

Governing Energy

Safety Revisited

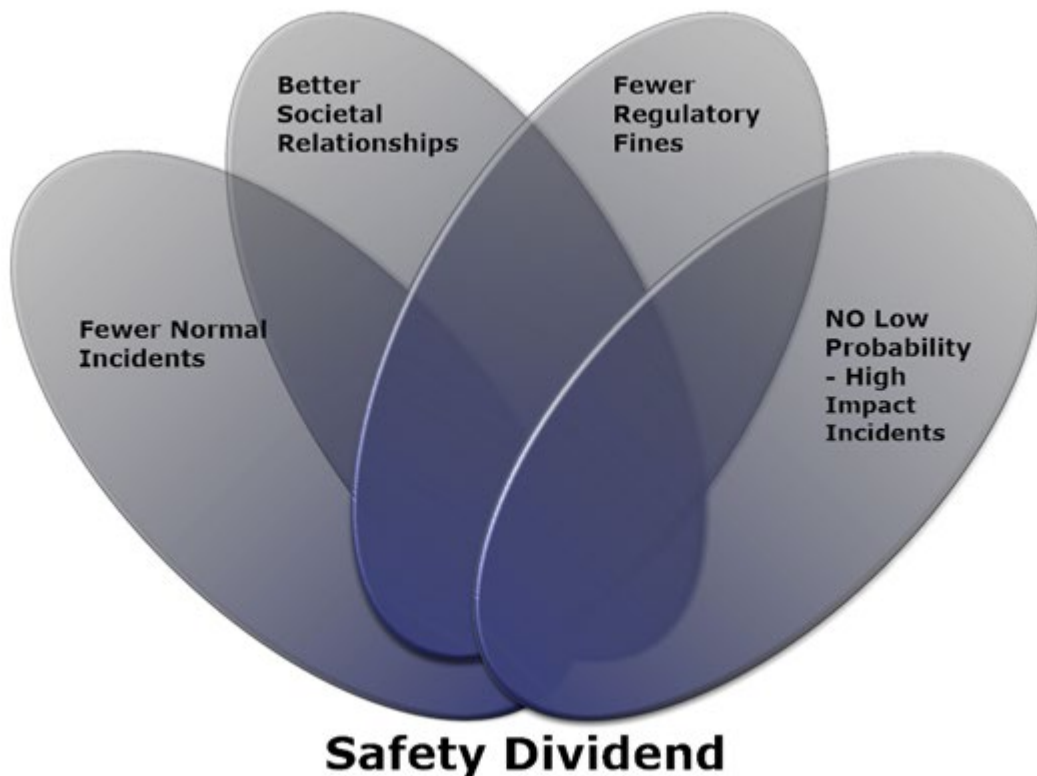
Volume 5 Number 3—February 3, 2016

I read a recent blog post that suggested the perhaps the oil and gas industry has gone too far in its safety driven actions. The argument goes something like, *perhaps the sector has over corrected post Macondo and value is not being derived from these efforts.*

While there are concerns over the cost of safety and the hubris that “it only happens to the other guy,” these concerns are misplaced. One of the tenets of Operational Excellence is the so-called *Safety Dividend*.ⁱ

We can represent the Safety Dividend **set** of all possible combinations of logical relationships in the finite collection of different safety variable sets.ⁱⁱ For example, economic value from investments in safety are available from a number of different sources/processes.

A Venn diagram (also known as a set diagram or logic diagram) is a diagram that shows all possible logical relations between a finite collection of different sets. The Safety Dividend Venn Diagram as shown in the following figure.



This figure reflects four major collections of sets defined as follows:

- **Fewer Normal Incidents**—Included in this category are so-called “Slips Trips and Falls,” Lessons Learned from Near-Miss Reports, Unplanned Downtime, Equipment Failure, Fires et al. Incidents of this nature can and do result in personnel deaths even though to the organization they may be considered Normal.

For purposes of this model we re-define Perrow’s Normal Accident to exclude major catastrophic incident such as No Low Probability—High Impact Incidents (LP-HI). Many often assume that since LP-HI are infrequent (arguably not the case) that risk models based on major incidents are not truly representations of daily operations. Therefore, we place LP-HI incidents in a separate category than Perrow.ⁱⁱⁱ

- **Better Social Relationships**—As noted often in this series since its inception in 2012, local communities, states, federal and the international community in general are much less tolerant of Accidents and the impact on society and the Environment. Significant investments are made assuring the “Privilege to Operate” is not put at risk and the company is a good “Corporate Citizen.”
- **Fewer Regulatory Fines**—Regulatory fines are composed of three major costs; the fine itself, legal costs and the impact on the stakeholders’ perception of the firm.
- **No Low Probability—High Impact Incidents**—This is the ultimate catastrophe such as a major blowout with high visibility. An incident of this nature can and has resulted in the demise of

many careers and organizations. Black Swan events can be systemic in nature (see WSJ Black Monday, 1987). This suggests that unless the organization has a sustained and robust Systemic Culture of Safety a higher level of LP-HI risk may exist than management believes.^{iv}

This all adds up to an impact on the equity of the firm. In today's volatile markets, fungible Capital is quick to 'flee' *perceived* higher risk situations. In addition to a lower stock market price, access to debt markets may be curtailed or at least become more expensive.

Therefore, it is easy to calculate the Safety Dividend as a function of Return on Capital Employed (ROCE). ROCE is defined as $ROCE = \text{Earnings Before Interest and Tax (EBIT)} / \text{Capital Employed}$.^v

In an earlier blog, we developed our *Convergence of Exponential* model that *Maximizes Capital Efficiency*.^{vi} Most of the variables in that model are a function of ROCE. Therefore, it follows that the Safety Dividend is a major contributor to equity performance.

Previously we have reported that regulators have indicated that, "In this era of lower commodity price points, there is no relief on the requirement for safe and environmentally responsible operations."^{vii} This directly infers that the "Privilege to Operate" is a function of the Safety Dividend as well.

We all know that safety is the critical issue in field operations. We also realize that in an environment with significant financial pressures on all aspects of all economic actors in the industry, pressure mounts to compromise certain processes and policies. Usually, we 'get away with it' and nothing happens.

But not always! From small injuries or equipment failure to the unlikely but more likely than most believe disastrous LP-HI incident, all have measureable costs and impact on the value of the firm and its ability to do business. Stakeholders of all types can be negatively impacted.

What steps is your Firm taking to Maximize its Safety Dividend?

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 five 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 Shemwell, Scott M. (2016, January 5). A Year for Strong Bond Governance? Governing Energy.

ⁱⁱ https://en.wikipedia.org/wiki/Venn_diagram

ⁱⁱⁱ <http://www.jstor.org/stable/j.ctt7srgf>

-
- iv [http://www.ce-conference.org/sites/default/files/smith_driscoll_kopp_bodai - modeling extreme risk.pdf](http://www.ce-conference.org/sites/default/files/smith_driscoll_kopp_bodai_-_modeling_extreme_risk.pdf)
- v <http://www.investopedia.com/terms/r/roce.asp>
- vi Shemwell, Scott M. (2015, August 24). Technology Price Point Changes Everything. Governing Energy.
- vii Shemwell, Scott M. (2015, July 20). Cultural Simulation. Governing Energy.