



# SAP Leonardo Live

Not just another business conference

## SAP Leonardo Industry Innovations: Chemical Industry

Anand Sundar, SAP

PUBLIC

# Agenda

## Chemicals Industry Trends

- Need to Transform

## Challenges

- Systems, Technology, and Risk

## Digital Transformation Enabler

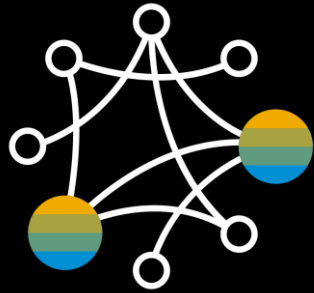
- Portfolio of Systems, Platform, and Methodology

## Customer Success Stories

- BASF and Stara

## Next Steps

# Key takeaways



External dynamics forcing the chemicals industry to transform



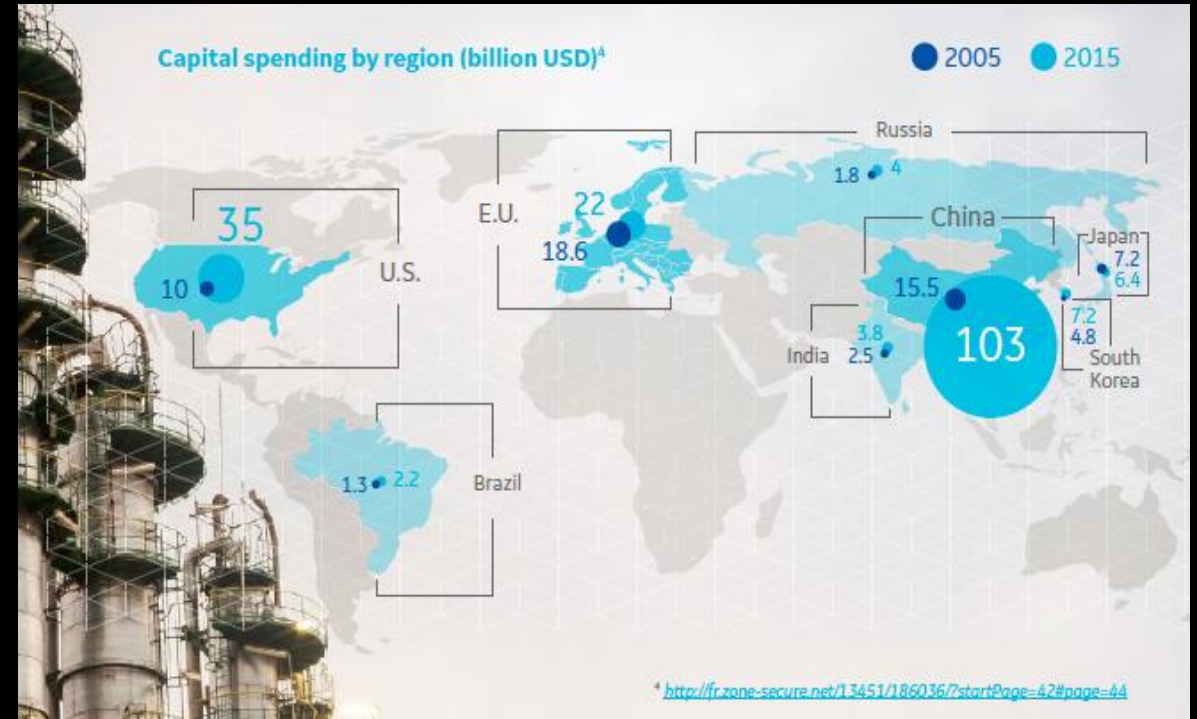
Digital technologies that can intelligently connect people, things, and business



Methodology, platform, and a portfolio of systems to innovate and transform

# Global trends in the chemicals industry ...

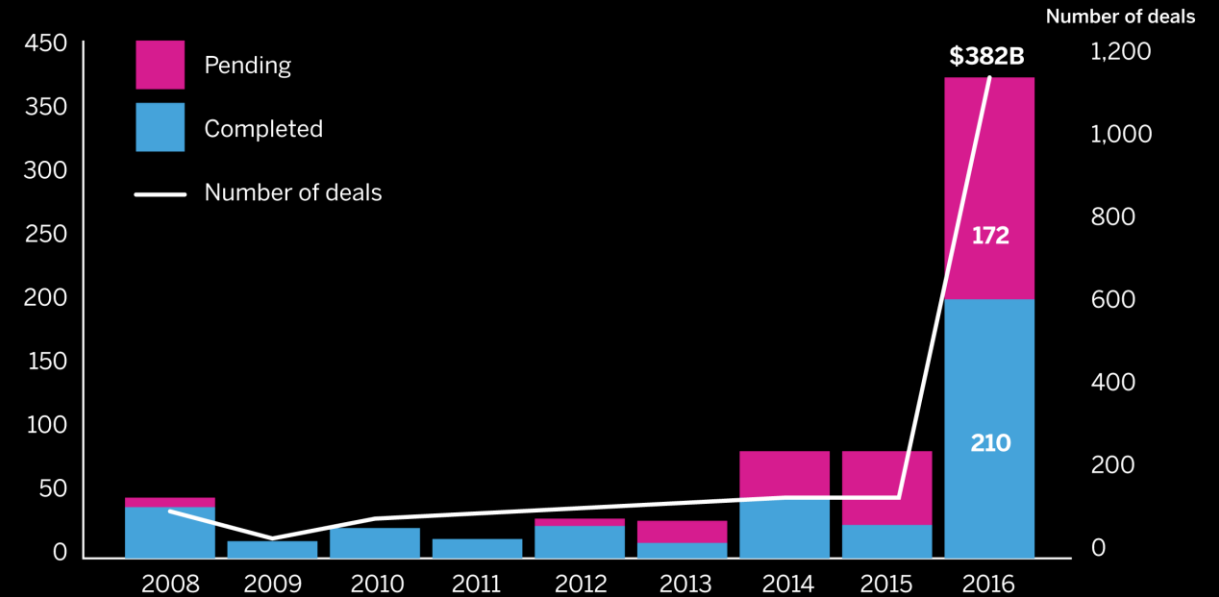
- Globalization and increased investment on capacity, which has resulted in extreme competition
- Changing regulation, rising protectionism, and increasing geopolitical uncertainty
- Compression of commoditization cycle
- Rise of digitalization and hyperconnectivity



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



Chem Industry M&A Activity (Deals > \$10M)

Source: [2017 Chemicals Trends, PWC](#)

# 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 advantage<sup>1</sup>



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

**94%**

Of chemical executives expect to increase investment in digital capabilities<sup>2</sup>

**Of 87%:** say that those companies that don't embrace digital will lose their competitive edge and may face extinction<sup>2</sup>



**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**

Digitization has potential to reduce CO<sub>2</sub> emission by 60-100 million tonnes, save 20-30 lives and avoid 2000-3000 injuries over the next decade<sup>3</sup>



**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**."<sup>4</sup>

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](#)

# 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.



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

Sources: PwC. "2017 Chemical Industry Trends – Delivering profitable growth in a hypercompetitive, low-growth world."

# However, digital leaders face **technology barriers** ...

## Technological innovation

Emerging, disruptive technologies and processes



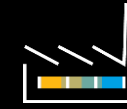
Predictive quality



Smart products



Digital twin



Connected manufacturing



Predictive maintenance



Connected logistics

## ERP

ERP and back-office business systems



## Enterprise assets

Enterprise assets and OEM equipment at customer sites





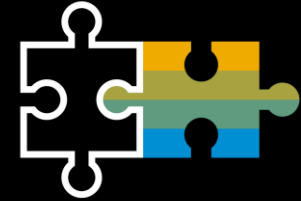
# And face questions on **size, scope, and outcomes** of innovation projects



Where do we start?



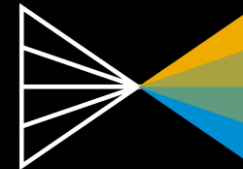
Do we need to make a large up-front investment?



How can we integrate digital with everything we already do?



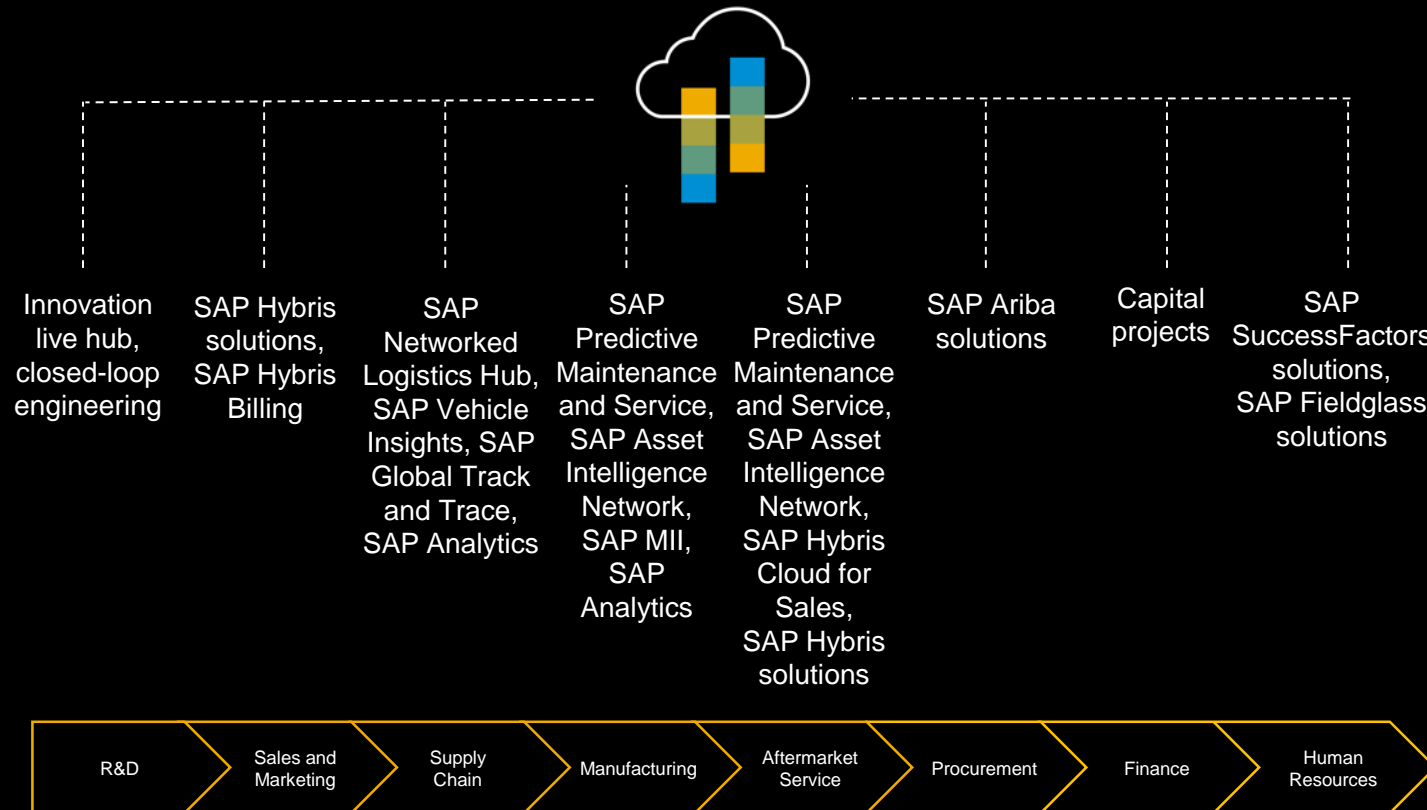
How soon can we expect to see real outcomes?



How can we scale our innovations across our businesses?

# To transform chemical companies, prioritize new business models and processes

## New business scenarios



## 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



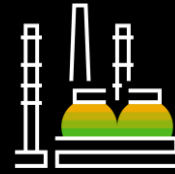
### Enterprise

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



### Plant

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



### Supply chain

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

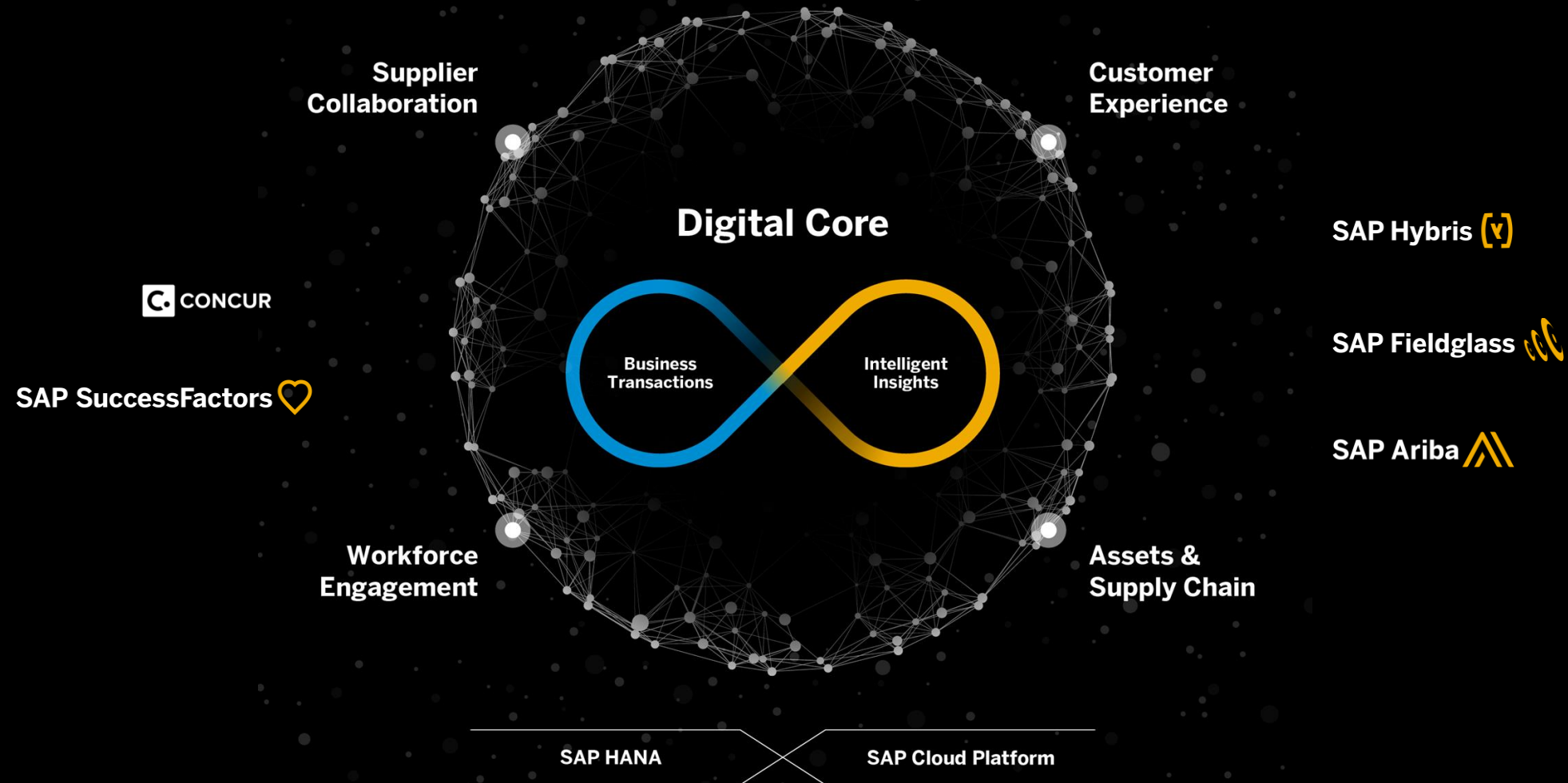


### Sales and marketing

- 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 Leonardo

## Digital Innovation System

Design Thinking  
Services

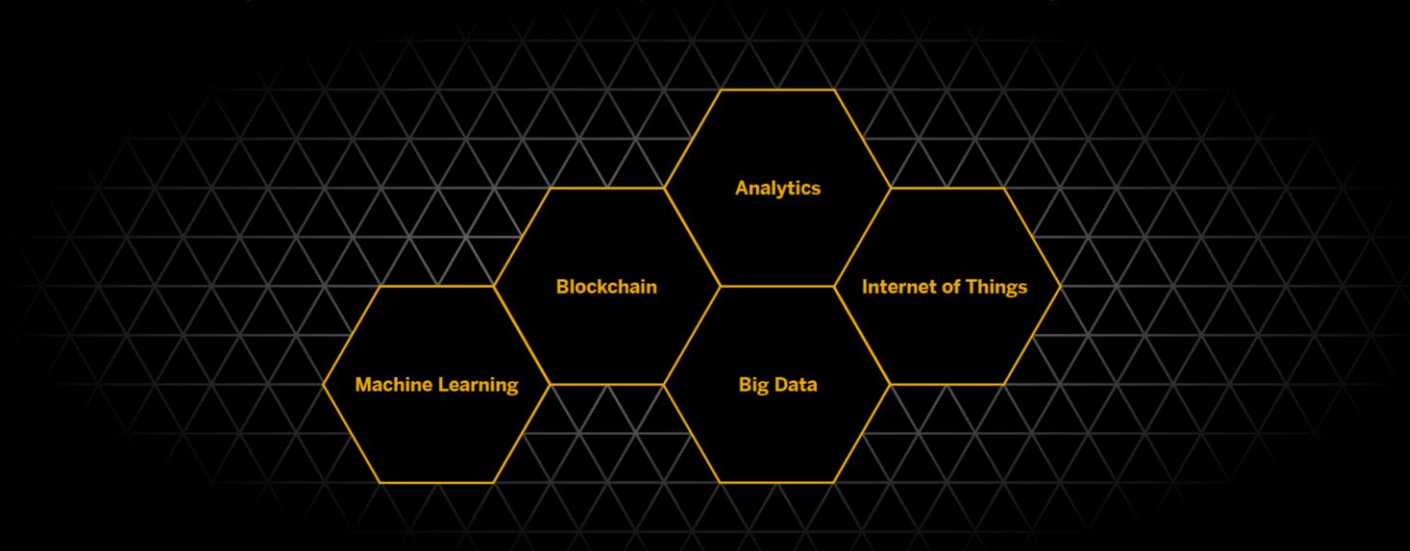
Solution Ideation  
& Vision

Rapid  
Prototyping

Business Case  
Development

Technology  
Blueprint

SAP Leonardo  
Capabilities



SAP Cloud Platform

Microservices | Open APIs | Flexible Runtimes | Integration

Multi-Cloud Infrastructure

SAP Data Center

 Google Cloud Platform

Microsoft Azure

 amazon  
web services

# 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**

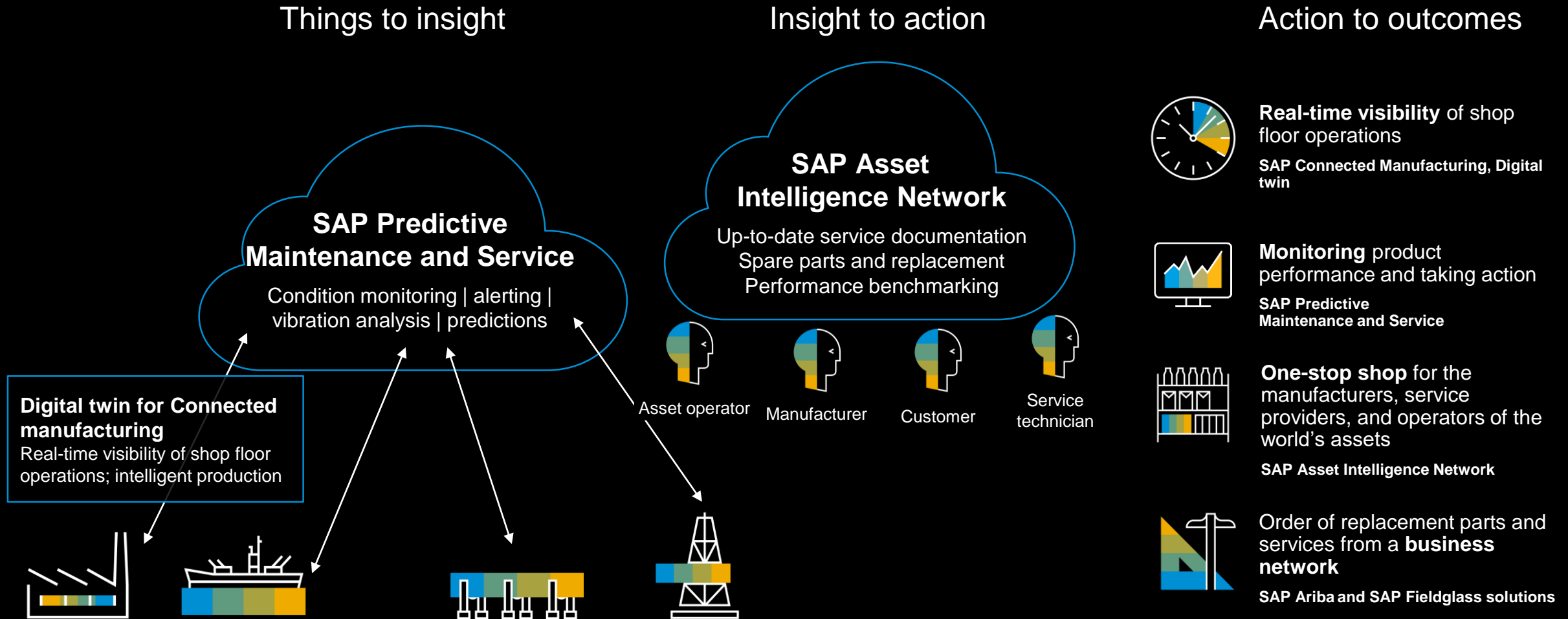
**Digital Manufacturing Insights**

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

Unlike off-the-shelf software, **innovation** requires collaboration and idea sharing

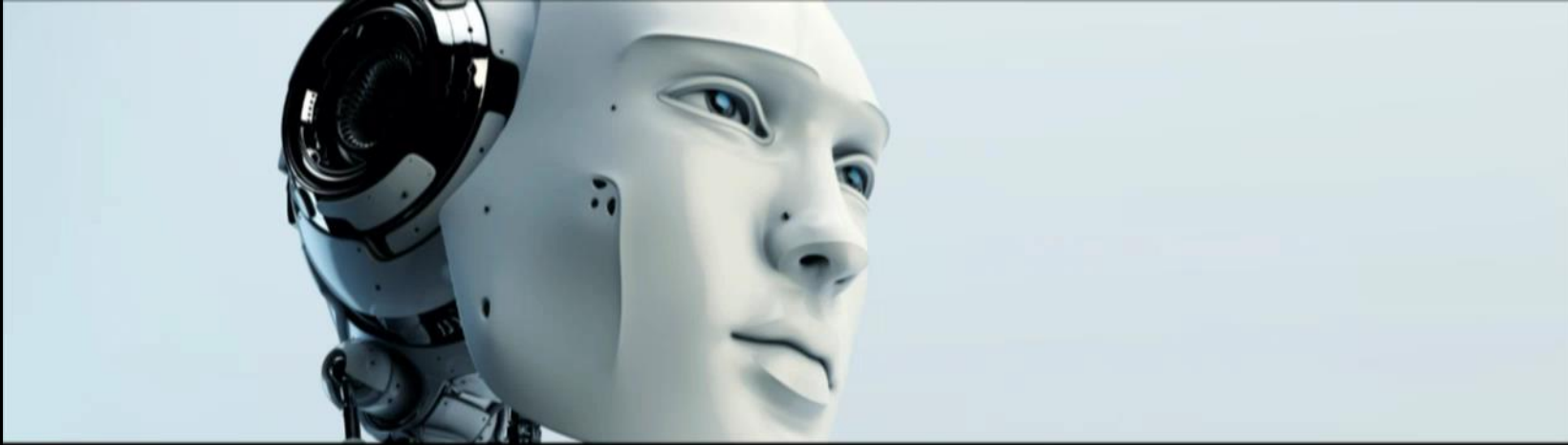


# Chemical Factory with Operations fully digitized, connected and automated





# BASF: Realizing digital across its business



## Build Your Intelligent Enterprise with Machine Learning **A Case Study with BASF**

Dr. Markus L. Noga  
Vice President, Machine Learning  
SAP SE

Wiebe van der Horst  
Chief Information Officer  
BASF Group



@MLNoga  
@SAPLeonardo

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# 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 machinery

## Employees

2,500

## Web Site

[www.stara.com.br](http://www.stara.com.br)

## Partner

SAP Labs

[www.sap.com](http://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

**100%**

Reliability of the data sent to SAP ERP Central

**100%**

Faster information retrieval for decision making

**More**

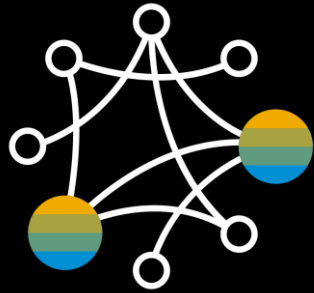
Efficient cost control

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“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

# Key takeaways



External dynamics forcing the chemicals industry to transform



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

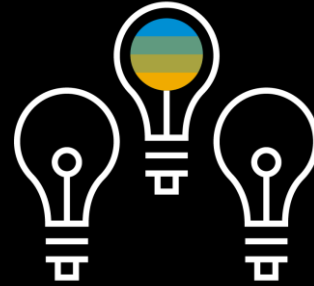


Methodology, platform, and a portfolio of systems to innovate and transform

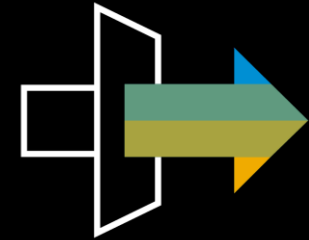
## Next step: Conduct an exploration workshop together



**Find the right path**



**Strategize use cases**



**Build the road map to innovation**

**SAP Leonardo**

**How do I see innovation in action?**

Visit [SAP Leonardo Centers](#) in New York or Palo Alto, California

# Thank you.

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