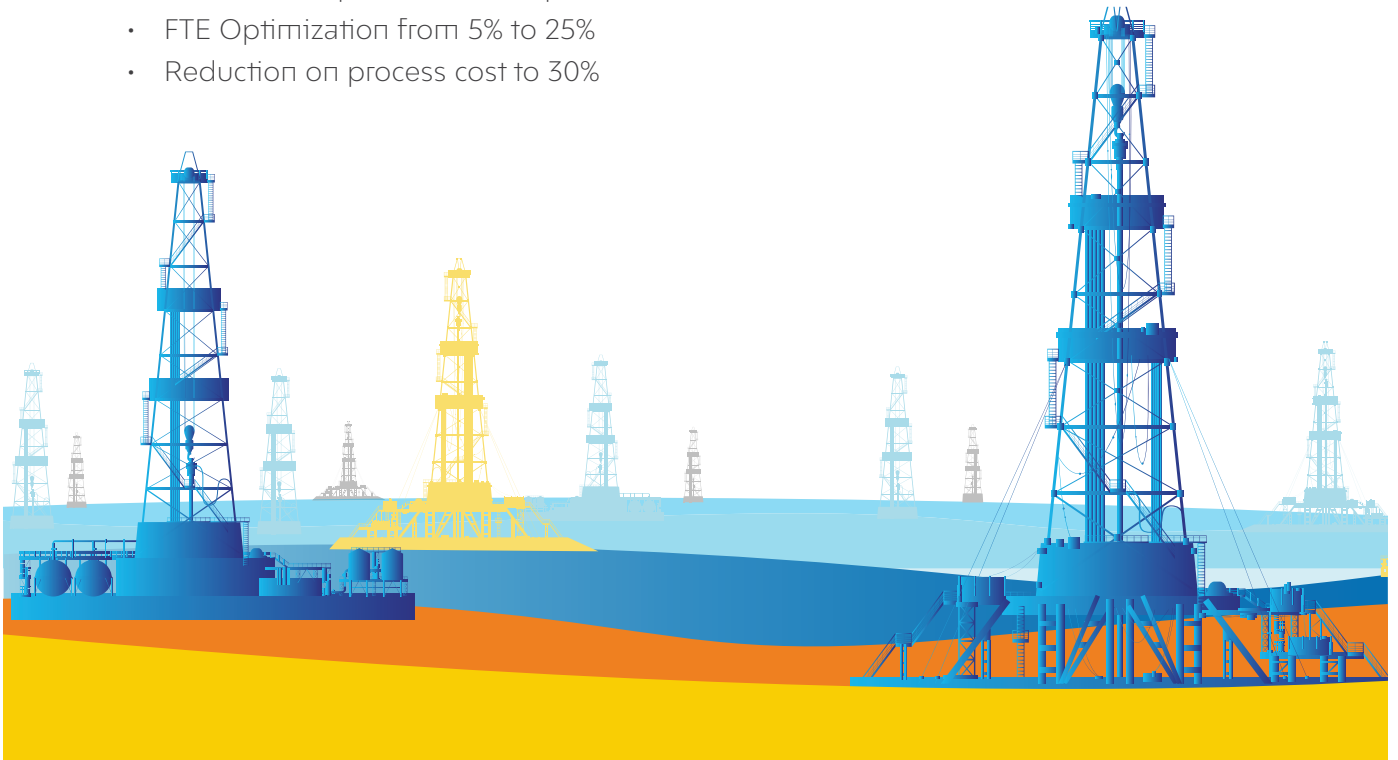
# The Connected RPA experience

The convergence of RPA plus other digital technologies like Advanced OCR, Workflow Orchestration, Chatbot and Cognitive Automation will help Oil & Gas companies cope with increasing customer expectations, generate newer revenue streams, optimizing operations etc. For instance, using a chatbot along with RPA can digitize a customer interface and enable smart conversations in real-time. This feature can be added with most O&G use cases to enhance the user experience on bot execution. Advanced OCR capabilities will help validate invoice data, and reduce the cost, time and effort needed for invoice processing.

AI/ ML can be successfully combined with RPA in the process areas of hire to retire, cost allocations, portfolio management, subsurface digitization and so on. Despite several challenges, the scope of implementing Intelligent RPA across the O&G enterprise is huge and comes with the promise of radical digital transformation. It allows companies to leverage digital labor to do more, faster, at a fraction of the cost of human labor, and leads to a double-digit reduction in error rates.

## About the author

**Kanagasabai Sivashanmugam**
Sr. Project Manager, Intelligent RPA Practice, LTI

Kanagasabai has over 20 years of rich experience in managing Application Development (in Microsoft Technologies), Automation Projects and solution designing for various industries like Oil & Gas, Health Care, Insurance and Manufacturing in North America, UAE and KSA . He has 10+ years of experience in managing O&G projects, and has been involved in setting up CoE and delivering complex intelligent RPA projects for top Manufacturing and O&G customers. He is a certified RPA Solution Architect.

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