

Governing Energy

Agile, Resilient, Sustainable Ecosystem

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High Reliability Management (HRM) places a premium on resiliency, the ability to recover in times of adversity. This can be a challenge for any individual organization; however, the upstream petroleum sector requires an extensive supply chain. Resilience is by definition is exogenous in this and other critical sectors.

Industry executives and regulatory agencies have understood this exposure. They are explicitly demanding that contractors of all sizes meet new safety, environmental and performance metrics. Moreover, both parties recognize that the Tier 2 and their contractors and suppliers may be the weakest link in the supply chain.

The concept of a supply chain visualizes a linear and hierarchy model of the industrial age of the 19th century and earlier. Raw materials are transported to factories and finished goods such as an automobile are the output into the marketing and sales cycle.

Linear models such as Just-in-Time (JIT) manufacturing are still prevalent and have their strengths and weaknesses.ⁱ In 2011, the Great Tohoku Earthquake and Tsunami severely affected the global automobile manufacturing sector.ⁱⁱ The *agility* and *resilience* of that industry was tested on a global scale.

All supplier Tiers were negatively impacted for weeks, especially for Japanese automobile manufacturers and their suppliers from the affected areas. US based automakers were less affected initially, due to long logistics tail of products in route to the United States. As after any major incident, that industry needed to make adjustments including expanding geographical diversity of key components.ⁱⁱⁱ

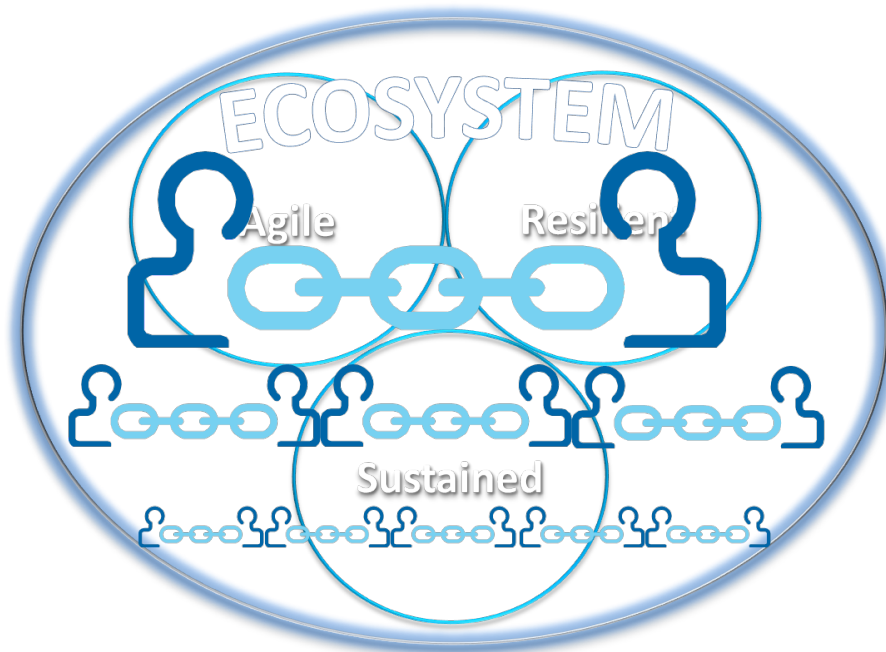
One could argue that this wake-up call extended JIT into a global ecosystem for the industry or more correctly, a set of ecosystems as each automobile manufacturer establish their own. In this model, Tier 1, 2, and 3 suppliers may find themselves part of several ecosystems. Moreover, governments are ecosystem partners with strong concerns about employment as well as tax revenue.

The current upstream offshore wake-up call rang in 2010.^{iv} The response over the last four plus years has been expansive and global; however, there is still much to accomplish to create a Culture of Safety across the sector.

This author has put forth the Relationships, Behaviors, and Conditions (RBC) model as one approach towards managing this change. We have argued that this multi-dimensional methodology mitigates systemic risk, including from the supply chain.^v

Agility and resilience are behaviors. One can also view sustainability as a situation or condition. The resulting set of relationships is not just aligned with a Culture of Safety, it is engrained as the foundation of a high reliable and safe sector.

Supply chains are no long linked sets of organizations and activities. More properly, they have the traits of complex interrelated organisms confined by industry cosmos—an ecosystem.^{vi}



Multi-cultural, global, complex and interrelated, one organization cannot truly operate at a high level of reliability if one or more key members of their ecosystem are found wanting. Operators now have a greater dependency on their ecosystems than ever before. In other words, the focus on Tier 1 partners is no longer enough. Unseen risks may lurk in Tier 2 and beyond.^{vii}

Be Afraid

The oil industry is entering another part of its ongoing cycle as West Texas Intermediate (WTI) dips below \$80/bbl.^{viii} As margins shrink pressure on operators as well as their supply chain increase—cost cutting has been the traditional industry response.

CEOs throughout the ecosystem have a fiduciary responsibility to their shareholders. They are charged with growing shareholder value and protecting that value during downturns by reducing the direct costs of operations.

A reduction-in-force, deferred maintenance, consolidation and facility/fleet mothballing are common actions. However, safety, environmental stewardship and performance are just as important and perhaps more so during economic downturns.

Fewer people with more to do places additional stress on personnel and their equipment. By extension, facilities may suffer as well. Such a scenario can make incidents more likely.

How strong is your firm's ecosystem?

About the Author

Dr. [Scott M. Shemwell](#) has over 30 years technical and executive management experience primarily in the energy sector. He is the author of four books and has written extensively about the field of operations management. Shemwell is the Managing Director of The Rapid Response Institute, a firm that focuses on providing its customers with solutions enabling operations excellence and regulatory compliance management. He has studied cultural interactions for more than 30 years--his dissertation; *Cross Cultural Negotiations Between Japanese and American Businessmen: A Systems Analysis (Exploratory Study)* is an early peer reviewed manuscript addressing the systemic structure of social relationships.

End Notes

ⁱ http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/just-in-time.html

ⁱⁱ <http://fas.org/sgp/crs/misc/R41831.pdf>

ⁱⁱⁱ Ibid.

^{iv} Shemwell, Scott M. and Dowlearn, Robert T. (2010, October). A Date Which Will Live... *Oilfield Technology Magazine*. pp. 16-20.

^v Ibid.

^{vi} <http://www.merriam-webster.com/dictionary/ecosystem>

^{vii} <http://www.corporate-value.com/our-expertise/Transportation,-Defense,-%26-Security/risk-management-upstream-businesses>

^{viii} <http://www.bloomberg.com/energy/>