International Downstream Conference & Exhibition

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الإتحـاد الخـليجي للتـكرير
Gulf Downstream Association

Abstract Title: KNPC's Smart Refinery: Maximo Oil & Gas Enterprise Solution

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The Kuwait National Petroleum Company has implemented and heavily customized Maximo's Oil & Gas enterprise solution to allow its core business processes to be fully automated, a step towards the company's goal of achieving a truly "Smart Refinery".
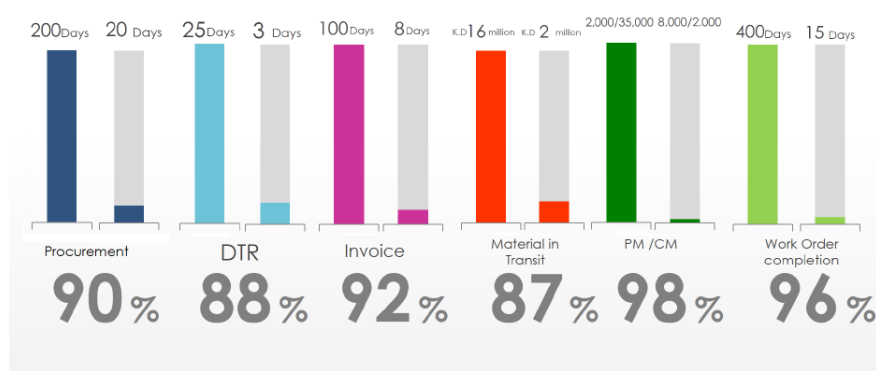
Maximo Oil and Gas brings together traditionally separate business functions into a single integrated platform that combines the most common business systems and departments such as finance, commercial, maintenance, and operations.

The project's implementation covers 7 KNPC sites with over 300 training sessions for 2562 users from maintenance, operation and HSE.

Some of the main components of the solution include Electronic work permits, Operator's logs, Risk Assessment, Work Conditions, Defect Elimination, and Failure reporting. KNPC is one of the first companies in the Gulf region with Electronic Work Permit implementation inside Maximo's Asset Management System.

One of the major challenges with implementing the solution was the standardization of business processes across various KNPC refineries and migrating all of them into a single platform. Additionally, transforming the work permit infrastructure into an electronic system instead of the previous manual methods.

Utilizing this solution, the KNPC reduces the data transfer rates from 25 days to 3 days, the invoice cycle times from 100 days to 8 days, the purchase cycle times from 200 days to 20 days and improves the procurement cycle immensely. In addition, the company decreased the time needed to complete asset maintenance and enhanced its work order preventative-maintenance versus corrective-maintenance ratio [PM/CM ratios (8,000/ 2,000) prior to Maximo (2,000/ 35,000)], and the average Material in Transit cost has been decreased dramatically from 16million KD to less than 2million KD.

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Future plans include upgrading to Maximo 7.6, which would introduce the latest technologies such as IoT (Internet of Things) where data collection will be fully automated, including analytics, preventative maintenance, and even predictive maintenance by utilizing AI technologies.