

Offshore



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AFRICA

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communication across departmental silos (41 percent) is another major challenge.

Lastly, the survey tackles alternative ways to conduct inspections that include mobile devices, unmanned aerial vehicles, cloud technology and laser scanning. With regard to using mobile devices to conduct the inspection process, only 32 percent of respondents said they were using them, which means there is great potential for adopting more of this technology. According to Phil Christensen, VP of analytical modeling with Bentley Systems, those with paper-based workflows are hesitant to adopt mobile devices fearing they could drop them in the water or not know how to back up the device when out on the platform. But with 32% adopting this technology, clearly some have overcome these challenges.

Interestingly, the adoption of UAVs is rapidly making inroads in the industry with more than a quarter already using them. Christensen says he is encouraged by this number, as he guessed that the percentage of users would only be around 10 percent. Christensen is also surprised by the number of respondents using cloud technology. With a quarter of the audience adopting it, Christensen says we are just beyond the early adopter stage with users becoming more relaxed about issues of security. He adds that some Bentley users are asking for cloud-only solutions of the products it offers. These unsolicited requests specifically demand a solution to their data needs that is not on premise, validating that the thinking among oil producers has changed.

Some Examples from the Field

The takeaway from the survey is that producers are seeking alternative ways to inspect, maintain, and extend the life of their assets. It is no different from an individual taking their car into the mechanic for general

maintenance and tune ups. Let's examine how three owner-operators are implementing analysis software to maintain their offshore platforms and assets.

Oil and Natural Gas Corporation currently operates more than 265 offshore fixed jacket platforms in waters off the coast of India that have outlived their 25-year design life. Installing new platforms would cost the company USD 25 million per platform. Instead, ONGC saw the value of asset life extension and invested USD 150 million to assess its jacketed platforms for extended fit for user and strengthen the platforms as required to meet industry safety standards.

ONGC deployed Bentley's SACS for design-level analysis to carry out detailed structural analyses and SACS collapse for ultimate strength analysis. The analyses included dent modeling, member/joint component strengthening, additional pile modeling, and soil convergence, as well as extensive load modeling to recommend equipment removal if necessary. The technology became part of ONGC's methodology for platform life extension/requalification, which added 10-15 years to the average life of each structure.

In the Chenqdoa oilfield in Bohai Bay, a number of offshore platforms have reached the end of their design life, and needed to be reassessed for extended life and to ensure safe operation. China-based oil producer **Sinopec** performed underwater inspection of the platforms to evaluate their structural security and determine their maintenance feasibility. It relied on analytical software to evaluate the structural integrity of the platforms and consider the maintenance alternatives based on the analytical data required for safe operation of the marine platform.

Using SACS, Sinopec evaluated the structural integrity of the existing platforms to

determine whether repairs were necessary, economically feasible, and could be completed effectively. Sinopec's reliance on comprehensive analysis to perform a risk-based approach to life extension of its platforms kept it from building new ones, saving millions of dollars.

Zakum Development Company (ZADCO) had to evaluate and reinstate the structural integrity of the platform that was struck by a 1,600-ton marine vessel in the Upper Zakum oil field, the fourth largest in the world. For each day that production was halted meant lost revenue for the joint-venture stakeholders, so ZADCO used analytical software to carry out the ship impact analysis in-house, which reduced project time and costs. SACS software helped ZADCO resume production sooner, and the technical documentation-generated SACS simulations allowed the company to substantiate the insurance claim resulting from the accident saving the operator considerable costs.

These three excellent examples of producers extending the life of their assets illustrate how software technology is becoming an integral part of risk-based analysis. And new technologies, such as cloud computing, mobile devices, and UAVs are already here to help continue the productive life of existing platforms. It is now a matter of getting producers to be comfortable with using them and implementing them in their daily monitoring routines.

Anne-Marie Walters

Bentley Systems Global Marketing Director

Anne-Marie Walters joined Bentley in 2004 as a global marketing director. In this capacity she is responsible for the marketing and positioning of Bentley's solutions and products that address the needs of the Process, Power, and Enterprise arena.

Bentley Institute Press Announces Availability of New BIM Publication: Plain Language BIM

Bentley Institute Press, publisher of a broad array of textbooks and professional reference works dedicated to BIM advancements in the architectural, engineering, construction, operations, geospatial, and educational communities, today announced the availability of their newest title, **Plain Language BIM**, now available as both a print publication and as an eBook for Kindle and iOS devices.

Vinayak Trivedi, vice president, Bentley Institute, said, "We are pleased to offer this highly anticipated title from Bentley Institute Press: **Plain Language BIM** by Iain Miskimmin, one of our BIM Advancement Academy experts. With this addition to our library, Bentley Institute Press continues to advance the professions through world-class publications for infrastructure, available in printed and digital formats. These publications foster communication between industry, researchers, and students, and draw upon Bentley's collective 30-plus years of expertise in infrastructure industries."

Because BIM improves the ability to manage, produce, and consume asset

information throughout the lifecycle (design, construction, operations, and maintenance) of infrastructure assets, an increasing number of governments around the world are mandating BIM Level 2 standards and deliverables for publicly funded projects. Successfully implementing a BIM strategy can result in considerable cost savings, improved performance, and better project outcomes. **Plain Language BIM** is beneficial for beginners and for those with experience with BIM strategies to ensure all professionals are thoroughly prepared to be part of industry efforts focused on advancing BIM.

Plain Language BIM condenses years of experience and lessons learned from

Bentley Institute's BIM Advancement Academy. It guides the reader through the many complexities of BIM methodology by providing a plain language understanding of the concepts and building blocks required to deliver an effective strategy. It demonstrates why gathering data about the asset is vital to the BIM process, and why trustworthy and reliable information, delivered in an understandable and consumable manner, is essential for effective decision making—upgrading, augmenting, replacing, decommissioning, or leaving assets as they are.

Plain Language BIM also explores three elements in creating good BIM practices: people, process, and technology. It explains how the combination of these elements plays a crucial role in the lifecycle of an asset and in delivering better outcomes. The book also examines the "Eight Pillars of BIM Wisdom" that ensure best practices and world-class BIM vision.