



# Supply chain visibility in the digital age

# Greater transparency can help companies increase resilience, reduce costs and meet ESG expectations

The Russian invasion of Ukraine brought renewed urgency to creating resilient supply chains. While companies focused first and foremost on supporting their people and communities at risk, they also had to quickly seek new sources of key resources, as the war disrupted the supply of everything from food staples like wheat to neon gas used for semiconductor production.

This geopolitical shock is the latest in a range of forces putting immense pressure on supply chains.

Inflation, notably rising energy prices, is pushing up the cost of manufacturing and logistics. Customers became more demanding, as the pandemic drove greater reliance on ecommerce and rapid delivery. Supply chain complexity is increasing, with multiple third parties involved at various stages—making it harder for manufacturers to control and monitor goods' progress, whether upstream, downstream, or during transit. And ESG (environmental, social, governance) expectations are rising, increasing the need to show that goods are produced and transported sustainably and ethically.

However, the unprecedented disruptions of recent years can be catalysts for a new era in supply chain management. Partly in response to recent pressures, a host of data and analytics

technologies are emerging that can provide greater supply chain visibility and control. Companies that accelerate the deployment of these technologies not only enhance supply chain resilience but also unlock long-term advantages in speed, cost reduction, and sustainability.

This paper provides an overview of the data and analytics capabilities that can help achieve greater supply chain transparency for improved resilience and efficiency.

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## The supply chain worldwide survey revealed that

# 70 percent

## of the companies surveyed perceive their supply chain as 'very' or 'extremely' complex.<sup>1</sup>

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<sup>1</sup> Supply chain transparency: creating stakeholder value



# Mastering volatility



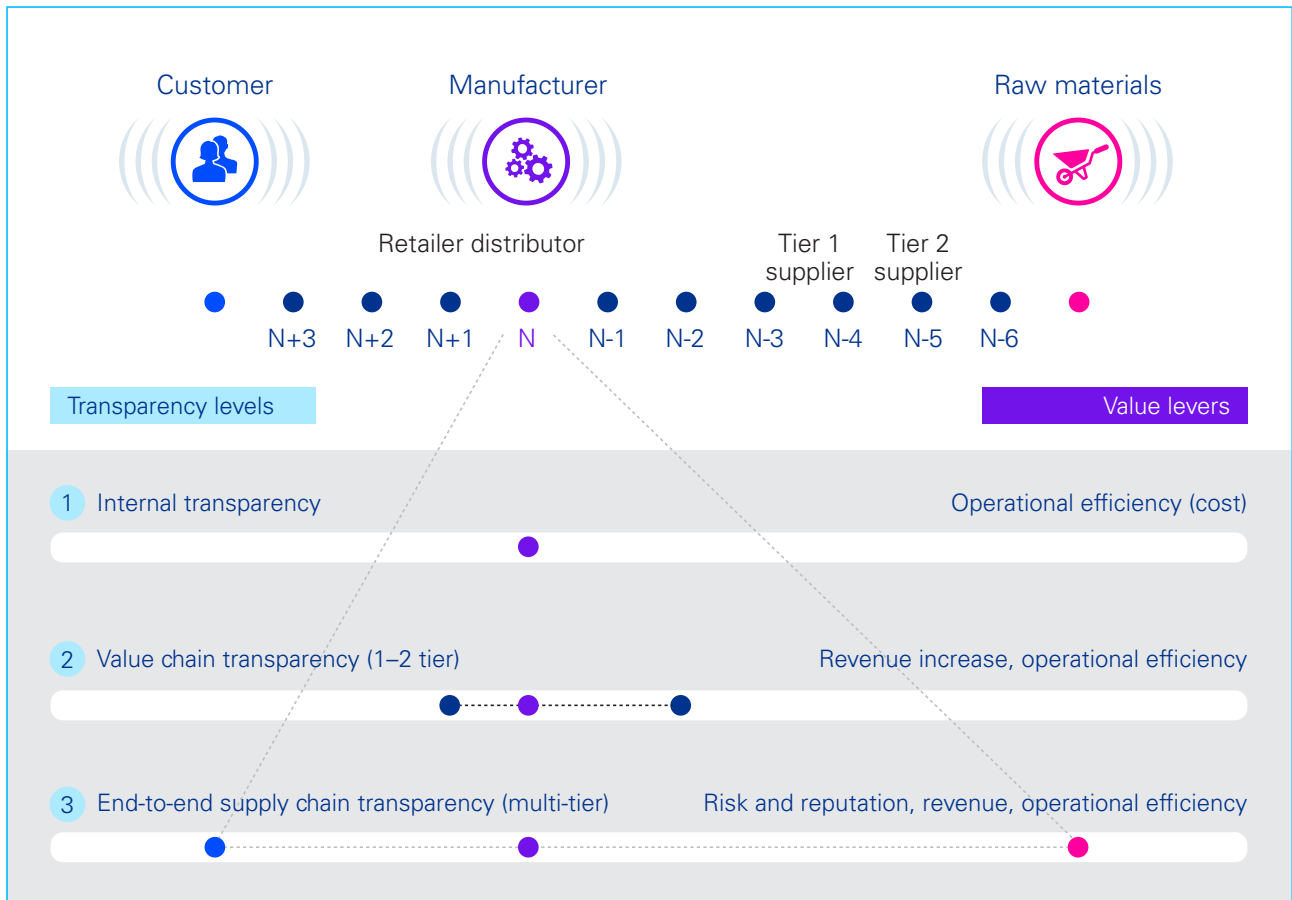
Supply chain visibility gives organizations mastery over their environment. Instead of fire-fighting and reacting, they develop responsive and agile operations that can cope with volatile demand, shortages or transportation disruptions. According to the Business Continuity Institute, only 12 percent of firms track disruption at tier three and beyond; nearly 33 percent don't analyze their supply chain to identify the original source of disruption. Real-time visibility across their extended value chains enables them to adjust swiftly and continuously meet customer

deliveries, strengthening customer relationships, protecting margins and, above all, transforming their supply chains into competitive differentiators.

When companies have full end-to-end transparency, they're able to work with all their upstream and downstream trading partners, to extract and share real-time data and analytics. This tells them how much stock they have, in which locations, all tracked via SKU (stock keeping unit) or bar code with the aid of GPS during transit. To do this they must be able to connect with hubs along

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**Supply chain transparency requires key actors to enable visibility and traceability on multiple levels<sup>2</sup>**



<sup>2</sup> Supply chain transparency: creating stakeholder value, KPMG Netherlands, 2021

the chain, whether with suppliers, contract manufacturers, logistics providers and buyers. In a recent KPMG survey, only 19 percent of respondents in the apparel industry claim to have full visibility of all stakeholders operating across the entire supply chain, while merely 15 percent have full traceability of the materials used to produce their products.<sup>3</sup>

The resulting insights are integrated into supply chain planning to uplift the capability and performance of

operations planning — and help comply with ESG requirements.

Indeed, anytime, anyplace visibility also enables businesses to improve ESG across the supply chain, for example checking use of water and other scarce resources during manufacturing, and scrutinizing labor practices, emissions and pollution in production and logistics, as well as tracking fleet efficiency.

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**Sustainability**

Drive positive social and environmental impact across the value chain

**Strategy**

Create a future-proof strategy built on long- and short-term objectives

**Data and analytics**

Disclose and use real-time and data-driven information to enable decision-making



**Procurement**

Focus on accurate supplier mapping and assessments

**Customer and innovation**

Use innovative technologies for a customer-centric supply chain

**Technology solutions**

Integrate and embrace technical capabilities and solutions i.e. ERPs

Having the right mix of capabilities is fundamental in achieving true supply chain transparency and realizing its value potential<sup>4</sup>

<sup>3</sup> Moving the needle — Threading a sustainable future for apparel, Nov 2021, KPMG in Hong Kong (SAR), China

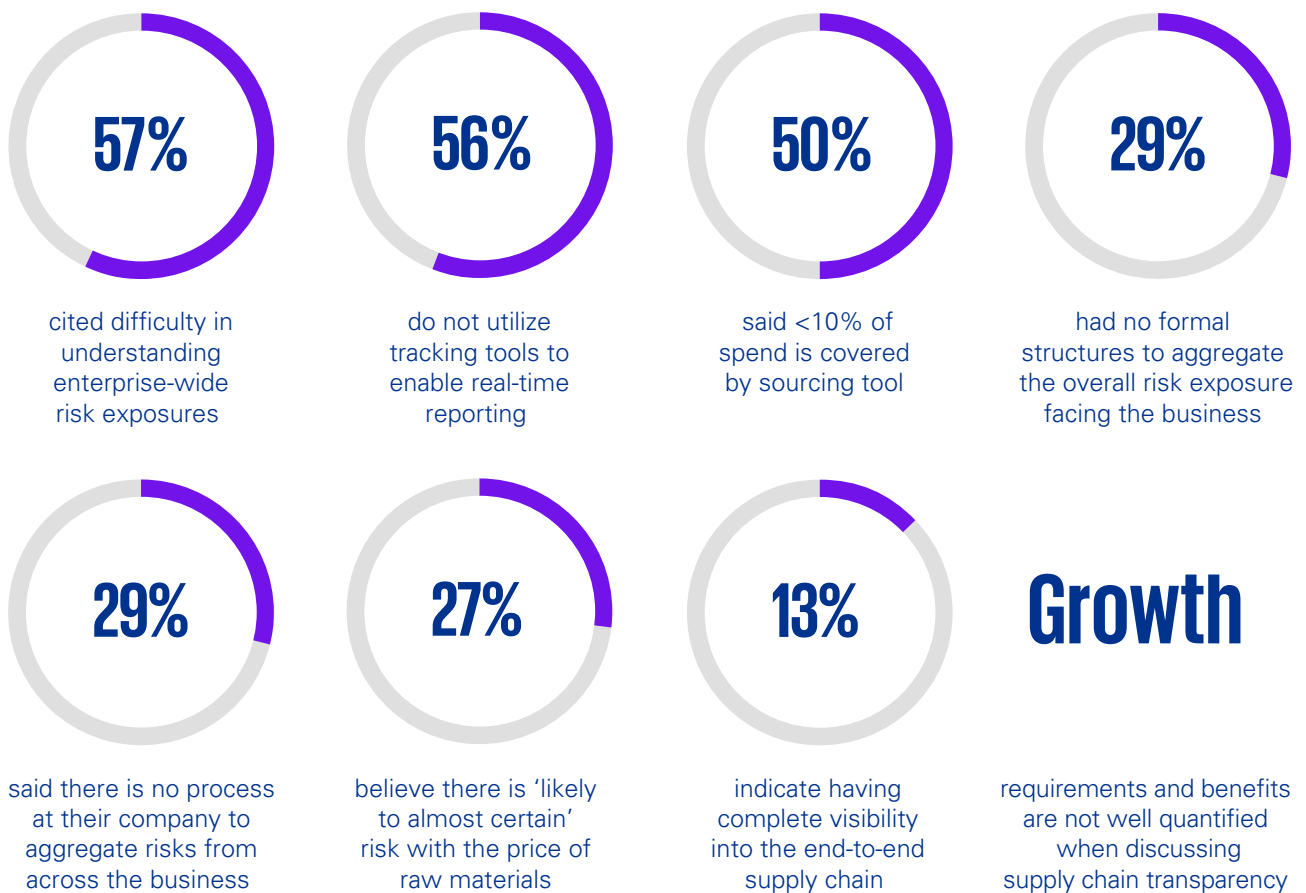
<sup>4</sup> Supply chain transparency: creating stakeholder value

Visibility is relatively simple to design, yet considerably more complex to deliver. In KPMG's Value of Connection survey, only 31 percent of respondents say they're satisfied with the data used to support supply chain planning activities.

**Transparency is recognized as one of the key C-level issues in supply chain management that requires attention to deliver growth and control risk<sup>5</sup>**



**A survey of supply chain and risk management industry executives show...**



Source: Digital Supply Chain Investment Survey, KPMG & BlueYonder, 2018

<sup>5</sup> Supply chain transparency: creating stakeholder value.



# Upping the analytics game

Analytics — increasingly available in real time — are a vital component of supply chain visibility, helping companies anticipate the future rather than simply analyze the past.

The Supply Chain Big Data Analytics Market was valued at 3.55 billion US dollars (USD) in 2020 and is expected to reach USD9.28 billion by 2026, at a CAGR of 17.31 percent over the forecast period 2021–2026.<sup>6</sup>

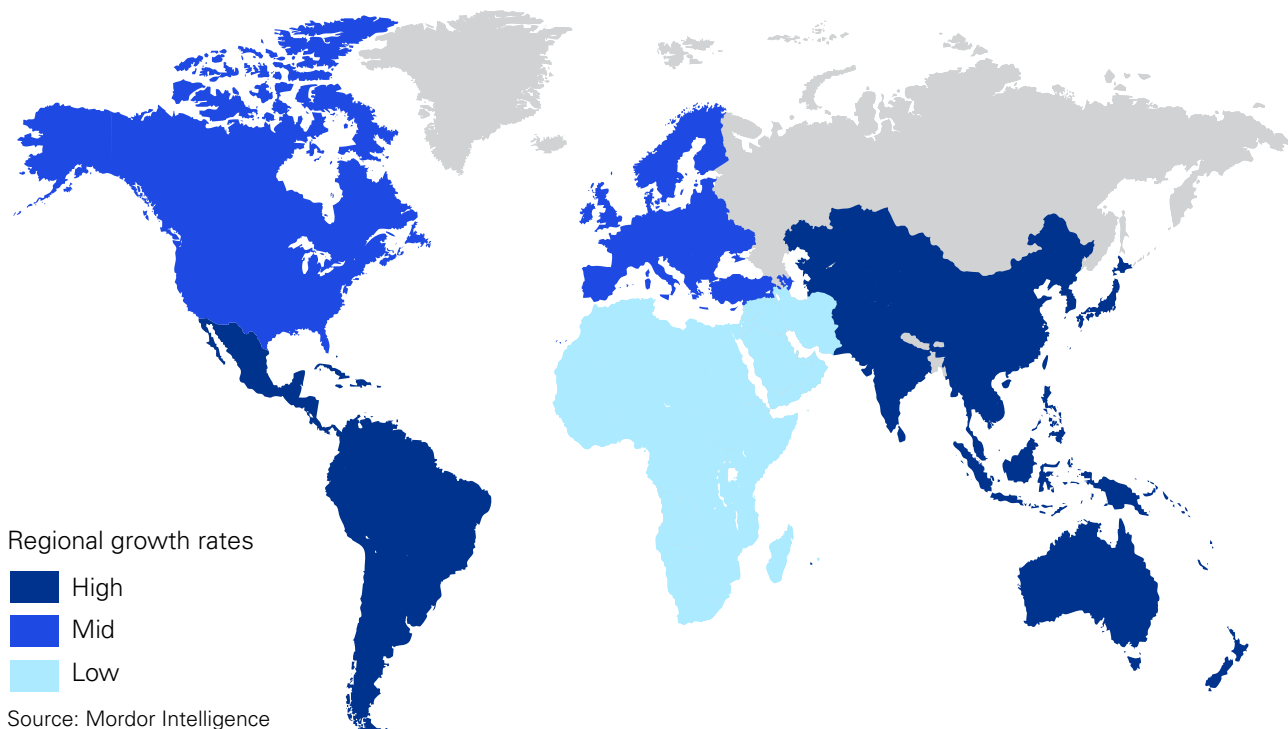
Real-time visibility throughout the global value chain gives companies essential demand and supply data and analyses. Global manufacturers can respond to a change in demand by redeploying goods when they're still in transit between factories and the end consumer, saving precious time, avoiding potential delays, and reducing storage costs. And they can quickly increase or decrease

the volumes going into distribution centers and stores. All of which should ensure faster delivery, fewer steps in the movement of goods, delighting customers and reducing operating and storage costs.

During transportation, IoT monitors and continuous connectivity can provide alerts if, for instance, shipment temperatures change for perishable goods, or volumes change suddenly. Analytics also enable real-time measurement of key 'milestone' events like customs clearance and shipping, to ensure that progress meets schedule. And, when distributors and other partners have access to the same information, via collaborative platforms, it's easier to discuss and resolve problems and make instantaneous decisions on where to send stock and source materials.

Analytics also provide essential support to the supply chain planning process, using AI and ML (machine learning) tools that take product, customer, and channel data to deliver sophisticated demand insights, like sales per segment, preferred packaging, and channel comparisons. AI can help predict demand over different periods — and calculate the subsequent impact of different supply chain flows on pricing, service levels and payment terms — to help avoid either stock-outs or excessive inventory levels. It can also forecast delivery times more accurately, and factor in the effect of potential delays due to weather and traffic, all in real-time. And, through modeling, it's possible to analyze different scenarios to determine optimum decisions on stock levels and pricing.

### Supply chain Big Data analytics market — Growth rate by region (2019–2024)<sup>7</sup>



<sup>6</sup> Supply Chain Big Data Analytics Market Size, Share | 2022–2027 (mordorintelligence.com)

<sup>7</sup> Ibid.





# A new era in supply chain planning and management

The pandemic has affected every part of the value chain, from raw material sourcing to end customer fulfilment. The more resilient supply chains have been flexible, integrated, and transparent, with continuous monitoring and highly intelligent real-time/predictive analytics and insights.

However, many supply chains also suffered, due to a lack of analytics and visibility. The 2021 BCI Supply Chain Resilience Report<sup>8</sup> found that almost three-quarters of surveyed organizations still rely on spreadsheets to predict, monitor, record and report disruptions.

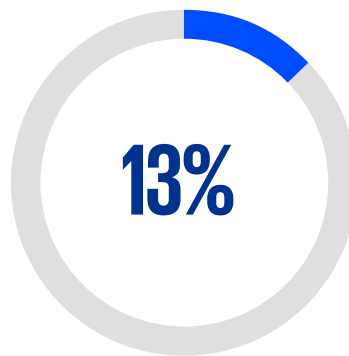
In order to gain greater visibility, businesses must first map the end-to-end value chain and gain a complete picture of how products and materials move, who handles them and what data is captured — this will include all third party movements, some of whom may lack sophisticated data gathering capabilities. Armed with a data gap analysis, cost-effective track and trace solutions can be applied to these providers.

The ultimate goal is to create control towers that provide immediate insights to drive a fully connected supply chain, powered by high-tech (5G) networks, delivering real-time data and analytics and informing decision-making. Some retailers, for example, have intelligent demand signals and in-transit stock updates integrated from their control towers into their fully-automated fulfilment centers that can readjust and cater for either store replenishment and online orders, based off these real-time data insights.

Many 'Just in Time' (lean) global and regional supply chains struggled to cope with the complex logistics challenges brought on by COVID-19.

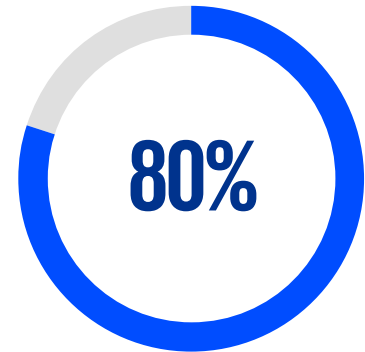
Consequently there was a shift to a 'Just in Case' (agile) approach offering greater flexibility and resilience, but requiring slightly higher inventory levels. Such a strategy would be better supported by greater use of contract manufacturing organizations, giving the potential to scale up or down with speed.

Greater visibility and collaboration bring agile supply chains a step closer to reality, as trading partners track and share key data, like changing customer demand, and real-time inventory levels of all partners — including in-transit shipments. They can plan more accurately for distribution center/store replenishment and adapt to e-commerce fulfilment.



indicate having complete visibility into the end-to-end supply chain<sup>9</sup>

There's a lot of work to do. Many supply chains suffer from fragmentation, with a lack of collaboration, data sharing and technology integration. Investing in the technology enablers like IoT, 5G and analytical software will be hard for smaller players in the chain. Getting data can be a painful exercise.



A responsive operations and supply chain is the single biggest digital transformation priority for organization: 80 percent say it's a 'top' or 'high' priority.

Source: A commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2020

However, many of these barriers can be overcome through collaboration, offering supply chain partners with access to open platforms that enhance information exchange. With every part of the supply chain connected, customer behavior and desires will feed directly into the supply process, and manufacturers can communicate seamlessly with upstream and downstream partners. In this way, a visible supply chain can become a competitive differentiator, driving predictive decision-making, giving businesses the flexibility to act swiftly on sourcing, manufacturing, logistics and storage, to cope with disruption and complexity, and become more resilient.

<sup>8</sup> <https://www.thebci.org/static/e02a3e5f-82e5-4ff1-b8bc61de9657e9c8/BCI-0007h-Supply-Chain-Resilience-ReportLow-Singles.pdf>

<sup>9</sup> Supply chain transparency: creating stakeholder value



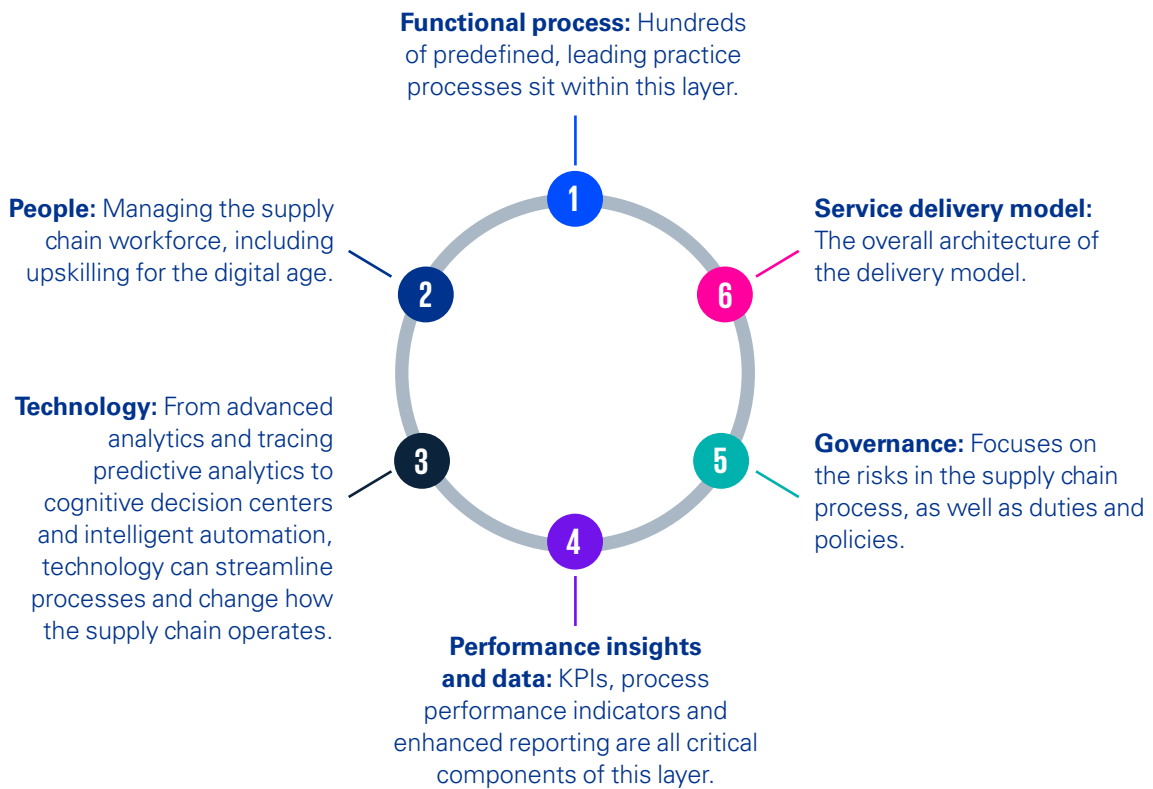
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Leverage customer-centric business models, pre-built KPI libraries, data

models and reports to align your supply chain to your customer experience. This is all underpinned by the KPMG Target Operating Model, fine-tuned to derive value from your chosen technology platform and based upon six layers of change:

KPMG Powered Enterprise | Supply Chain and KPMG professionals can help you on this transformation journey. Their processes and tools, enhanced by decades of experience, can facilitate a connected supply chain, and can help bring your customer-centric vision to life.



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