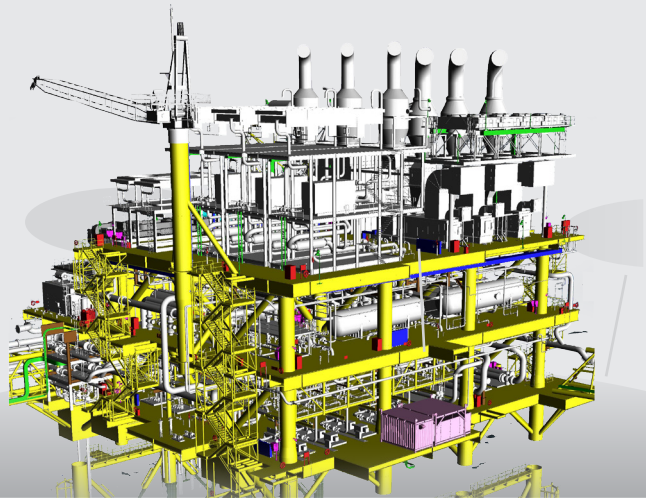
PROJECT LIFECYCLE MANAGEMENT

INTEGRATED PLATFORM

Delivering best in industry EPCI solutions



EPCI STARTS WITH ENGINEERING

In today's market, engineering needs to be smart, simple and efficient. That's why McDermott is looking into new solutions to use data to drive the industry forward.

Together with Dassault Systèmes, McDermott will launch the 3DEXPERIENCE platform for the EPCI market and deliver customized project management from concept to decommissioning for energy projects; changing how projects are executed, delivered and maintained. This first of its kind industry solution will form the basis of a "digital twin," creating a data-centric offering enabling owners and operators to unlock the power of the 3D model, integrated engineering tools, big data analytics and project management tools all from a single platform.

WHO BENEFITS FROM THIS SOLUTION?

Owners and operators continually experience delays and additional costs due to missing, incomplete or poorly organized information at handover.

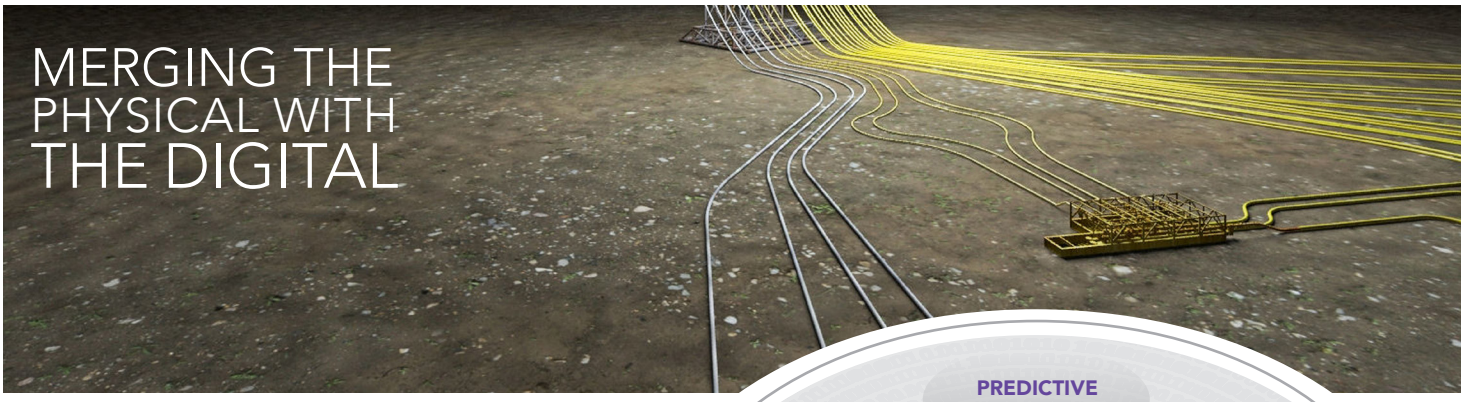
HANDOVER CHALLENGES

- Misalignment between owners/operators and contractors as to what was required at handover
- Use of off-the-shelf document storage tools, not a robust data management system
- Contractors treatment of handover as a bolt-on at the end of the project

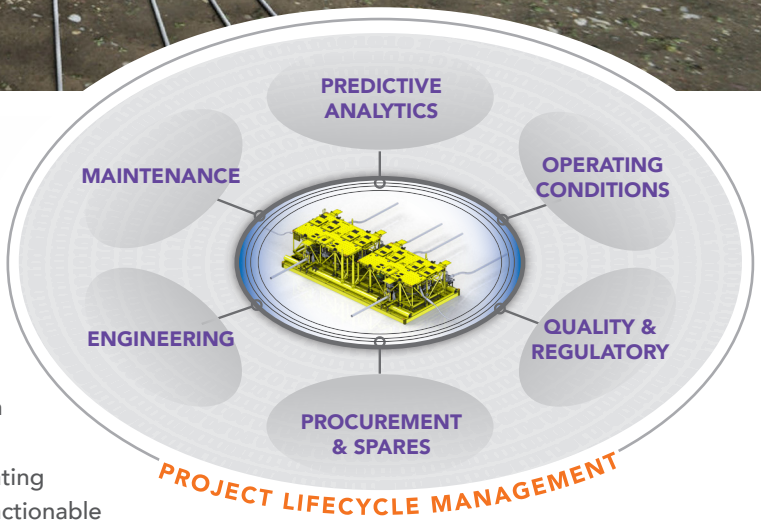
POST-HANDOVER CHALLENGES

- Maintenance of files after the plant is put into operation
- Turnarounds and plant expansions going through similar challenges as before
- Incomplete or out of date 3D models of the facility

MERGING THE PHYSICAL WITH THE DIGITAL



THE PLATFORM OF THE FUTURE



The 3DEXPERIENCE Platform will be implemented as a project lifecycle management suite, encompassing integration with industry-standard integrated engineering tools and non-engineering software such as enterprise resource planning, project cost control, planning, fabrication management and work packaging. Within the platform, the data sets from these different tools are all inter-related, creating an extremely powerful and searchable data model to drive actionable intelligence for project execution and post-handover operations. The platform is flexible enough to deal with different types of operating facilities including, but not limited to, offshore platforms, onshore facilities, subsea assets and vessels.

Following handover, the power of the "digital twin" will be unlocked through leveraging operational data to increase efficiency of operations in the field. The "digital twin" will be empowered through integration of design phase 3D models with additional software packages to create a single point-of-truth for the asset. The "digital twin" integrates mechanical design, 2D drawings, specification sheets, finite element analysis, quality documents and test reports, maintenance procedures and other operational data to enable life-of-field services for the physical asset including:

- *Predictive maintenance through data analytics*
- *Facility optimization and de-bottlenecking through use of operating facility data to unlock further efficiency and operating margins*
- *Operator training through virtual reality*
- *Optimized maintenance and turn-around planning through smart work package preparation*
- *Single-source for all information about the facility, continually updated throughout the life of the facility*
- *Operator training and in-field maintenance technician assistance through use of mixed-reality platforms*
- *Rapid engineering for brownfield modifications through a continually updated 3D model and data set*

ENGINEERING THE McDERMOTT WAY

McDermott is addressing the demand for cost-effective project management from concept through decommissioning by providing an innovative digital solution that simplifies work processes onto one common software platform. We are promoting an open exchange of information improving productivity, cross-functional collaboration and on-schedule delivery of complex projects.

As the first energy-focused EPCI company to implement such an advanced industry solution, this smart, data-driven offering provides a real-time view combining the as-built physical state with a living, up-to-date digital twin.

LIFECYCLE OF DATA

- **6D** | **Predictive data**
- **5D** | **Operational data**
- **4D** | **Time & volumetric visualization**
- **3D** | **Volumetric representation**
- **2D** | **Visual representation**
- **1D** | **Data attribute**

6D DATA