Harnessing data to fuel continuous improvement in the chemicals industry

SIGHT MACHINE

The data imperative

As the chemical industry prepares to enter the next decade, companies' survival could hinge on their ability to harvest insights from an ever-increasing deluge of data.

Several key structural changes are driving this data imperative:

- Global Chemical sales are expected to double by 2030, reaching nearly €6.6 trillion. [1]

- There is a material cost imbalance between Europe and North America. [2]

- Regulatory costs rising, particularly in the EU. The EU Chemical Regulatory Cost Index doubled from May 2004 to April 2014. [3]

Margins across the entire chemical supply chain are converging — bulk, diversified, specialty — forcing chemical companies to focus on improving production operations.

To significantly boost manufacturing productivity and competitiveness in a time of dramatic structural upheaval, chemical manufacturers need to take a different approach.

1. Cefic Chemicals International 2018
2. ICIS and Cefic analysis 2018 (2H2018)
3. EU Commission Report, "Cumulative Cost Assessment (CCA) for the EU Chemical Industry" (11 July 2016)

Real-time, System-wide visibility

The next level of continuous improvement in the chemical industry will be driven by data —, or, more specifically, by chemical manufacturers' ability to use all of their data, regardless of its format or where it was created.

Unfortunately, industry players often struggle to make this happen. Like their counterparts in many other industries, chemical companies typically generate a flood of production data — but only a trickle of insight. Data from multiple sources isn't integrated, so there is no scalable way to understand the interrelationships between machine data and production events. In addition, because information isn't shared across functional boundaries, there is no ability to drive cross-plant optimization and continuous improvement.
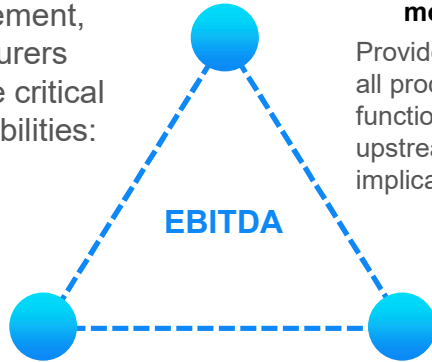
3 essential data capabilities enable continuous improvement

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To reach the next level of continuous improvement, chemical manufacturers must possess three critical data-handling capabilities:

1 System-wide models

Provides an integrated view of all processes, assets, functions, and plants, including upstream and downstream implications

EBITDA

2 Real-time streaming

Enables informed decisions on current production activity

3 Digital manufacturing expertise

Ensures production operations can work with data, end-to-end

The Sight Machine platform offers all three capabilities:

- **First, it collects data** from across an entire chemical making company — from feedstock, to intermediary and specialty processing, to the end-user application.

- That information is then **assembled**, **contextualized**, and **leveraged** to present a single source of truth for the entire organization.

- Finally, the data is **modeled** into a "digital twin" that mirrors the complete production process, transforming data into actionable intelligence to solve previously intractable problems.
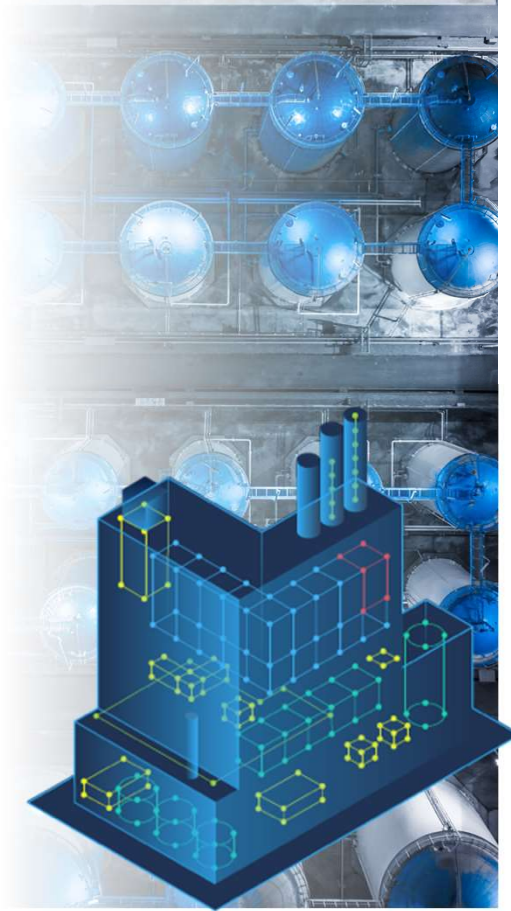
Case Study

Asian Paints uses plant data to reduce cycle time

Asian Paints was looking to improve visibility into the factors affecting production. The complex interdependencies (machines, process parameters, and materials) made it difficult and time consuming to determine the root causes of issues and optimize production cycles.

Sight Machine's platform transformed plant data into a digital model of the entire production process, identifying and quantifying contention and bottlenecks. This resulted in a 7% reduction in cycle times and significant savings per facility.

asianpaints

Bottom-line impact: improved productivity, lower costs

By using Sight Machine to leverage data across the entire company, chemical manufacturers can maximize the value they derive from their aging assets, while minimizing the costs of production.

These lower costs will help manufacturers absorb rising raw material costs and more aggressively pursue production of premium-priced chemicals – using current automation capabilities and data that already exists. Continuous improvement has never been easier.

To learn more about how chemical manufacturers are improving production with system-wide data visibility, visit **sightmachine.com/solutions/chemicals/**