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# MITIGATING OPERATIONAL RISK USING the Power of Social Media

*“The FBI and Twitter must recognize sooner rather than later that social media is a tool for terrorists” - Ted Poe, US Congressman*

Julian Pecquet, quoting US Congressman Ted Poe of Texas, writes “The FBI and Twitter must recognize sooner rather than later that social media is a tool for terrorists,” in his blog on *The Hill*. This observation speaks volumes to a threat often overlooked by firms with global operations.

The exponential growth of social media is revolutionizing communications and social interaction at breakneck speed with a geometric expansion in volume, variety, and velocity of data. The rapidly expanding universe of social media applications includes Facebook, Twitter, Google+, chat rooms, blogs, bulletin boards, and a host of other electronic forums. This unprecedented growth and rapid adoption of new technologies has been just as accelerated in underdeveloped areas of the globe as in the developed world. These trends simultaneously present tremendous opportunities and challenges to multinational corporations, as the applications can be used to impart both positive and negative effects on business operations.

In 2011, more data was created than in all previous years of human history, and the trend line continues to accelerate in vertical fashion. As a part of this trend, the growth in use and application of various forms of social media has continued to skyrocket. For example, Facebook reported in September of this year that they have surpassed the benchmark of one billion active users. They also claim 584 million active users each day on average and 604 million using Facebook from mobile devices. The Google+ button is reportedly pushed 5 billion times per day.<sup>i</sup> Additionally, the number of Facebook users is twice the size of the population of the US.<sup>ii</sup>

Particularly noteworthy is how dynamically the use of social media is taking hold in the developing world. For example, this year Twitter has broadened and deepened its status as a major information platform in the Middle East by enhancing its Arabic language capabilities, particularly across rural settings. By introducing a new interface that reads right to left, they have enhanced their appeal to Arabic speaking users and fueled expansion across the region.

The impressive pace of growth has been matched in sub-Saharan Africa. Nigeria is one of the top 10 countries with the highest Facebook Mobile penetration at 81.2%; followed closely by South Africa (80.8%), Malawi (78.3%), Namibia (76.4%), Botswana (73.9%), and Zambia (72.1%).<sup>iii</sup> These statistics suggest an interesting paradox: areas which suffer from

undeveloped or underdeveloped services and infrastructure seem to accept and absorb social media penetration at rates comparable to more developed areas. This implies significant continued growth potential not only across Africa, but around the world.

Social media is becoming pervasive across multiple demographics, with many applications entering mainstream use. This offers tremendous potential across a wide array of potential purposes and provides valuable insight which cannot be obtained as quickly and easily any other way. For example, in May 2011, a Pakistani IT specialist tweeted about hearing helicopters at the commencement of the Osama Bin Laden raid.<sup>iv</sup> As with other inexpensive and easily obtained technology, however, some will use it for malicious purposes. This is where we must stay ahead of the technology bow wave.

## Open Source

On November 1, 2005, the Director of National Intelligence Open Source Center was established. Its mission is to support US government customers with information and assessment of open source data. Initially, open sources included the Internet, various databases, press, television, radio, and other visual media. Additional sources include geospatial data, photographs, and commercial imagery. Over time, a wide variety of social media applications have been added. A representative sampling of this ever expanding landscape is illustrated below.

## Social Media Landscape



FredCavazza.net

Source: alliance-strategies.com

In 2008, then CIA Director Michael V. Hayden stated at a conference, “Open source ... helps us understand how others view the world. Without that understanding, we’d fail in our obligation to provide insight; not just information, but insight.” Additionally, the vision of the National Open Source Strategic Action Plan states, “open sources are integral to the planning, execution, and success of all US national security initiatives.”

While the government has shown vision in recognizing the importance of publically available open source information, it has struggled to demonstrate the agility to keep pace with the speed and scope of technology adoption and expansion around the globe. Popular demand has fueled a private sector which is far more innovative and constantly striving to introduce new product improvements which connect more and more people and provide new applications and services.

### 21<sup>st</sup> Century Risk Mitigation

The global energy industry must realize that social media is a tool for quick and readily accessible mass communications that global terrorists, criminals, and others that wish it and its personnel harm can quickly adapt for illicit purposes. Everyone is struggling to respond to the rapid pace of adoption and expansion, and this gives bad actors an advantage. Unencumbered by laws, rules, or regulations, they can subvert technology to serve their illicit purposes. Fortunately, some of the tools, techniques, and procedures originally designed for national security purposes to combat terrorists and threat networks also have highly effective commercial applications that can be employed for the safety and security of global business operations.

Global firms are challenged as never before. How many commercial personnel and facilities were at risk in Libya and across Africa on September 11, 2012? The violent terrorist assault and kidnapping for ransom at the petroleum facility in Algeria in January of this year demonstrates the perils of business operations in these volatile regions. The good news is industry can now predict and mitigate these events with the same or better level of certainty than the US government did in September 2012. This capability and the associated geopolitical risk assessment are finally commercially available.

Current price points reflect cost-benefit for global corporations, much like the Internet of the 1990s. As with other technologies, the economic marginal cost of better intelligence is small, especially when compared to the millions of dollars of potential losses in lives, property, and productivity from events such as occurred in Algeria.

The marginal cost of a unit of Internet or GPS use is effectively zero, yet commercial firms generate billions of dollars in recurring revenue each year. This business model suggests that open source unconventional intelligence solutions can have the same benefit and return to industry participants.

### Compelling Economics

The energy industry has a long history of using big data for predictive analytics. Two solutions that come to mind immediately are hurricane path predictive analysis, and more recently, predictive analytics to assure better asset integrity and performance.

The industry propensity to evacuate offshore production facilities and drilling rigs is a function of accuracy of the weather forecast, the costs

of false evacuation, and a risk profile associated with such a decision.<sup>v</sup> In the US Gulf of Mexico, management may make this decision based on econometric models several times during the annual hurricane season.

The authors and others have also used game theory to address a number of scenarios, resulting in a value rank order with weather as the most important variable. Similarly, asset integrity management using predictive techniques can result in less unplanned downtime, fewer safety and/or environmental incidents, and greater production.

### Economic Value Proposition

A super major integrated oil and gas company recently stated that it was “the predictive power of open source analysis that was of interest” and that they had “a pretty good handle on the past.” Most value proposition models rely heavily on directly measurable data. Return on Capital Employed (ROCE) is a common metric in the global oil and gas industry.

Predictive models require an additional set of variables, many of which are latent or not directly observable. Similar to those used by weather predictive models, they include; Conditional Probability of Partial or Complete Loss, Decision-Maker experience, and Probability of Detection (POD). The authors have developed an Economic Value Proposition Matrix (EVPM) model that has identified an additional nine latent variables that can be tested in predictive models.

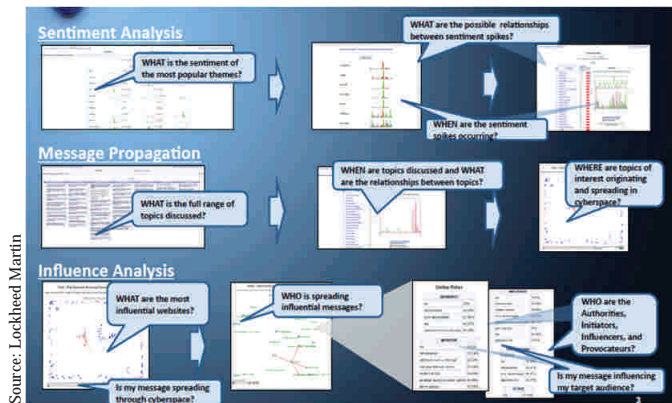
This econometric model enables oil and gas company management to develop internal metrics for the value of “prediction” vs. good knowledge of what has already happened. These models indicate that, like storm warnings, loss of life can be prevented or limited and equipment and facilities can be properly prepared in advance. Benchmarking has shown a greater than 20x analyst-time improvement over standard web search techniques currently in use. The risks mitigated with the open source unconventional intelligence analysis business and economic model can be substantial.

### Unconventional Intelligence for the Energy Industry

Leveraging best practices developed by the Department of Defense (DoD) and others, the Energy Industry can combine best of breed technological tools and applications with cutting edge analytic techniques and procedures to produce an unconventional intelligence capability that goes well beyond the traditional understanding of open source analytics. A suite of unconventional intelligence processes that combines bulk data, big data and social media with conventional intelligence disciplines and experienced analysts, delivers to the commercial sector a full range of integrated capabilities previously unavailable. Unconventional intelligence capabilities have already been used in DoD agencies to address significant operational risk issues including kidnapping, extortion, corruption, drug trafficking, organized crime, gang violence, vandalism, weapons trafficking, and human trafficking.<sup>vi</sup> These capabilities provide an amazing degree of flexibility, allowing customers to gain understanding and appreciation of large scale problem sets at a national or regional level in foreign areas, as well as view close-in risk scenarios in amazingly granular detail. This results in savings and risk avoidance/mitigation to a degree never before possible.

These capabilities in tandem provide comprehensive situational understanding of the human fabric in areas where the energy industry

operates, significantly augmenting existing security and geopolitical risk management regimes in place. In countries with substantial political unrest where a company has significant exposure, the value added is even greater. Timely, accurate, and predictive analysis along with indications and warning can contribute significantly to the safeguarding of personnel and facilities from emerging threats. Enhanced understanding of the local environment accrues other benefits as well, leading to better relations with locals, reduced costs, and other potential operational enhancements.



Source: Lockheed Martin

One aspect of this approach is the integration of social media into the overall intelligence picture, providing a perspective integral to comprehensive situational understanding. As shown in the illustration above, this aspect of social media capability can provide significant additional insight into local population attitudes and behaviors. Answers to key questions include:

- Sentiment Analysis
  - What are the most popular themes and associated sentiments?
  - What are the possible relationships between sentiment spikes?
  - When are the sentiment spikes occurring?
- Message Propagation
  - What is the full range of topics discussed?
  - When are topics being discussed and what are the relationships between topics?
  - Where are topics of interest originating and spreading in cyberspace?
- Influence Analysis
  - What are the most influential websites and individuals?
  - Who is spreading influential messages?
  - Who are the Authorities, Initiators, Influencers, and Provocateurs?

Fused with other capabilities, this data provides valuable insight into the operational environment and points toward effects options that can be taken to accentuate and accelerate positive trends and retard or ameliorate negative ones. Even more importantly, the operational implications and potential applications of having full access to all social media, in multiple languages, in real time, are extremely powerful. The unconventional intelligence model with its innovative processes and methodologies has already proven mature and highly-responsive in support of the DoD and other government missions, effectively targeting bad actors and safeguarding US and coalition lives. Across a broad array of mission areas, these capabilities have proven highly effective in support of situational understanding in volatile and dynamic security environments when properly employed. In contrast, the attackers in Algeria apparently knew the personnel and layout at the In Amenas plant quite well, while those in charge of the plant seemed to lack

situational understanding of the human environment both in and around the plant complex.

## Concluding Comments

Perhaps it is cliché to note that “the world is a dangerous place,” but it rings true today just as throughout history. While the vast majority of people are law-abiding citizens, we continue to see geopolitical unrest, often accompanied by violence, terrorism, kidnapping for ransom, extortion, and other criminal behavior that affects the environment where we choose to operate. The oil and gas industry has a long history of using technology to adapt to changing circumstances to mitigate and solve seemingly intractable problems.

Social media is a new phenomenon that did not exist in its current form until recently.<sup>vii</sup> It seems that with each generation of new information technologies, the adoption curve shortens. Fortunately, the curve is flattened with the application of cutting edge unconventional intelligence capabilities, which provide the situational awareness and understanding necessary to enable timely and effective decision-making and risk mitigation.

Global energy firms are challenged to provide the world’s energy needs in a safe and environmentally friendly manner. The safety of the organization’s personnel, suppliers, and local populations is a major component of corporate mission statements and cultures. Moreover, stakeholders including local governments and populations demand that facilities are protected and benefit the community as well. The industry has a long history of asset integrity management.

Keeping up with the explosive growth of social media technologies and volatile dynamic environments can present a considerable challenge, but mature and proven solutions are available to support industry risk mitigation processes. A number of companies have entered this market space, seeking to sell niche tools or silver bullet technological solutions. Experience has shown, though, that attempting to build capability *a la carte* particularly without training, integration, and all source and unconventional fusion capability, does not produce desired results. In this fast moving environment, buying unconventional intelligence as a service may be a much more cost effective and efficient solution for many firms rather than trying to build in-house technological capabilities or procuring single-purpose tools.

Large global enterprises can augment existing security and risk management with the same solutions used by the government entities in the defense sector at commercial price points. The real question is not why, but why not?

## About the Authors

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Marcus Kuiper has over three decades as an intelligence professional, serving in the armed forces and throughout the Intelligence Community conducting intelligence operations at tactical, operational, and senior level. He has served as the Senior Intelligence Officer at multiple levels, to include as the J2 of Multi-national Corps-Iraq in combat with over 150,000 soldiers from 28 nations. He has over five years experience working within the Joint Staff J2, interacting directly with the Chairman, Joint Chiefs of Staff and Secretary of Defense. He is a leader in spearheading innovation in the field of open source unconventional

intelligence and operationalizing those capabilities to serve a broad array of government and commercial customers.

Dr. Scott M. Shemwell, 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. Knowledge Ops delivers solutions that provide a specific, demonstrable, measurable, and defensible approach for addressing the emerging industry requirements for operational excellence and increased regulatory scrutiny.



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