WHITE PAPER

Energy Companies Can Accelerate to the Cloud Using Business Outcomes and OKRs

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Why should energy companies move to the cloud? The answer is simple—cloud provides technology accelerators to scale out solutions across the business and offers easy access to all employees across the organization.

Most energy companies, including those in the utilities and oil and gas industries, have a mandate to move everything, including data and analytic workloads, to the cloud. Too many of these organization struggle with this mandate because they are trying to lift and shift their on-premises system to the cloud. Some have been successful, but many have not. Part of the problem is that only moving a current system to the cloud is not enough. Energy companies must also modernize their data analytics architecture in the cloud.

What should companies move to the cloud? "Everything" is not the answer. Trying to boil the ocean never works. A company should focus on high-value business outcomes and using Objectives and Key Results (OKRs) to help them drive scalable workloads and analytics to the cloud.

Ensuring a Successful Cloud Migration

Why are so many cloud migrations unsuccessful? As with any technological advancement, benefits are magnified but so are detriments if implementation is not handled correctly. One common problem in cloud applications is poor data quality. If data was not clean on-premises, then why would it be clean by moving it to the cloud? Data management and governance best practices are just as essential in the cloud as they are on-premises to keep data clean, accurate, and current.

Likewise, if organizations had data siloes on-premises, then they will still have data silos in the cloud. Moving siloes to the cloud is just a consolidation of data. It's not an integration of data. Companies are essentially shifting an on-prem data silo problem to a cloud problem. Current poor data practices will continue in the cloud, providing the same—and maybe even more—frustrations.

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Organizations that have been successful with their cloud mandates use OKRs to measure and drive business outcomes. When an energy company focuses on business outcomes and optimizes cloud technologies as accelerators to accomplish their OKRs, the entire organization wins by reaching objectives and achieving results faster.

OKRs Enabling Data-Driven Business Outcomes

Business outcomes must be at the heart of any successful digital transformation journey and cloud modernization. High-value outcomes that affect the bottom line usually require data from multiple sources to answers next-level questions that provide new insights.

Utilities and oil and gas companies that make data their most valuable asset and unlock its full value use it to guide every decision and every action. Achieving successful business outcomes often involves multiple teams taking a sharable, reusable approach that stores data once, but uses it many times across many users.

Reaching business outcomes also requires multidiscipline teams working together to accomplish a goal. The challenge that often occurs is teams overlooking essential skill sets needed to get answers.

Make Better Decisions Faster

Teradata Vantage™ can bring together 100% of data from across energy and oil and gas companies, including data from field assets, oil rigs, wells, plants, sensors, and other sources. The resulting analytic insights enable companies to reduce risk, improve margins, and make better and faster decisions.

Vantage can help with:

- **Drilling and completions.** Establish a service-agnostic data foundation with Drilling Data As-a-Service and fundamental rig states analytics. Combine them with drill bit failure analysis for tangible, high-value results.
- **Production.** Optimize lifting costs, maintenance costs, and the entire supply chain with rich, cross-functional cost forensics.
- **Refining.** Ensure company-wide agreement on data by integrating it for a single source of truth. Use the data to improve energy efficiency, achieve operational excellence, perform analytics, address product giveaway, and reach other operational priorities.
- **Utilities.** Position companies to better serve their customers by tapping into the Internet of Things to drive value, insights, and efficiencies across the value chain.

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Figure 1. Integrated Data Unlocks Greater Value: The individual green, black, and blue triangles represent departmental data. The white area in the larger triangles represents the extra value and additional questions that can be answered in an integrated environment.

The glaring missed opportunity is between the business, operational technology (OT), and information technology (IT). Very often, these groups exclude each other from their projects when in fact data is needed from all groups to create a comprehensive picture of how the business is doing and where it needs to go.

A better approach is to remove the functional silo barriers and create integrated multidiscipline teams, and use OKRs to drive synergies and objectives for high-value business outcome projects.

Use OKRs and Integrated Data for Better Answers

Leveraging OKRs for business outcomes helps energy companies achieve their objectives faster by bringing together numerous data sources to answer important questions and make data-driven decisions that have bottom line results. Getting data out of departmental silos, where the information is often outdated and provides limited value, enables integrated data from across the organization to answer detailed questions that drive action to improve profitability.

Figure 1 shows how bringing together data allows better, more detailed answers. Spend data that's isolated in a silo answers questions:

- What's the company's global spend?
- Where is significant purchase price variance?
- Who are the company's top global suppliers, and what are the open orders with them?

Likewise, inventory data in a silo answers some questions:

- What's the company's global inventory value?
- What is the current level of excess inventory?
- Where's the highest days forward coverage?

Integrating spend and inventory data allows more detailed answers:

- How are maintenance safety stock levels impacted by supplier performance?
- Who are the company's top 10 suppliers of quality-on-hold inventory?
- Does supplier location impact maintenance variable and overall cost?

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As more data is integrated, such as spend, inventory, and forecast data, even more granular and impactful questions can be answered:

- Are supply delays contributing to forecasting errors?
- How do changing forecasts impact purchasing planning and volume discount planning?
- Is the company's forecasting error related to inventory positioning and promotional activities?

The more data that's brought together for analysis, the more value and intelligence energy companies can unlock.

Where do cloud technologies come into play in this roadmap? Cloud can help energy companies ingest and integrate data from a variety of sources while offering scalability as data volumes and workloads grow. Cloud technologies have accelerators to turn typical six to eight month projects into eight to 16 week projects. This time-to-value is a game changer for utilities and gas and oil companies.

Data Analytics for the Energy Industry

Utility organizations and gas and oil companies can gain new analytic insights with Teradata Vantage. Teradata provides the lowest cost, fastest path to cloud modernization by delivering a connected multi-cloud data platform from start to scale on Azure, AWS, and Google Cloud.

Teradata ensures companies are as natively connected in the cloud as the providers' own offerings. This allows oil and gas companies to optimize upstream and downstream analytics to:

- **Increase productivity.** Integrate and analyze data from sensors, logistics, and other sources to drive productivity.
- **Enhance quality of life.** Empower employees with analytics to solve problems faster and improve quality of life.
- **Improve safety.** Apply analytics and machine learning for safer work environments.

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Align With Shared Business Goals

OKR is a goal setting system credited with the growth and increased shareholder value of Google, Intel, and other global companies. The OKR approach creates organizational transparency through alignment and engagement around goals.

Unlike traditional planning methods, OKRs are frequently set and tracked often, such as quarterly. Everyone in the organization knows how their tasks contribute toward obtaining each company goal. OKRs make sure everyone is rowing in the same direction. The OKRs are not only for technology companies.

A majority of Fortune 500 companies in retail, banking, and manufacturing use OKRs, and energy companies can benefit from them too by creating alignment and accountability throughout the organization.

Cloud deployments usually have objectives and measurable key results that are shared throughout the company. Many organizations accomplish their cloud migrations but then discover they relocated their on-premises problems to the cloud.

Focusing OKRs and cloud technologies on business outcomes helps organizations prevent that problem while realizing and scaling successful outcomes throughout the business.

Applying OKRs toward business outcomes builds functional buy-in with stakeholders. For energy companies to be successful with OKRs, they must clearly define objectives to achieve the desired results. For example, an objective to "improve cashflow forecast" is vague. Consequently, the result will also be ambiguous. By contrast, a clear objective such as "cashflow forecast improvement, accurate within 15%" will provide a concise, measurable key result (Table 1). Each key result must be measurable.

Key results become team objectives that generate even more detailed key results to reach the overarching goal. Done correctly, multidisciplinary teams use the latest key results to form new objectives. For instance, Table 2 shows how a measurable key result from Table 1 is used as an objective.

The OKRs should permeate throughout the organization, which is where the cloud comes into play. Table 3 shows the evolution of key results becoming objectives, leading to more detailed results.

Table 1: Key Results Must Be Measurable

Typical/Vague	Better/Measurable
Objective: Improve cashflow forecast	**Objective:** Cashflow forecast improvement, accurate within +/-15%
Key Results: Improve frequency of inventory	**Key Results:** Increase frequency of site inventory updates to cashflow team from 1 to 4 times a day
Key Results: Provide training in organization	**Key Results:** Train 100 cashflow team members a month on cash flow principles and how their role affects cashflow forecast

Table 2: Using a Key Result as a New Objective

Objective	**Increase frequency of site inventory updates to cashflow team from 1 to 4 times a day**
Key Results	4 site inventory volume snapshots at times of midnight, 6am, 12pm, and 6pm for 7 sites
Key Results	Collect and combine feedstock and product material codes from all 7 sites and create reference material list for cashflow team
Key Results	100% access to 65-member cashflow team

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In this example, the next OKRs will focus on utilizing cloud technologies. If initial OKRs focus on the cloud implementation rather than business objectives, there's a danger of overlooking the work that needs to be done to capture the business outcomes needed to stay competitive. Table 4 shows a key result using cloud.

If an on-premises database was being used rather than a cloud database, the organization would still see a benefit, but there would be less impact to the bottom line. That's because the cloud allows the company to see the maximum benefit for the business objective by delivering results faster and cheaper at scale.

Drive Cloud Adoption to Scale Solutions

Energy companies that use business outcomes to drive cloud adoption can scale solutions across the organization. Leveraging OKRs to break major objectives into key and actionable results that can be measured and completed quickly by multidiscipline teams helps utility and oil and gas companies reach their goals faster and boost the bottom line.

A cloud data analytics architecture with modern data pipelines helps energy companies unlock real business value from their data while using OKRs to drive sustainable, bottom-line improvements. Having cloud initiatives weaved into OKRs for high-value business outcomes gives organizations transparency into how cloud technologies are helping them achieve those high-value outcomes.

When companies do this once, it is very easy to replicate the success and scale for additional outcomes. Over the course of their journey, companies will realize that they have been successfully integrating and scaling the business on one version of the truth in the cloud, and that version is being touched by everyone in the organization to make decisions that have an impact.

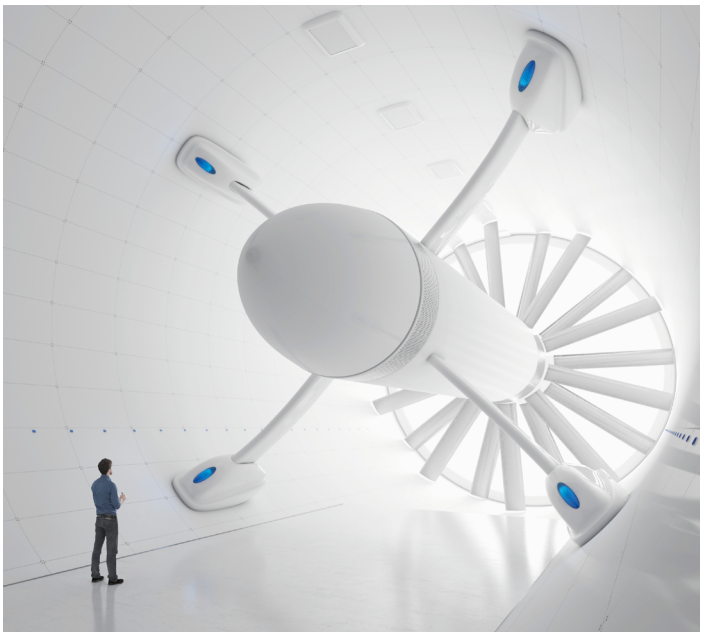
Table 3:

Supporting a Main Objective of Improving Cash Flow

Objective	4 site inventory volume snapshots at times of midnight, 6am, 12pm, and 6pm for 7 sites
Key Results	100% of volume and temperature sensors will be captured and stored for each snapshot

Table 4: Key Result With Cloud Database

Objective	100% of volume and temperature sensors will be captured and stored for each snapshot
Key Results	Achieve 30% savings using cloud database
Key Results	Create integrated data model data that uses the 3 sources of inventory, pricing, and ERP material codes



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About the Author

Johnny L. Gipson is a senior industry consultant for oil and gas for Teradata. He is responsible for Teradata solution development and implementation for downstream oil and gas customers. He delivers high ROI projects and strategic digitalization roadmaps that create new and ongoing business value.

Recommended Books on OKRs

High Output Management
Book by Andrew Grove

Measure What Matters: OKRs: The Simple Idea that Drives 10x Growth
Book by John Doerr

Radical Focus: Achieving Your Most Important Goals with Objectives and Key Results
Book by Christina Wodtk

Objectives and Key Results: Driving Focus, Alignment, and Engagement with OKRs
Book by Ben Lamorte and Paul R. Niven

About Teradata

Teradata is the connected multi-cloud data platform for enterprise analytics, solving data challenges from start to scale. Only Teradata gives you the flexibility to handle the massive and mixed data workloads of the future, today. Our open approach embraces the modern ecosystem to create a seamless experience for ingestion, exploration, development, and operationalization. Teradata's experts and partners around the world can show you how to drive business outcomes and unlock unlimited value by turning data into your greatest asset. Learn more at **Teradata.com.**

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