Integrated Operations Platform for Oil Well Operations

Murphy Oil (Partnered with Incutre, LLC)
Integration Operations on SAP Cloud Platform

Click Here to see the video specific to this project
Integrated Operations Platform for Oil Well Operations
Murphy Oil

“‘Our Business is able to proactively prevent problems impacting our production in Future. The platform gives real-time visibility to people in the field, thus improving the safety culture. Employees understand that risk and procedures they have to follow while doing their jobs. We have seen a productivity gain in the range of 15-20% with the same workforce we have. Its super exciting in terms of different technologies we are using in SCP. It has truly solved a Business Problem”

- Rajesh Satewar, Director SAP and Enterprise Applications

**Challenge**

Murphy oil faced challenges in gaining visibility into their oil well operations. Lack of integration of business processes running on disparate systems made it difficult for them to locate and collate information in a timely and efficient manner – significantly delaying business decisions and processes.

**Solution**

An Intuitive Application which would unify information and integrate business processes, Murphy Oil utilized SAP Cloud Platform and its services to develop a remote operations center with real-time visibility into their oil well operations, the solution that unified information and integrated all relevant business processes.

**Outcome**

Integrated task management and collaboration of processes allowed Murphy to create a centralized cockpit to manage operations, gain real-time visibility into tasks, and track assets accurately while utilizing a secure multi-cloud infrastructure.

- **10 weeks rollout, Integrated 15+ Disparate systems.**
- **ROI realized in <1 year**
- **15% Productivity Increase**
Incture, LLC

Incture developed an Integrated Operations Platform for Murphy Oil Corporation.

Incture has been delivering “technology-enabled business innovation” to SAP customers since 2006. Its digital apps solve a multitude of business and technology problems, in ways smarter than was possible with legacy and Web applications. Digital apps integrate people, processes, data, systems, and the Internet of Things to make work easy, and deliver a shift in business performance and people experiences.

Incture has had a fruitful partnership with Murphy for over a year now. They have successfully been able to enhance and add value to Murphy’s investments in SAP technology by developing transformative app-based solutions. This has helped connect Murphy’s processes and its people within a more efficient framework.

To get the best from the “app economy” for your team or organization, talk to Incture. With offices in the US, Canada, India, and Southeast Asia, Incture has been instrumental in technology-enabled business innovations at a number of large and small customers across the world.
Business Challenge & Objectives

Murphy’s Remote Operations Center (ROC) staff spent an estimated 25% of their normal working day on locating and collating data from various sources. Switching among multiple sources (15+ Applications) of data was not only tedious, but also error-prone. They also missed out on providing critical information to various stakeholders in the process at the right time, especially to Field engineers. Lack of coherence among systems led to inefficient management of tasks, ineffective communication among employees, and hampered Murphy’s goal of becoming a data rich enterprise.

Efficient production is everything in the Oil Business, and the listed above challenges reflected poorly on the overall production rates for Murphy Oil.

Project Objective

The objective was to create a one-stop platform, which would capture data from multiple business processes, allow real-time data processing, and enable administrative teams to proactively monitor resources and assign tasks swiftly. This integration on SAP Cloud platform combined with features such as Offline capability, ease of use across multiple devices, automate downtime capture in production, and smart predictive analytics added visibility and ensured seamless flow of operations.

The platform created a mechanism which allows better management of people, processes and ultimately improves oil production rates.
Remote Operations Center (ROC) is a centralized monitoring cockpit, which brings in the essential operational efficiencies and visibility into day-to-day activities by unification of information and business processes from disparate systems. Harnessing the power of SAP Cloud Platform and its services, the ROC features include:

- Daily Oil Production Monitoring (DOP)
- FRAC Monitoring
- Enables response time to alarms
- Dispatching of tasks with Standard SOP’s
- Capture Downtime in production
- Issuance of Permits to work
- GPS enabled Asset Tracking

The new platform ensures Intelligent data management, smart allocation of resources, improved safety conditions of staff, and a seamless flow of processes.

Leveraging technologies such as iOS SDK, the operations staff and field engineers alike are empowered to ensure consistent Oil production at all times.
Benefits and Outcomes

Business / Social

• Enhanced overall Operational performance by 15%
• Unification of 15+ disparate applications into one single platform
• Optimized operations result in more consistent and improved oil production

IT

• Harmonizing the system landscape by Integrating 15+ Business processes
• Process over 15M events/year to detect exceptions real-time
• The platform actively combined work related chats and groups, allowing them to cut down use of Microsoft Teams by 80%, providing better compliance.

Human Empowerment

• Empowered operations staff members
• Access to better technology reduced manual labor and improved safety conditions for staff.
• Improved communication among Remote Operations Center (ROC) staff and Field Operators
Architecture

IOP – SOLUTION APPROACH

Datacenters

- SAP ERP On Premise
- Cloud Connector
- SAP ERP on HANA
- Databases On Premise
  - Cloud Connector
  - PROVE, ALS
- 3rd Party Cloud

Mobile Screen
- Mobile services
- Java or SAPUI5

Web Screen
- Portal
- SAP Fiori Launchpad

Cloud Platform
- Business Rules
- Workflow
- Cloud Integration
- OData Provisioning
- Identity Authentication
- HANA Database

Firewall
- Secure tunnel
# Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

<table>
<thead>
<tr>
<th>Technology or Use Case</th>
<th>Yes/No</th>
<th>Contribution to Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machine Learning / Artificial Intelligence</td>
<td>yes</td>
<td>SAP HANA PAL used to build machine learning models to drive forecasting and well anomaly detection</td>
</tr>
<tr>
<td>2. IoT</td>
<td>Yes</td>
<td>Capturing sensor data and Real-time Data processing</td>
</tr>
<tr>
<td>3. 3D printing</td>
<td>No</td>
<td></td>
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<td>4. Blockchain</td>
<td>No</td>
<td></td>
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<td>5. API Economy / Integrate the Intelligent Enterprise</td>
<td>yes</td>
<td>Geotab</td>
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<tr>
<td>6. Cloud Native / Event Based Architectures</td>
<td>Yes</td>
<td></td>
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<tr>
<td>7. Extending the digital core with SAP CP / ABAP in SAP CP</td>
<td>Yes</td>
<td>Extending to SAP ERP</td>
</tr>
<tr>
<td>8. SAP Leonardo Application ( extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)</td>
<td>yes</td>
<td>SAP Leonardo OCR libraries.</td>
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</tbody>
</table>
Deployment

Date of Deployment or POC: 05' May 2018

Number of live users: 190

SAP Technologies Used:

- SAP Cloud Platform Services
- SAP HANA
- HCI
- SAP IDP
- SAP Cloud Platform Mobile services including iOS SDK
- SAP Cloud Portal
- SAP UI5

Server Processor: Apache Application Server

Linux Distribution: