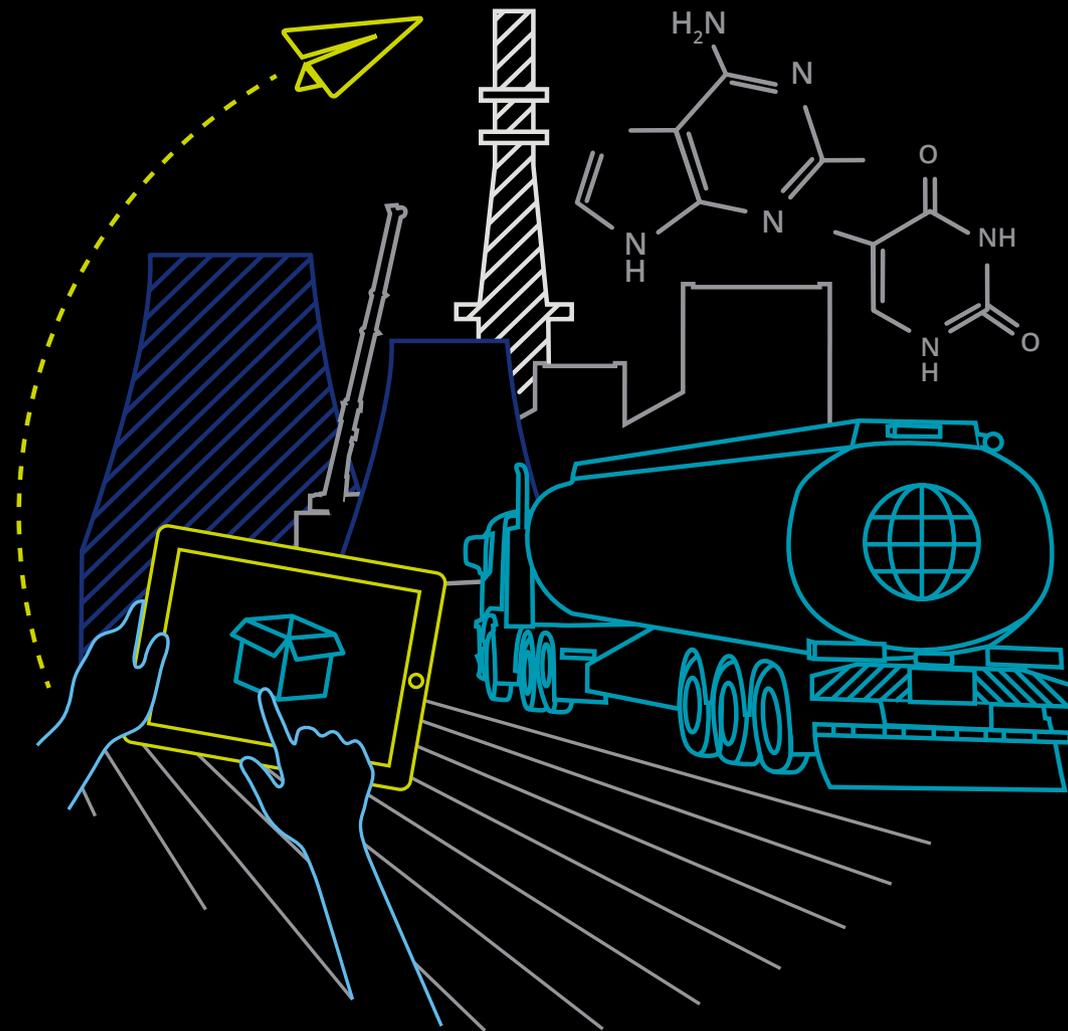


Deloitte.



Supply chain management in the chemicals industry

Key challenges and how Deloitte can support

Employing more than 20 million people* and with annual sales of almost \$5 trillion, the world's chemicals industry represents one of the largest interacting industries globally, delivering materials and substances to sectors such as agriculture, automotive, construction, and nutrition.

The chemicals market is currently undergoing transformation, so companies need to adapt their businesses, operating models and processes. Chemicals supply chain management will face new challenges as a result, but also new opportunities.

It is therefore critical to understand key developments in the chemicals market and the resulting impact for the individual supply chain. Only then will companies have the proper preparation to face these challenges and seize the opportunity to create long-term competitive advantage.

*Estimated number as the sum of global direct and indirect employment

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Key SCM challenges in the chemicals industry

The chemicals market ...

Market & Competition

- Ongoing high cost pressure caused by intensifying global competition
- Opportunities for organic growth continue to slow down due to saturated markets in the western world while value chains move to Asia
- Chemicals markets become more complex due to global demand shifts, market consolidation, commoditization and uncertainties such as political instability

Customer Demands

- Decreasing product importance due to deflation, commoditization and dematerialization
- Increasingly complex customer demands with differentiated request profiles and service levels
- Rising expectations regarding pre- and post-sales services require an integrated supply chain management

Emerging Technologies

- High complexity and dynamics in the chemicals market environment generate vast quantities of data
- Unlike in other industries, the impact of digitalization in the chemicals sector is more of an evolution than a big bang
- Chemicals customers increasingly require customized products and value added service

... and challenges for the SCM



Fix the basics

“Although many companies love to think about digital supply chains, they still need to fix the basics to avoid falling behind.”

- Transparent, structured and lean supply chain essential to stay competitive
- Enabling M&A activities with means of standard SCM processes, with a focus on strengthening the global footprint
- To cope with market uncertainties, supply chain resilience and integrated business planning become key for success



Aim for customer excellence

“To create true value, we need a fundamental understanding of customer needs, but also a strategy that translates these insights into action.”

- Differentiation from competitors through supply chain services crucial to avoid competing only on the price level
- Adapt service levels accordingly, i.e. premium service for A customers
- Not meeting customer's supply chain service expectations increasingly puts the relationship at risk



Go digital

“Industry 4.0 in the chemicals industry needs to be discussed from a market perspective, not just a technical point of view.”

- Thoughtful developed digitalization strategy and implementation roadmap
- Further individualization of chemical product offerings (formulations) based on insights as a service
- Decreasing costs and performance-based pricing instead of price-per-kg or price-per-container needed

Fix the basics

Deloitte's solution to prepare chemical companies for the requirements of future markets ...



Supply Chain Segmentation

Identify the current state and starting points for improvements at a glance

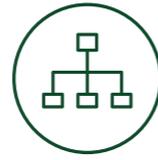
- Pave the way for a tailored chemicals supply chain that fits your specific needs
- Profit from the 80/20 Rule regarding outcome and effort when starting to redesign your supply chain processes
- Identify products without significant incremental sales and reduce non-profitable complexity



Operating Rules

Tailor your supply chain processes to your companies needs and align across functions

- Establish rules complying with your TOM* to avoid unnecessary process costs and efforts
- Identify the crucial elements of your supply chain and focus resources on value adding processes
- Enable M&A activities by making your supply chain scalable and fit for growth



Integrated Business Planning

Connect all parties in the planning process with predictive analytics for best forecasting results

- Integrate all relevant parties in a joint planning process
- Apply the principles of S&OP to your whole supply chain for a holistic view of your demand specifications
- Automate your supply chain processes to be prepared for a quick response to market changes



... using our broad experience from serving 23 of the 33 largest chemical and specialty materials companies.

Aim for customer excellence

Deloitte's solution to prepare chemical companies for the requirements of future markets ...



Customer Clustering

Gain additional information on your customer base to enable further analytics

- Apply the "gold card principle" to improve the improve customer loyalty
- Define individual criteria to set up customer clusters
- Analyze and group your customer base according to defined criteria



Customer Specific Service Profiles

Compile and analyze all gathered customer knowledge allowing insights into what services are essential

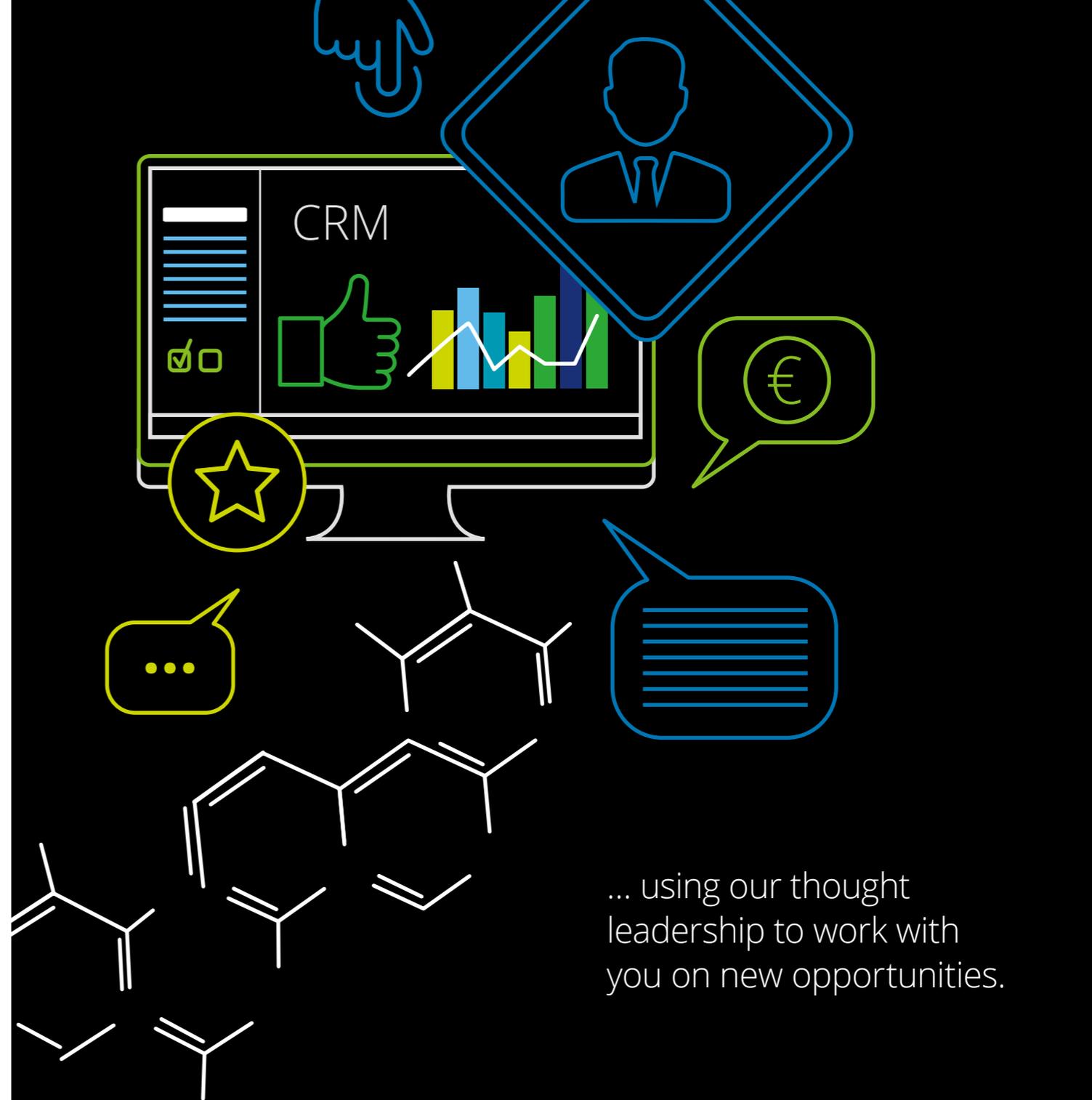
- Identify service criteria as a basis for setting up customer service profiles
- Conduct customer evaluation based on defined criteria and identify the gap to current service offerings



Individual Service and Pricing

Use your profound customer knowledge to provide best services while increasing your margin

- Make use of your customer specific service profiles to offer individualized pre- and post-sales solutions
- Increase your customer satisfaction by anticipating demand patterns
- Develop new pricing models based on individual service preferences



... using our thought leadership to work with you on new opportunities.

Go digital

Deloitte's solution to prepare chemical companies for the requirements of future markets ...



Value Analytics

- Combine broad operational know-how of the chemicals supply chain with predictive analytics for advanced results
- Evolve from "happy engineering" to focusing on possible value and competitive impact
- Apply the Triple Long Tail® principle for constant adaptation and improvement

A

Performance is measured at the end user, big data analyses help to improve performance



Customization

- Facilitate product customization with real-time optimization of multi-functional production assets in small loops
- Be able to meet volatile demands by reserving certain production capabilities for customer specific products

B

Individualization of products drives customer-specific solutions and performance



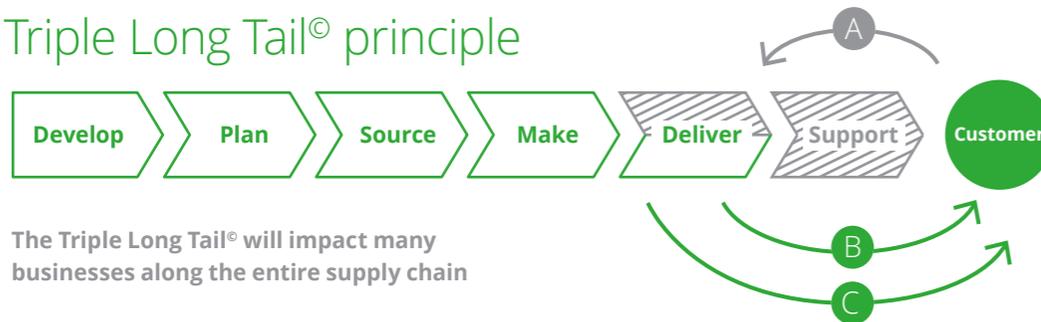
Value Pricing

- Apply a systematic, holistic approach to the digital transformation to make sufficient use of the business opportunities
- Consider the customization drivers as cost drivers in the ERP system to benefit from value generated by proper cost allocations

C

Pricing can be re-engineered towards customer benefit and performance

Triple Long Tail® principle

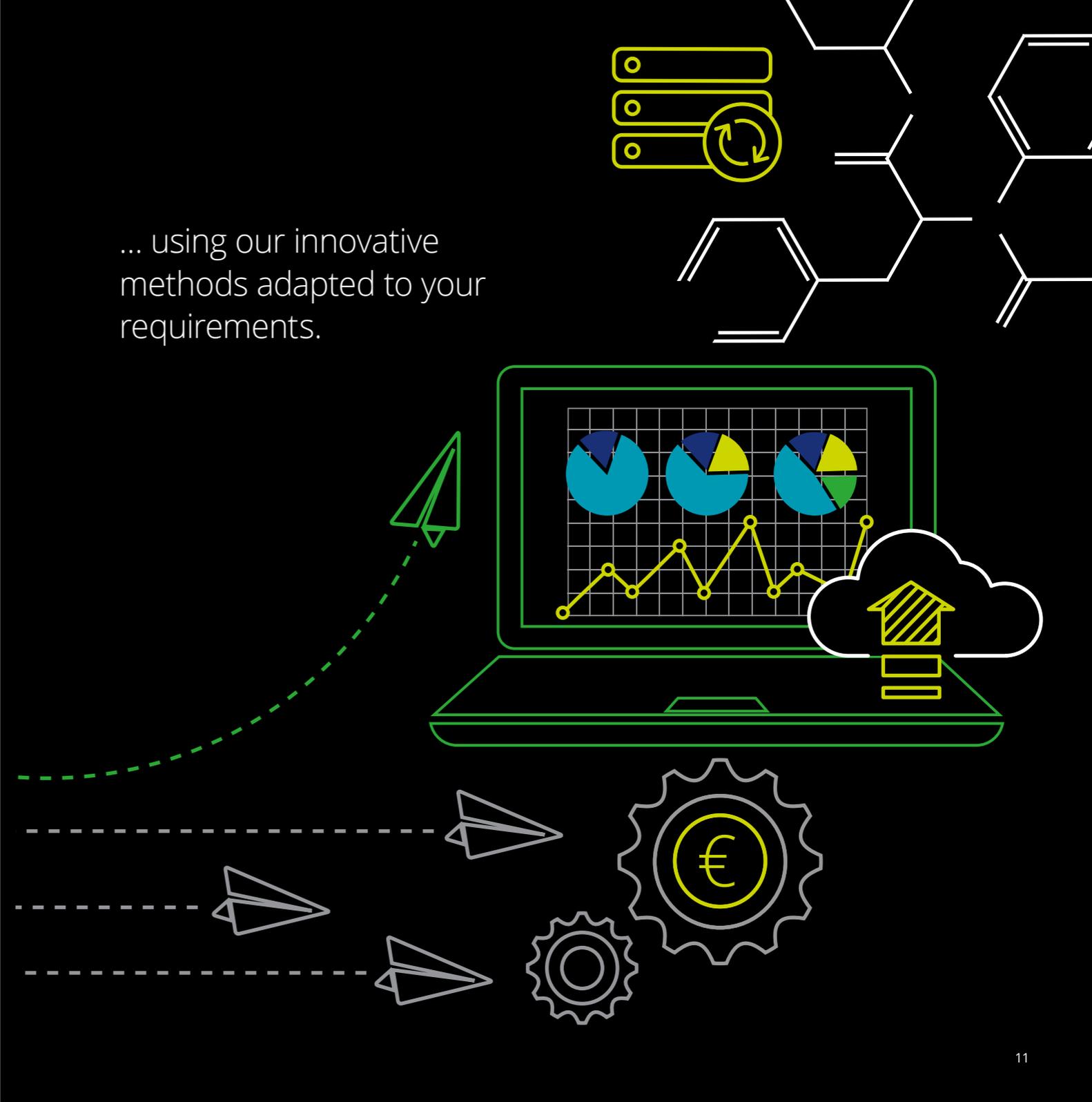


The Triple Long Tail® will impact many businesses along the entire supply chain



Cross industry examples

... using our innovative methods adapted to your requirements.



Views on supply chain management within the chemicals industry



Dr. Wolfgang Falter

Partner | Global Chemicals & Specialty Materials Lead

“Chemicals markets are commoditizing in a deflationary environment. Dematerialization is accelerated by digitalization and end-to-end transparency is for most players more a threat than an opportunity. The strongly export-oriented chemicals industry is facing increasing geopolitical uncertainties and declining investments into an aging asset structure lead to poorer technical availability. At the same time, shareholders and activists command a higher performance. Having a reliable, competitive, compliant and transparent supply chain increasingly becomes a differentiator. Former outsourcing decisions are critically questioned. Automatic material planning, labeling, reordering, track-and-trace systems in combination with more accurate sales & operations planning improve on-time in-full deliveries at lower working capital costs and with higher customer satisfaction”



Dr. Götz Wehberg

Partner | German Chemicals & Specialty Materials Consulting Lead

“Talking Supply Chain Management is all about competitiveness. So, how does Supply Chain Management contribute to the business over and beyond its fulfillment function? A key characteristic of using digital technologies is the significant decrease in transaction costs within the supply chain. Therefore, these technologies are particularly suitable to support customized products. However, it is important to not limit digitalization to technical aspects. As we suggest, the so-called Triple-Long-Tail®-strategy is at the heart of digital business models and supply chains. It generates value through individualized products and services as well as performance-based pricing. Using expedient big data analytics combined with deep chemicals industry knowledge enables a holistic approach to digital supply chain management.”



Tim Berger

Senior Manager | Supply Chain Management Chemicals Industry

“In today's chemicals industry, demand for product customization is highly relevant in the specialty and fine chemicals segments, but moving forward we expect that demand to expand to other segments as well. Customers increasingly expect products tailored to their needs, which gives chemicals companies the opportunity to stand out from competitors – by offering not only customized products, but also individualized pre- and post-sales solutions. Big data and predictive analytics, combined with broad industry knowledge, are important factors in achieving these challenging objectives.”



Michael Petry

Senior Manager | Supply Chain Management Chemicals Industry

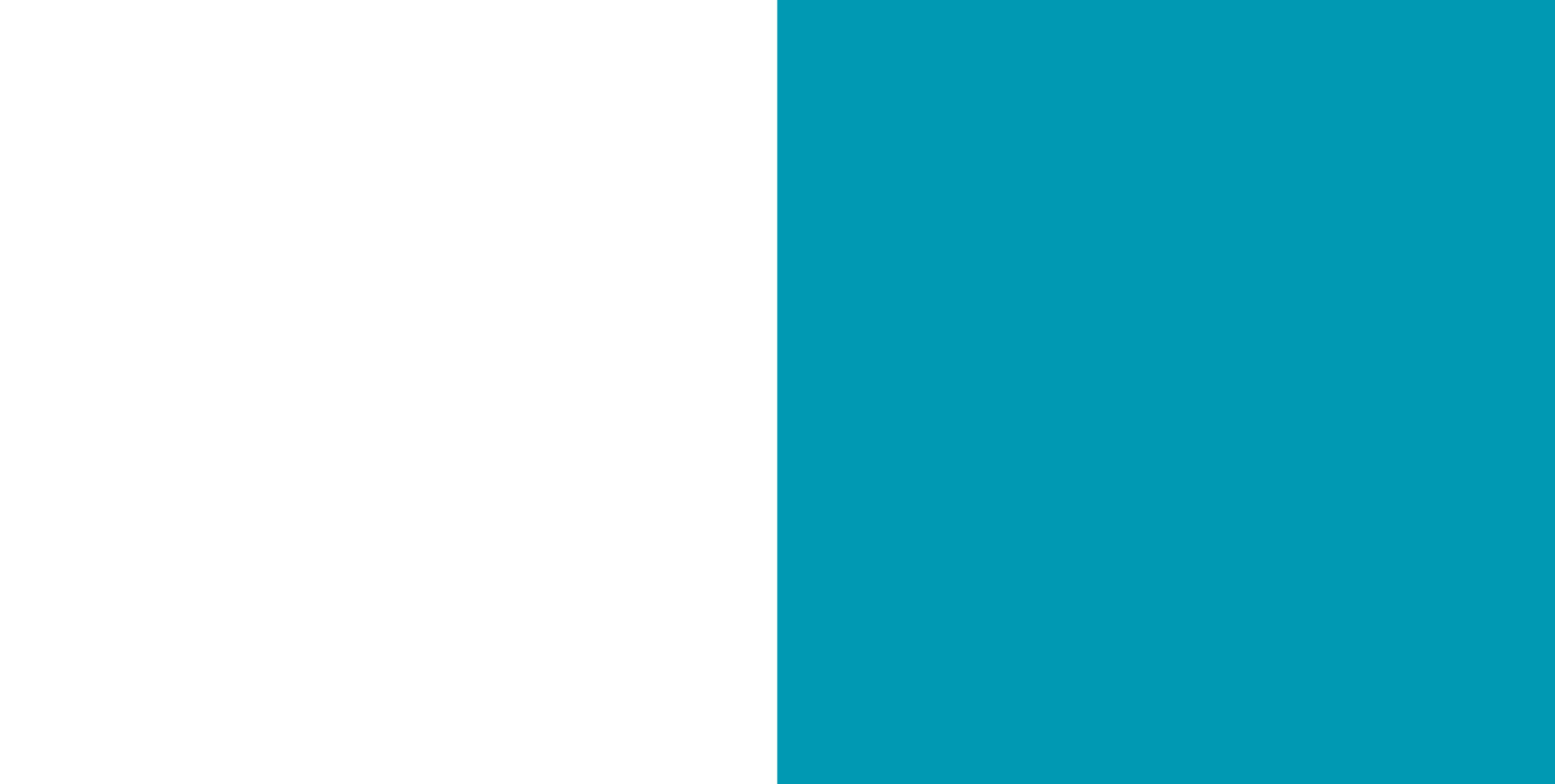
“Due to continuous consolidation within the chemicals market and value chains shifting to Asia, optimization of the global supply chain is key. Besides strengthening their presence in North America, chemicals companies should reassess their footprint in Asia to avoid disadvantages compared to local players. In supply chain management, knowledge about regional features as well as an expedient global supply chain network that is fit for future growth is indispensable. Furthermore, scalable processes enable companies to quickly integrate new acquisitions and focus on generating value.”



Andreas Mertens

Manager | Supply Chain Management Chemicals Industry

“To generate value from the supply chain instead of only reacting to market requirements, a comprehensive understanding of supply chain management is a key requisite. Our market expertise shows that insufficient customer insights, a lack of cross-functional capabilities and unsupportive governance models will increasingly lead to competitive disadvantages. Companies have to develop a strategy that aims at increasing value through supply chain improvements. In this process, the focus of supply chain management evolves from being efficiency-focused to demand-driven and finally to value-driven.”



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