

**Refinery of the Future**  
**-- From Modular Design to Connected Plants**

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With economic development, high growth regions face two major challenges. The first one is how to provide transportation fuel to remote locations enabling fast installation and low capital and operating costs. The second one is how to provide operation guidance and optimization support remotely to the refineries which are lack in know-how and experience.

In this presentation, I will explain two emerging technology, modular refinery and connected plant. Honeywell UOP provides the modular refinery, which is a complete refinery solution: from process units to offsite utility provision. Application of process integration and equipment intensification makes the modular refinery with low capital and operating costs. In essence, the modular refinery consists of a key component, i.e. skid and each skid contains equipment and piping with related instrumentation and control. Skids design are preengineered, standardized and manufactured in advance. Skids are transported by ship or truck and assembled on site. In this manner, a modular refinery can eliminate much of the engineering and equipment purchasing time thus shorten the cycle from order to commission.

In parallel, Honeywell UOP's connected performance services performs around the clock monitoring and simulation combined with the embedded UOP experience to enable a more reliable and economic operation through a cloud platform. To do this effectively Honeywell Connected Plant provides a unique solution which connects the multiple aspects of a plant – the processes, people and assets – in order to provide a complete solution. This solution combines various capabilities that leverage a unified cloud platform, UOP domain knowledge, optimization capability to derive the right recommendations for the operating companies.