

Time to Set the Course for the Future

Supply Chain and Logistics Trends in the Chemical Industry

The chemical industry is facing major challenges, with an urgent need for action. However, now is precisely the time to lay the groundwork for a successful recovery once the current downturn has been overcome. The study “Success Factor Supply Chain Management and Logistics in the Chemical Industry 2024”, conducted by Solventure, Aimms, and Miebach, examines key trends and challenges, the role of digitalization and artificial intelligence (AI), and planning strategies in the European chemical sector. The study begins by asking: What are the current trends and challenges in the chemical industry? This broad question was broken down into specific trends and their perceived significance according to the study participants. Birgit Megges interviewed Klaus-Peter Jung, Partner at Miebach, about the key findings of the study.

CHEManager: Mr. Jung, the study reveals that the majority of participants consider rising cost pressures on warehousing and transportation to be the most critical issue, while CO₂ neutrality is currently a lower priority. Were you surprised by this result?

Klaus-Peter Jung: Not at all. This finding is reflected not only in the predominantly negative public reports about the state of the industry but also in our daily consulting work. In the short term, many companies are primarily focused on cost reduction and cost



Klaus-Peter Jung,
Miebach Consulting

avoidance, leaving CO₂ neutrality as a secondary concern.

However, it's also important to acknowledge that logistics contributes only a small share of CO₂ emissions in the chemical industry—far less than in other manufacturing sectors

or retail. Moreover, there is a “natural correlation” between reduced transport costs and lower CO₂ emissions: shipping is cheaper and more environmentally friendly than air freight, full trucks are more cost-efficient and eco-friendly than half-empty ones, and larger shipments are more economical and sustainable than multiple small ones.

You explored how well the European chemical industry is prepared to tackle current challenges. What insights did you gain from the responses?

K.-P. Jung: Following the boom years of the early 2020s, the industry experienced an abrupt downturn for which, by its own assessment, it was not well prepared.

Looking at individual aspects, we found that only about half of the participants consider themselves ‘very well’ or ‘well’ prepared in terms of ‘transparency through enhanced communication and close collaboration’. This figure drops to roughly one-third when it comes to handling ‘rising cost pressures on warehousing and transport’ or ‘aligning logistics within the chemical supply chain with customer and product-specific requirements’.

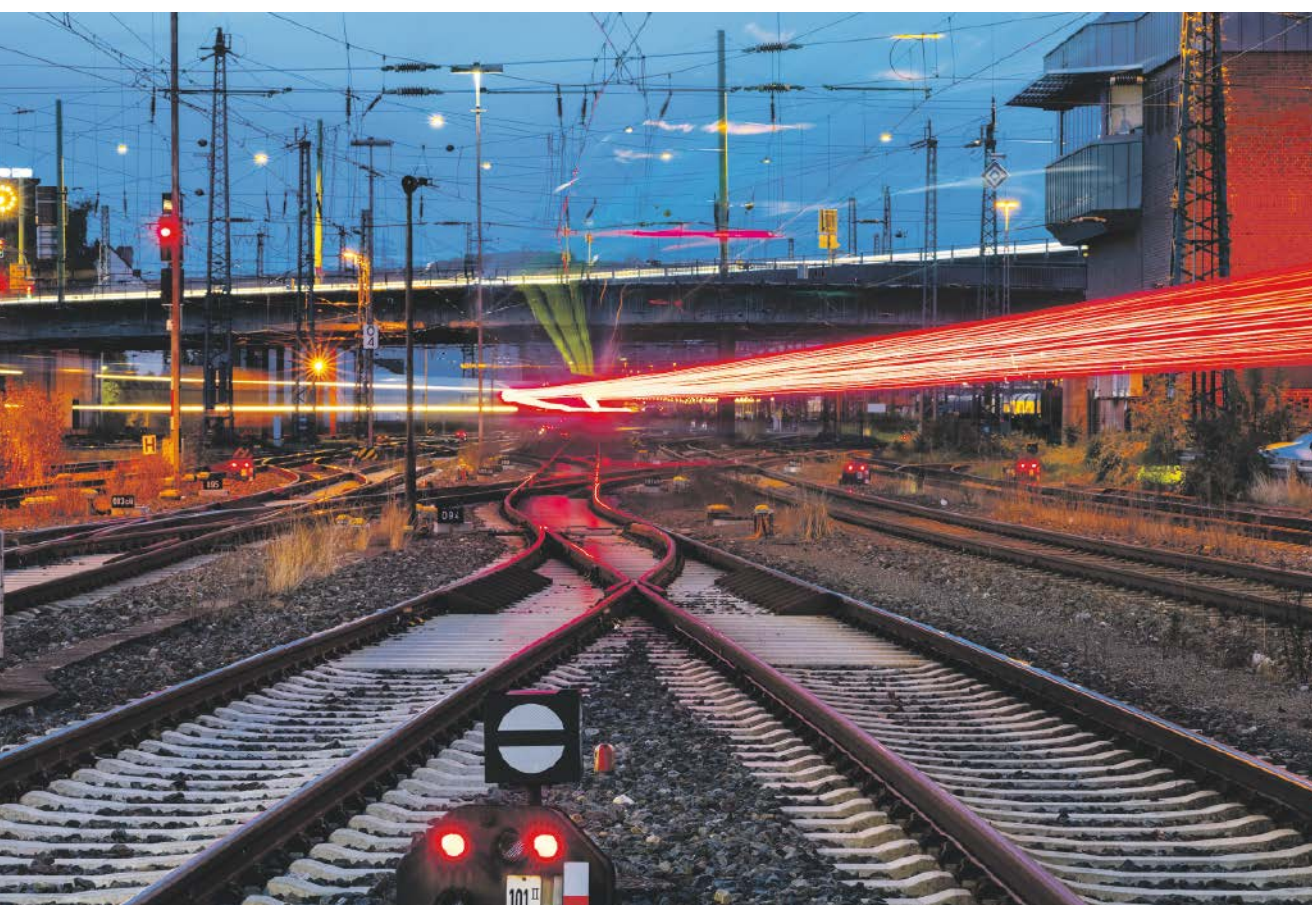
Many companies are in ‘work-in-progress’ mode, addressing these challenges but without clear solutions yet.

“Many companies are actively exploring AI and its applications.”

Some even admit they are inadequately prepared—or not prepared at all—for certain issues.

Digitalization and AI are hot topics in supply chain management and logistics. How widespread are such solutions in the industry?

K.-P. Jung: Simply put: too limited. On the positive side, many companies are actively exploring AI and its applica-



tions. However, many still struggle to identify suitable use cases beyond inventory management, forecasting, and workforce management, as well as highly administrative, repetitive applications like customer service chatbots. Nevertheless, there is a sense of momentum in the search for AI applications—but with limited budgets.

I am far more critical when it comes to advanced digitalization tools beyond AI, such as digital twins and control towers. Given past Black Swan events like Covid-19 or the Suez Canal blockage, one would expect companies to have recognized the urgency of the situation and invested in digital twins to strengthen supply chain resilience. Unfortunately, we see that these proactive risk management measures have often been sacrificed in favor of short-term cost-cutting.

The study also examined how chemical companies approach planning at the strategic, tactical, and operational levels, who is involved, and what tools are used. What were the key takeaways?

K.-P. Jung: The chemical industry has a very different planning approach compared to other industries, such as consumer goods.

Strategic planning, such as decisions on production footprint or inbound and outbound networks, is typically conducted only every two to three years or on a need-to basis. Only a few companies follow a structured annual planning cycle.

In most cases, these strategic planning tasks fall under line management, though over 40% of respondents also rely on external consulting firms. Exter-

nal experts bring specialized methodologies, tools, and experience, while also freeing up internal resources and often delivering faster and higher-quality results—many companies still rely on Excel for these tasks.

“The industry is still far from achieving full digital transformation.”

Tactical planning follows various cycles: while inventory optimization tends to be weekly, S&OP planning rounds occur monthly in the vast majority of companies. Supply chain teams take the lead in tactical planning,

whether for demand planning, inventory management, or supply & production planning. The logistics department is almost equally involved, particularly in demand and inventory planning, while production teams naturally take the lead in supply and production planning. Interestingly, very few companies assign these responsibilities to their sales teams, and if they do, it's only for demand planning or S&OP.

Across all three planning levels, one of our study's most critical findings is that Excel remains the dominant tool. While Excel is flexible and easy to use, it is also prone to errors and requires extensive manual effort. This highlights that the industry is still far from achieving full digital transformation.

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Between Globalization and National Regulation

Pharmaceutical Logistics Need to Integrate Global Expertise with National Networks

For those wishing to know what significant progress has been made in the field of pharmaceutical research in recent years and how the distribution of pharmaceutical products has evolved, a look at the development of pharmaceutical logistics can be very illuminating. Its changing portfolio and evolving structures provide clear indications of new focal points and industry developments, of the increased – and still rising – importance of outsourcing specific logistics services, as well as of growing complexity and heightened quality requirements.

These are the key trends in the field of pharmaceutical logistics through which one can discern some of the major shifts within the industry. Perhaps the most striking trend is the move towards active temperature control. These do not just constitute changes brought about by the amended control practices of the regulatory authorities.



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Biopharmaceuticals are Driving the Trend Towards Active Temperature Control in Transport

The primary driver of the trend towards active temperature control is new products. This is because the proportion of temperature-sensitive products among newly launched phar-

maceuticals is steadily increasing. In many cases, these are biopharmaceuticals that are not produced through chemical but biological processes. The stability of such biopharmaceuticals is generally lower than that of chemically manufactured products—something that is reflected in the demand for actively temperature-controlled logistics.



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But why exactly actively temperature controlled? Could the necessary level of temperature control not be achieved using specialized packaging solutions (passive packaging)? What does the continuous decline in the use of passive temperature control—in the ranges of 15 to 25°C (ambient or room temperature) or 2 to 8°C (refrigerated temperature)—tell us about the development of the pharmaceutical industry?

The growing demand for active temperature control is linked to two overar-

ching trends in our economy and society, from which the pharmaceutical industry is not exempt: rising cost pressures and the desire for greater sustainability. Studies conducted in-house, based on public and recognized sources, have revealed that the actively temperature-controlled transport of pharmaceuticals is not only more cost-effective than passive shipping but also more environmentally friendly.

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