

Governing Energy

Technology Price Point Changes Everything

Volume 4 Number 16—August 24, 2015

When the first IBM PC (desktop) was unveiled in 1981, its price sans options was \$1,565.ⁱ That is the equivalent of almost \$4,100 in 2014.ⁱⁱ Today, an average laptop is available for slightly more than \$200 and one could argue that there is little similarity between the current generation and its founding ancestor.

This is even true for durable goods such as automobiles. The average cost of a new car in 1980 was around \$7,000 and gasoline was 90 cents a gallon.ⁱⁱⁱ In 2014, the average cost of a vehicle is little more than \$31,000.^{iv}

This is approximately \$11,000 more than the inflation predicted price but today automobiles are more reliable and “have optional features that people in the 50s, 60s and 70s would have considered science fiction.”^v

We can surmise that the Total Cost of Ownership (TCO) throughout the automobile “asset” life cycle is lower and that its current Usability Index is high. In other words, the *Driving Experience* is better than with earlier generations.

In earlier editions, we have commented about the impact of technology is having on heavy industry resulting in lower cost structures.^{vi} We extend this position herein and posit that a *unit of technology* cost or its marginal cost is approaching zero.

As previously mentioned in this series, we developed the construct of the Expected Value of Marginal Information (EVMI) in 1997.^{vii} This economic Utility Theory derived model holds true for other technologies deployed in industry.

Therefore, we can infer that our *Energy Experience* can be better using the technology tools that have enabled disruptive and more effective processes. Additionally, today’s energy firm can have features only dreamed about by previous generations.

One of these features is better Capital Efficiency (Return on Capital Employed). Similar to the boom in home offices, greater capital efficiency can enable smaller economic actors to undertake projects that in the past only major players could commence. One example might be the sustained shale plays despite much lower crude oil prices.

The current market has sidelined many major capital investments in the deepwater.^{viii} Granted, the project costs for deepwater are significantly higher; however, ROCE has been elusive more because of

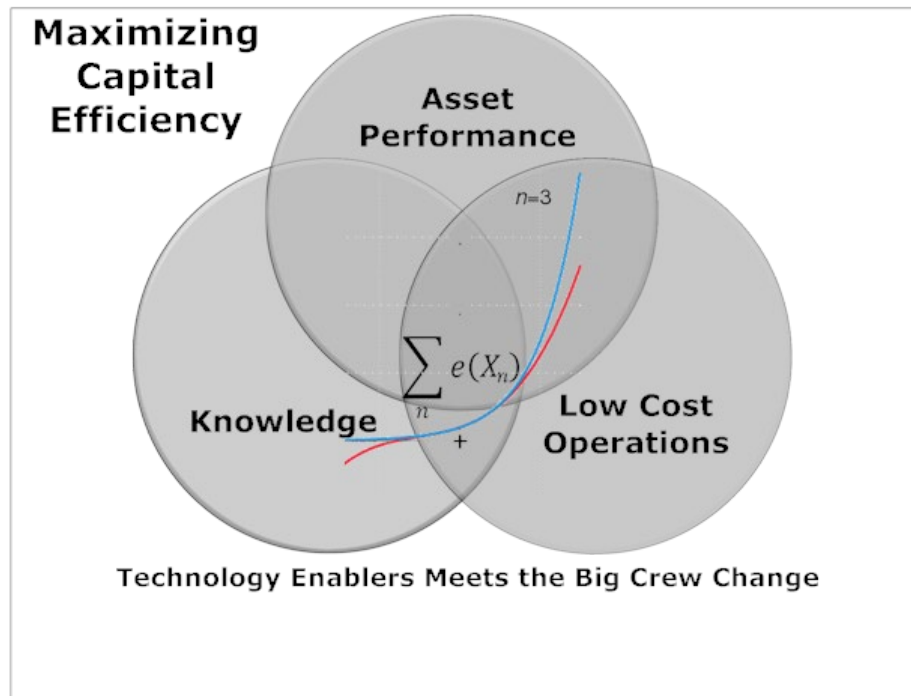
management costs rather than expensive deepwater technology and regulatory compliance requirements.^{ix}

ROCE = Earnings Before Interest and Tax (EBIT) / Capital Employed. Capital Employed = Total Assets – Current Liabilities. This key metric of the firm’s performance is driven not only by low cost operations but superior asset (reservoir) management.

Finally, the long awaited and much discussed Big Crew Change is well underway if not drawing to a close. The discussion has long been around how to replace the knowledge leaving the industry.

Perhaps the knowledge is not leaving the industry but simply being repositioned in smaller firms or as contractors and other professional service providers. If this is correct, this knowledge base will be available for the foreseeable future.

The great Technology Enabler meeting the Big Crew Change may be changing the sector landscape. As depicted in the following graphic which is redrawn from the Convergence of Exponentials.^x



With an ever decreasing technology price point powered by performance from the Convergence of Exponentials knowledgeable teams can maximize Capital Efficiency. This disruptive force is changing the nature of this established sector.

How will your firm Maximize its Capital Efficiency?

About the Author

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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 https://www-03.ibm.com/ibm/history/exhibits/pc25/pc25_birth.html

ⁱⁱ <http://www.davemanuel.com/inflation-calculator.php>

ⁱⁱⁱ <http://www.thepeoplehistory.com/80scars.html>

^{iv} <http://money.usnews.com/money/personal-finance/articles/2015/01/02/a-glimpse-at-your-expenses-100-years-ago>

^v <http://jalopnik.com/5953080/how-inflation-has-jacked-up-the-prices-of-your-favorite-cars/>

^{vi} Shemwell, Scott M. (2015, March 20). Drilling Moore. Governing Energy. PennEnergy.

^{vii} _____ (2015, February 4). Towards Zero. Governing Energy. PennEnergy.

^{viii} <http://www.ft.com/cms/s/0/dc94b628-9be7-11e4-b6cc-00144feabdc0.html#axzz3j6Xv2H9V>

^{ix} Barton, Christopher M. (2015, April 1). Best Practices Help Keep Deepwater Megaproject Capex in Check. Hart Energy.

^x Shemwell, Scott M. (2015, April 23). Titans of the 1940s, Today. Governing Energy. PennEnergy.