Shell’s Gulf of Mexico Deepwater Group Industrialized Offshore Project Delivery While Supporting Its Carbon-neutral Future

Establishing an Integrated Digital Delivery Platform with AssetWise and iTwin Experience

Cut Time to Find Information by 50%
DEPLOYING OPEN, INTEROPERABLE TECHNOLOGY PROVIDES END-TO-END DIGITAL SOLUTION

Already familiar with Bentley applications, Shell selected iTwin Experience and AssetWise ALIM as the foundation for building the digital platform. By using Bentley technology, the team could integrate with third-party sub-sea 3D modeling software and digital document management systems to create an open platform and single source of truth, accessible to all engineers and project stakeholders. “A key feature of this project delivery digital platform is that it is open,” said Jhingran. This openness allows for visual collaboration to happen within all parties, whether they are within the Shell system or outside, and for data to be exchanged in accordance with industry protocols. iTwin Experience provides a flexible environment that links to other systems, aggregating information and data from multiple applications across all project phases and disciplines into a collaborative digital twin that can be handed over to operations. The technology platform is used in the design and execution phases to perform concurrent digital design, construction management, and reviews, and then to facilitate seamless delivery of a digital twin for lifecycle operations and management.

Shell’s end-to-end digital solution begins by collecting multisourced data and importing it into iTwin Experience during the early project stages, providing a comprehensive picture and clarity of the project concept among the diverse project team. As the project matures, Bentley’s open visualization and collaboration portal—combined with connected modeling, authoring, and document management tools—is used to engage external contractors to seek feedback, perform front-end engineering design (FEED), and conduct tendering processes. Simultaneously, AssetWise ALIM is engaged throughout the project to store, associate, and validate asset and design data. “[iTwin Experience] is the primary portal of the project delivery digital platform and is front and center, where all project information, such as 3D models, are stored, maintained, and [connected] to AssetWise ALIM for all documentation and change requirements,” said Jhingran.

DIGITAL SUCCESS SUPPORTS REDEFINING OIL AND GAS INDUSTRY

Leveraging Bentley’s open technology with third-party applications, Shell successfully developed their Gulf of Mexico Deepwater digital project delivery platform, integrating data and workflows from the conceptual stage to handover, streamlining capital project processes. Deployment of the project on the Gulf of Mexico portfolio is in progress, but results are already demonstrating a tremendous amount of efficiency for engineers who are constantly trying to find information and documentation related to the pieces of equipment. “Early indications are that by using the integrated ALIM and iTwin Experience environment, project teams have reduced [the] time it takes to find information by approximately 50%, compared with conventional tools and ways of working,” said Jhingran. Interactions with vendors during the tendering process and feedback sessions have seen improvements in collaboration efficiencies by approximately 10%, while design and project review sessions have been streamlined, enhancing workflow efficiencies by 20%.

Working in an integrated digital environment optimized data access, visualization, and remote collaboration, eliminating work duplication. Shell’s end-to-end digital platform provides visibility and transparency to project and engineering data across their deep-water portfolio and validates digital technologies as a key driver to delivering competitive projects. The digital platform can be scaled as projects expand or new ones arise, promoting efficiencies. “By driving cost efficiency, providing new and faster revenue opportunities, and changing business models, digital technologies are essential tools for the energy systems of the future,” said Jhingran.

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Shell Gulf of Mexico Deepwater group identified digital technologies as a key enabler to improve project cycle times and meet net zero carbon ambitions.

Working in an integrated digital environment reduced the time for Shell’s project teams to find information by 50%.