WHITE PAPER

Addressing the Decline

Finding the Silver Lining for Producers

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CTRM Market Research, Analysis and Insights

OIL PRICE DECLINE OFFERS CHALLENGES AND OPPORTUNITIES FOR PRODUCERS

From around 2005 to early 2014, the revolution in North American oil and gas production, spurred by the development of long reach horizontal drilling and massive hydraulic fracturing technologies, attracted billions of dollars in new capital to the space – fueling huge growth in drilling activity, oil and gas production, and in the numbers and size of oil and gas producers operating in the space. However, with the sudden collapse of oil prices (beginning in the third quarter of 2014, which saw the value of crude decline by more than 50% from its high in July of that year), the inflow of capital has shrunk, and with it, the expansive growth in the producer market. While the collapse in the oil markets has had far reaching impacts across the global economy, nowhere are the consequences more greatly felt than in the North American oil and gas fields.

With this low price environment extending for almost a year now, US and Canadian producers have slashed drilling and exploration budgets and are cutting costs to preserve cash in order to ensure their survival. Companies that had principally relied on debt financing to support their drilling activities have been particularly impacted and many are struggling to meet debt payments, forcing liquidation of assets as bankruptcies loom. The upstream market is seeing the beginning of a wave of mergers and acquisitions as the stronger producers, those that funded their activities through generated cash or retained earnings, are now looking for bargains amongst the weaker.

With the continuing decline in the US drilling rig count, off more than 40% in the last 7 months, and layoffs occurring in all segments of the upstream industry, the upstream oil and gas industry has clearly fallen into one of the troughs of the boom and bust cycles that have marked the industry for more than a

century. And while there is no question times are difficult, there is also no question that for those that can survive, good times will again return as they have done consistently over the history of this market.

Clearly painful for all involved in the North American upstream market, and even traumatic for some, the current storm clouds engulfing this industry do offer a bit of the proverbial silver-lining to those producers that have been able to restructure their businesses to better survive the new low-price environment - a break in the hectic, high growth environment that marked the proceeding years offers an opportunity to move beyond simple cost reductions. With this period of relative quiet, companies that were caught up in the whirlwind of the boom may now have the chance to focus on improving bottom line performance via maximized margins on each produced barrel of oil and MCF of gas.

A BOOMING BUSINESS ON A BUCKLING INFRASTRUCTURE

According to more than one producer, the pause in activity may be a bit of a gift in disguise, as during the recent boom years, growth was occurring so rapidly that many of producers were having difficulty keeping up with the organizational and infrastructural demands that were being placed on them by their rapidly expanding operations.

In particular, the computer systems that are indispensable to every E & P company, from leasehold/land systems to marketing systems to production revenue accounting systems, were often relegated to the backburner in terms of investment and business focus. Though acknowledged as necessary, these systems have often been viewed as overhead burden - mere record keeping systems that reflected, after the fact, the activities of the business. In the environment of rapid growth, systems were often purchased and implemented only in reaction to a perceived shortcoming in business capabilities, not considered in the context of a larger IT strategy purposefully designed to support and enable better decision making. Worse still, some companies simply continued to build-out vast libraries of spreadsheets to manage their business despite the growing complexity and reach of their operations, and the attendant and well-known issues associated with using spreadsheets as a critical business system – data entry errors, calculation errors, audit issues and the list goes on.

Without having developed and executed a well-planned approach to addressing software and IT infrastructure needs, these producers are now experiencing some or all of the following software/technology issues that are symptomatic of a rapidly growing business that has become reactive to growth:

- Underinvestment in systems leading to a patchwork of outdated and ineffective software unable to provide the necessary information and support for sound business decision-making
- Poorly configured systems caused by a rushed implementation process that was necessitated by an urgent or poorly planned-for critical shortcoming in business processes
- "Undersized" solutions that met near terms goals when implemented, but did not support expansion into new products or geographies
- Unnecessarily complex and expensive systems that were selected to service future growth and expansion that is now scuttled – such systems may be creating difficulties for users and carry unnecessary and increasing costs for support and maintenance
- Solutions that are not "integrate-able", unable to communicate with other systems and creating silos of data - forcing duplicative data entry, increasing the risk of data entry errors and slowing and/or limiting visibility of operational and financial performance
- Incomplete solutions that are unable to capture the entirety of the business – some or all of that business is forced onto, and tracked/managed, in spreadsheets or bespoke applications like Access Databases

- Little or no support for capturing complex agreements, such as processing contracts or complex marketing arrangements – forcing such agreements to be managed in spreadsheets and providing little or no visibility into revenue components and costs/reductions
- Inefficient or ineffective use and support of complex systems caused by reliance on the limited experience of internal staff during the selection and implementation process
- Unresolved overlap and duplication of systems acquired through M&A activities
- Reliance on production management and accounting system to manage increasingly complex marketing and/or processing requirements, necessitating constant reconciliation and human intervention to manage reporting and valuations.

In any of these cases, the continuing use of such an infrastructure will be an impediment to improving the company's performance and will limit the ability to get the critical data and information that management needs to contain costs and improve the revenue performance of their assets.

Though no doubt the slowdown in drilling and new well connections is difficult for all, production companies can, as part of their overall strategy to right size and optimize their operations in a low price environment, use this time to take stock of their technology capabilities - identifying opportunities to reduce costs, but more importantly, seek to improve their operations by improving their technology capabilities.

EVALUATING CAPABILITIES IN A LOW PRICE ENVIRONMENT

In the current low price environment, producers should undertake a comprehensive IT review, focusing not only on reducing costs, but ensuring the business has the systems and tools necessary to operate most efficiently. Again, while such a review will certainly include a focus on reducing costs, those cost reductions should not come at the expense of potential bottom line gains that could be realized through optimized operations and improved production marketing performance.

Looking specifically at marketing related systems and their costs, "low hanging fruit" may be available. Some cost reductions can come from the elimination of duplicative or overlapping systems – consolidate capabilities where possible and retire un-necessary systems. Review the number and purpose of data/price feeds – often companies will allow marketing personnel to select their own preferred providers, even though their needs may be equally served by another vendor already servicing the company.

But aside from looking strictly at costs, producers should also ask themselves, "Do our marketing systems provide the data and information we need to optimize the value of our production and improve our bottom line performance?"

A fit for purpose producer marketing system should be able to provide a complete views of all revenue and cost components from the wellhead to the sales delivery point, regardless of whether that production is sold at the wellhead, or is gathered, treated, processed, or transported by pipe or truck. Armed with this information, the company can then undertake a comprehensive review of the profitability of all marketing and sales contracts. Given that many of these agreements were negotiated under the stress of a rapidly expanding business, often the value provided by these contracts can be improved as they reach their expiration/renewal. Having a clear picture of the true value of an agreement, netted back to the wellhead and with full visibility of all costs and value reductions, is vital

in determining if optimization/profitability improvements be achieved.

If your business is relying on spreadsheets for some or all of your marketing efforts, you may have a difficult time optimizing your operations. While spreadsheets are useful for conducting analysis on limited datasets, attempting to capture, manipulate and analyze multiple years of historical operating and marketing data will almost certainly introduce errors and provide false results. Utilizing accurate and complete data from the "system of record" will ensure a full and complete picture of those operations, including the ability to analyze and optimize financial performance.

Though perhaps not emblematic of all producers that had been operating under the stress of a rapidly expanding operation, ComTech is aware of a midsized US producer that, once given the opportunity to reflect upon IT decisions made during the boom, has taken advantage of the slowdown to improve their operational profitability through improvements in their systems.

The company's marketing manager, a long-term industry veteran, was tasked with ensuring new well hook-ups were expedited so the company could begin production (and recovery of their investment) as quickly as possible. Under executive pressure to ramp production quickly, that manager was essentially forced into surrendering potential profit for immediate cash flow; and in doing so, the company had essentially become a "price taker" as new wells connections were contracted to whichever gathering company could most quickly get a line laid to the well. While this manager felt that his experience provided him an informed view of whether or not the offer from the gathering company was essentially in the ballpark of what should be reasonable, there was no real measurement of the performance of those agreements as the company's marketing system was not able to capture P&L performance at the appropriate level.

Ultimately, the company recognized their existing system lacked the capabilities to answer the many fundamental questions related to their operations, including the profitability of their production marketing agreements. After selecting and implementing a fit for purpose producer marketing software product, the company was able to get a complete and componentized view of their fully netted prices at each individual wellhead; with the new system providing an accurate and auditable net-back price and tri-stream accrual for each individual commodity (crude oil, natural gas and NGL's). When combined with the new system's capability to report daily production volumes disaggregated to those same wellheads, the company also had a daily P&L at each and every sales points.

With the system providing an accurate P&L at the well level, the marketing group now has the ability to measure actual contract performance, and with access to fully componentized costs, is better able identify opportunities optimize profits by routing production to higher value sales points.

A STUDY IN OPTIMIZING MARKETING SOLUTIONS

Another example of operational improvements facilitated by improved technology is that of a large independent U.S. Exploration & Production Company, with a diverse geographic operating footprint (Mid-Continent, Permian Basin, Bakken, and Eagle Ford). The company had, in the last 3 years, more than doubled their production via a combination of an aggressive drilling program and acquisitions. With this growth in both production and administrative overhead, their critical business systems had become overtaxed and increasingly complex, with numerous independent systems (including spreadsheets) that had developed organically and in reaction to emerging needs. As the company's growth continued, their complex infrastructure increasingly inhibited their ability to effectively and efficiently manage much of their business, and in particular, their oil, gas and NGL marketing efforts.

Reflecting the weaknesses in their systems, key business processes were largely manual, error prone and suffered from so much process latency that their business could only be "viewed through the rear-view mirror." Among their key issues was the inability to:

- Effectively and accurately capture volumes and contract pricing
- Calculate accurate wellhead netbacks
- Calculate an timely and accurate accrual
- Track expenses and revenue deductions associated with the transportation and sale of productions
- Perform reconciliations necessary to ensure accurate payments and billing
- Provide sufficient clarity into business processes and production marketing decisions to address auditors inquiries and ensure SOX compliance

Marketing their mix of production (55% crude oil, 30% natural gas, 15% NGL's) required a broad but specific set of capabilities that simply doesn't exist in most vendor supplied systems, including traditional energy trading and risk management systems (ETRM). Most ETRM solutions usually fail to address a number of producer's requirements, including the need to capture, manage and account for their marketing activities under a variety of scenarios, including sales at any point from wellhead, through treating, gathering, and processing. ETRM system are deigned to start at an aggregation point, moving production downstream, primarily for trading purposes. What is not native to ETRM systems, and critical to E&P companies, is the ability to allocate all revenues & expenses back to an individual well head level.

After an extended review of available solutions, they did identify a "fit for purpose" solution from EMK3, a Texas-based software provider that was founded in producer markets.

SOLUTION OVERVIEW

EMK3's marketing solution, Senergy, designed to address the specific needs of producers, provides a fully integrated, end-to-end solution that supports all processes related to the marketing and transportation of crude oil, natural gas and NGL's.

With the deployment of Senergy, the client is able to get a complete view of their production marketing operations, including contract management and deal capture for all commodities, including complex NGL POP contract pricing; nominations/scheduling for transportation; accurate and timely wellhead netback price calculations; timely and accurate accrual; sales invoicing; revenue and expense reconciliations; and full SOX & Audit compliance.

Senergy has provided complete visibility into all volumes, prices, revenues and expenses; giving their team the information and intelligence to make better informed decisions and improve performance during difficult times; and, with a robust and fit for purpose solution, the company now has a fully supported commercial platform that will address their future growth needs as well.

SUMMARY

While it's almost impossible to overstate the negative impacts that falling crude prices have had on the upstream oil and gas markets in North America, the resultant slowdown in drilling and completion activity does offer producers an opportunity to better take stock of their operations, including their critical IT systems and in particular their production marketing solutions.

Reducing costs in this environment is, of course, necessary; however, those reductions should not come at the expense improved bottom-line performance, particularly as it applies to your oil, gas and NGL marketing efforts – the cash generator for your business.

Having the right marketing system, fit for purpose for producers - like that from EMK3, will provide your company the insights necessary to maximize the value on each of your produced barrel of oil, MCF of gas, and gallon of NGL's.

ABOUT EMK3

EMK3 is the market leader in providing innovative and comprehensive software and service solutions designed exclusively for Oil & Gas Producers and Midstream Operators.

EMK3's software solution is a single, fully integrated, and proven software application suite - EMK3 Senergy. EMK3 Senergy is a collaborative effort between EMK3 and its users to provide a best-practices application for an entire industry. EMK3's software and services are utilized by many of today's premier energy companies to enable their ability to achieve key business goals and objectives.

EMK3 is a true software company. EMK3's approach to the business is simply; to develop, implement and support industry solutions for our customers. This is accomplished in a single, fully integrated, best-practices application. All EMK3 customers use the exact same version of EMK3 Senergy, there are on "one- off" custom versions of EMK3 Senergy.

What you will find is, EMK3's innovative business model is aligned with our customer's objectives. What this means is, you will get what you expect, when you expect it, on time and on budget. You acquire and implement an application that works as you need it to, remains relevant and is user friendly.
Utilizing EMK3 Senergy allows you to:

Increase revenue and efficiencies by leveraging accurate and timely business intelligence. This is accomplished through complete and total transparency. Transparency into every transaction, contract term, calculation. Any data that's captured inside of EMK3 can be easily extracted, analyzed and reported on.

Significantly reduce your cost structure with superior technology and EMK3's business model.

- A single, fully integrated technology platform that provides full functionality for all processes related to the marketing and transportation of crude oil, natural gas and NGL's
- Enterprise-wide licensing
- All development funded by EMK3
- Releases and upgrades are provided at no additional cost over and above standard support and maintenance.

For more information, please contact EMK3 via phone at 972-668-6601, via email at info@emk3.com or visit our website at www.emk3.com.

ABOUT

Commodity **Tech**nology **Advisory LLC**

Commodity Technology Advisory is the leading analyst organization covering the ETRM and CTRM markets. We provide the invaluable insights into the issues and trends affecting the users and providers of the technologies that are crucial for success in the constantly evolving global commodities markets.

Patrick Reames and Gary Vasey head our team, whose combined 60-plus years in the energy and commodities markets, provides depth of understanding of the market and its issues that is unmatched and unrivaled by any analyst group.

For more information, please visit:
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