SAP Leonardo Industry Innovations: Chemical Industry

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Agenda

Chemicals Industry Trends
- Need to Transform

Challenges
- Systems, Technology, and Risk

Digital Transformation Enabler
- Portfolio of Systems, Platform, and Methodology

Customer Success Stories
- BASF and Stara

Next Steps
Key takeaways

External dynamics forcing the chemicals industry to transform

Digital technologies that can intelligently connect people, things, and business

Methodology, platform, and a portfolio of systems to innovate and transform
Global trends in the chemicals industry …

- Globalization and increased investment on capacity, which has resulted in extreme competition
- Changing regulation, rising protectionism, and increasing geopolitical uncertainty
- Compression of commoditization cycle
- Rise of digitalization and hyperconnectivity

Source: Capital spending by region, The European Chemical Industry Council
... have resulted in

- Erosion of EBIDA 1% to 2% year over year without recession
- Accelerated M&A for portfolio consolidation
- 50% of top-quintile chemical companies from 2000 to 2004 being no longer present
- Increased cost-cutting pressures
- Need to be agile and resilient
- Need for increased customer intimacy

Source: 2017 Chemicals Trends, PWC

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Digital trends transforming the chemicals industry

Early adopters of new technologies are winning by focusing on digital innovations.

58%
Of chemical companies are embracing digital to gain competitive advantage¹

Successfully using new technologies will be the foundation for digitalization and innovation.

94%
Of chemical executives expect to increase investment in digital capabilities²

Of 87%: say that those companies that don’t embrace digital will lose their competitive edge and may face extinction²

Significant value will be created by embracing new digital technologies.

The Value addition due to Digitization in Chemicals cumulated for period 2016 to 2025 ranges from $310-$550 billion

Digitalization will revolutionize the chemicals industry.

“Digital can give chemical companies the power to unlock more than $200 billion of new value by reducing cost to serve, improving pricing, and, for fast movers, capturing growth from competitors.”⁴

Sources:
1 & 2 Accenture Global Digital Chemical Survey, Accenture 2014
3 “Digital Transformation Initiative: Chemistry and Advanced Materials Industries” report published by the World Economic Forum (WEF) in collaboration with Accenture
4 Demystifying digital marketing and sales in the chemical industry, McKinsey, 2017

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Digitalization has potential to reduce CO₂ emission by 60-100 million tonnes, save 20-30 lives and avoid 2000-3000 injuries over the next decade³

“Digital can give chemical companies the power to unlock more than $200 billion of new value by reducing cost to serve, improving pricing, and, for fast movers, capturing growth from competitors.”⁴
**Digital** unlocks significant economic value for the chemicals industry and touches all areas of the company.

PwC sees an overall 5% to 9% potential in total EBITDA* improvement for chemical companies.

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*EBITDA – Earnings before interest, tax, depreciation, and amortization


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However, digital leaders face **technology barriers** …

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<th>Technological innovation</th>
<th>Emerging, disruptive technologies and processes</th>
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<th>Enterprise assets and OEM equipment at customer sites</th>
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And face questions on **size, scope, and outcomes** of innovation projects

Where do we start?

Do we need to make a large up-front investment?

How can we integrate digital with everything we already do?

How soon can we expect to see real outcomes?

How can we scale our innovations across our businesses?
To transform chemical companies, prioritize new business models and processes

Strategic priorities:

1. Product innovation
   Simplify to shrink cycle time; compete as an ecosystem
   - Industry 4.0–enabled products and solutions; IT and OT integration
   - Adjusting strategy and portfolio dynamically in response to market opportunities and needs
   - Integrating with both customer and supplier supply chains to unlock superior value

2. Process innovation
   Increase market-driven strategic agility
   - Adaptive logistics
   - Resilient production
   - Energy management
   - Predictive maintenance and service
   - Using digital technology to streamline operations and maximize asset performance

3. Business model innovation
   Deliver customer outcomes, not products
   - Serving the “segment of one”
   - Rethinking the value chain from the customer perspective
   - Performance and usage-based contracting and billing
The digital chemical company
Use cases and innovations driving value

**Procurement**
- Automation and self-service
- Spend and predictive analytics
- Procurement cloud
- Supplier collaboration

**Enterprise**
- Agile, modular architectures
- Enterprise data hub and analytics
- Digitalized business process models
- Digital HR and talent collaboration

**Supply chain**
- Asset utilization and tracking
- Supply chain control tower
- Intermodal logistics visibility
- Reliability services
- Blockchain
- Warehouse robotics

**Plant**
- Digital asset management and maintenance
- Digital worker
- Contractor management
- Safety and environment monitoring
- Digital operating procedures
- IT/OT convergence
- Wireless connectivity and devices

**Sales and marketing**
- Next-generation CRM
- Dynamic price and margin management
- Digital marketing and commerce
- Connected consumer
- Sales enablement
- Predictive analytics and demand sensing
Our vision: SAP Digital Transformation Framework

SAP HANA

SAP Cloud Platform

Supplier Collaboration

Customer Experience

Digital Core

Business Transactions

Intelligent Insights

Workforce Engagement

Assets & Supply Chain

SAP Hybris

SAP Fieldglass

SAP Ariba

CONCUR

SAP SuccessFactors
SAP Leonardo
Digital Innovation System

Design Thinking Services
Solution Ideation & Vision
Rapid Prototyping
Business Case Development
Technology Blueprint

SAP Leonardo Capabilities

Analytics
Blockchain
Internet of Things
Machine Learning
Big Data

SAP Cloud Platform
Microservices | Open APIs | Flexible Runtimes | Integration

Multi-Cloud Infrastructure
SAP Data Center | Google Cloud Platform | Microsoft Azure

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SAP Leonardo Industry & LoB Innovation Accelerators

**DESIGN THINKING**

- Industry / LoB knowledge
- Software
- Express Edition Service

- Fixed price **bundles**
- Target **common use cases** for a 70-80% fit
- Timeline to value in **weeks not years**

### Retail
- Assets
- Logistics
- Store*
- Inventory*
- Shelf*
- Cold Chain*

### Consumer Products
- Assets
- Logistics
- Manufacturing*
- Cold Chain*
- Consumer*

### Discrete Manufacturing
- Logistics
- Service & Assets
- Spare Parts

### Chemicals
- **Spare Parts**
- **Service & Assets**

### Travel and Transportation
- Logistics

### Utilities
- **Service & Assets**

### Sports & Entertainment
- Venue
- Team
- Fans*

### Predictive Maintenance and Service

### Asset Intelligence Network

### Connected Goods

### Global Track and Trace

### Distributed Manufacturing

### Vehicle Insights

### Digital Manufacturing Insights

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How do we engage with customers to innovate using SAP Leonardo?

Unlike off-the-shelf software, innovation requires collaboration and idea sharing.
Chemical Factory with Operations fully digitized, connected and automated

**Digital twin for Connected manufacturing**
Real-time visibility of shop floor operations; intelligent production

**SAP Predictive Maintenance and Service**
Condition monitoring | alerting | vibration analysis | predictions

**Real-time visibility of shop floor operations**
SAP Connected Manufacturing, Digital twin

**Monitoring product performance and taking action**
SAP Predictive Maintenance and Service

**Order of replacement parts and services from a business network**
SAP Ariba and SAP Fieldglass solutions

**SAP Asset Intelligence Network**
Up-to-date service documentation
Spare parts and replacement
Performance benchmarking

**Things to insight**

**Insight to action**

**Action to outcomes**

Manufacturer  
Customer  
Service technician

Asset operator
BASF: Realizing digital across its business
Stara: Bringing IoT to Agribusiness with SAP HANA® Cloud Platform and SAP® ERP Central Component

Company
Stara S/A Indústria de Implementos Agrícolas

Headquarters
Não-Me-Toque, Brazil

Industry
Industrial machinery and components

Products and Services
Manufacture and sale of agricultural machiner

Employees
2,500

Web Site
www.stara.com.br

Partner
SAP Labs
www.sap.com

Objectives
- Integrate agricultural machinery sensors with the SAP HANA® Cloud Platform
- Transfer data about planting, soil preparation, fertilizing, soil correction, spraying, and harvesting in real time
- Integrate data with the farm management software to enable real-time analysis

Why SAP
- Integration with SAP® ERP Central Component and the SAP HANA platform
- The possibility of using cloud computing

Resolution
- Developed a telemetry solution in partnership with SAP Labs
- Enabled farmers to monitor critical farming processes
- Gave farmers metrics to make decisions in real time about business-critical processes

Benefits
- Real-time monitoring of vital farm processes
- Tracking of work targets as defined in the crop planning process
- Better management of farm and planted areas
- Fewer losses from overlapping (planting areas already planted)
- Higher performance of operators and machinery

"When we launched our telemetry solution, our customers came to us saying they would like to have the data in their ERP software. We integrated the applications and presented a prototype."

Cristiano Paim Buss, R&D Director, Stara S/A Indústria de Implementos Agrícolas

100%
Reliability of the data sent to SAP ERP Central

100%
Faster information retrieval for decision making

More
Efficient cost control
Key takeaways

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Methodology, platform, and a portfolio of systems to innovate and transform
Next step: Conduct an exploration workshop together

Find the right path
Strategize use cases
Build the road map to innovation

How do I see innovation in action?
Visit SAP Leonardo Centers in New York or Palo Alto, California
Thank you.

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