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The Blast Heard Around the World

Some historians refer to the first shot of the American Revolution in the state of Massachusetts as the “shot heard around the world” because it began the game changing process that led to the demise of Old European monarchies in favor of more populist national governance models. Like the global fallout from Krakatau, the recent blast in the Gulf of Mexico has changed the offshore drilling climate.

It is often the singularity that causes dramatic and irrevocable change to our status quo. Likely, the events of April 20, 2010 will have this effect to the global drilling and well construction sector regardless of locale.

What makes one industrial accident more egregious than others? After all, when a passenger airliner crashes it is certainly investigated – repeatedly hundreds of lives are lost. On occasion, a type of aircraft is temporarily grounded. New engineering revisions and/or upgrades are implemented and the industry typically continues with lessons learned – most often, business as usual.

In a Word – Scale!

Had the BP Macondo well exploded, the Transocean Deepwater Horizon rig sunk, but in this scenario the well “quickly brought under control by closing the Blowout Preventer Rams,” it would still have been a tragic industrial accident. However, the bracket of concern would be largely limited to those who died or were injured and those whose careers would be ruined justly or unjustly.

Engineering studies, lawsuits, regulatory updates, and other traditional responses to accidents would unfold with a methodical routine that suggest a business as usual response to occupational safety issues. The media news cycle would move on.

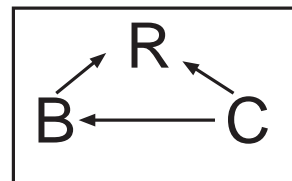
RBC Critical Mass

The seeming inability to gain control of the situation, the lack of clarity from responsible parties, the glare of 24/7 online media coverage, and a feeling that this will impact on me, not just someone else is a more onerous perspective. Once economic actors outside the immediate small group of protagonists engaged, one could argue that not the President of the United States, Governor of the State of Louisiana, Chairman of BP, or even the United States Coast Guard (on the ground) could control events. As this disaster reached self-sustaining multicultural behavioral critical mass, the resulting mushroom cloud engulfed all in its path.

Lost in all of the uproar was the multicultural mix of a vast and expanding constituency. Arrayed but not aligned, the industry must now deal with a set of Relationships, Behaviors, and Conditions unlike those in place on April 19, 2010. Like the world of December 6, 1941, a level of innocence was lost.

When one thinks of cross-culture, the typical stereotype is cross geography or cross ethnic. But what if the cross-cultural aspects are within an industry sector? We sometimes think of industry and government at odds, but often fail to realize that without industry, government does not have a tax or revenue base. This economic reality inexorably ties these two constituents together at a base level.

The Relationships, Behaviors, and Conditions (RBC) model was originally developed to address issues around cross cultural (international) negotiation processesⁱ. As shown in the figure, Relationships are the focal point of this perspective, reflecting commonality of interest, balance of power and trust as well as intensity of expressed conflict.



Behavior in this model is defined as a broad term including multi-dimensions – intentional as well as unintentional. Finally, Conditions are defined as active and including circumstances, capabilities and skills of the parties, culture, and the environment. Of course, time is a variable in this model as well.

One key feature of the RBC Framework is its emphasis on interactive relationships while providing an environment for multiple levels of behavioral analysisⁱⁱ. This makes it a useful tool to better understand the new regulatory processes currently unfolding. As we will see later, the number of constituents now engaged belays the use of simplistic linear decision models.

Systemic Risk Management

One can argue that the petroleum industry (all links of the value chain) has entered a new realm. The late Matthew Simmons described the state of industry from the perspective of twin cancers; the unresolved people crisis (sometimes referred to in the west as the Great Crew Changeⁱⁱⁱ) and state of aging global infrastructure as one of “RUST.”^{iv} Respectfully, the real industry oxidations are time worn processes. Metal is more easily repaired; humans can be much less malleable.

Increasingly, the industry has come to realize that strict adherence to occupational safety standards such as required by OSHA are limited. For more than a decade, real time solutions such as found in digital oilfield initiatives require a more holistic approach to risk management^v.

Early findings on the BP Macondo incident suggest that a number of factors, technologies, companies, and individuals were involved. The following excerpt from the internal BP incident report indicates the systemic nature of a complex, highly technical, real time, and dangerous set of processes.

The team did not identify any single action or inaction that caused this accident. Rather, a complex and interlined series of mechanical failures, human judgments, engineering design, operational implementation and team interfaces came together to allow the initiation and escalation of the accident. Multiple companies, work teams and circumstances were involved over time^{vi}.

Other studies suggest that systemic risk management is not limited to the petroleum sector. Our increasingly complex and real time society exposes all to possible disruptions. Just look at the impact Wiki leaks and its Mirrors are having on the United States government.

There are already a great deal of organizational learning examples for the industry to capitalize on, both from inside the sector^{vii} and exogenous examples such as the Columbia Space Shuttle tragedy on February 1, 2003. In their 2003 report, the Columbia Accident Investigation Board described what might be coined Information Calcification, or a process with which critical aspects of an “information packet” is lost when communicated to senior executives^{viii}.

With the risk of organizational collapse directly in stakeholder crosshairs, systemic risk management is now mandatory. Decision support systems that cannot cure Organizational Parkinson’s using futuristic processes are antiquated. Top talent in the organization and its constituents (including government) must be enabled so they can make better, faster decisions in chaotic and uncertain times – Ambiguity Management^{ix}.

Changing Role of Governance

Contemporarily thinking about US corporate governance most often leads thinking to the post Enron, Sarbanes Oxley (SOX) perspective. Today, one might argue that this model is just the tip of the iceberg or more accurately that of a more simplistic time, albeit less than a decade ago.

That’s the ball game! Post Macondo, the focus of governance has taken on added dimensions. First and foremost, the oil and gas industry now faces a societal problem.

Based on the media onslaught, readers might only see the political aspect as paramount, but politicians only mirror their constituents. Once people in the state of Louisiana turned against the industry, the systemic problem became far worse than just engineering. The industry has a major challenge ahead of it rebuilding its reputation not only as

a good corporate citizen but as competent engineers and managers. The societies it serves must trust it again.

With risk taking on orders of magnitude, managing and mitigating these levels of exposure require new business and governmental oversight models. New managerial systems must take these issues into consideration.

Role of Governments

As with any major industrial accident, there is an immediate knee-jerk reaction, followed by levels of assessment and review with a new set of rules all economic actors live by. This process is currently unfolding for the deepwater Gulf of Mexico and by extension the rest of the world, and perhaps across the entire petroleum value chain. Throughout the summer of 2010, the deepwater and de facto the shallow water operators and drilling companies faced a great deal of uncertainty. There are numerous boards of inquiry; Googling the Macondo event will generate almost 4.2 million hits. It most likely will be the most investigated industrial accident ever.

Two significant regulatory actions are particularly noteworthy. The October 12, 2010 decision by the US Department of the Interior allowing the resumption of deepwater drilling in US waters if certain criteria are met, establishes the new regulatory framework^x. Additional guidance continues from the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE).

Furthermore, on December 15, 2010, the US Chemical Safety and Hazard Investigation Board (CSB) held public hearings on the Macondo event including testimony regarding drilling practices in other countries^{xi}. As of this writing, the author believes that these two agencies will have great influence over US domestic offshore drilling – both deepwater and shallow water.

Nor is this renewed focus on governmental oversight restricted to drilling. Following the September 9, 2010 San Bruno, California gas pipeline rupture and explosion, the National Transportation Safety Board began what will most likely be a long and broad investigation^{xii}.

Finally, there is one more dimension to compliance. As with the Sarbanes Oxley Act of 2002, the compliance requirements from the Department of the Interior described above compel operator executives to attest that they are in compliance, independent engineering firms must certify equipment integrity, as well as the imposition of additional government oversight with increased fines and penalties^{xiii}.

One can surmise that given the seriousness of large scale industrial accidents that operators will require their suppliers to conform with these higher standards as well. As the following Regulatory Compliance Matrix suggests the broader industry across all segments of the value chain will come under increased scrutiny deep into the supply chain.

New regulations for drilling and pipeline transportation are currently evolving; however, given the aging US energy infrastructure, one scenario is that over the next few years all aspects will come under review.

Corporate Governance

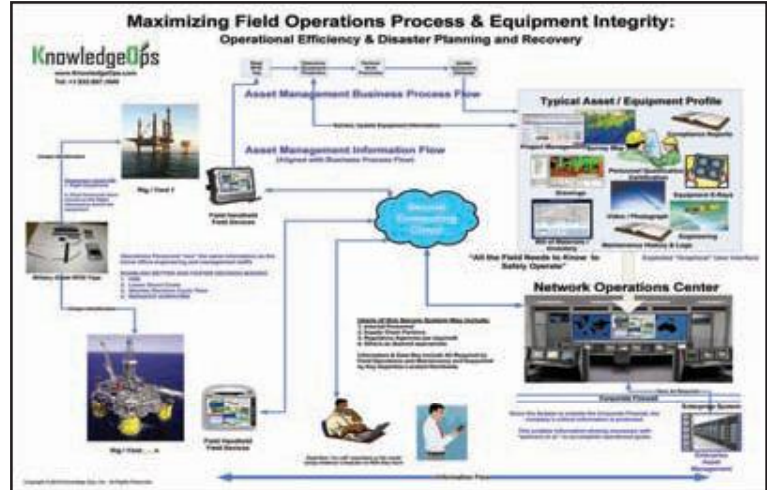
Major industry actors remain committed to deepwater oil exploration and production^{xiv}. However, is its current operating structure appropriate?^{xv} Even key players agree that structural change is necessary^{xvi}.

The industry was already undergoing change with the advent of Integrated Operations (aka digital oilfield), the so called Great Crew Change (retirement of the Baby Boomers), and the changing relationship with the asset owners (countries). The new demands discussed herein accelerate this trajectory^{xvii}.

Lessons from Sarbanes Oxley suggest that when better corporate governance models are implemented, all economic actors in a sector benefit^{xviii}. Industry behavior to date indicates that it is very proactive as transparency models are being put in place by leaders and fast followers. Laggards will benefit as well, but later. In other words, greater shareholder value accrues to early movers.

One can expect the upstream industry and its supply chain partners to adopt governance models that better integrate operations more tightly, much as the back office functions were dramatically transformed in the 1990s with the large scale adoption of Enterprise Resource Planning (ERP) solutions.

Systems that support this new governance model enable the broad spectrum of users from the C level corner office to the mechanic working as a contractor on a piece of rotating equipment. Robust systems that incorporate real time data from sensors with operations, maintenance and equipment integrity are available and have been vetted by organizations such as the US military.

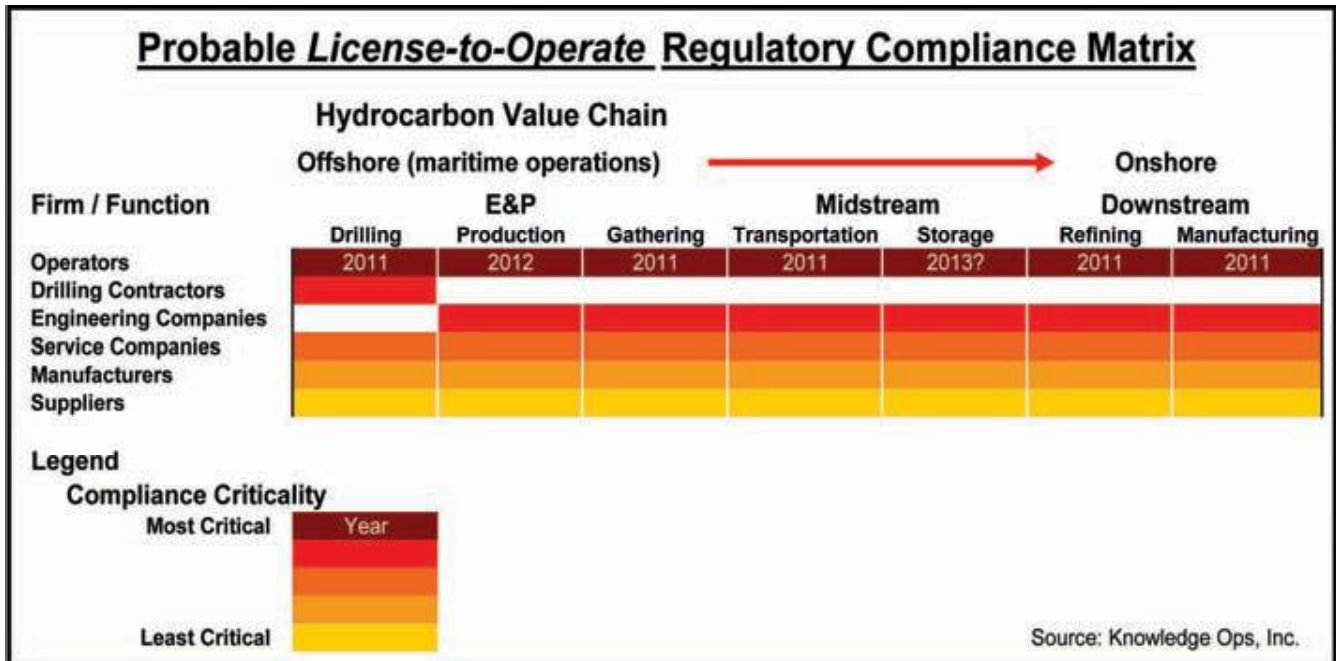


Change Trajectory

Emerging from the crisis of the moment, the industry is showing signs of settling. New regulations are in place and the industry is finalizing its Well Construction Interfacing Document (WCID) that is designed to address the management of well construction activities as well as mitigating unexpected events that impact HSE^{xix}.

We can expect additional changes as the industry moves into this new era. However, it is not about change management, it is the trajectory of change that matters. Change management suggests that organizations are in charge of change and can control the process. This point is arguable. Change is all about us and accelerating. Change cannot be managed any more than the rodeo rider can control the bull.

Success at bull riding is more about positioning than it is about riding a volatile animal, just as knowing where the puck will be



characterizes the greatest hockey players. Eight seconds of rodeo bull riding is infinitesimal in business process time; however, a play in that same eight seconds can win an ice hockey game of 60 minutes.

In one case an individual defies gravity for an instant, in the other a team is better positioned to win the Stanley Cup. In the former, the cowboy reacts and most often loses, in the latter the professional organization can repeat superb performance.

For some time, the Velocity of Information, or the frequency at which information is exchanged has been accelerating^{xx}. Managing the change process as the industry moves forward will incorporate the instantaneous data of a bull ride with the strategy of a high-paced team sport. The velocity of information exchange will not diminish, but the number of organizations and individuals requiring it will grow.

A recent position paper by the well known risk management firm, Det Norske Veritas (DNV), posits new detailed and comprehensive risk management processes that are the foundation of a drilling safety case^{xxi}. These comprehensive Best Practice changes align with other industry thinking described herein. This further confirms the likelihood of systemic and structural industry change.

Bet Your Company

We have witnessed that likely no firms in the upstream sector can carry the moniker of Too Big to Fail. Governance and risk mitigation strategies

must now recognize that the systemic risk posed by complex integrated offshore processes require new thinking.


The industry has always adjusted to changes in its environment and shows signs of adapting once again. As the saying goes, “that which does not kill you makes you stronger.”

This resilient industry will emerge stronger and better able to deal with volatile environments with a new RBC model. The silver lining will be better corporate governance with enhanced shareholder value.

About Knowledge Ops, Inc.

Knowledge Ops (www.KnowledgeOps.com) delivers solutions that provide a specific, demonstrable, measureable, and defensible approach for addressing the emerging industry requirements for operational excellence and increased regulatory scrutiny. Purpose built to support the decision making process from the board room to the field operations arena, operators and energy service providers can capitalize on all available knowledge – Total Asset Visibility.

About the Author

Dr. Scott M. Shemwell, CEO, Knowledge Ops, Inc. is an acknowledged authority and thought leader in field operations and risk management with over 30 years in the energy sector leading turnaround and transformation processes for global S&P 500 organizations as well as start-up and professional service firms. He is recognized as an authority in risk management, technology, knowledge management, industry change, process change management/modeling and simulation, and logistics and operational supply chain management, having authored over 300 articles and presentations on these subject matters. 

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