# Harnessing machine learning in the chemical sector

## Roundtable comments from Ravi Joshi

**With machine learning, chemical companies can make critical decisions more quickly — and gain deeper insights into what lies ahead.**

### EY's Ravi Joshi: faster data, better decisions

To Ravi Joshi, Executive Director for EY Advisory Services, chemical companies must be prepared to challenge accepted ways of doing business to benefit fully from technologies such as machine learning and predictive analytics. "You have to be a pioneer," Ravi says. "You have to have eccentric opinions or creative ideas to shake the status quo."

Ravi recently participated in a panel discussion led by Bonnie D. Graham, producer and host of the live web-based radio series, *The Future of Manufacturing with Game-Changers Radio,* presented by SAP. Ravi was joined by John Santagate, Research Manager at IDC Manufacturing Insights, and John Harrison, Senior Solutions Specialist with SAP Industry Business Solutions Chemicals.

Ravi shared his thoughts on several critical topics:

- **Machine learning and supporting the chemical supply chain:** "In the chemical industry, one company's finished product might be a raw material for another company. Any deviation in quality is going to have a significant impact on the supply chain. Machine learning can drive ingredient quality not just for that particular industry, but across the supply chain and throughout the life cycle of the product."
- **Machine learning and decision-making:** "There is a lot of information needed right at that moment to make key decisions. It is not like I can make the decision after one month, or one week, or one day. Having people try to get that information right away takes a significant amount of time. That is when machine learning is going to come in handy. People can get to decisions rapidly using the information."
- **Moving from data storage to data insights:** "Companies are looking for automation. They are looking for the capability to take data and translate it into an information set where they will be able to make business decisions. The tools are there, but it is a significant leap from just having the tools and having data analyzed. I want to see the end result of taking the leap to build those algorithms that drive the speed at which decisions are made. I think it is really important for organizations to be leaders in analyzing the data using the tools of machine learning."

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On **machine learning and productivity improvements for chemical companies**, Ravi says: "If a set of quality results does not meet standards, you can build algorithms and start doing repeatability studies to predict when things might go wrong. Machine learning can be used for that. If you try doing the process analysis manually, it is going to take a lot of time. Machine learning algorithms can get that information quickly and minimize bad product quality by allowing leaders to be proactive and take corrective actions."

**Machine learning is also supporting technology transformation for chemical companies, according to Ravi.** "I have been in situations where I have used my mobile device and said, 'Hey, we can do this one.' People say: 'You are light-years away. We do not have that technology; we aren't there.' Then, within a couple years when we go back and talk to them again, they say, 'Oh, we are either there or behind the industry.' Especially in the chemical industry, there are a lot of applications and a lot of data that are all the way there."

Ravi sees the **future state of machine learning in the chemical sector** as advancing to the next level. "In the near future," he says, "machines will be able to predict, then tell you in advance what decisions need to be made. In some cases, the decisions will be made by the machines, not by people taking a lot of time to review the data. When information is automatically processed and presented to you in the format you want, it becomes easy for you to make rapid decisions and be a leader in the sector."

**When is simple not as simple as it seems?**

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Our diverse teams, combined with our broad experience in technology and industry issues, inspire us to ask better questions. We innovate with SAP to co-create more innovative answers. Together, we can guide you on a journey to becoming an organization that is able to address the ever-increasing demands to innovate and transform, while at the same time, allowing you to run your business every day.

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