

Capturing the New Sources of Competitive Advantage

By Partha S. Ghosh



"Without passion, there would be neither mathematics nor natural science. Time and again, the passion for understanding has led to the illusion that man is able to comprehend the objective world rationally, by pure thought."

Albert Einstein

Do new trends + new rules = new models?

During the past 10 to 15 years, seven powerful trends have emerged that could fundamentally transform the global economic landscape. Some of these trends are quite obvious and some less so, but together, they can have a powerful effect on the economy.

Throughout history in “mega transition” times such as this, new ideas are born and new rules take root to govern them. As problem solvers/thought leaders and partners with our clients, we must continually examine the ways organizational leaders can locate the bright spots, often hidden in the turbulent competitive landscape, to help identify and define the most likely game-changing plays.

Identifying the bright spots is particularly important in industries such as energy and minerals that rely on a finite supply of resources and form the backbone of the global economy. We need to find ways to adjust to these emerging trends and continually advance the promise of value creation, balanced with the various expectations of multiple constituencies and stakeholders. Indeed, with the rising appetite for energy, capital expenditure and resource commitment for technology development are increasing for each barrel of additional hydrocarbon resource. Oil and gas companies will be well served today and in the future to offset slimming profit margins by examining the opportunities these new trends offer to help unleash higher levels of sustained economic yields for their investments.

Seven Trends that Will Influence the Oil and Gas Industry

- 1** Convergence of technologies will create new economic ecosystems. Economic value created through the convergence of communication, computing, content, and commerce will lead to the development of mobile, 24/7, knowledge-based businesses and services. Fresh perspectives on how new possibilities might evolve at the confluence of tera-level to nano-level technologies will be essential.
- 2** Advent of big data and advanced analytics will profoundly transform the industry landscape. Capturing data analytics will require new skill sets, and the speed at which industries respond will define competitive advantage.
- 3** Intensifying concerns and advocacies on global warming and resource constraints will continue to draw public attention, both nationally and internationally.
- 4** Generation Y and multidisciplinary knowledge workers will require that corporate leaders learn how to deal with multigenerational expectations and aspirations.
- 5** Deepening influence of social media on the evolving networked environment will democratize knowledge and transform ways that people interact in the workplace. Leading (as distinct from managing) in a world connected through social media will require higher-level expressions of genuine and dynamic empathy, transparency, and ethics of thought and workflows through innovation in leadership development models.
- 6** Shift in geo-economic equations among regions will lead to new models of economic diplomacies. New modes of engagement with different regions will require more tailored approaches to local communities, tied together by a universal global framework, including multiple dimensions that define good corporate citizenship.
- 7** Rising tensions between Wall Street (wealth creation) and Main Street (social good) will require organizations to participate in social programs while meeting higher economic expectations.

Keeping Emerging Trends in Perspective

These seven emerging trends will have a profound impact on the ways successful business leaders across industries shape strategies, develop organizations, and run their operations. Business leaders will be required to make transformational adjustments to prevent disruption to their business models and create value on the upside. This is especially true for the energy sector as it adjusts to a wider and more complex range of hydrocarbon resources in deeper and harsher environments and in sync with rising attention to renewable energy sources, as well as hydrocarbon price uncertainties.

Energy industry leaders must define the “essential logic” that will help them harness the power of the seven trends in harmony with each other. They will have to find ways to explore these frontier trends by developing and fusing new skill sets with conventional wisdom acquired through decades of experience to drive in the next era of industry advancement. Given the likely scale of impact and the degree of strategic and operational orchestration and cultural change that will be required, active engagement from the CEO and senior leaders is essential.

Capturing the Possibilities of the Emerging Trends

The CEOs and senior leaders of oil and gas companies will need to consider rearranging their operational and organizational business models to capture the emerging possibilities these trends offer. Similar to the way the steam engine redefined the transportation, textile, and metal-working industries and the way the internal combustion engine and electronics triggered mass surface and air transportation and gave birth to a host of new

industries, the convergence engine is currently redefining and improving productivity in conventional industries.

Many organizations are already realizing significant value by using the power of convergence to reconfigure ways that multiple industries interact with each other. This interaction is especially important as technical specialization continues and globalization enables a more efficient division of skill sets across industries. Competitive edge will increasingly be defined by the way creative collaborative arrangements are defined. In a recent cross-industry collaboration, Chevron, ExxonMobil, and Royal Dutch Shell partnered with HJW Geospatial Inc. and the Geosat Committee Inc. in a cooperative R&D project, proving that sophisticated airborne hyperspectral sensors were capable of detecting oil seeps and oil-impacted soils.

Furthermore, every industry must realize that the convergence engine (in the form of smartphones and tablets) has given executives extraordinary power. Apart from the fundamental transformation of how people search for and process knowledge, the convergence engine has the potential to create efficiency gains that were not possible earlier.

For instance, organizations are using big data and advanced analytics to design experiments and pilots, assess risks and options, manage technology pipelines, control costs of mega capital projects, and most importantly, structure, make real-time choices with deeper insights on the likely economic returns, and then develop and track environmental stewardships and community-focused services.

Accordingly, the way cross-boundary workspaces are designed and the way alliances are built across industries will unlock future productivity. Within the energy sector, as the diversity and complexity of hydrocarbon assets multiply and the diversity of sciences and technologies increases, new possibilities for cost reduction and value creation will quickly open up.

For instance, real-time tracking of reservoir characteristics to guide how different technologies from various companies could be synergized to improve well productivity at the various stages of its life cycle is now within the reach of operators. Similarly, new types of collaborative arrangements could help oil and gas companies speed the transition to low-carbon, water-efficient business models. Increasingly, a holistic approach to resource development — including CO₂ sequestration and water recycling — will be required.

In fact, organizations cannot afford not to master the influence of the seven trends. At a philosophical level, we must realize that economic life across industries in transition is a grand dynamic experiment, which likely will give birth to new ecosystems. We might not know the best answers to the emerging questions, but what we know is that when human ingenuity has been put to creative work, our collective social intelligence has always uncovered better ways of value creation and value delivery.

FIGURE 1: LEADERSHIP IMPLICATIONS OF THE SEVEN TRENDS

Corporate success will be influenced by the way today's leaders envision the future of the enterprise along strategic, organizational, and leadership dimensions.



Shaping the Future Enterprise

Organizations today cannot afford not to adjust to the seven trends, and as industries respond, new economic processes and business models will emerge. Within the new models, wealth creation and environmental preservation and enrichment and local community development and globalization will coexist in harmony rather than in conflict with each other. An outside-in look at how multinational organizations prepare to adjust to the changes reveals that to achieve sustained leadership, companies must embrace the following five essential guidelines. These guidelines, working in concert, will define the dynamics to shape the companies that will lead the industry.

1. Transient industrial ecologies. Cross-boundary solutions will continually emerge to break the constructs of conventional industries. Oil and gas companies, in the execution of mega capital projects, must take advantage of the convergence of technologies from multiple domains, working with multiple tiers of vendors and service providers much like Boeing and Toyota work with their suppliers. Relationships such as these will all be different, depending on the nature of assets — for example, assets in the Arctic versus those in Canada's oil sands — as new technologies are assembled, from *nano/micro level* such as microsensors to *tera level* such as satellite-based communication systems with large-scale structures in harsh environments. Not only will they be different for different assets, for a singular asset during the life cycle of a specific project, such eco-systems could continually evolve with new members. Relationships will change as leaders bring together different players with wider skill sets, and organizations will need to develop the leadership capacity to quickly compose, decompose, and recompose cross-industry ecosystems.

2. Re-emergence of strategic management. The leaders of tomorrow must integrate the art of imagination and the science of systems-oriented thinking based on deep analytics. With powerful forces that could restructure industries and the interactions among them, strategic management has to reclaim its significance in the boards of companies. For example, senior management of oil and gas companies in a rapidly transforming competitive environment will be required to find imaginative ways to plan game-changing possibilities and, at the same time, make disciplined use of predictive analytics to explore options and hedges and take more calculated capital expenditure and technological risks.

Google has successfully blended the art of imagination with the science of systems-oriented thinking to foster innovation, promoting projects and acquiring companies and start-ups to create a dynamic portfolio of technology ecosystems. By blending its long-term views and goals with an open and incentivized management style in which employees (and small start-ups) can contribute and become the engineers of innovation, Google

has been able to blend systems-oriented thinking for long-term goals, based on analytical rigor, with the art of imagination.

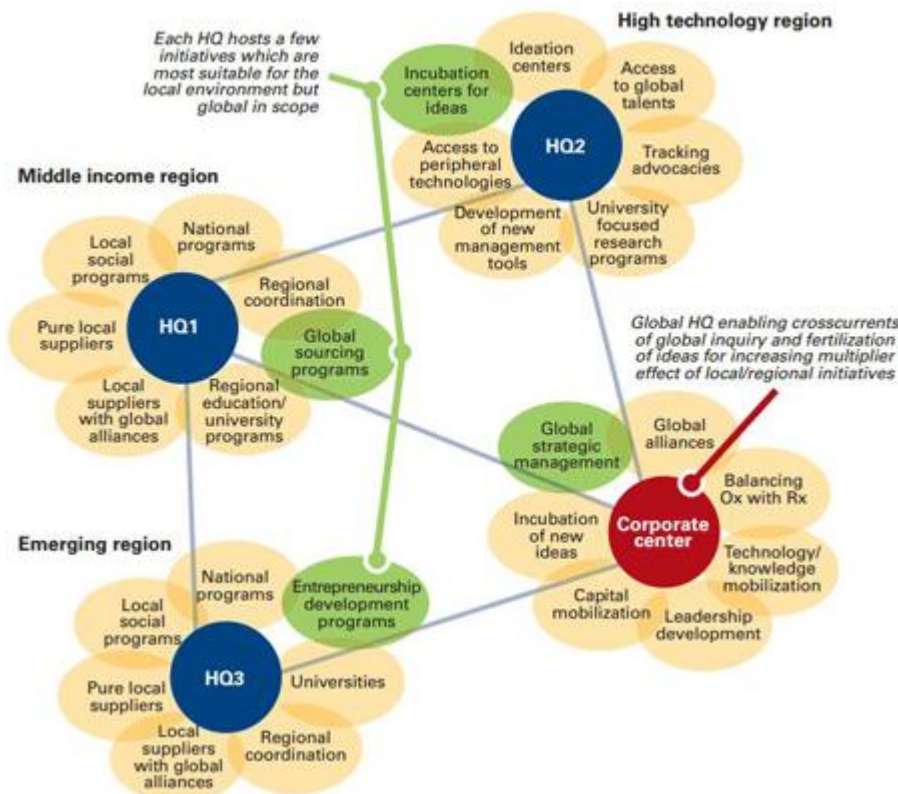
3. Shift from a single-HQ to a multi-HQ organization model. Now and in the future, successful multinational companies need to know how to treat multiple assets and markets as home markets rather than marginal, distant, overseas operations. At the same time, they must ensure that basic corporate values, operational principles, and strategic themes of the enterprise are respected worldwide. A consensus is emerging that successful companies must be able to accomplish the following:

- a.** Treat fast-growing big markets and developed markets as sources for value invention, value creation, and value delivery.
- b.** Continually find common denominators among assets and markets across national borders to secure scale and synergy advantages.
- c.** Build objective relationships with suppliers, local communities, and governments with a holistic perspective to contribute to social well-being faster and better than the competition.

In the process, the decision-making architecture of a global enterprise might well shift from a single-headquarter (single-HQ) multinational to a multi-headquarter (multi-HQ) multi-home organizational paradigm. The new paradigm will organize global decision-making centers in various regions for different types of businesses and functions. For example, GE recently moved its international headquarters to Hong Kong to shift from a traditional global business structure to a more global perspective. As a result, the decision-making process will become closer to and more aligned with the local environment, partners, regulatory agencies, local suppliers, and customers in 12 global regions around the world. GE's intention is to treat all significant markets as home markets to facilitate more regional authority in terms of staffing, resourcing, strategy, and investment. As oil and gas assets diversify and spread into different regions, organizations must develop local operational models for sensing opportunities and addressing issues. Then, as best practices evolve in different regions, they can be quickly scaled and synergized.

FIGURE 2: THE BASIC CONSTRUCT OF THE MULTI-HQ MODEL

Shifting from a single-HQ model to a multi-HQ model will enable the emergence of a loosely coupled multi-local organizational model that will work as a tightly knit global enterprise.



1. OX = OPERATIONAL EXCELLENCE; RX = RENEWAL EXCELLENCE

4. Dynamic knowledge management. As energy company business leaders increasingly commit to technology as the fundamental force to create game-changing plays and secure competitive edge, the oil and gas sector will be required to work with an expanding range of science and technologies and, in turn, with a wider group of partners.

Increasingly, knowledge management within an organization and across the ecosystems with whom it works will determine the organization's ability to secure competitive advantage in terms of quickly harnessing technologies from various assets and partners with limited trials and errors. Doing so will ensure that R&D efforts avoid repeat trials and leakage of valuable intellectual property as the organization collaborates with a wider set of players. Technology organizations must develop the capacity to integrate and the intellectual and attitudinal resilience to enable proactive convergence of technologies from different domains.

5. Reformation of the corporate center. Because of the nature of the transitions that are underway across industries and for the multi-HQ model to become operational, the corporate center and members of the board will increasingly be required to offer wider skill sets and stewardship capabilities to executive leaders across regions. Rather than acting as the regulator of corporate activities and dispenser of decisions, the future corporate center will be required to work with both internal and external board members from various regions to form teams that can sense and create more possibilities, provide creative scenarios, inspire innovation, and stimulate highly ethical operational excellence from multiple disciplines and cultures.

Becoming Transformational, Yet Practical: The Role of the CEO

CEOs who are not continually asking themselves and their top executives how they can harness the power of the seven trends and reflect the five essential guidelines in the day-today running of the enterprise can be blindsided. To avoid this possibility, they must focus on three fundamentals.

First, in this new business environment, the role of the CEO must fundamentally shift from that of a conductor of the orchestra to one of scope enhancer and harmonizer of multiple orchestras. The CEO must continually challenge the boundaries of business and inspire the organization to renew value propositions with increasingly wider and deeper perspectives. Along with the chief technology officer and the strategic planning officer, the CEO will need to actively nurture an innovation culture to move the company beyond incremental improvements and search for, pilot and test, and scale and implement big game-changing moves that have the potential to revolutionize the industry.

Accordingly, organizational leaders must ensure that passion and a thirst for knowledge are at the heart of the organizations they lead. To succeed in the emerging competitive environment, leaders must focus on continuous operational improvement through better and more efficient use of information and knowledge. To avoid technological disruptions and create new value propositions, they must continually examine adjacent opportunities across their value delivery chains as well as the value propositions themselves. There are no best practices that seed and nurture innovation, so the CEO must create an environment to internally cultivate structures and processes and inspire leadership styles to make double helix organizational processes real — one strand focused on operational excellence (Ox), and another strand focused on renewable excellence (Rx).

Finally, to reach the full potential that the emerging environment offers, organizations will need to shift from the mechanistic command and control model to a new model that focuses on learning, information processing, and knowledge management (creating, sharing, and filtering) capacities and capabilities. When managed properly, the processes are self-enriching, but when managed poorly, they are self-consuming. CEOs and their teams must create a leadership culture that involves and inspires, is knowledge enriching, and ensures that everyone is committed to performance excellence and feels genuinely responsible for their domain of influence.

We are entering a new era that will require new thoughts and new responses. The real challenge for a major surge ahead will perhaps be how courageously and effectively leaders of oil and gas companies balance the new opportunities with the day-to-day requirements of running a global enterprise. In the next decade, with so many changes in the making, energy companies could lead the future global enterprise as it evolves, with all industries working to transition in a new era.

Will the leaders of the energy sector take the lead?

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