Upstream Process Performance: Non-Intrusive Capture of Large but Hidden Opportunities

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Abstract/Outline of keynote presentation: The authors are part of an ABB unit that have developed services and solutions for improved upstream process performance over the last 20+ years.

The kernel competency underpinning this development and the associated large end-customer value creation is the cross-disciplinary competency of dynamic behavior and operability of real-world physical systems, like oil- and gas production systems. Based on the affiliation of the authors, it might be surprising to learn that – at its core – this competency is completely independent of technology and systems.

We will share a decomposition and characterization of the dynamic process behavior – which is key to plant regularity and integrity – and use it as a basis for explaining why we believe the associated competency is hidden, the associated value is large, and that it can be captured non-intrusively at virtually no risk.

We will also provide a profile for the hidden competency and discuss how we think it relates to university education as well as the classical upstream disciplines like process, operations, production, reservoir, electrical, mechanical, and automation.

Next, we move on to discuss how we believe that operators and owners efficiently and sustainably can identify and capture such large but hidden opportunities. We do this by proposing ways to "embed" the hidden competency throughout the lifecycle of their assets - including our experienced value creation by doing so.

In the discussion on value capture, we will address topics ranging from contractual structures via digital technology enablers and project execution to acceleration of continuous improvement of operations.

Keywords: Process performance, process operability, process control, process dynamics, continuous improvement, cross discipline, offshore processing, oil and gas production, data science.

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