

White Paper

CGI's Pocket PVR: A Production Volume Reporting Revolution

Introduction

This white paper is a compilation of concepts presented by CGI and Nexen following the development of a corroborative approach to building a powerful and versatile Field Data Capture (FDC) application that allows users to enter data in the field as it is captured.

About CGI

At CGI, we're in the business of satisfying clients by helping them win and grow. For 33 years, we've operated upon the principles of sharing in clients' challenges and delivering quality services to address them. As a leading IT and business process services provider, CGI has a strong base of 26,000 professionals operating in 107 offices worldwide, giving us the competitive advantage of close proximity to our clients. Through these offices, we offer local partnerships and a balanced blend of global delivery options to ensure clients receive the optimal combination of value and expertise required for their success. We define success by helping our clients achieve superior performance and gain competitive advantage.

About Nexen

Nexen Inc. is an independent, Canadian-based global energy company, listed on the Toronto and New York stock exchanges under the symbol NXY. We are uniquely positioned for growth in the North Sea, Western Canada (including the Athabasca oil sands of Alberta and unconventional gas resource plays such as shale gas), deep-water Gulf of Mexico, offshore West Africa and the Middle East. We add value for shareholders through successful full-cycle oil and gas exploration and development and leadership in ethics, integrity, governance and environmental protection.

Business Drivers

In today's competitive marketplace, oil and gas producers need to leverage every tool available to make better, faster and smarter decisions about what direction to drive their business. Accurate and fast access to current asset performance is a critical piece of this equation.

As the most widely used field data capture system in the Canadian oil and gas industry, the Production Management Suite from CGI (PVR, GFR, CNS) has been an important component of this equation for some time. Our clients leverage PVR for their business because they consider it the most comprehensive and powerful field data capture system on the market.

PVR provides progressive companies with an efficient means of collecting, compiling and reporting field data. The system provides both field operators and office personnel with an intuitive, comprehensive and easy-to-use tool. Whether managing operated or non-operated assets, PVR makes the business processes and the workflow associated with operations data collection more efficient. The value proposition of single-source information offered by PVR helps companies manage their business easily every day, while positioning them strategically to build for the future.

Now CGI has made making informed business decisions even easier through Pocket PVR.

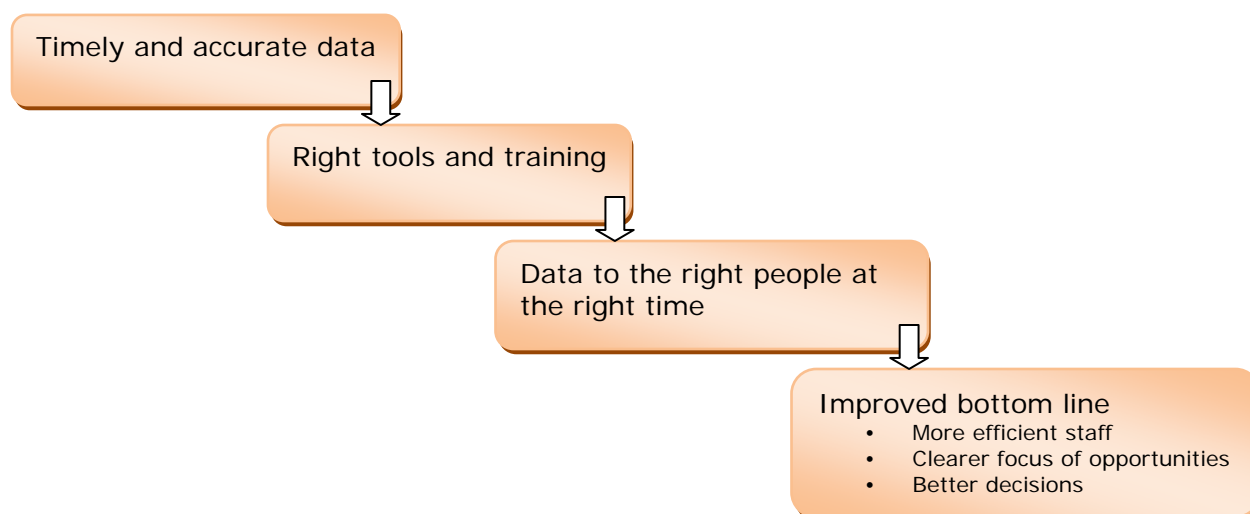
The Genesis

Working in collaboration with Nexen, a Canadian-based global energy company and long-time PVR customer, CGI and Nexen embarked on an initiative in 2007 to disrupt an existing business paradigm—one that involved handling production data twice. The end goal: improve productivity and business decision efficiency while reducing costs through the elimination of redundant field data capture steps. The potential payoffs can be large, since decisions to optimize production and detect problems proactively can now be made sooner and without concerns of possible erroneous data.

The Old Way and The New Way – Addressing the Challenge

Historically companies have used production management solutions like PVR by sending operators to wells, capturing the data manually, returning to the office and re-keying the data into the system. In other words, this process resulted in the duplication of effort—first documenting the information in written logs and then keying it into the software.

The business challenge at Nexen was further characterized by a large number of wells (4,000+) with a massive number of activities generated on a daily basis by some 200 operators. Couple these facts with the reality that the wells are low producing and generate low margins and it became clear that the information management and business processes behind them had to be optimized.



Pocket PVR helps to increase efficiency and mitigates the risk of errors in transferring data from written logs into the software by eliminating a step in the data capture process as illustrated on the next page. In addition, Pocket PVR has helped to foster improved and proactive business processes at Nexen in areas affecting field data capture (production), regulatory compliance and equipment maintenance and servicing.

The Production Process at Nexen – Before and After Pocket PVR

Pre-Handheld Process

Over 10,000 production data points written in log books EVERY DAY

Operator then enters data into PVR when back at the office

Operator analyzes and troubleshoots data

Operator reacts to what the data is telling them

- Cause of production shortfalls
- Verify readings
- Arrange for maintenance/repairs

Post-Handheld Process

Operator runs data in handheld device

Operator troubleshoots right at work site

- Production tests
- Pump efficiency
- Torques

Automatic interface of data to centralize application when docked

Overall 1 hour/day/operator savings

The Compliance Process at Nexen – Before and After Pocket PVR

Pre-Handheld Process

Over 63,000 equipment inspections/year required to meet government and corporate policy compliance

- Production storage facilities
- Active and inactive well sites
- Vehicles

Inspections done on paper forms

- Filed locally at operator field office
- Many different variations of forms/area
- Forms provide no regulation requirements guidance
- Change to regulations difficult to administer

Follow up on deficiencies a manual ad-hoc process

- A government audit would require a huge admin effort with the paper-based system
- Potential risk for non-compliance high due to gaps in process

Unable to rollup inspection information at areas or divisional level

- Unable to understand or plan for maintenance of common deficiencies at a business or unit level
- General corporate and government reporting

Post-Handheld Process

Standardization

- Forms and reporting
- Equipment inventory and hierarchy interfaced from SAP

Operational efficiencies

- Inspection schedules pushed to the handheld
- Forms easily updated with regulation changes
- Regulations referenced on handhelds to ensure understanding and intent

Data interfaced to centralized database upon docking

- Automated look up
- Corrective action plan and escalation process
- Ease of government and corporate reporting
- Easy-to-generate management reports
- Fully auditable

Critical for achieving RC certification in 2010

- Documented processes, continuous improvement
- Access to information critical to job function, i.e., work procedures, competency assessments and ER information

Equipment at Nexen – Before and After Pocket PVR

Pre-Handheld Process

Over 3,000 data points logged daily

- 15% SCADA (digital)
- 85% paper

Operator files paper-based log sheet in local filing system

Accessibility and analysis of paper data is very limited

- Operators not equipment experts
- Data not accessible to the experts

Post-Handheld Process

100% of critical equipment data is digitized

Proactive trending and troubleshooting at the work site

- High temp
- Low volumetric efficiency
- High blow by

Experts carry out proactive performance diagnostics

- Equipment utilization and efficiencies
- More proactive and planned maintenance activities

Supports PSM initiative

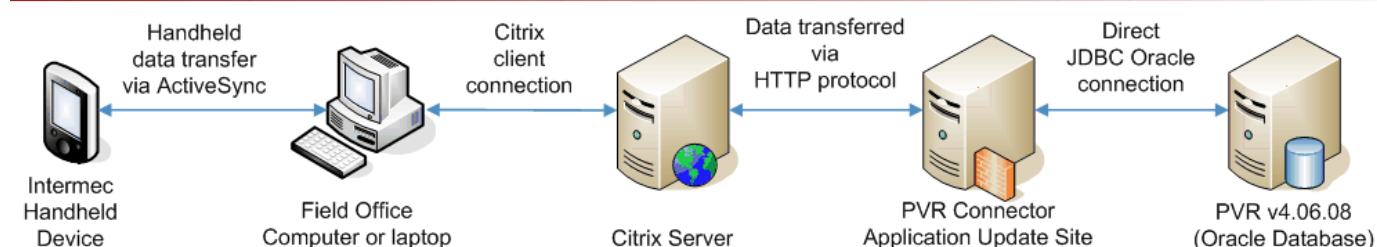
- Data collection and inspections of critical equipment

About Pocket PVR

The Pocket PVR software provides mobile data collection for PVR data on the Intermec 730i-Safe Windows CE handheld unit. Pocket PVR, also known as a field data capture (FDC) solution, is compatible with and integrated to PVR. It is intended to be used in conjunction with PVR, and does not replace PVR.

The following architecture diagram illustrates the various components required to implement Pocket PVR.

Pocket PVR Architecture



Pocket PVR has several features, including:

- Integration with CGI PVR
- A simple AGA3 no analysis calculation to calculate the gas volumes
- 15 day “trending analysis”

Two-way synchronization handles updates from both Pocket PVR on the handheld device and the PVR application on the server. The result is that the most recent daily transactions and amendments appear in both applications after synchronization. The handheld device holds 15 days of transactions and the last 10 well tests.

The Benefits of Pocket PVR

Through the implementation of Pocket PVR in the field, Nexen has found significant benefits to their business operations.

Cost Benefit	Business Benefit	Strategic Benefit
<ul style="list-style-type: none"> • Reduced costs through elimination of redundant processes • Well uptime and production is maximized 	<ul style="list-style-type: none"> • Not handling the production volume data twice has reduced the possibility of erroneous data capture • Operators are able to proactively troubleshoot issues on site, ensuring production and uptime are optimized. This is critical considering the 4,000+ wells with low production and low margins. For example, an operator can order a new belt by providing the belt size and cost centre while on location. 	<ul style="list-style-type: none"> • More efficient access and reporting of asset performance data empowers organizations using the system to optimize production from current assets and make better decisions about day to day operations

Pocket PVR Requirements

- Pocket PVR requires PVR version 4.06.09 or higher
- A remote server access system, such as Citrix operating on MS Windows
- Windows CE handheld unit, including a cradling device and a SD card with at least 32 MB of space (In addition, the device must have MS Active Sync and MS Windows Mobile OS 2003 installed.)
- Field office computer with MS Windows and MS Active Sync installed, a USB port for handheld cradle and ability to connect to Citrix server
- Apache Tomcat server with min 64 MB of RAM and 500mhz processor (with Tomcat version 5.5 or higher installed)

