

How the great supply chain reset is infolding

(PART 1)



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Companies are making their supply chains more cost-efficient, resilient and sustainable in an increasingly uncertain world.

In brief

- ▶ Inflationary pressure, supply uncertainty, geopolitical, economic, and ESG pressures are causing a rethink of traditional global supply chain models.
- ▶ Linear, lowest-cost supply chains are giving way to more multi-dimensional supply networks that better balance risk, sustainability, speed, agility and cost.
- ▶ Companies need to rethink where they operate, the materials they source, the suppliers they buy from, and their physical supply footprint and operating model.

Over the last couple of decades, many supply chains have become linear global chains, stretched to their limit in pursuit of efficient, mass production with low-cost countries, just-in-time inventory and limited inherent resilience.

These models were geared towards growing volumes of open, cross-border trade in a relatively stable world. Manufacturers also became accustomed to an abundant supply of raw materials, leading to low prices and downward spiral in investments. Furthermore, this low-cost, single-use mentality typically failed to consider the environmental and sustainability impact of products, processes and physical supply routes.

However, in the face of international trade policy change and global tax reforms, massive disruptions from the COVID-19 pandemic, the war in Ukraine, increasing China-US tensions, shipping delays, and environmental, social and governance (ESG) pressures, companies in many sectors are being forced to shift to segmented "supply networks." This involves re-orienting the supply chain towards supply security, energy transition, talent, and increased agility.

These factors combined have led to the unfolding of the great supply chain reset. A reset involves more than just tinkering with the edges of supply chains. It impacts the entire business model, from strategy, marketing and design, to sourcing,

manufacturing, packaging, storage and transportation. In many cases, companies will be reconstructing their entire value chain, including their business management and supply chain control hubs, and associated tax models.

Five elements of the great supply chain reset

There are five key elements to the great supply chain reset. Future supply chains, or supply networks, should support efforts to reduce material consumption and carbon footprint and increase circularity and biodiversity. They also need to be resilient enough to withstand environmental and geopolitical shocks and adapt to changing legislative measures.

CHAPTER 1

Rationalized portfolio, service levels and as-a-service

The first element of the great supply chain reset is rationalizing the portfolio. A radical review of the product portfolio and bill of materials may reveal products that – regardless of their manufacturing location – are no longer profitable to make and sell (if the manufacturer is unable to pass on inflationary costs) or cannot be produced sustainably. These include cheap, disposable plastic goods and fast-fashion products, products that use large amounts of raw materials such as water, biodiversity-damaging products, or items produced thousands of miles from their ultimate marketplace. Manufacturers should question whether such items can survive the pressures of ESG reporting requirements, carbon taxes and consumer demand for ESG.

In many sectors, the cumulative effects of the rising costs of products (and thus working capital), logistics, carbon charges for border crossings, and frequent supply

disruptions is increasing the cost-to-serve, reducing gross margins and making it unprofitable to hold inventory as a buffer.

Circular and as-a-service models are a foundation of the great supply chain reset. From manufacturers' refurbishment of cars, phones, laptops and other white and brown goods to the textile collection and waste reduction by global fashion brands, companies are pivoting to sustainability. Along with the shift from customer-ownership to subscribing and renting, manufacturers are becoming less dependent on new material supplies and are instead focusing on increasing supply chain resiliency.

CHAPTER 2

Resilient, circular operating model

Sustainability by design is another imperative. In a future circular economy, products will be engineered to last, be able to be constantly repaired and upgraded, with any redundant parts recyclable. This opens up new revenue streams with modular design, enabling different parts to be easily replaced and serviced. The production process will avoid exploiting scarce mineral resources and water, be energy-efficient and net zero, and minimize waste and pollution.

All these factors determine the kinds of products a company makes, and where and how they make them. In many cases, the entire bill of materials – the components required to produce a product – may have to be revisited, including raw materials, semi-finished products, or ingredients. It may be possible to reconfigure existing products to become more circular, while others may have to be discontinued.

Taking a detailed view of the entire product journey, from design to delivery and beyond, can also help to simplify sourcing, by standardizing as many elements as possible, reducing the range and specification of materials used for

production and packaging. This means fewer suppliers and components, which lowers the exposure to disruption. Companies should investigate whether it's possible to use less material and/or more recycled content, and whether this can reduce total cost of manufacture.

Ironically, a more circular model with subscription components introduces a new set of tax, legal and customs-trade trade-offs that require careful consideration. For example, service subscription income may be taxed different from a traditional product sale, and cross border service provision will give rise to new transactional models, asset ownership, registrations and compliance challenges.

In real estate, it's estimated that a circular economy has the potential to reduce global CO2 emissions from building materials by 38% by 2050. Owners could realize more value from existing assets, keep resources and building materials in the economy, and reduce waste. ■

(CONTINUED IN NEXT EDITION)

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Large, international companies are also collaborating to support the circular supply chain. For example, an international drinks conglomerate launched a global incubator program designed to address supply chain challenges across water stewardship, circular economy, sustainable agriculture, and climate action.

Nearshoring

53%

of respondents to an EY study are considering nearshoring.

Packaging is increasingly under the consumer and regulatory spotlight, with plastic taxes driving companies to build recycling capabilities and source recycled plastics. A consumer giant recently announced that 97% of its product packaging in Italy is now recyclable and that it is investing significantly in innovative packaging solutions. Workers' rights must also be respected in the shift to sustainability. In another example, also from Italy, instead of just closing down a factory, the same company repurposed it as a dedicated plastic recycling facility, helping to minimize redundancies and creating much needed recycling capability.

CHAPTER 3

Segmented supply footprint and challenging traditional management hubs

Chief supply chain officers now balance multiple conflicting needs of cost, service, sustainability, agility, and resilience. Growing international trade complexity, and the need to manage a widening

range of risks, makes it even harder to determine where products should be manufactured and sold. The onshoring vs. offshoring vs. "friendshoring" debate remains, but is further complicated by issues such as sustainability, trade wars, agility and, increasingly, visibility. The Carbon Border Adjustment Mechanism is a proposed EU tariff on carbon-intensive products like cement and steel,² which could make these goods less attractive to import and encourage companies to build recycling capabilities and source recycled plastics.

In the era of mass offshoring, manufacturers have enjoyed the huge scale efficiencies of large manufacturing centers in low-wage countries. For a wide range of products, there is a now a pronounced shift to get closer to the end customer, to ensure a faster response to changing consumer demands, while avoiding tariffs, cutting logistics costs and reducing carbon footprint.

An early example of this trend is "China plus one," where companies avoid concentrating all their sourcing in a single market. However, even this may not be sufficient in the face of continued price inflation coupled with trade policy and rule changes aimed at improving national level supply chain resilience that encourages re-shoring or near shoring. Technology is starting to make such decisions easier, with advances in 3D printing and robotics, making it possible to transform manufacturing conversion costs. 3D printing allows highly personalized and increasingly sophisticated parts and finished goods to be produced locally – often to order, while robotics enables factories and warehouses to operate at or near "lights out."

There are already clear signs of a shift to more localized manufacturing. According to the 2022 EY European Attractiveness Survey of global investors, 53% of respondents are considering "nearshoring" to bring operations closer to customers – more than double the previous year's figures. And a further 43% are thinking of "reshoring" to take activity back to their domestic market – compared with 20% in 2021. More specifically, 79% plan to establish or expand operations

in Europe. The war in Ukraine may have temporarily slowed some of these trends, but the overall direction is pronounced.

Reshoring

43%

of respondents are thinking of reshoring to take activity back to their domestic market.

Given concerns over geopolitical tension and national security, friendshoring is a further option for companies, forming economic-trade partnerships based on shared values and mutual interests between countries, potentially offering greater stability.

Another key factor in choosing supplier strategy is the use of supply chain management hubs. It is important for companies to actively re-assess functionality, labor intensity and the physical location of their international footprint of management and control hubs.

In recent decades, we have seen multinationals establish "hub" structures to house "above market" supply chain teams, often co-located with commercial, sales, marketing and product management functions. Many of these hubs were established in jurisdictions attractive for fiscal reasons, as well as the ability to attract and retain talent pools. With improved visibility tools and larger supply networks, these central supply chain management teams were able to extract significant value from procurement right down to manufacturing logistics and return flows, whilst benefitting from competitive cooperate tax treatment.

Fast forward to the post-pandemic age of the future of work, digitization of routine processes, talent shortages, labor cost increases, international tax reform and protectionism and the evolution of hub structures is subject to a growing set of new set of questions:

1. What is the practical geographic span of control of these hubs?
2. Can a distributed workforce still provide "co-located hub" functionality through technology?
3. Have some traditional hub locations become too expensive in terms of labor cost? Or have they actually become more attractive due to their inherent geopolitical stability and strong talent pools?
4. Can the hub team size be reduced through the use of AI? Or through offshoring secondary hubs?
5. Can a multi-hub structure reduce the risk of a single point of operational and fiscal failure?
6. Is the "work from anywhere" credo in certain sectors fundamentally challenging any form of physical co-location, and thus requiring fully distributed no-hub design? ■

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The above considerations have started to drive change in the size and location of supply chain management hubs and this effect is expected to increase over the next decade when the above considerations are likely to get more profound.

CHAPTER 4

Automation and cognitive decision support

The opacity of traditional supply chains continues to frustrate managers' ability to increase agility and responsiveness, balance supply with demand, and monitor and improve ESG performance. With supply chain ecosystems becoming ever more complex, human operators need the right automation and cognitive decision support capabilities to gain visibility and control – to improve quality and speed of decision-making.

Transparency assures consumers, regulators and investors that products are on their way and that sourcing is sustainable, as well as helping avoid compliance fines and enhancing brand and corporate reputation. The ability to map and track suppliers, facilities and products down to raw materials will improve traceability, and allow analysis of supplier compliance, ESG credentials, KPIs and supply chain risks.

Localized manufacturing

79%

of European companies plan to establish or expand operations in Europe.

Armed with greater visibility, supply chain leaders are investing in adding flexibility and multi-sourcing to critical stages of their supply chain. This gives them the capability to not only spot problems sooner, but also change sourcing at short notice to avoid delays or shortages. One major UK retailer has an interactive global map that locates and gives details of all its key supply chain partners. This transparency has also helped build brand trust, with consumers being able to track the details of where a company sources products from and what the environmental impact is. A New Zealand dairy brand lets consumers view product sources, while another New Zealand company offers a customer app showing the carbon impact of different purchases.⁴

CHAPTER 5

Collaborative relationships built on value – not cost

Tomorrow's supply chains will be less linear, involving a more complex, connected network of onshore, friendshore and farshore players, working as partners and linked into common approaches to circular design, sustainable sourcing, manufacturing, packaging and logistics. Sourcing decisions will be based more upon resilience, rather than merely minimizing costs. Although manufacturers should aim for a diverse range of suppliers to spread geographical and geopolitical risk, they also need sufficient depth of business to develop trusted strategic relationships.

To do this, they are reducing their overall supplier base, focusing more on outcomes not transactions, to foster collaborative partnerships, where other members of the value chain are incentivized to innovate and get involved earlier in the product process – ideally at design stage.

Another key decision is whether to manufacture in-house or contract out. The former brings greater reliability and control, but potentially higher costs and exposes companies to the global talent shortage. Contracting out, on the other hand, gives more flexibility to scale up and down at short notice, with contractors able to deliver manufacturing "centers of excellence" to access the latest skills and technology. However, outsourcing production risks IP leakage and a breakdown between manufacture and design, as well as making companies dependent on fewer suppliers, reducing bargaining power.

The pace of transformation to these new models will be heavily influenced by government action, notably tax incentives and grants, and penalties for non-compliance with ESG legislation.

Reconfigured, rebalanced, resilient

Many of today's supply chains have become too long, brittle and opaque to adapt to an increasingly disrupted world. If the byword for the past 20 years or so was scale and low cost, then the next decade will be characterized by resilience, sustainability and a broader definition of value.

In the great supply chain reset, companies need to reconfigure from linear to segmented, rebalance from primarily offshore to multi-sourcing, and become more resilient by forming longer-term, mutual partnerships. To do this, they should demonstrate critical capabilities in supply chain segmentation, portfolio and lifecycle management, ESG and circularity, ecosystem partnering, data analytics and risk, underpinned by innovation.

SUMMARY

In the great supply chain reset, companies are becoming more sustainable, shifting from simple, linear, low-cost models to multi-dimensional designs to satisfy different product segments and markets. A blend of global and regional models and carefully selected near and onshore production, enable swift responses to disruption and volatility. Supply chain design should consider sustainability, resilience, agility and cost, with manufacturing locations balancing tax, operational, strategic, financial and environmental factors. Managing this increased complexity requires broad visibility and risk monitoring. Meanwhile, fewer, deeper and more collaborative supply relationships, along with built-in redundancy and inventory strategy, can lower supply chain risk. ■

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