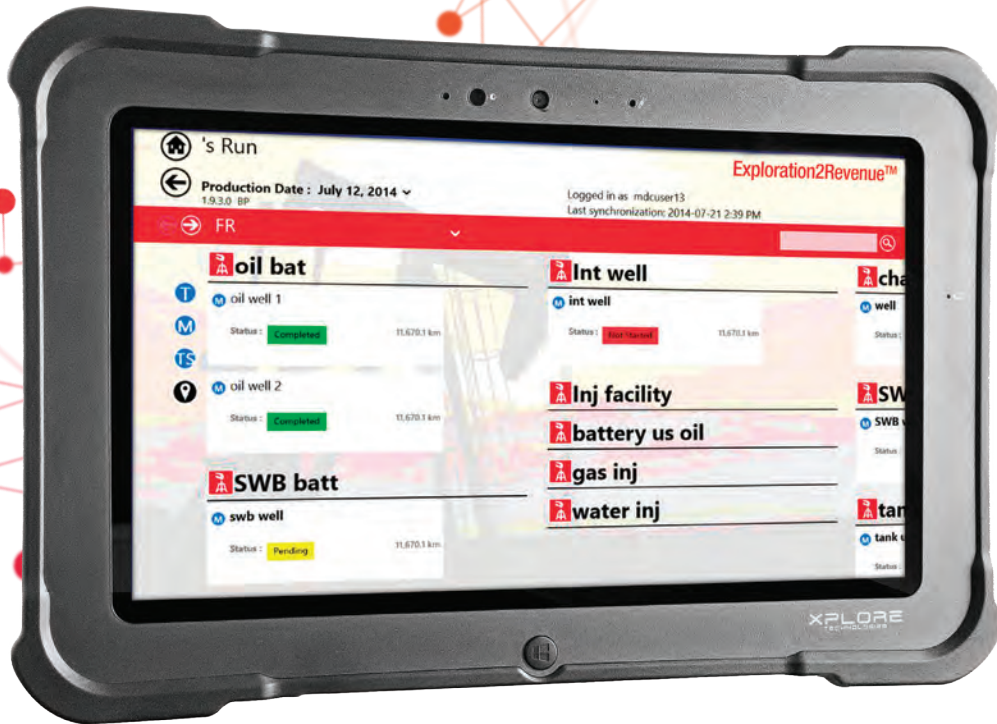# CGI
Experience the commitment®

Exploration2Revenue™ Mobile Data Capture

Mobile data capture in
Oil and Gas
companies

Why mobility in oil and gas field operations?

When in the field, oil and gas workers want to have the same kind of mobile connectivity and capability they experience with their personal smartphones and tablets. Employers want crews to be able access and transmit accurate data from any location. As a result, supporting more mobile devices with real-time connectivity has become a high priority for companies with remote workers. All of these drivers led CGI to invest in developing a new mobile data capture and validation solution for oil and gas companies.

This solution brief demonstrates how CGI's new Exploration2Revenue Mobile Data Capture (X2R MDC) helps oil and gas companies increase data accuracy and reduce expenses.

Present day processes and challenges

Error-prone data entry

Data quality is a constant concern in a business where stock price is dictated by how closely production meets forecasts. In order to make precision projections, data coming out of the field has to be as accurate as possible. In the current manual model, the operator records data twice. First, on a piece of paper onsite, and second, by keying the data into a hydrocarbon accounting (HCA) system back in the field office. This two-step, manual process increases the possibility for errors and inaccurate forecasts.
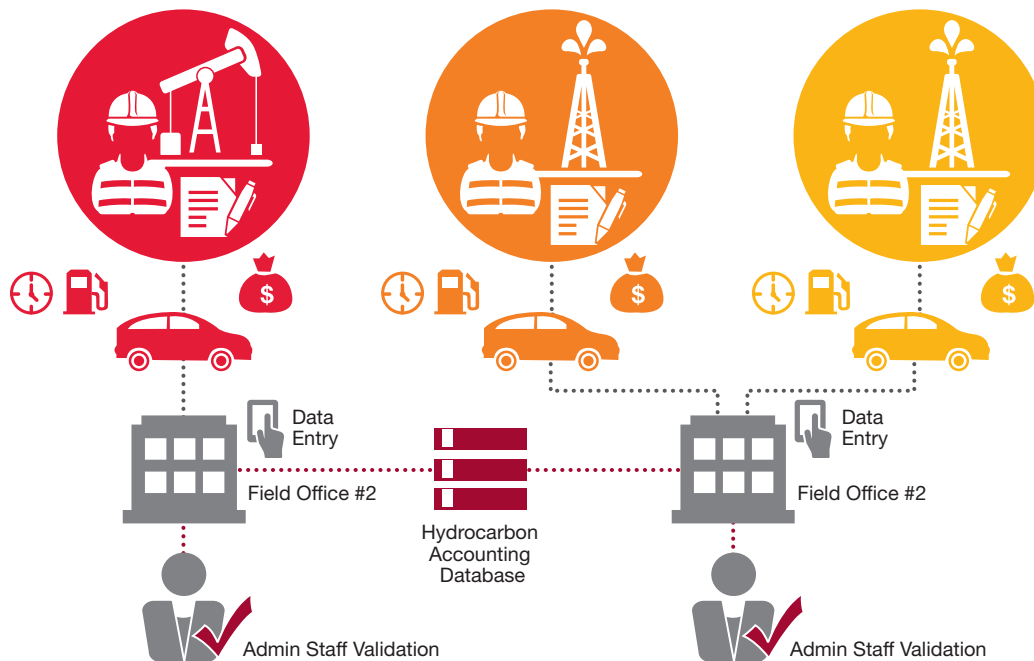
Multi-trip expenses

Without real-time data access, remote operators can only react to what they see in the HCA system long after they have left the site. As production values often are needed by the company as soon as possible, this means having to return to the location on the same day to determine reasons for production shortfalls, verify readings or arrange for maintenance services.

So, the typical process today looks like this:

• Meet at the field office.

• Drive out to the field and collect production volumes, tank readings and tickets.

• Drive back to the field office to enter the collected values into the HCA system.

• Drive back out to the field to perform maintenance/operational tasks at well sites.
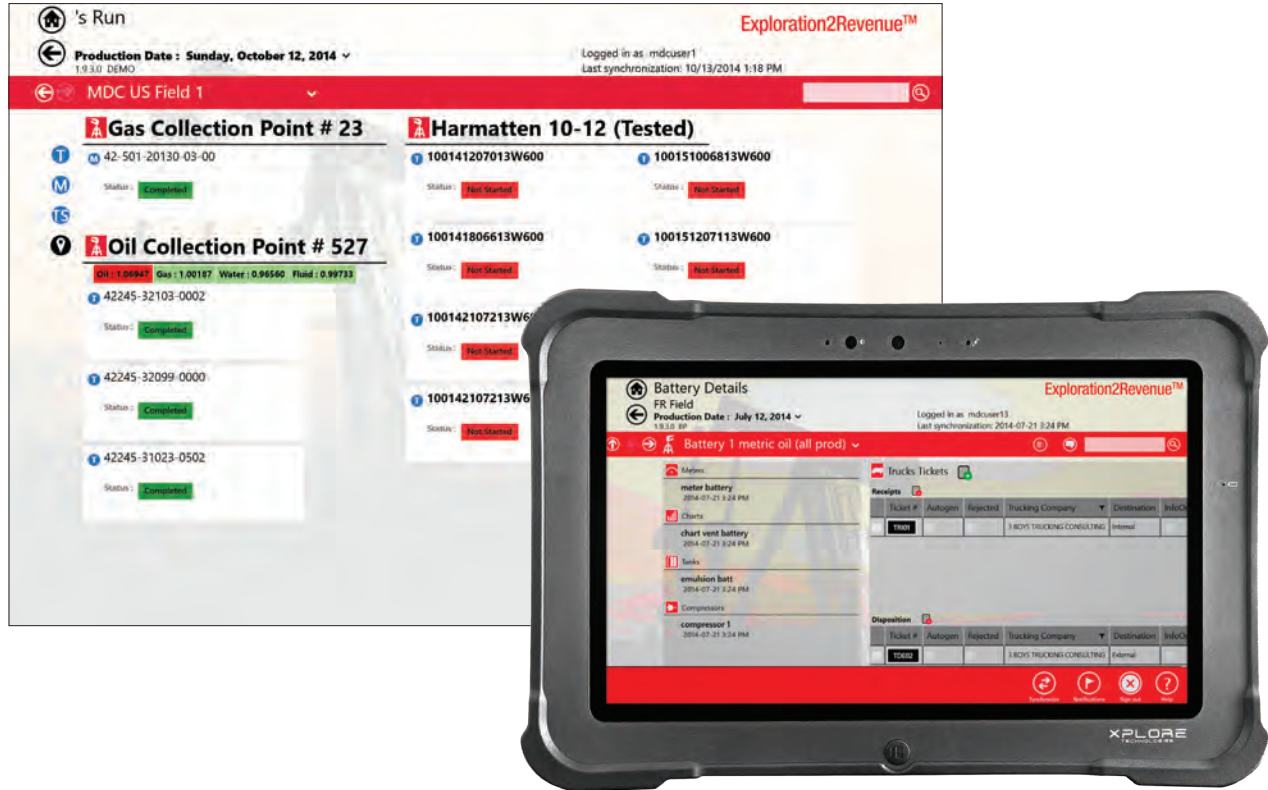
This is a common scenario that not only takes away 1–2 hours out of every operator's day, but also adds significant expense via increased wear and tear of vehicles and additional fuel use. It also poses an additional safety risk because of an increase in time spent driving.

Multi-trip commutes to and from well sites and field offices

Data Entry

Field Office #2

Hydrocarbon Accounting Database

Data Entry

Field Office #2

Admin Staff Validation

Admin Staff Validation

Challenges—Commute to and from well sites to field office

Imagine if a workforce was focused, directed and available to act … all the time.

Sub-optimized asset management

Additionally, the concept of an operator's "run"—driving the same path every day to collect operational and volumetric well data—is becoming obsolete. This is because the traditional run places no priority on wells with higher production potential and risk. With no prioritization for high performing wells, the potential lost production can be immense.

How do organizations change current processes to optimize production operations?

CGI's X2R MDC mobile production volume data capture and validation solution was developed keeping ease of use, integration and administration top of mind. The solution offers bi-directional communication with any enterprise production volume reporting or hydrocarbon accounting system. MDC allows the remote capture of volumetric and operational data directly in the field. By storing up to 31 days of well and facility data in a connected or disconnected state, users can make amendments to historical data, monitor developing trends and validate data, all onsite.

Focused: Where previously the operator was recording data twice, now, using the MDC mobile application, the operator enters the data once onsite. Not only does this eliminate an unnecessary step, but it also facilitates the analysis of data while the operator is still at the lease. One of the core aspects of MDC is the Business Rules Engine (BRE). The BRE is user configurable to set up specific validation rules around data elements such as automated SCADA (supervisory control and data acquisition) data or fluid levels on pumping oil wells. By monitoring any entered data or automated imports, real-time validations in MDC alert the operator to erroneous data and/or developing trends. Now the operator has all the required tools, resulting in more accurate production data and optimized forecasts.

Available to act: Here the benefits of using MDC are even more tangible. Capturing data in the field and eliminating additional trips back to field offices provides cost savings in a number of areas. It has been proven that the elimination of extra trips by the operator can save an average of 1.5 hours per day. When this example is applied to a company with a workforce of 200 operators, the savings can reach over $6 million per year. This does not take into account additional fuel use, wear and tear on vehicles or safety risk due to the extra time on wheels. Now the operator is more available to act. The time saved provides increased capability for the workforce to focus on true engineering and operational matters, resulting in greater value creation.

Directed: When the price of oil drops, the importance of improved well production and reduced operations costs is magnified. The concept of "operating by exception" or "managing by exception" is becoming more common. The Notifications Dashboard in MDC facilitates improved risk management during resource deployment, where the operator's run is optimized to proactively focus on issues arising with data, wells and equipment. Warnings can be set up in the system to notify the operator when a high performing asset has gone down. Prioritizing the warnings based on lost production volumes allows the operator to target the most critical asset first. The workforce in the field no longer follows the same run without change in priority, but has a more intelligent, directed, proactive approach to their asset management.

Streamlined process with Mobile Data Capture: X2R MDC

MDC Client application on Windows 7/8 device with 30 days local storage

Benefits
- Full operators' tool kit
- Measurements
- Exception dashboard
- Inspections
- Truck tickets
- Transportation dispatch
- More time, ability to cover more fields

Hydrocarbon Accounting Database

Admin Staff Validation

- Validated operator entry
- Consolidated monthly
- Allocations and calculations

MDC has added significant benefits to our clients' business operations

Cost Benefit	Business Benefit	Strategic Benefit
• Reduced costs through elimination of redundant processes • Well uptime and production maximized • Time savings, with operators freeing up 1–2 hours per day	• Intelligent workforce utilization • Erroneous data capture is reduced with one-time handling of production volume data • Production and uptime are optimized through onsite issue resolution	• More efficient access and reporting of asset performance data • Ready platform for other mobile solutions such as forms, inspections and digital service requests • Right for "Big Crew Change" and young, intelligent new talent in the workforce

Why the Microsoft Operating System?

As part of our focus group with clients interested in the development of X2R MDC, the best operating system was discussed. Because Microsoft OS is enterprise centric, administrators are more familiar with and better equipped to manage user profiles, enterprise security and application deployment. Another positive is the abundant selection of form factors available in the market. Additionally, for those corporations where intrinsically safe devices are necessary, there are Class 1 Division 2 enabled devices as well. Microsoft works with our clients to keep them updated on the new hardware that would soon be available as well as upcoming operating system releases. Now, with the release of the Windows 8 platform, there is a mobility focused operating system with an improved mobile experience.

MDC features:

• Trending on every data entry field

• Storage of 30 days of history

• Availability of previous 10 tests (graphical/tabular)

• GPS enabled auto-navigation

• Deployment through the Windows Store (or corporate store)

• Configurable business rules engine

• Notifications dashboard

• Two-way synchronization resulting in no administrative overhead

• Ease of expansion, based on the user's unique requirements through the available Agile development team

In conclusion, MDC operators proactively troubleshoot onsite, and with the increased intelligence built into the solution, this is enhanced over time. Systemic issues/opportunities can be addressed and managed more effectively, which ultimately leads to maximized well and equipment time, facilitating increased revenue. The bottom line is that time saved is used to provide more efficiencies and in the end, more well uptime and company profit.

Working with CGI

Today the oil and gas industry is a challenging place to operate—with geo-political uncertainty, price fluctuation, transportation issues and inaccessibility of reserves. CGI works with oil and gas companies across the globe to address these challenges and more. We combine extensive industry expertise, proven solutions and end-to-end IT services to help organizations create agile and cost-effective infrastructures that reach new levels of efficiency and profitability.

Experience and expertise

- Decades of oil and gas expertise and operations in 40 countries

- Preferred global supplier to three out of the world's six largest oil suppliers

- Manage the entire exploration and production application portfolio for our global clients

- Provider of card payment services that manage more than $90 billion in transactions per year

- More than 2,000 professionals working with our oil and gas clients in 24 locations around the globe

CGI

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X2R MDC is part of the CGI Exploration2Revenue™ (X2R) suite of solutions.

X2R HCA *For hydrocarbon accounting*	**X2R LAND** *For land and asset management*
X2R MDC *For mobile data capture*	**X2R FAS** *For financial accounting*

cgi.com

With 68,000 professionals operating in 400 offices in 40 countries, CGI fosters local accountability for client success while bringing global delivery capabilities to clients' front doors. Founded in 1976, CGI applies a disciplined delivery approach that has achieved an industry-leading track record of on-time, on-budget projects. Our high-quality business consulting, systems integration and outsourcing services help clients leverage current investments while adopting new technology and business strategies that achieve top and bottom line results.