Doing More with Less: Minimizing Waste and Cost *OTC 2015 Dassault Systèmes Executive Briefing*

CIMdata Commentary

Key takeaways:

- With continued lower oil prices, the Oil and Gas Industry is focusing on efficiency and robust supply chain management by harnessing digital technologies and automation
- Through examples, this session demonstrated Dassault Systèmes' PLM solutions and Sogeti's services to create product design and delivery efficiencies that are being sought by the O&G Industry
- "Designing right the first time" requires strategic focus on collaboration intent, having robust decision making processes, addressing cultural barriers, and adopting the right digital technology solutions to support product development and design collaboration

The "Doing More with Less: Minimizing Waste and Cost" Executive Briefing event was held on May 5, 2015 during the 2015 Offshore Technology Conference (OTC) in Houston, Texas—the event was sponsored by Sogeti, a partner of Dassault Systèmes. The format of the event was a combination of presentations from Dassault Systèmes and Sogeti, and a panel where next-generation strategies and technologies for product lifecycle management (PLM), asset lifecycle management (ALM), collaborative development and engineering, and information management were discussed. CIMdata was invited to participate in the panel discussion along with representatives from Dassault Systèmes and Sogeti.

Mr. Régis Faure, Dassault Systèmes, Sales Director, Energy, Process and Utilities Industries kicked off the event with introductory remarks about Dassault Systèmes. He described Dassault Systèmes as a scientific company with more than 12,000 people serving 190,000+ enterprise users in 12 industries who are operating in 140 countries. Mr. Faure highlighted Dassault Systèmes' product development software applications, which are delivered via their 3DEXPERIENCE platform to enable 3D design, engineering, modeling, simulation, and data and process management. CIMdata has followed the evolution of Dassault Systèmes' 3DEXPERIENCE platform to become a collaborative innovation platform through internal development by Dassault Systèmes and strategic acquisitions. It is adopted by leading companies in diverse industries ranging from aerospace and defense to consumer packaged goods, to manage complexity of their product development processes and data leading to benefits in efficiency and effective quality management.

The briefing continued with presentations from Sogeti, by Messrs. Doug Burgess, Practice Lead Global Engineering Services (Sogeti), and Ketan Suri, National Solution Architect, (Sogeti). Mr. Burgess started with a brief background about Sogeti, a wholly owned subsidiary of Capgemini. With 20,000+ experts distributed globally, Sogeti provides services around technology and testing with a focus on applications, infrastructure, and engineering. Mr. Burgess continued his presentation by highlighting the environment and trends in the O&G industry. He indicated that the industry expects low oil prices to continue due to geopolitics, weak economic growth, over production in prior years, and negative market sentiment. He noted that O&G upstream activities had contracted as companies are waiting for a turnaround in policies, and that the current industry focus is robust supply chain management. He pointed out that companies have already harnessed digital technology and robotics for greater

efficiencies and it is an opportune time for digital convergence. In 2015, Mr. Burgess expects merger and acquisition (M&A) activities to increase with a focus on shale and water, and Big Data technologies. Referring to a recent Gartner report¹, he highlighted the top technology trends as 3D models for managing and maintaining operational assets, 3D printing, cloud—hybrid IT, cognitive computing, digital field devices and mobility (smart, connected wearables), and upstream modeling suites. These trends, driven by advances in IT and manufacturing technologies, are consistent with the general industry trends that CIMdata believes are key in an era of innovation with smart and connected products.

Mr. Suri presented a case study based on a Fortune 100 client project where by enabling upfront collaborative planning among engineering and manufacturing and by effectively using PLM (Dassault Systèmes 3DEXPERIENCEs platform) for managing product data, a significant reduction in manufacturing inventory was achieved. Mr. Suri described the client's main issues as being time consuming manufacturing change process, and sometimes inadvertently wrong parts and configurations being used in making the product. The manufacturing sites were therefore forced to maintain a high inventory of parts to minimize these issues. Root cause was identified as absence of effective collaboration among engineering and manufacturing. After receiving the engineering BOM each manufacturing site had to figure out their own manufacturing BOM without involving engineering. Engineering did not have any knowledge of the "as-built" product BOM. In the new process, through strategic collaboration, multiple alternate assemblies for the product were jointly identified upfront. Subsequently, the top-level parts were managed in ERP, but the alternate assemblies were managed in the 3DEXPERIENCE platform where both engineering and manufacturing had visibility into the data. This example shows the importance of "effective collaboration" across functions, not just task management by each function, for designing and delivering products right the first time.

Mr. Suri also shared a video where he highlighted a prototype of a "federated" search capability that Sogeti built using Dassault Systèmes' EXALEAD search technology. He explained the problem that this capability addresses as the ability to identify existing information across data silos within an enterprise or external to an enterprise on a given need before commissioning new work. Search and corollary "recommendation" systems are an essential part of an effective "collaborative innovation" infrastructure. Smart, intelligence search and recommendation systems enable connections that can result in significant time and cost savings.

Lastly, a panel discussion took place in regards to the importance of collaboration to designing products right the first time so that waste and cost are minimized. The panel was moderated by Dassault Systèmes' Ms. Nelia Mazula. Panelists were Mr. Stephane Declee, Vice President of Energy, Process & Utilities (Dassault Systèmes), Mr. Srini Datla, Vice President of Global Engineering (Sogeti), Mr. Doug Burgess (Sogeti), and Dr. Suna Polat, Collaborative Innovation and Social Product Development Practice Manager (CIMdata). Mr. Declee indicated that collaboration is at the heart of Dassault Systèmes' 3DEXPERIENCE platform, and pointed that with Cloud adoption, collaboration technologies will only get better. Dr. Polat emphasized that product development involves learning and knowledge transfer across interfaces. She pointed out that while innovation happens at interfaces (of time zones, functions, disciplines, generations, and experiences), if not managed carefully, failures also happen at the interfaces. Her experiences in enterprise knowledge management showed that effective digital collaboration systems should have people profiles (which are automatically updated based on people's activities), smart search as in the example demonstrated by Sogeti, and also

Top 10 Technology Trends Impacting the Upstream Oil and Gas Industry in 2015, published on 18 March 2015

recommendations based on people's interests. Moreover, she indicated that Communities of Practice (CoP) can be important for people to find useful connections and to collaborate beyond their immediate teams to accelerate knowledge and insights. If PLM environments were to allow access to CoP or other similar horizontal networks, people could receive quick help on their critical questions. This could improve efficiency of critical knowledge capture and transfer, especially in environments where organizations are evolving constantly through attrition, hiring, or M&A activities.

An attendee asked if PLM allowed linking unstructured conversations and other supporting data to the product models and design. PLM allows documents to be embedded as supporting data. New approaches involve embedding "social" conversations in product design environments. These conversations are maintained as part of the design. Another attendee asked what the panel thought about trends in PLM. Dr. Polat pointed to CIMdata's observation that PLM is evolving to become a business platform for innovation. Especially in an era of "smart and connected product" innovation, PLM has to extend to the front end for strategy and idea management as well as to the back end to create insights from product utilization. The panel agreed with CIMdata's observations. Another attendee asked how a company's culture and sub-cultures affect collaboration. "Culture" is a critical factor in collaboration and adoption of technology. While a global company tries to create a unified company culture, sub-cultures exist based on demographics and regional traditions. It is important to be aware these sub-cultures during new technology deployments.

Overall, the panel discussion touched different aspects of effective collaboration during product development and design to minimize waste and cost. To design products right the first time, companies first need to declare their strategic intent for internal and external collaboration, have robust decision-making processes, and implement digital capabilities to support and manage their processes and data. Awareness of cultural barriers and intentional planning to address them is also required to achieve true and effective collaboration.

Concluding Remarks

Doing More with Less: Minimizing Waste and Cost, OTC 2015 Executive Briefing organized by Dassault Systèmes created discussions and insights into next-generation strategies and technologies for collaborative development and engineering, product lifecycle management, asset lifecycle management, and information management to address the need for greater efficiency in the Oil and Gas Industry due to continuing lower oil prices. Examples and the panel discussion gave solid evidence that technology solutions alone are not sufficient to achieve efficiencies in product development and design. Strategic intent for collaboration must be declared, robust decision-making processes should be put in place, and cultural barriers have to be addressed. Only then, can digital capabilities and solutions deliver their ultimate value.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at http://www.CIMdata.com or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922.

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