

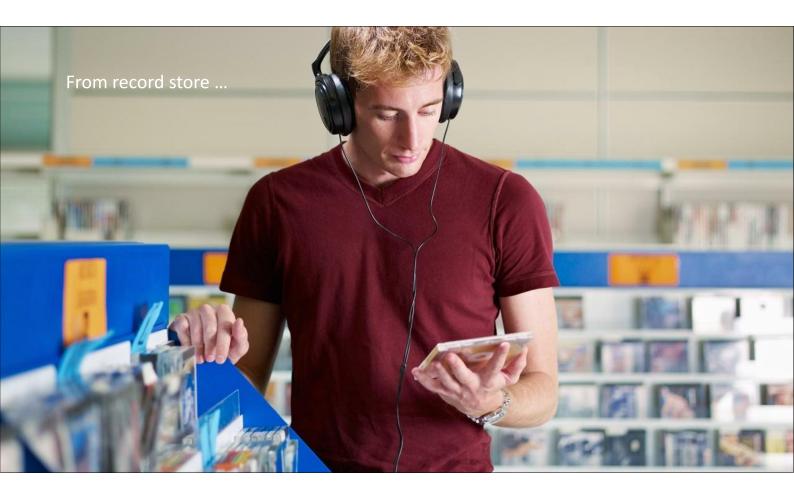
### The Digital Twin in Process Industries From Integrated Engineering to Integrated Operations

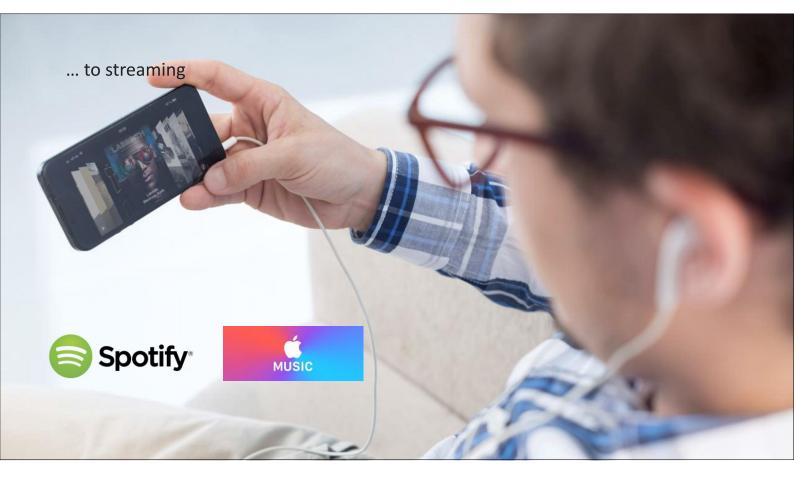
SPACe Vietnam | Ho Chi Minh City | 6 May 2019

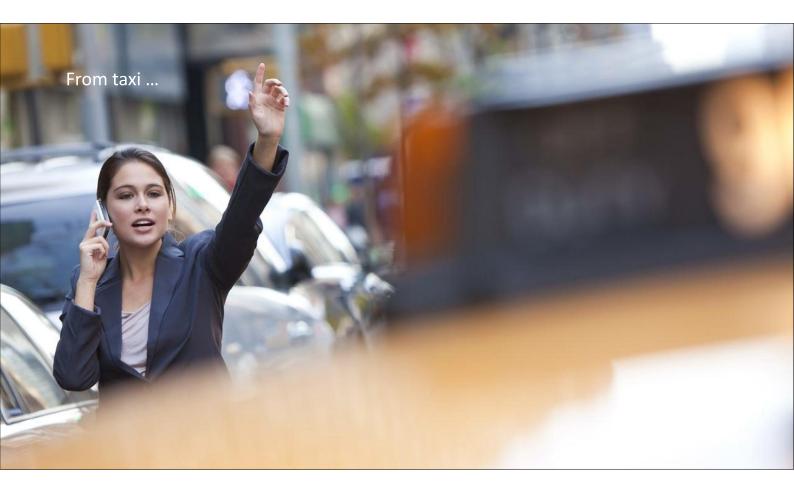
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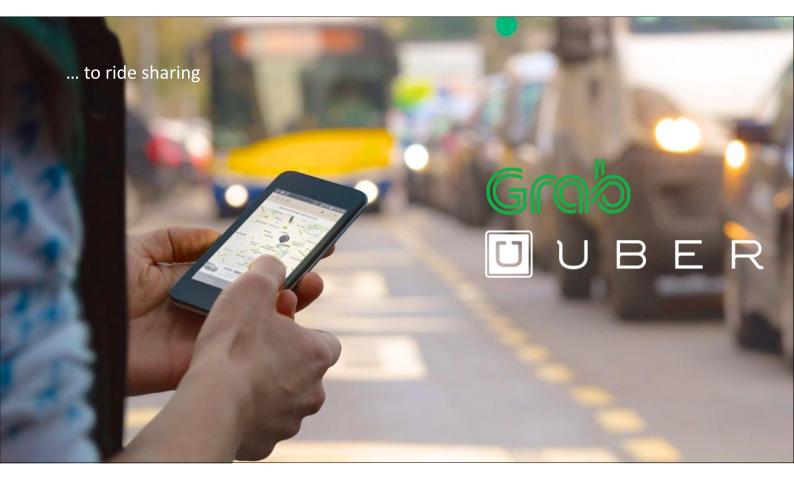
siemens.com

# Digitalization changes everything











### **Siemens Digital Industries**

#### **Driving Digital Transformation** Leveraging Industrial DNA

#### **Process Industries**

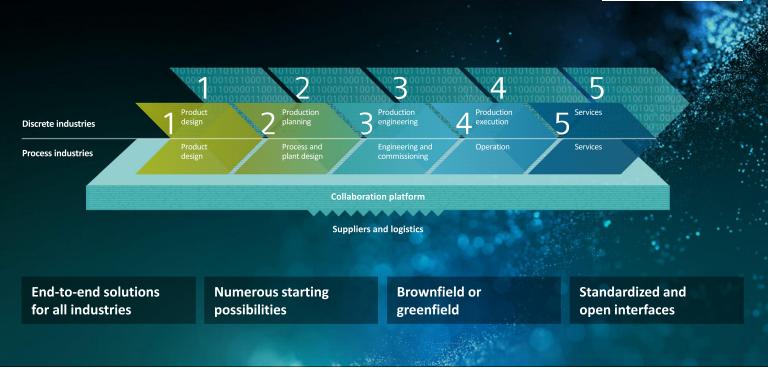


#### **Discrete Industries**



#### Integrating and Digitalizing the Entire Value Chain

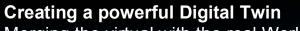
Siemens' unique Approach



**SIEMENS** 

**SIEMENS** 

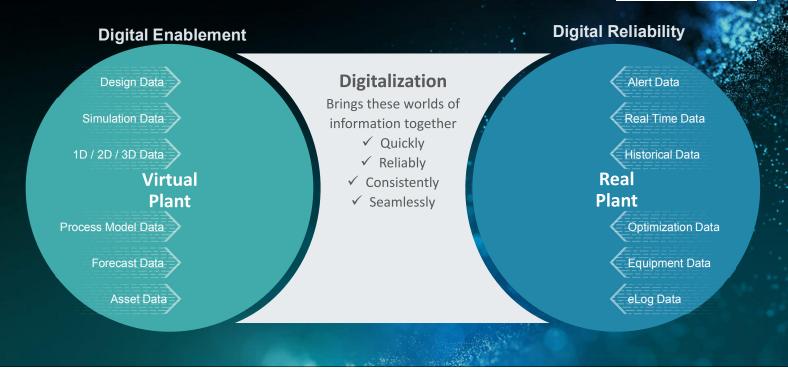
Ingenuity for life



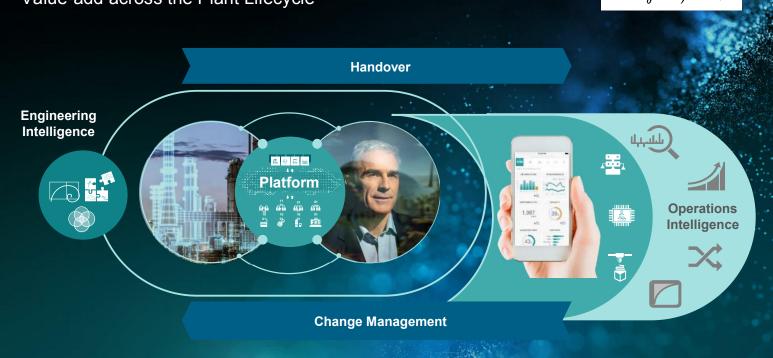
Merging the virtual with the real World Ingenuity for Life Performance data Virtual world Real world World Realize and optimize

#### **Bridging the Virtual and Real Plant** Digital Enablement & Digital Reliability

#### SIEMENS Ingenuity for life



#### Engineering & Operations Intelligence Value-add across the Plant Lifecycle

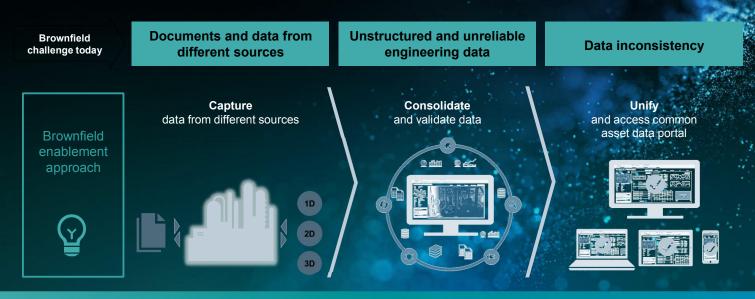


#### **Brownfield Enablement** Managing your Asset Integrity

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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



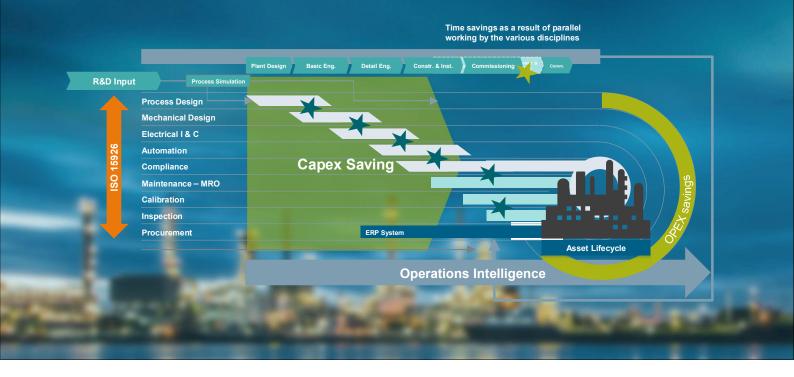
EFFICIENCY



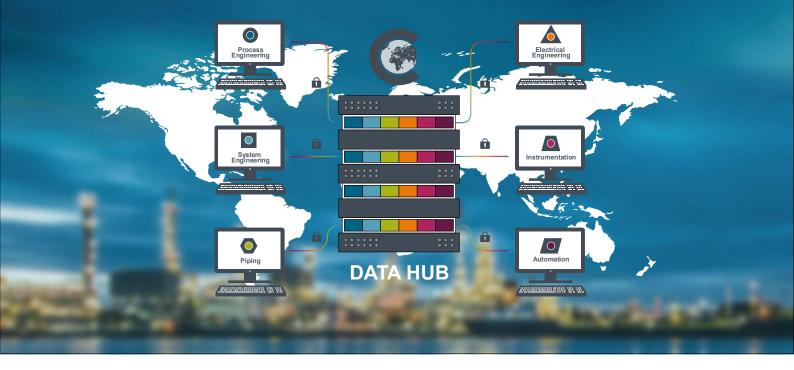


#### Accelerated Start-up & ROI Integrated Data Backbone





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



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

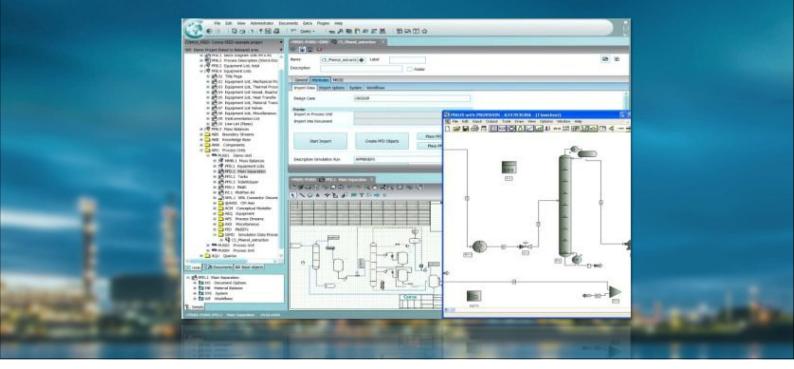
## Ingenuity for Life COMOS – Making data work.



#### **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

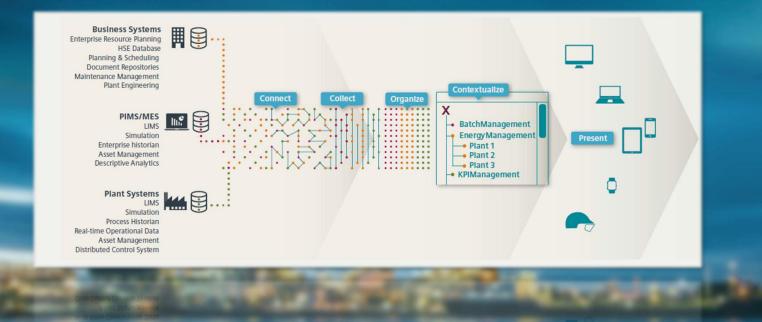


#### **XHQ Operations Intelligence** Translating Disparate Data into Meaningful Information

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#### **XHQ Operations Intelligence** Translating Disparate Data into Meaningful Information

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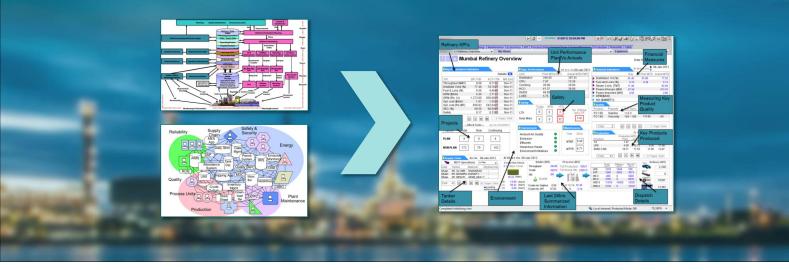
#### **Digital Twin** Engineering & Operations Intelligence



#### 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

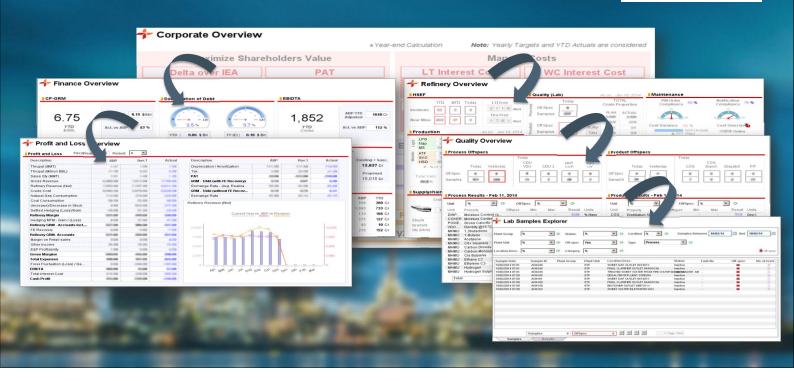


#### **Customer Reference** Unleash Business & Operations Data

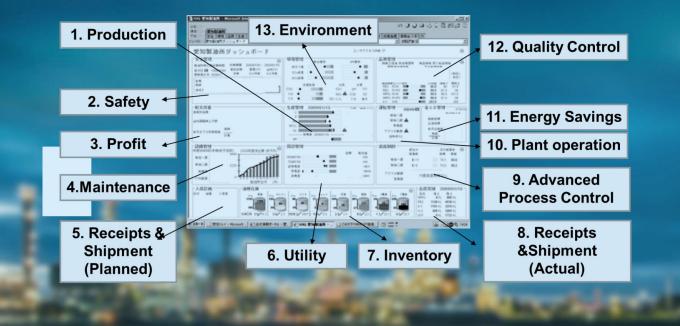
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#### Customer Reference Unleash Business & Operations Data

#### SIEMENS Ingenuity for life



#### **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





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