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Mobile Apps for Mission-Critical Business Processes

Oil & Gas Industry Case Study: Improving Productivity in the Field

Background

The oil and gas industry in North America is expansive. According to a report by PricewaterhouseCoopers, the industry contributed more than one trillion dollars, provided more than nine million jobs and accounted for about 7.5% of the US GDP in 2007. Geographically, the industry encompasses everything from the mineral-rich Appalachian Basin to the Tar Sands of Alberta continuing all the way down to the oil fields of Texas.

Despite the expanse of the industry, the supply of skilled laborers has failed to increase at the same pace as demand for domestically sourced fossil fuels. In adition to addressing labor shortages and rising salaries brought on by strong demand, organizations across the industry are looking for ways to improve productivity.

Companies across the entire industry lifecycle -- upstream, midstream and downstream -- are working to increase operational efficiencies **[do more with less]**, which rely on accurate data related to production, construction / engineering, facilities management and health, safety and environmental compliance.

Cost of a Paper-Based Solution

Like most organizations, those in the oil and gas industry manage a vast number of processes that are triggered, monitored and approved by forms. Most of these processes are still paper-based where often forms are either scanned and distributed electronically, or pre-printed on paper and physically distributed in advance of a process. Data may be electronically captured or filled in using a pen, and then managed through the system as paper.

Forms printing, distribution, collection and sorting represents a considerable overhead even before trying to collate data gathered on completed forms. When forms are personalized, the costs rise further and continue to increase once they are completed and need to be transported safely, securely and quickly to start a process.

Based on the responses to a recent AIIM (Association of Information & Image Managers) survey, **the estimated average cost per paper form, including printing, distribution, mailing, collection & sorting is $4.56**. Though the reported median was about $2.00 per paper form, 20% of the respondents reported the cost per paper form was $10 or more. Scanning and capturing of forms into an electronic format provides a considerable increase in productivity savings throughout the process. After factoring in the scanning costs for completed paper-based forms, a direct-entry mechanism for forms data, will generally yield a cost savings between $3.5 and $7 per form compared to paper origination--even if the core process is paperless.

A range of devices is available for use throughout the industry -- **portable scanners**, **smartphones**, **tablets** and **specialist terminals**.

Using such devices to collect and report data provides extensive benefits, including:

- ☑ Improved speed of data availability
- ☑ Reduction of paper throughout processes
- ☑ Reduction in form-filling time
- ☑ Fewer lost/incomplete forms
- ☑ Greater data accuracy
- ☑ Competitive customer service
- ☑ Reduced logistics of forms & paper handling
- ☑ Improved back-office efficiecy
- ☑ Freeing up process flows/approval cycles

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Applying the Benefits of a Mobile Data Capture Solution

The use of electronic forms within the process yields business process management and workflow benefits. Respondents of the same AIIM survey, on average, predict a 33% improvement, with a third expecting **a 50% improvement in productivity of administrative staff** following implementation of a workflow process using scanned forms and documents, with automated data collection.

Extending the benefits of electronic forms with the capability for mobile data capture produces even greater benefits in cost savings along with productivity increases, especially for the oil and gas indusry where field workers operate in remote locations, often with no internet connection. The AIIM survey identified that 36% of respondents use mobile devices for data capture by field service personnel, ranging down to 6% who capture mobile data directly from their customers. In some applications, the availability of an immediate connection to the process provides a step-change in customer service or staff productivity.

Oil and gas inspectors are required to fill out a multitude of forms for environmental compliance, permit regulations, maintenance, equipment checks and much more. Only one missing piece of information or illegible data point can result in sending an inspector back to the field to very data. This prolongs the inspection process, increases costs, and in the case of an inspection, incomplete or missing data can force a halt on production, resulting in a well that is unable to produce.

Electronic forms and the implementation of mobile data collection processes, such as well-tending, equipment inspections, timesheets, and flow monitoring applications, verify and validate important data points. During onsite field inspections, when armed with timely and accurate information, inspectors can easily assess the health of a well and report equipment malfunctions. The ability to take corrective actions quickly helps keep production at peak levels.

Customary across the oil and gas industry, landowners receive royalty payments based on production and output. With a mobile data capture process, management can accurately calculate a well's life expectancy, optimizing production against expected goals and monthly outputs. Automatic uploads share that information with a company's accrual system for timely royalty payments to land owners.

Access to **real-time validation of accurate data provides companies in the oil and gas industry with strategic value in productivity, improved margins, and reductions in business costs**. When deploying an electronic form and mobile data capture solution, organizations can also better manage training of field personnel and inspectors, while accurately maintaining training records as required for compliance and risk mitigation.

Oil and gas companies considering mobile data collection solutions demand a number of key features:

Ability to work offline --
The nature of the industry--with its wide geographic areas often situated in remote locations--the ability to capture data offline & upload it once reconnected is critical.

Flexibility of operation system --
Companies want to retain current device operating systems to preserve flexibility during future growth.

Integration w/ backend solutions --
Including Oracle, SAP, Maximo and others. Most users parse data that is then integrated into other systems (field maintenance, payroll, doc. management, accounting, etc.)

Ability to capture rich data --
Photos, GPS coordinates, barcodes, RFID tags, voice, signatures and more.

Support for paper-based solutions --

Oil & Gas Industry Turns to Innovative Tech

Recent reports indicate that by 2015, organizations will spend $168 billion on enterprise mobile apps and $8 billion on oil and gas mobile apps. Building on the inherent benefits associated with electronic form-based and mobile data capture, and the projected expenditure on mobile apps, companies can realize dramatic benefits beyond the simple automation of paper-based data collection processes. Mobile apps that enhance internal workflow, increase productivity, and produce economies of scale, provide strategic business benefits.

Increasingly, the purchase of innovative enterprise solutions, such as mobile data collection, requires evaluations by a team of C-suite executives (COO and CIO) who understand the business proposition, and key IT managers who will manage the integration and deployment. As the key technology experts, IT departments play a major

role in the decision making process. Embracing the use of innovative technology solutions wholeheartedly, IT managers can guide standardization throughout the enterprise rather than implementing disparate departmental purchases.

Enterprises searching for mobile solutions will choose providers who understand the need to manage the entire data collection process, ensuring competitive advantage and reducing the loss of future benefits. While in-house built solutions can manage bits and pieces of data collection, today's oil and gas companies seek solutions that can replace or enhance in-house solutions with more robust capabilities. Extending benefits across multiple departments -- operations, facilities management, maintenance, field services, finance, logistics, transportation and trucking, etc. -- chosen integrated solutions enhance abilities at an enterprise level.

Rapid Deployment, Rapid ROI

The deployment of a standard Mi-Corporation mobile solution takes between two and six months, including initial discovery and requirement assessment, forms design, and initial roll out and training. Most organizations realize a return in as little as 6-12 months with Mi-Corporation, who has customers with field inspectors that used to spend 1-1.5 hours per day processing paperwork and are now completing 20 more field inspections a day after deploying a mobile forms and mobile data capture solution.

User adoption is key to assessing implementation success. Low user adoption rates account for 90% of mobile data capture project failures, while technology changes account for only 10% of project failures. A vendor who understands and can articulate the benefits of change can greatly reduce their failure rate. Reasons for poor user adoption include:

- **User-interfaces that are not paper-like, intuitive, and friendly**
- **Limited involvement of end-users in the design process**
- **Lack of effective iterative testing by end-users**
- **Technology that forces end-users to change their processes**
- **Lack of incentives and benefits for end-users in the project**

The greatest contributer to adoption failure is insufficient training of end-users prior to launch and the absense of parallelized processes during initial launch. Mi-Corporation has developed a comprehensive and effective training approach to managing the migration from paper-based processes to mobile data capture, maximizing user adoption success, meeting security and data integrity requirements, managing a complex device landscape and centralizing data management.

In addition to providing flexible technology adaptable to any use case or changing process, Mi-Corporation's best practices are grounded in:

- **Strong user training programs -- outlining project needs & identifying benefits, goals and specialization**
- **Effective communication feedback loops -- tracking progress pre- and post-launch, design impact**
- **Superior ROI measurement and methodologies -- measuring and communicating success**

Mobile Data Capture Promise Land

Building on **15+ years of experience with enterprise mobility**, Mi-Corporation has created the industry's most comprehensive and flexible mobile solutions that can be deployed on the greatest range of software and hardware.

Mi-Corporation can help oil and gas industry companies to easily migrate paper-based processes to electronic forms that can be used on several types of devices to improve efficiency and flexibility of data capture processes, for realization of significant improvements in productivity, operational efficiency & cost savings.