



WHAT OIL AND GAS CAN LEARN FROM AVIATION

A new cyclical reality makes energy
companies rethink operations

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It's a transformative time for the oil and gas industry. OPEC production controls are unable so far to overcome a persistent oversupply. North American shale producers keep a cap on prices as they adjust output to capitalize on market peaks. And then, there are the growing risks to the oil and gas industry from a future less dependent on fossil fuels.

The new economic reality for oil and gas: While the cyclical lows may look the same, the swing back into good times is likely not to see prices exceed past highs or even come close to reaching them. For the foreseeable future, many analysts predict crude oil will not top \$60 a barrel, which means fewer profits and less money to plow back into asset-intensive operations.

Oil and gas executives are reacting appropriately to this new normal, seeking ways to maintain tighter reins on an industry that has always functioned like a federation of very independent states. While some of the larger industry members provide models for improving performance, the oil and gas industry also may want to consider reshaping some of its operations around a historically cyclical and volatile, asset-intensive industry with far tighter profit margins – the aviation industry.

GOING FOR OPERATIONAL TRANSPARENCY

Aviation's strategy has always been to provide its decision makers with optimal transparency into operations, to limit the number of surprises, and maximize the reaction time to problems and opportunities. Single-digit margins make even small mistakes costly, rendering visibility a critical factor in functions up and down the vertical.

To achieve this goal, airlines have three operational imperatives – standardization, centralization, and performance management – and they maintain rigorous

scorecards to ensure they meet and exceed their targets. These are the fundamental components that guide senior-level decision making. By contrast, oil and gas has struggled to implement these concepts across business units with any kind of consistency, and daily decision making is regularly pushed down the management chain where problem solving is based as much on individual style as it is on organizational objectives.

Standardization for airlines involves developing specifically defined processes and protocols that are followed across organizations. For instance, each component on every plane that is categorized as being safety critical requires stringently defined high levels of testing and mandated servicing and replacement schedules. These apply in every region, at every facility.

SETTING ENTERPRISE-WIDE STANDARDS

While oil and gas has a similar concern for safety and standards, relatively few industry-wide standards are consistently applied across organizations. Rig operators, for example, often set their own maintenance schedules and protocols. This means when a problem develops, headquarters executives do not always have transparency into the procedure that had been followed.

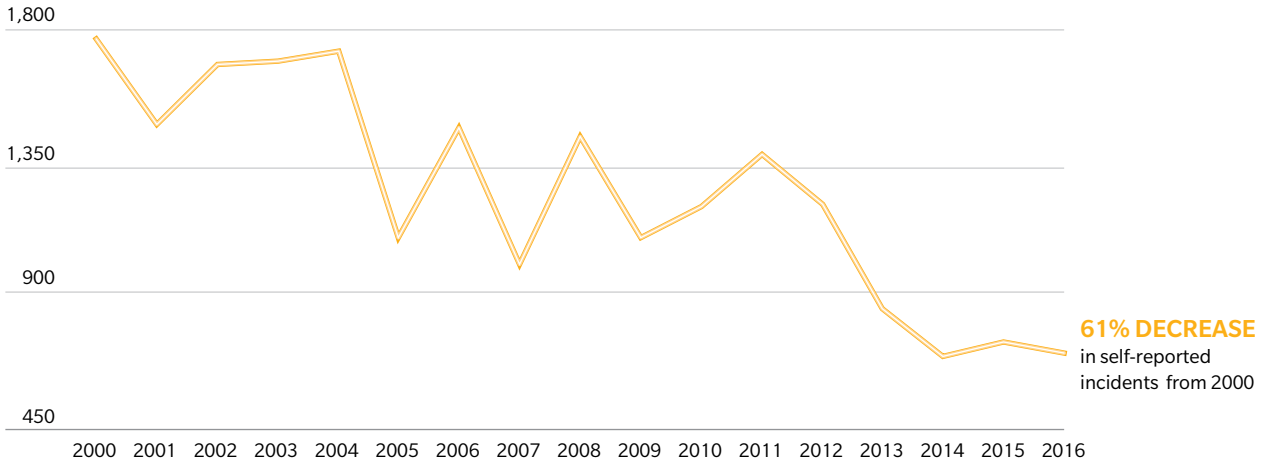
Standardization is critical, particularly when it comes to the collection of data. In order to construct an accurate view of the organization as a whole, as well as identify the outliers, it requires that information be collected using uniform definitions and similar criteria. Without it, organizations are apt to miss aberrational performance – good or bad.

Centralizing authority and oversight is another priority in aviation. This includes constructing systems that consolidate data. Each airline has a corporate maintenance control team, with access to aircraft data and drawings. These

EXHIBIT 1: AVIATION'S TIGHTER REINS RESULT IN DOWNWARD TREND IN AIRCRAFT INCIDENTS

After a rocky 1990s, airline efforts in standardization and centralization are making a difference in safety

AIRCRAFT INCIDENTS



Note: Based on incidents reported to the Aviation Safety Reporting System (ASRS) between 2000 and 2016 that resulted in aircraft damage, flights cancelled or delayed, maintenance actions, physical injury, or incapacitation, or evacuation

Source: ASRS, Oliver Wyman analysis

teams are tasked with making calls on requests to deviate from standards on maintenance or replacement. The goal here is to ensure that the same rigorous criteria are applied to deferring maintenance as to performing it. In oil and gas, such decisions are typically left to the judgment of local leaders.

ROLE OF THE REGULATORS

The emphasis on standardization and centralization in part is a byproduct of hawk-eyed national regulators, such as the Federal Aviation Administration (FAA) in the United States. These regulators often require a certain degree of transparency into a fleet’s operations and mandate responses to certain risk scenarios.

After a rocky decade in the 1990s when airlines saw particularly rapid growth and an increase in the number of accidents, aviation – with encouragement from the FAA – looked to overhaul its risk mitigation and safety

management procedures. The goal was to become proactive rather than reactive, with an emphasis on such elements as maintenance procedures and reviews, and data collection and sharing. To help it develop new templates, aviation turned to the National Aeronautics and Space Administration (NASA) and the nuclear power industry for models – just as oil and gas might look to aviation today. (See Exhibit 1.)

Single-digit profit margins are an equally important motivation for aviation to get risk management right, as even small mistakes eat away at hard-won earnings. While airlines refer to the “safety window” – requirements set by regulators, which cannot be breached – they also maintain an “operations window.”

For instance, one airline may run tight crew scheduling and accept the risk that planes will be delayed; another will brand itself as punctual and invest differently. Even in these different cost versus operational risk situations, decisions must be made on the basis of standardized principles and centralized decision making.

In the end, a lack of standardization and centralization in any industry can inhibit transparency and obstruct visibility into enterprise-wide functions. This almost always leads to less well-informed decisions and diminished performance.

Compare, for instance, what airline executives hear about their fleet during a day versus information flowing to oil and gas headquarters – and the reactions that information can trigger. If, for example, there have been several similar incidents involving hydraulic landing gear on Boeing 777s in Singapore, Dublin, and Riyadh, the corporate offices of the airline involved will know about all three, and will make sure that landing gear for every 777 in the fleet is checked. The aircraft may even need to be grounded until those checks have been completed, depending on the severity of the problem. Risk detected; risk addressed.

CATCHING SYSTEMIC RISKS

In contrast, an oil and gas company is unlikely to have a collective view on what's happening real-time on its hundreds of offshore wells scattered across the globe. In this case, systemic risks are only detected and addressed with difficulty and often only when events cause catastrophic failures, such as the blowout at the Macondo Prospect well in the Gulf of Mexico.

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Airlines maintain rigorous scorecards to make sure they meet or exceed their goals

Operating data is the cornerstone for the strong performance management cultures in airlines. Using a cascading scorecard, leaders analyze the data in detail to understand where performance can be improved. Leaders also feel highly accountable for performance and will do what it takes to address issues.

In oil and gas, little of this attention to detail, centralization, and standardization can be found. Part of the reason for this is an assumption that every site or asset – each usually its own profit center – is unique. This leads to diverging maintenance regimes over time, which means there is no centralized control over how problems are addressed. And in the long run, that focus on individual operating units rather than the whole leads to sub-optimized performance management.

Ultimately, there is no better time to do this kind of review and overhaul than when an industry faces disruption. It is times like these when companies either take the reins on change or let external circumstances dictate their futures.