

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.

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

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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.



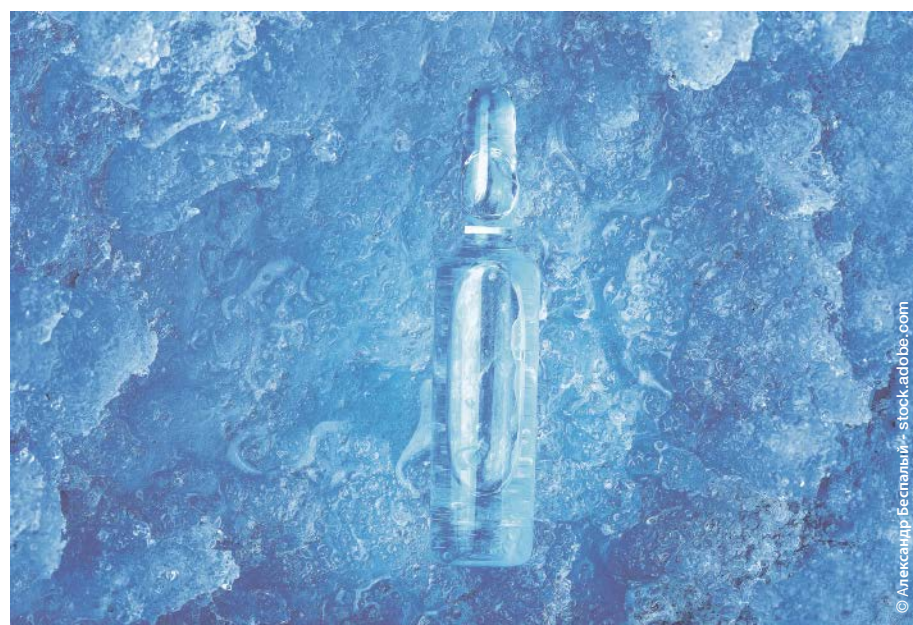
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Martin Reder,  
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Express

### 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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# Between Globalization and National Regulation

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## Passive Transportation is Too Expensive and Not Environmentally Friendly

The higher costs associated with passive transportation are due to the increased freight weight of the consignment—resulting from the additional packaging required, the inclusion of cooling packs and temperature trackers—but also the procurement and storage of the specialized packaging and, depending on the chosen option, the disposal or return transport. The study examined transport variants involving the use of both single-use cartons and reusable boxes. It was established that the climate impact of active temperature control

remains in transit longer than planned—for instance, because lorries were caught in traffic? Often, products must then be destroyed, re-manufactured and re-shipped.

These days, pharmaceutical logistics companies require service providers who are proficient in all applicable temperature ranges and transport methods. The example of the various necessary temperature ranges—whether ambient, refrigerated, frozen or ultra-frozen—illustrates the field of pharmaceutical logistics. Since the range of products is becoming increasingly specialized, logistics service providers are also increasingly confronted by the pharmaceutical industry's need to develop and implement special solutions for ever more specific require-

pany with an industry focus, concentrated on its own networks in Germany and Austria and developed procurement and distribution logistics solutions

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*“Despite all the globalization trends in the pharmaceutical industry, access to individual national markets remains heavily dependent on local expertise.”*

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through partners in other European countries, it can now establish and implement global supply chains with

be developed and maintained as if handling a mass shipment, because regardless of the quantity, the product is subject to the same transport requirements. If a logistics provider transports a vaccine to Brazil, they must expend nearly the same amount of effort whether handling one syringe or 100,000.

In view of such diverse requirements, not only do Trans-o-flex customers benefit from the company's enhanced international reach and expertise in global logistics chains, but Geodis customers also profit from the national pharmaceutical logistics solutions offered by the German subsidiary. Despite all the globalization trends in the pharmaceutical industry, access to individual national markets remains heavily dependent on local expertise. Regardless of all attempts at harmonization at EU level, a sufficient amount of country-specific particularities persist in the implementation of national law. In today's phar-

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*“In today's pharmaceutical industry, the prospect of a one-size-fits-all solution possibly seems more remote than ever.”*

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is at most half that of passive temperature control. Specifically: The climate impact of active temperature control is 3.93 times lower than that of passive shipping in single-use cartons. Compared to passive temperature con-

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*“Perhaps the most striking trend is the move towards active temperature control.”*

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trol using reusable boxes, the climate impact of active temperature control (also in a reusable box) is 2.63 times lower. This study did not factor in the risks associated with passive cooling. What happens if a consignment is not delivered within 24 or 48 hours, but

ments. This is driven by the increasingly customized and individualized health solutions that are enabling significant medical advances these days. Just consider the numerous immunotherapeutic approaches that are taking cancer treatments to a new level. And due to the fact these therapies are increasingly marketed on an international scale, they must be made available globally wherever possible. This trend is clearly reflected in pharmaceutical logistics.

## Global Solutions and National Expertise

For instance, the takeover of the pharmaceutical logistics specialist Trans-o-flex by the globally active French group Geodis is no coincidence. While Trans-o-flex, as a mid-sized com-

pany, the support of its new parent company. As a result, customers can, for example, have pharmaceuticals produced in Asia or North America flown subject to temperature control to Germany, where Trans-o-flex takes care of their delivery.

This not only requires the control of large volume flows in the procurement or distribution logistics. In the pharmaceutical industry, one particular logistical challenge involves the support of product launches. During the product launch phase, a company that has reached Phase III with a drug sends the new product to the regulatory authorities in various countries to obtain final approval and patenting for the respective market. Sometimes this involves only 50 consignments—each the size of an injection syringe—yet the optimal route involving the lowest risks must still be selected with great care. Safety measures and backup solutions must

maceutical industry, the prospect of a one-size-fits-all solution possibly seems more remote than ever. And pharmaceutical logistics, seamlessly integrating global expertise with national networks, perfectly embodies this trend.

Given the diversity of services required, the increasing complexity involved, and the globalization of both procurement and distribution logistics, in-sourcing the logistics chain—either in part or in its entirety—is simply out of the question. It is therefore crucial, when selecting outsourcing partners, to carefully consider their experience, industry expertise, levels of innovativeness, product portfolio, network quality, and the scalability of the services offered. Only with a strong and specialized logistics partner can managers in the pharmaceutical industry successfully focus on their core competencies and sleep soundly.

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