

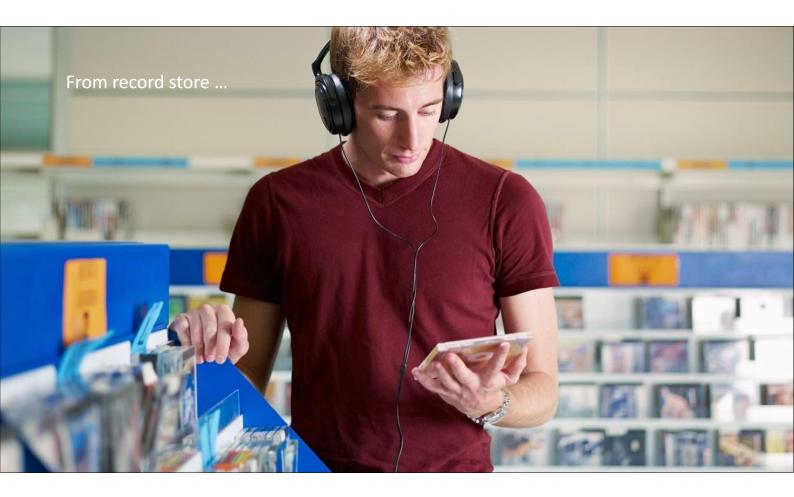
The Digital Twin in Process Industries From Integrated Engineering to Integrated Operations

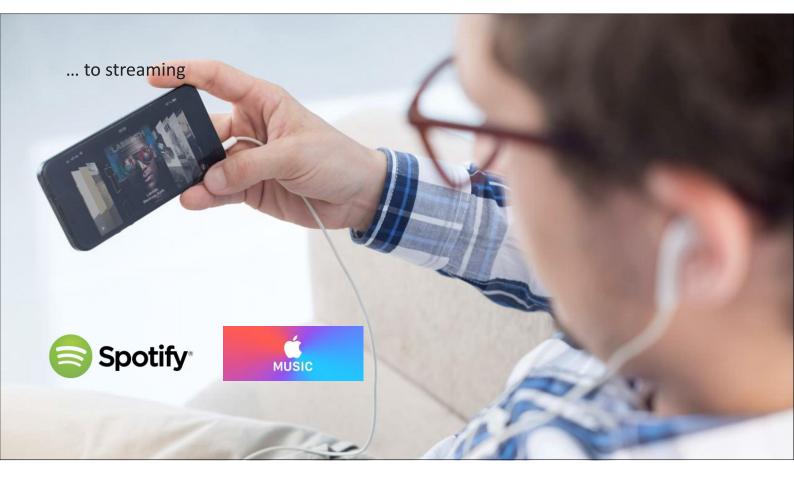
SPACe Vietnam | Ho Chi Minh City | 6 May 2019

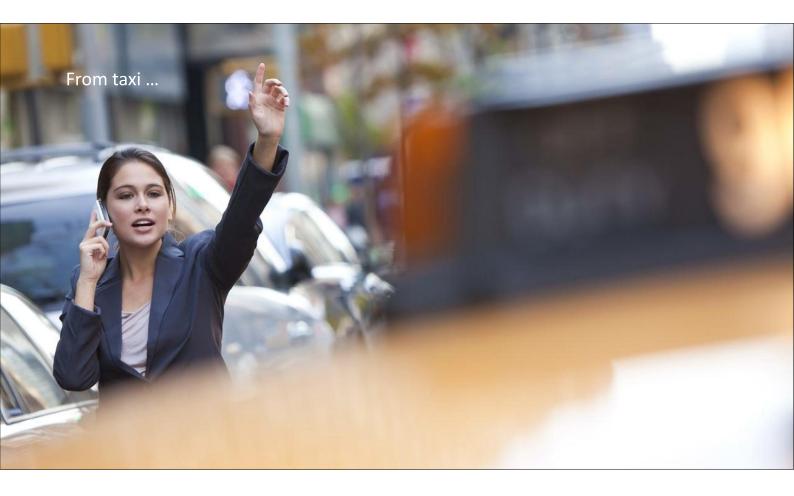
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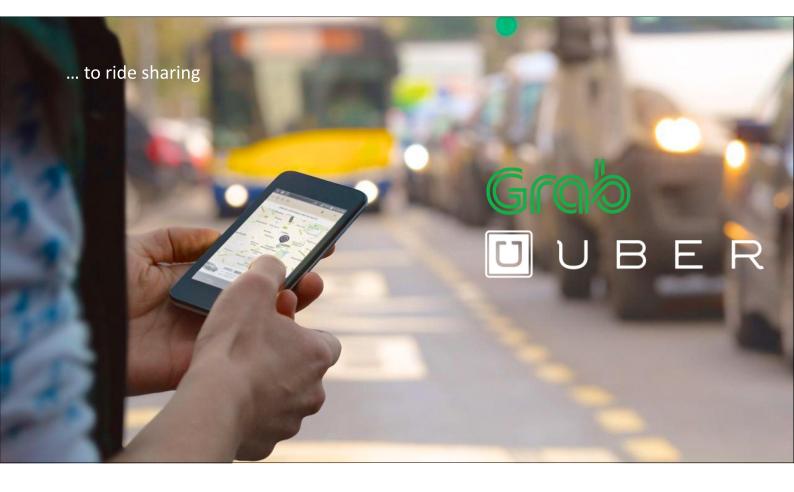
siemens.com

Digitalization changes everything











Siemens Digital Industries

Driving Digital Transformation Leveraging Industrial DNA

Process Industries

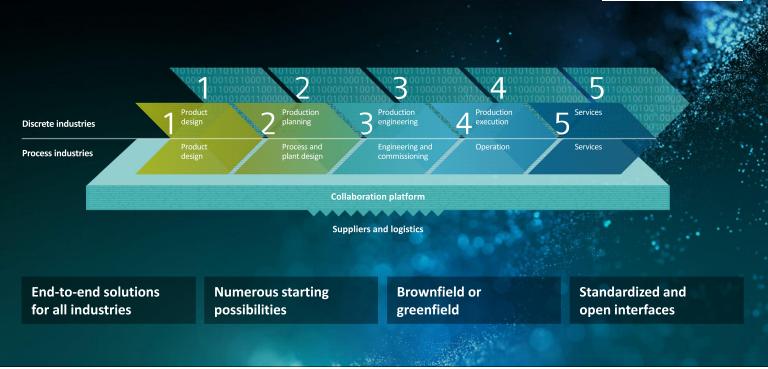


Discrete Industries



Integrating and Digitalizing the Entire Value Chain

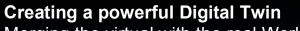
Siemens' unique Approach



SIEMENS

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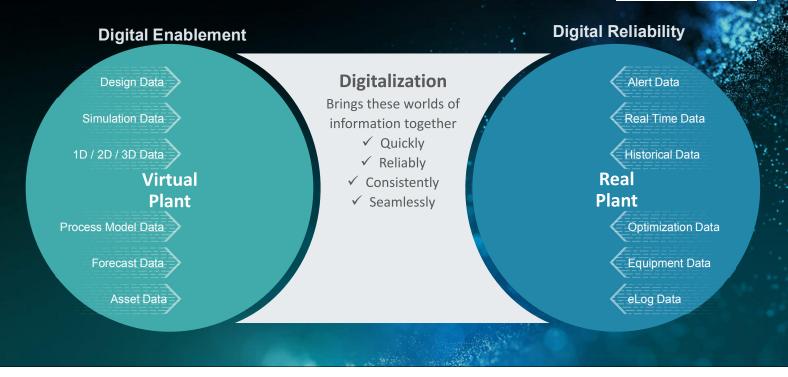
Ingenuity for life



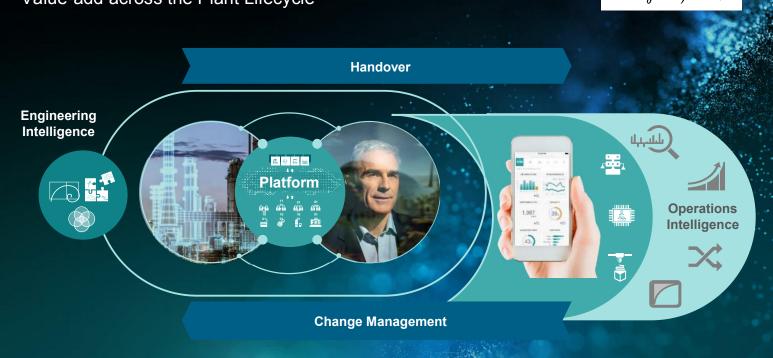
Merging the virtual with the real World Ingenuity for Life Performance data Virtual world Real world World Realize and optimize

Bridging the Virtual and Real Plant Digital Enablement & Digital Reliability

SIEMENS Ingenuity for life



Engineering & Operations Intelligence Value-add across the Plant Lifecycle

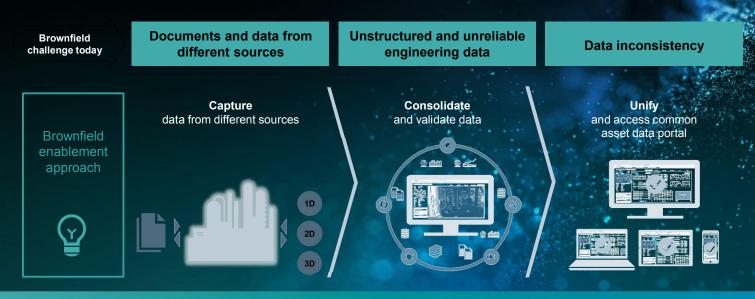


Brownfield Enablement Managing your Asset Integrity

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Digital Twin enablement without disruption to existing physical or virtual environment

Horizontal & Vertical Data Integration Holistic View on your Plant Assets' Performance

———Data hosted at	different Operational Level		
Enterprise System and Platforms	Historian, ERP, CMMS, Batch, Inventory, Sales & Finance	L L	Operations Intelligence
Control System and Engineering	PLCs, DCS, SCADA, Logical data, P&ID, EI&C	Vertical Integration	Engineering Intelligence
Instrument and Devices	Field devices, sensors, motors, Edge devices, workpieces, tools etc.	<pre></pre>	IOT Platform
Hori			



Creating your Plant's Digital Twin

Business Priorities driving Digital Agenda Key Parameters





SPEED



FLEXIBILITY



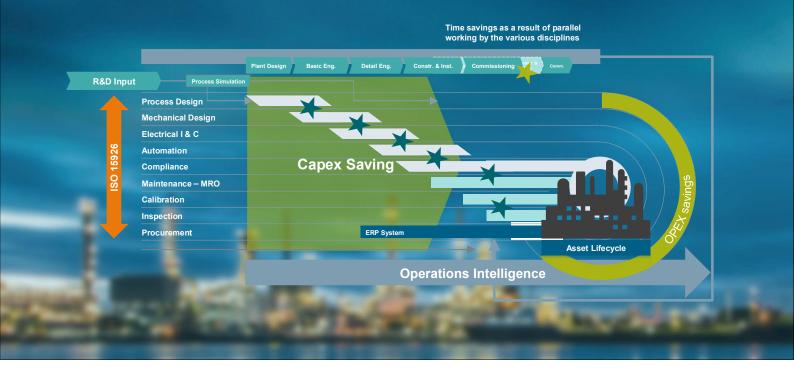
EFFICIENCY



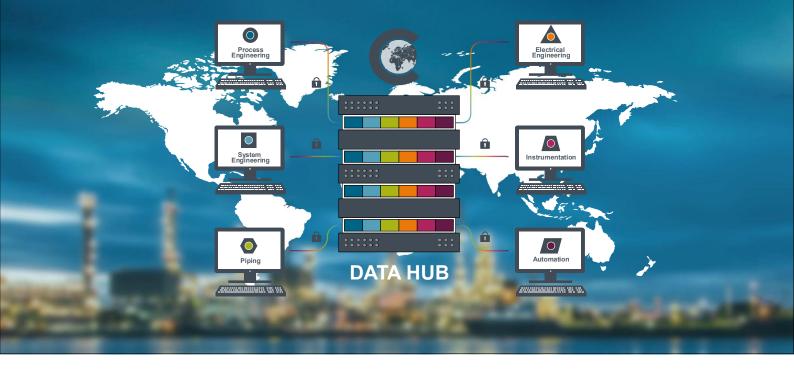


Accelerated Start-up & ROI Integrated Data Backbone





COMOS Plant Life Cycle Engineering and Asset Management *One* Data Hub



COMOS Plant Life Cycle Engineering and Asset Management *One* Data Hub

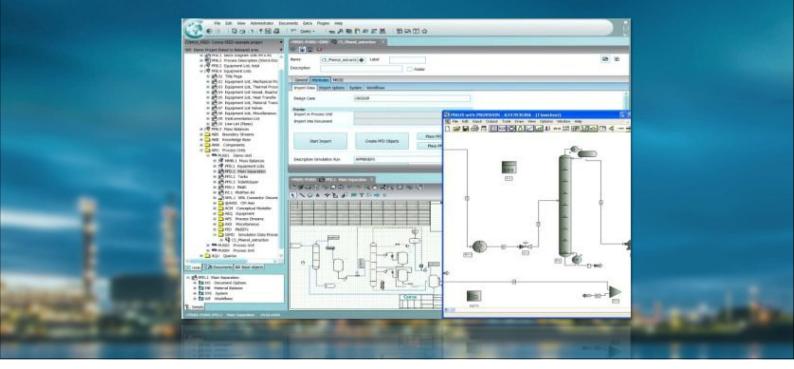
Ingenuity for Life COMOS – Making data work.



COMOS Plant Life Cycle Engineering and Asset Management *One* Data Hub

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COMOS Plant Life Cycle Engineering and Asset Management *One* Data Hub

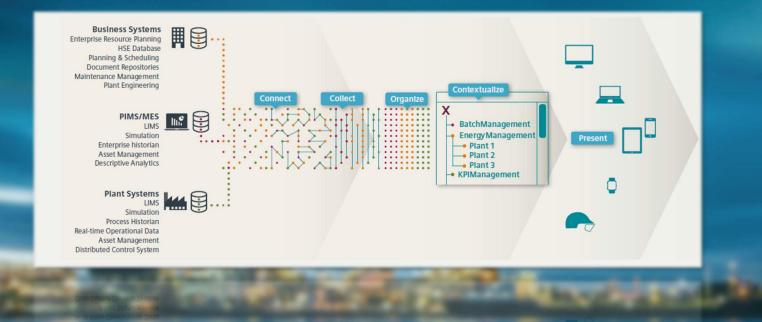


XHQ Operations Intelligence Translating Disparate Data into Meaningful Information

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XHQ Operations Intelligence Translating Disparate Data into Meaningful Information

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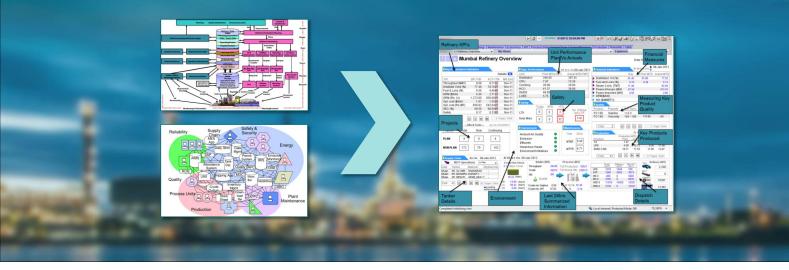
Digital Twin Engineering & Operations Intelligence



Customer Reference Business Performance Management & Intelligence System



- Single view to monitor and manage all critical business processes and activities
- Data integration technology to be real-time and data source vendor agnostic
- Integration of refinery systems and business applications (DCS, IP21, MES, LIMS, SAP, In-House Apps)
- Annual savings of 13.5M USD

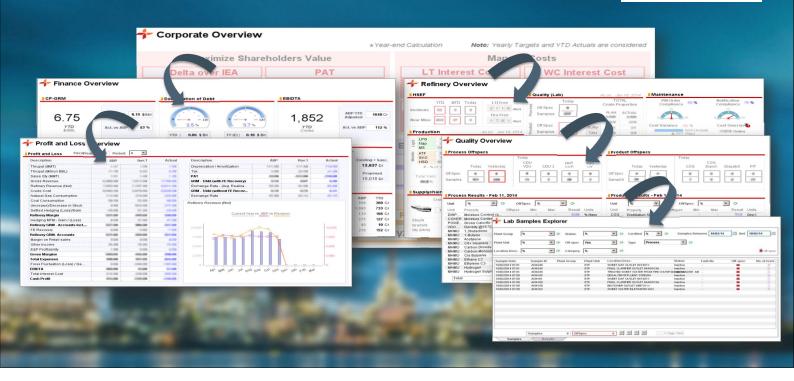


Customer Reference Unleash Business & Operations Data

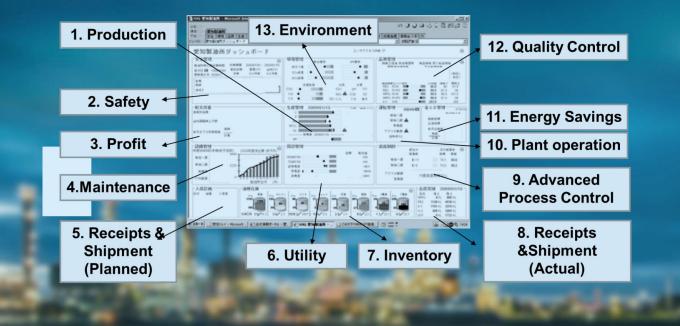
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Customer Reference Unleash Business & Operations Data

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Customer Reference Unleash Business & Operations Data



Customer Reference Production Monitoring in Pharmaceutical Batch Plant

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Business Impact Operations Performance Improvement

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8% Reduction in the operating costs



9% increase in facility utilization



2.5% increase in operational availability



11% increase in production

Thank you





Tobias Botzenhardt Vice President Asia Pacific Enterprise Data Intelligence and Analytics

60 MacPherson Road 348615 Singapore

Phone:+65 6843 1141Fax:+65 6843 1189Mobile:+65 9173 2498

E-mail: tobias.botzenhardt@siemens.com

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Page 31 XHQ Operations Intelligence Software

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