

The state of smarter oil and gas

Smarter Industries Symposium, Barcelona, November 2010



The possibility of smarter industries

Two years ago, IBM first introduced the concept of a Smarter Planet, a world in which collaboration, systems thinking and data analytics improve the efficiency and effectiveness of the many systems that facilitate life on earth. It was a bold idea, but one that resonated within the business and government communities because it is rooted in a deep understanding of what's possible with today's technologies and capabilities. For this reason, our clients and business partners immediately embraced and echoed the concept.

Two years later, IBM has collaborated with more than 600 different organizations worldwide that are each doing their part in making this vision a reality. In November 2010, we brought many of these world leaders in government and

business to Barcelona to share their stories of a Smarter Planet. We called the event Smarter Industries Symposium because while the notion of a Smarter Planet may be global in scope, the work of building it happens industry by industry, company by company, government by government, and process by process.

Representatives from ten different industries attended the event, including banking, communications, energy and utilities, healthcare, government, insurance, oil and gas, retail, transportation and electronics. And though each of these industries faces unique circumstances in today's economic environment, the most advanced organizations in each field share a common outlook. They are the organizations that have stopped seeing change as a threat and started seeing it as an opportunity. They have changed the conversation from one about problems to one about possibilities.



IBM Smarter Industries Symposium

Smarter Industries. Smarter Business.

“We are climbing out of a global downturn in an environment of accelerating complexity and uncertainty, with an explosion of data all around us,” said Frank Kern, Senior Vice President and Managing Partner at IBM Global Business Services. “Yet the question on the mind of global business leaders is shifting from ‘What’s my biggest problem?’ to ‘What’s my greatest opportunity? What are my prospects? What’s available to my enterprise now that wasn’t before?’”

Analytics, ROI and the customer

During the course of the Symposium, attendees saw many examples of how organizations are answering those questions with action. In particular, they saw the power of data and analytics in making smarter industries a reality. “Analytics: The New Path to Value,” a study jointly conducted by IBM and the *MIT Sloan Management Review*, found organizations that utilize analytics outperform those that are just beginning to adopt analytics by a factor of three.¹ They use them to understand historical trends, to model current conditions and to predict the return on investment of different courses of action.

And though the approaches to analytics vary, every organization shared a remarkably consistent design point: the customer. From Fundacio TicSalut, an institution of the regional healthcare administrator in Spain that has built a shared electronic medical records system to improve health services for its citizens, to Best Buy, the electronics retailer that is listening to its customers across multiple channels and engaging them over social networks, smarter industries are being built around serving the needs of the customer.

“Our customers are asking us to know them, empower them, offer them and support them,” said John Thompson, Senior Vice President and General Manager at BestBuy.com. “We’re inclined to listen to them.”

A path to possibilities

Having the design point of the customer is important because without it, all the innovation in the world has no purpose. John Kao, Chairman of the World Economic Forum’s Global Advisory Council on Innovation, explained it to symposium attendees like this: “Creativity and innovation are not the same thing. Creativity is the ability to generate new ideas. But innovation requires a goal to move forward.”

Kao advocates having a plan, or a system, when pursuing any innovation. And smarter industries are no different – which is why IBM has produced more than 30 industry-specific progression paths that identify key transformation milestones, outline the return and benefits of each step, and simplify the journey to getting smarter. The progression paths address specific aspects of various industries, from building a collaborative care model in healthcare to meeting regulatory requirements for municipal water systems.

Not surprisingly, some consistent patterns emerge at each stage of transformation, which Ginni Rometty, Senior Vice President and Group Executive for Sales, Marketing and Strategy at IBM, noted to attendees of the symposium:

- 1. Instrument to manage** – The collection of data to measure, monitor and understand a system
- 2. Integrate to innovate** – The analysis of that data to see patterns and identify opportunity
- 3. Optimize to transform** – The action of reaching system-specific goals and redefining what’s possible.

Throughout this report, you will read about what was shared at the Smarter Industries Symposium and the stories of how many organizations in your industry are applying this progression path. It’s a path that is helping improve the efficiency and operations of hundreds of IBM clients and business partners around the world. It is a path to possibility. And it’s a path to a Smarter Planet, one industry at a time.



The state of smarter oil and gas: Beyond profit margins

For economic, political and environmental reasons, the oil and gas industry comprises one of the most critical and complex systems on earth.

It is literally the fuel that drives much of the world. And it is closely related to nearly every other system that facilitates life on this planet, from transportation to retail, from water to food. All of which is why it is so important that the oil and gas industry operate efficiently, safely and in a sustainable manner. It is why the industry must get smarter.

But at the oil and gas track at the Smarter Industries Symposium in Barcelona, many participants pointed out inefficiencies and misalignments within the industry. And some lamented a lack of urgency within the industry to address these issues, due to brisk business and ample margins.

However, with increased demand for oil and gas, a raft of new competitors on the horizon and an industry-wide shortage of skills and talent, symposium participants agreed that profit margins could not be the only measure of success in this critical industry. Together they identified the three key areas that held the most potential for the industry going forward:

- Development and deployment of production and information technologies that utilize analytics and align with people, processes and operating models
- Implementation of regulatory and compliance controls that support a more comprehensive approach to enterprise risk management
- Recognition of synergies with external value systems.

Technology development and deployment

“There is a tsunami of data out there today, all of which clearly could improve both business and operational performance if leveraged in the right way, even if its not provided in real time,” said Pieter Kapteijn, Director of Technology and Innovation at Maersk Oil. This kicked off the discussion of data analytics at the symposium – a discussion not limited to the benefits of business or operational analytics.

Participants were clear to point out, however, that the focus on analytics should not be standalone, but instead tightly related with development and deployment of strategic production and information technologies. Furthermore, all should be aligned with the processes and people serving both upstream and downstream, operating in a global environment in collaboration with external partners. Intelligent drilling, 3D and 4D modeling, and realtime data streams were highlighted as key technological areas with great potential for enhancing efficiency. However, there was concern that too much realtime data could result in “information overload” rather than decision makers having access to the only the most important information.

Attendees concluded that a strategic approach to analytic, information and production technologies aligned with people and processes should enable benefits in key operational domains: data acquisition and modeling, well drilling, lifting and improvement of recovery rates.

Regulations, compliance and risk

When dealing with regulations, a heavy dose of collaboration with policymakers and industry experts is always in order. But there was wide agreement at the symposium that oil and gas companies need not wait for regulations to be imposed on them. In fact, many participants felt that by using analytics they could meet stricter regulations while improving their overall risk management strategies. This approach includes integrating processes and systems to continuously identify, monitor, measure and mitigate a broad category of risks, from financial resources to the environment. All of which would align with business principles, process safety and commercial standards.

Furthermore, the best practices developed by this “self-compliance” build credibility and influence over time. This, in turn, leads to higher productivity. As one participant put it, “Low productivity is often related to low compliance.”

Embracing external systems

Participants also felt it was time the industry began embracing a future of multiple energy sources and ensuring continuous environmental sensitivity. There was a compelling discussion about how the oil and gas industry could collaborate with adjacent industries and systems. In particular, there seemed to be a perception of synergy between the emerging offshore wind energy industry and the offshore oil and gas business. There are obstacles, however, as Torbjørn Forthun, Managing Director, Kongsberg Drilling Management Solutions, pointed out: “Wind energy companies can greatly benefit from the advanced expertise of offshore oil and gas producers and service providers, but it seems like they would rather go on their own.”

Indeed, collaboration in this industry does not always come easily. Though it is seen as important for these oil and gas companies, service providers, suppliers and end users to work together to improve the efficiency of the entire energy value chain, from production to use, there are major concerns about the shifting competitive landscape.

“If a service provider or supplier becomes too successful, they can become a competitor,” said John Gilmore, Director, Upstream Oil & Gas, Invensys Operations Management. Participants addressed these concerns by suggesting that companies sit down with potential value partners in their ecosystem to create a shared long-term (minimum three to five years) vision that is supported through value-based pricing, incentive contracts and pilot initiatives.

The road to smarter oil and gas

Ultimately, the group was eager to get started on the road to building a smarter oil and gas industry and creating a new culture that would support the journey. They identified a crucial need for capable leadership in this effort – leadership that would support and encourage people to take risks, learn from failure and drive innovation throughout organizations. They implored each other to look beyond one-dimensional metrics of success and drive change across disciplines, silos and even industries – and to foster the integration that is necessary to build a truly smarter industry.

Reference

- 1 LaValle, Steve, Michael Hopkins, Eric Lesser, Rebecca Shockley and Nina Kruschwitz. "Analytics: The new path to value. How the smartest organizations are embedding analytics to transform insights into action." *MIT Sloan Management Review* and IBM Institute for Business Value. October 2010. <ftp://public.dhe.ibm.com/common/ssi/ecm/en/gbe03371usen/GBE03371USEN.PDF>



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