Building a **resilient** supply chain

Your guide to building resilience into your supply chain

Contents

Contents

Introduction to supply chain resilience

The past few years have seen unprecedented challenges wherever your business sits in the supply chain. While it can be challenging to watch the news and see continual global events causing disruption, supply chain managers have the power to minimise the impact, juggle price increases and keep customers and the board happy.

Supply chain managers are on the frontline dealing with External pressures, such as regulation and trade barriers, have intensified, customer segments have become more volatile with increased service demands, and multiple stakeholders are demanding action to promote sustainability.

Unstable global markets have brought price fluctuation and varying inflation levels. As the global economy is shaken, it can be easy to get caught up in the depressing details. However, they are out of our control, so it's important to focus on things we can control.

For example, getting on top of

your inventory and supply chain management processes can ensure you remain competitive and profitable when times are tough.

The Association for Supply Chain Management says that the number one priority for supply chain and inventory managers is supply chain digitalisation. In this guide, we'll discuss this as well as other ways to build supply chain resilience.
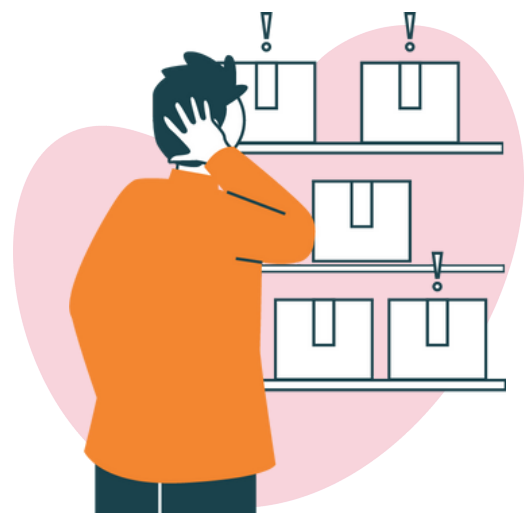
What is supply chain resilience?

Supply chain resilience means managing day-to-day risk and having systems and processes to adapt to disruption in the supply chain. Your business can absorb the additional stress, recover and, potentially, thrive – whatever the circumstances. With the right systems and processes, you can also forecast and anticipate disruptions, potentially avoiding them altogether.

Factors causing supply chain disruption

The interdependency of the supply chain means that one problem can compromise the entire global network. Unfortunately, this is becoming more common, and there are many factors that can impact supply chains, including:

Global health events

Geopolitical events

Supply chain risks

Natural disasters and climate events

Legislation and regulations

Cyber-attacks
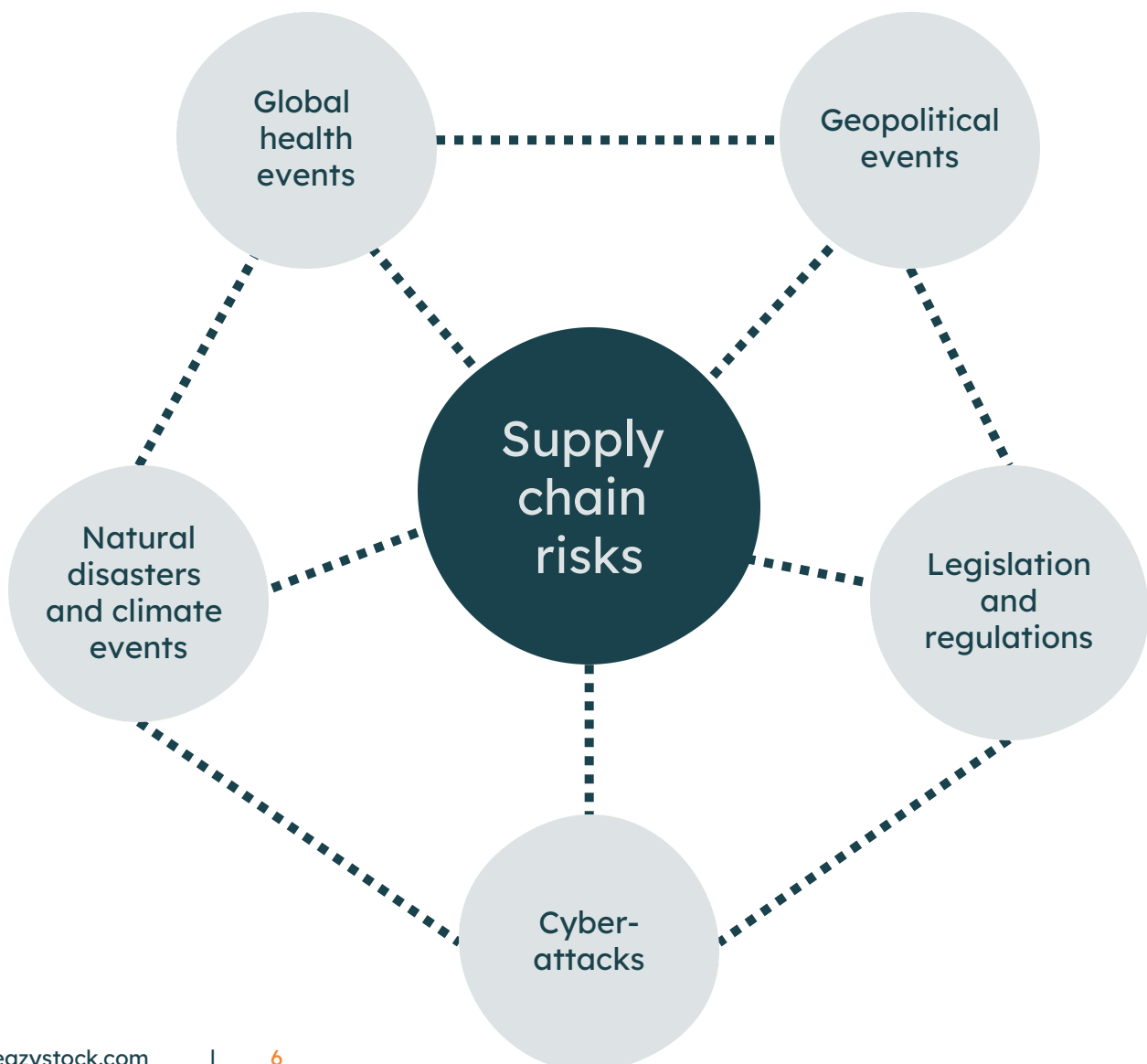
Global health events

While COVID-19 may be a once-in-a-generation pandemic, it wasn't the first global health event and won't be the last. SARS in 2003, H1N1 flu in 2009 and Ebola in 2014 caused everything from capacity constraints and sky-high freight rates to material shortages and shipping delays.

Geopolitical events

Geopolitical events such as Brexit and the US-China trade war have impacted supply chain mobility. New border arrangements resulting from Brexit saw an increase in costs and paperwork, and the creation of the EU-UK Trade and Cooperation Agreement (TCA) set out post-Brexit trade rules.

Due to the war in Ukraine, there have been global food shortages due to disruptions in the movement of exports. This has also contributed to the increase in global inflation.

The fighting between Israel and Hamas has seen Huthi rebels attack cargo ships in the Red Sea, effectively closing the main global shipping route. This is causing global issues and massive delays to shipping and deliveries.

Legislation and regulation

Each government will have its own supply chain legislation and regulations. For example, the UK's Modern Slavery Act (Transparency in Supply Chains) Regulations 2015 and Germany's Supply Chain Due Diligence Act, which came into force in 2023.

EU countries also need to prepare for the Carbon Border Adjustment Mechanism (CBAM) restrictions. The transitional period is already underway ahead of the definitive regime, which will come in 2026.

There are also packaging, safety, employment and environmental regulations, which could cause supply issues if they change.

Cyberattacks

Digital transformation has enabled global supply chains to become more connected, making it easier to conduct business globally. However, this also increases the risk of cyberattacks and makes it easier for hackers to infiltrate businesses of all sizes. Attackers will exploit weak supply chain security to bring businesses to a halt.

Natural disasters and climate events

Natural disasters, such as hurricanes, tornados, snowstorms, tsunamis, and volcanic eruptions, have led to port closures, cargo flight cancellations, and supply shortages.

As we live through climate change, severe weather patterns are becoming more common, so it's vital to have contingency plans to ensure business continuity.

Given the many variables that can occur without warning, it's imperative to develop adaptive strategies that consider supply chain resilience.

Why should you build resilience into your supply chain?

Effective supply chain planning can reduce risk, lower the immediate impact of an external shock on performance and the bottom line and lead to faster and often greater recovery.

How to build a resilient supply chain

Before building a resilient supply chain, you need to understand its weaknesses and highlight areas for improvement. A good place to start is to look at how you have responded to previous supply chain issues. These questions can help:

- Where did disruption hit your company?
- What was your initial response?
- Did it work? If not, what did you do?
- If yes, did you make permanent changes?
- Is your supply chain adequate to meet current demands?
- Where are the most significant risks?

Once you understand your company's supply chain weaknesses and consequential issues, you can begin to plan how to prevent problems from happening in the future.
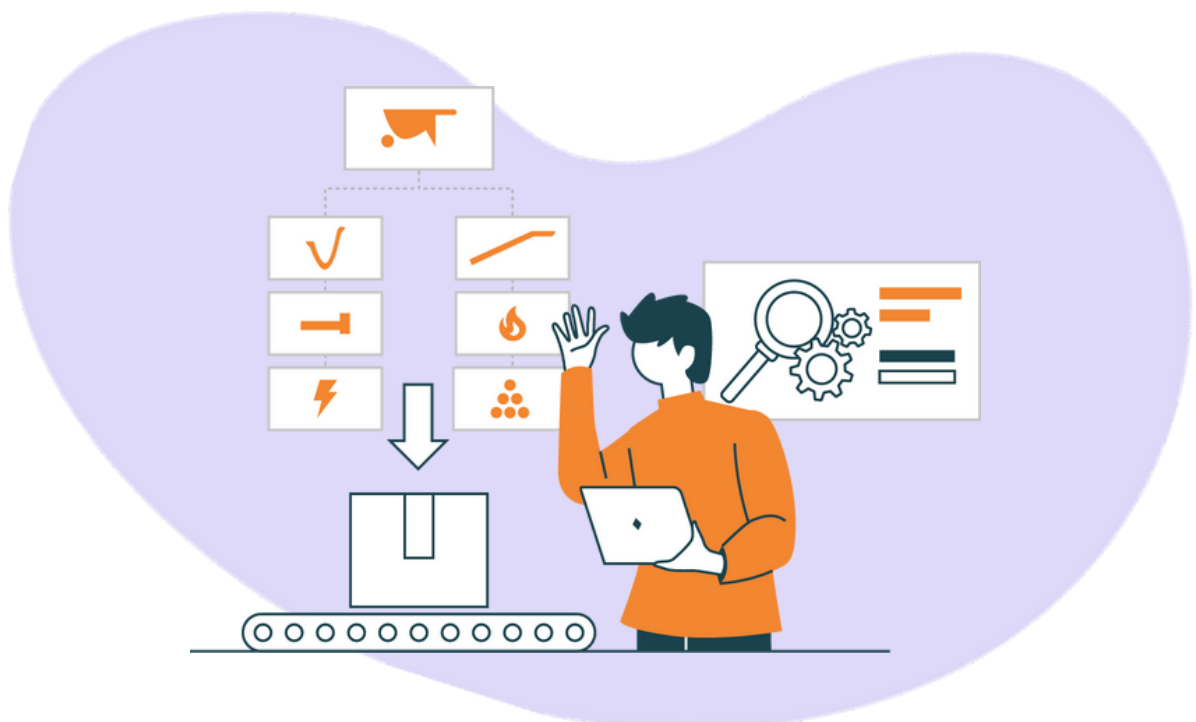
Five critical areas to consider when building a resilient supply chain

01 | Inventory management basics

02 | Digitalising the supply chain

03 | Visibility, traceability and real-time tracking

04 | Cyber security

05 | Supplier evaluation and management

Inventory management basics

If you've found your supply chain weaknesses and are ready to improve its resilience, getting the basics right is the first step. You can then build on these to ensure you're prepared to handle whatever disruption comes your way.

The key elements of inventory management

The interdependency of the supply chain means that one problem can compromise the entire global network. Unfortunately, this is becoming more common, and there are many factors that can impact supply chains, including:

Accurate demand forecasting

Stock classification

Stock-out anticipation

Ability to track excess stock to prevent obsolescence

Use of inventory buffers

Calculating safety stock

Forecasting accuracy

Without a crystal ball to predict the future, a good demand forecasting engine is critical to building resilience into your inventory levels.

This effectively means carrying stock that accurately reflects demand so you can decide how much extra you want to hold as a buffer. It also means you can continually analyse and adapt to the latest market conditions.

Factors to consider for accurate forecasting

The first step is to review the demand profiles of your stock items and consider where they sit in their product lifecycle. This is because an item's demand profile differs at each stage, affecting how you calculate its forecast.

Knowing each inventory item's demand profile or type will help you choose the best algorithms to calculate demand for the most accurate forecast.

Other factors to consider that will affect demand accuracy include:
- Demand trends (rising or falling over a sustained period)
- Seasonal demand (annual peaks and troughs),
- Promotions

You can then adjust forecasts accordingly. When markets are changing at a dramatic pace, it's essential to combine this data with qualitative insights. You will get some of the most up-to-date qualitative demand data from your sales teams, customers, and industry trade bodies. You can then use their input to fine-tune the numbers.

Check demand outliers

When demand is unpredictable, you may see more outliers, e.g., when actual demand is much higher or lower than the forecast.

Demand outliers can skew upcoming forecasts, so reviewing them and deciding whether to include them in your predictions is important.

Periods of stockouts

Ensure you remove periods when there were stockouts from your forecasts, as they will make them too low. Flag periods for exclusion, or if you can, make an assumption about the lost sales and add this number into the forecast.

Consider all scenarios

Once you have your forecasts, it's essential to identify plans A, B, and C in case of substantially higher or lower demand. These can include putting safety nets in place to help prevent stockouts or excess inventory. Setting up alerts for demand deviation can allow early implementation of your backup plans.

Share your demand forecasts or order projections with your suppliers so they can clearly understand your requirements, e.g., what stock you need to be delivered and when. If they can provide potential lead times, these can be added to make the prediction even more realistic.

In the worst-case scenario, you may need to look for alternative supply sources, ration current stock to last as long as possible, or prioritise orders for specific customers.

Stock classification

As each of your stock items will have different demand patterns, it's important not to treat each one the same when it comes to forecasting and management. This will help you manage items that are more at risk of erratic demand and lead times than others.

Classifying your stock using ABC analysis helps prevent a 'blanket approach' to categorising your stock items and assigning different stocking policies to each group. You can sort them into the most profitable or those most at risk of disruption.

For example, with your inventory split into three groups, you might decide to prioritise forecasting and carry more safety stock of your A items, as they have the most supply chain 'risk' and demand volatility than your B and then C items.

A more advanced approach would be to use pick classification. This identifies items that you pick and sell most frequently and improves availability.

As an item's pick frequency drops, you can reduce its order quantities and continue to invest in the right stock.

Anticipating stock-outs

If you can 'foresee' potential stock shortages, you can act before there's a stock-out.

A risk-of-run-out report will help you understand which stock items are most 'at risk' of running out, when they are likely to run out, and how much you are likely to be short.

Although this is a reactive tactic, with this crucial information, your team can put a plan in place to deal with the consequences, e.g., organise an emergency order, communicate with the sales team, or redistribute stock.

You can set up a basic risk-of-run-out spreadsheet using data on current stock levels, items on order or in transit, demand forecasts and lead times.

You can then work out:

- How many days of stock you have left until you run out
- The total number of days you will be out-of-stock (and the longest period, if required)
- The total amount of units you will have out-of-stock (and the largest quantity, if required).

However, such calculations are only helpful if you have accurate data on your current stock levels and forecasts. If demand is consistent, these calculations could be done once a week, maybe less. With more dynamic demand, they would need to be as often as possible.

The aim is to help your team understand upcoming stock challenges and implement contingency plans. Although doing this manually can be time-consuming, it lets you focus on your most critical or profitable items.

Preventing excess stock

Just as significant as avoiding stockouts is preventing excess stock. Excess stock can become difficult to move and become obsolete or dead stock.

One way to prevent this is to track your stock's health. Your stock levels will reflect your demand forecasts if you have healthy stock. You may also have a pre-calculated additional level of safety stock.

If you have excess stock, you'll have a lot of stock sitting on shelves well over the quantities needed according to your forecasts that won't sell. It is essential to watch these levels, as inventory can perish, be superseded by newer models, or lose market value.

When a stock item has had no demand over several periods, it can be considered obsolete or dead. At this point, items affect your bottom line, so acting before reaching this stage is imperative.

When you find you have excess stock, there are several strategies to prevent it from becoming obsolete. Firstly, you can look to run promotions or discounts. Secondly, if you have multiple sites, you can identify those with excess stock and move it to ones with lower levels to optimise your entire supply chain.

Identifying and utilising surplus stock also helps alleviate supply pressure, which could be the difference between business continuity and grinding to a standstill.

Inventory and capacity buffers

Companies have learnt the hard way over the past two years that for every Plan A, they need a Plan B, Plan C, and even Plan D so they're never caught off guard.

Adding extra capacity to your supply chain will often come at a cost. Consider how these will affect your overall operational spend and avoid introducing unnecessary complexity into your supply chain.

Introducing buffers into the supply chain can effectively eliminate variability, mitigate risk, and meet unexpected increases in customer demand. The three primary buffers used in supply chain and inventory management are inventory, capacity and time.

Inventory buffers are extremely common in inventory management if you have products with erratic demand or suppliers with long lead times. You can maintain high service levels by holding extra stock to cover expected orders.

The key is finding the optimal buffer or safety stock level to meet unexpected demand while minimising expenditure. Holding too much stock will tie up money that could be spent elsewhere while risking obsolescence.

Capacity buffers could bring in temporary staff or pay overtime to meet extra demand. This usually happens around Christmas or when there are seasonal demand increases. Companies looking to increase capacity around their workforce are introducing automation to aid productivity. This makes it easier to scale operations up and down when needed. We will discuss automation later in this guide.

If your supplier cannot get your items to you in them, you might need to pay for an emergency order by air freight instead of sea to get them to you in time.

Finally, you have time buffers. Time buffers work well if you are a manufacturer and have critical items in the manufacturing process. You could order materials or stock to arrive early to avoid a bottleneck or stop production.

You can also use a time buffer to delay delivering an item to a customer if you don't have the item in stock and you want to avoid paying for an emergency order. This should only be used as a last resort, as you'll be letting your customers down, which could see them look for alternative suppliers.

Moving items from suppliers to your premises and then out to customers presents many logistical challenges, including increases in container prices and shortages of HGV drivers.

To help mitigate these risks, you must secure logistics capacity early and remain flexible with your transportation methods. If this means longer delivery lead times, factor these into your replenishment calculations.

Have a Plan B, Plan C, and even Plan D

Calculating safety stock

Safety stock is a critical element of a resilient supply chain, as carrying extra stock helps deal with supply chain disruptions or spikes in demand.

Safety stock is also critical to achieving stock availability targets, but it's essential to get safety stock levels accurate to avoid carrying unnecessary inventory.

It's important to understand that safety stock should be calculated in addition to your normal stock levels. Calculate usual or cycle stock based on your demand forecast, then add some contingency for unexpected changes in demand or supply.

There are many ways to calculate safety stock, from simply adding a fixed amount of buffer stock to all items to using statistical calculations that account for demand and lead time variance.

While more sophisticated models lead to more accurate safety stock levels, they also take time and resources to implement. In contrast, manual calculations are frozen in time and virtually impossible to implement at SKU level.

Whatever safety stock calculation you use, it's essential to test it carefully before final implementation. This ensures that it works correctly and allows you to analyse its impact on inventory levels and cash flow.

You can read more about calculating safety stock in our blog.
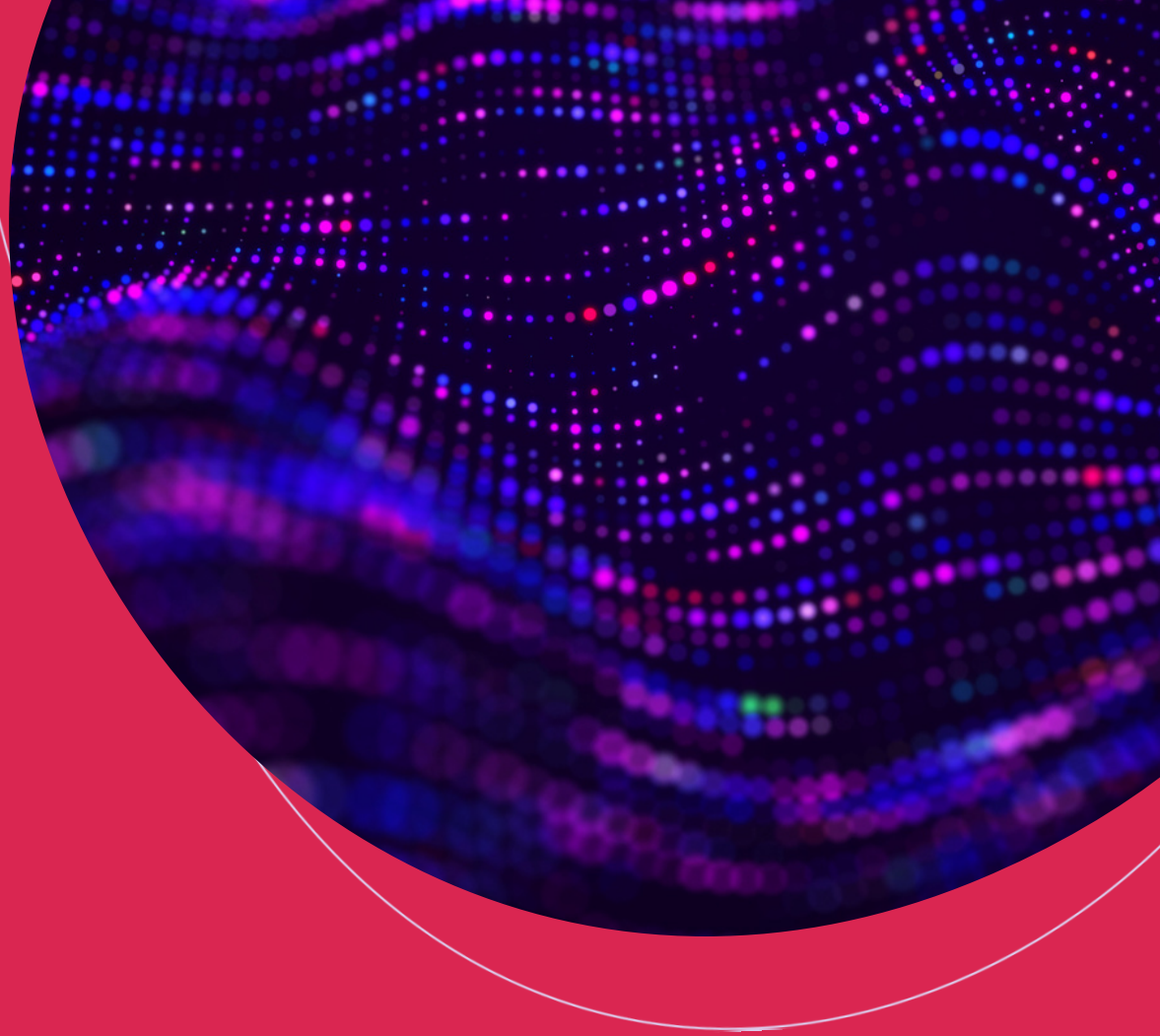
Digitalising the supply chain

There's no hiding from supply chain digitalisation. You won't achieve complete supply chain visibility with manual processes that juggle bits of paper and multiple spreadsheets.

The most resilient supply chains use systems that can process Big Data (large, complex, structured or unstructured data sets) and provide advanced analytics and real-time insights.

Moving to digital systems and processes provides this supply chain visibility so you can spot issues more easily. You can then mitigate or eliminate their impact before it's too late.

As supply chain digitalisation encompasses different areas of supply chain management, attempting to digitalise everything in your supply chain can be expensive and overwhelming.

If you haven't already, review your business strategy to see where bringing in specialist tools and software will improve efficiencies and free up your time for more strategic tasks. You can prioritise your supply chain digitalisation plan once you align the opportunities with your business objectives.

Here are some areas to consider.

Automation

Companies that invest in automation can boost profitability, stay competitive and meet customer demand with more agility. Automation leads to greater efficiency in day-to-day operations like order fulfilment. When businesses automate supply chain processes, they can lower inventory and transportation costs, reduce waste and improve customer service.

Automation is when a machine completes tasks rather than a human, usually faster and more accurately. A person still needs to programme the relevant machinery, but the machine will carry out the tasks independently.

As explained earlier, connecting your ERP system to demand forecasting and inventory optimisation software increases supply chain visibility.

The better informed you are, the more likely you are to make the best decisions regarding stock levels and operating costs. Automation can help with tasks that might involve risk to a person, such as carrying heavy items through a warehouse or fetching items from high shelves.

Some areas that could be boosted by automation include:

Robotic process automation

Robotic process automation (RPA) comes from artificial intelligence. In RPA, a computer or robot performs repetitive tasks that a human would do from a defined set of instructions. RPA bots can mimic most human-computer interactions faster and more accurately than humans at a higher volume.

For example, you could use RPA to extract invoice data, validate it, match it to a purchase order to ensure receipt of goods, create a payment record, notify the payment team and then archive the invoice.

Wearable technologies

We're used to wearable technologies such as smartwatches and smart speakers for day-to-day use. However, wearable technologies like barcode scanners can increase the level of data used within the warehouse. For example, they can analyse picking data to provide the shortest or fastest picking routes or sequences and other data to maximise productivity.

As automation becomes a natural part of business, it's important not to neglect the importance of human involvement in other tasks. For example, engaging with customers and suppliers, problem-solving and taking time to understand and interpret inventory data.

Robot automation

Even though they are at the more expensive end of the scale, robotics are becoming more mainstream, mainly for repetitive tasks such as picking and palleting.

While they might not be a priority or suitable for all businesses, the main use of robot automation in supply chain management is moving materials and items around a warehouse using automated guided vehicles (AGVs) and automated mobile robots (AMRs). Robots can streamline tasks and improve efficiencies as they are more precise and accurate and reduce the risk of human error.

With continued labour shortages, supply disruptions, and demand surges, robotics is making waves in supply chains. Rapid technological advancements are making robotics more affordable to support workers with warehousing, transportation, and other tasks. Safer, more efficient warehouses with fewer people will drive down costs. Although the initial capital investment will be high, the cost savings could be dramatic.

Software

Once you've identified your software needs, putting the next stage off can be easy, but implementing new software doesn't need to be a headache. Gone are the days of needing to halt business operations while setting up systems and spending a lot of money on servers or hardware.

Thanks to technological advances, cloud-based, Software-as-a-Service (SaaS) solutions mean you can connect new software to existing business systems or Enterprise Resource Planning Systems (ERP). Eliminating the need for hardware saves you time and money while improving efficiency.

You can use the flexibility of SaaS to pick and choose which specific inventory modules to add to your existing ERP and bring in the best systems for your needs.

As SaaS solutions are ERP-independent, you can future-proof your business. For example, if you change your ERP further down the line, you can maintain effective supply chain management by switching your SaaS connections to your new system.

Connecting the best systems for the job rather than trying to find one that does everything but not very well is a cost-effective and efficient way to access more information at different supply chain stages.

Visability, traceability and real-time tracking

Supply chain visibility, such as tracking items from leaving your supplier to arriving in your warehouse and being delivered to your customer, is fundamental to the smooth running of your supply chain.

Digitalising your supply chain to include new technology, automation, and wearable technologies will help. However, smart warehouses are capitalising on advanced robotics, such as artificial intelligence, Internet of Things devices and automated robotic automation. Blockchain technology also enhances supply chain visibility, which we discuss in the next section, where we look at cybersecurity.

These once-futuristic technologies can bring efficiencies in inventory management, picking, packing, and shipping while reducing errors and lead times. They can also increase visibility, traceability, and real-time tracking.

Big data and analytics

Data is one of the most critical assets for a business. Making data-driven decisions can revolutionise a business's inventory and supply chain management. A data-driven approach allows companies to refine their offerings, develop targeted marketing campaigns, and foster greater customer loyalty.

What's the difference between data and big data?

Data can come in many formats but is usually structured around a database architecture. Big data combines tools, processing systems, and algorithms that can interpret insights from data. It can come from many sources and be mixed, unstructured, and continually updated. It might sound expensive, but the good news is that you don't need to spend the earth to access advanced data analytics.

Using data in supply chain management

Using data analytics to track demand and analyse inventory levels can further reduce costs. Applying qualified data meaningfully can lead to better inventory planning and management, giving businesses the flexibility to respond to market trends and create a better overall customer experience.

Traditionally, supply chain management has relied on ERPs or disparate storage systems for data. With supply chain analytics, there has been a shift from solely using automation to using forward-thinking data integration and better decision-making.

Supply chain analytics enables supplier network collaboration and end-to-end integration in the truest sense by harnessing near-real-time data and the power of volume, velocity, and variety.

Big data, analytics and automation allow companies to mitigate disruption through digital, agile supply chain management. Implementing predictive and prescriptive analytics, combined with algorithms and robotics, will provide increased visibility, synchronised planning and execution, data-driven decision-making, predictability, agility and profitability.

With a modern business system, you'll have real-time insights to increase stock visibility and streamline warehouse processes. It can also improve pick accuracy, warehouse flexibility, responsiveness, safety, security, and customer service.

Big data, advanced analytics and real-time insights combined with a modern ERP system and in-memory database can help you optimise your supply chain and improve its resilience.

Investing in the right software will empower your teams with the necessary data to perform more efficiently and make informed decisions.

The Internet of Things

The Internet of Things has transformed manufacturing and aftermarket businesses, allowing them to track their goods and items through the supply chain in real-time. It might sound complicated, but essentially, IoT connects devices or objects to a digital network for global monitoring.

Devices, software, and machines are connected using sensors and unique identifiers, such as Radio Frequency ID, which allow them to send and receive digital data. This data is then sent to the central software system – so there's one place to manage all aspects.

With such sophisticated systems, you can track inventory items moment by moment throughout the whole supply chain – from leaving the manufacturer to being on a cargo container, or HGV, into the warehouse and dispatch.

This level of information enables companies to respond to issues quickly, save administrative time for tracking items, and reduce the risk of theft or loss.

The insights you gain will reduce costs, increase service levels and optimise networks by highlighting areas for improvement. For example, you could identify bottlenecks in production to reduce downtimes and improve efficiency. The IoT could also help you identify cost-saving opportunities and ensure compliance with environmental regulations. In service businesses, you could use IoT to track when items are likely to break so you can be prepared to repair.

Artificial intelligence (AI), machine learning and digital twins

Artificial intelligence (AI) hit the headlines regularly in 2023 as actors went on strike to prevent it being used to take over their roles, and the Beatles released new music.

There's no escaping from AI in everyday life, and it's been part of supply chains for a while. From chatbots that provide instant responses to queries to AI algorithms offering tailored product recommendations, the focus is elevating the customer journey at every touchpoint. Now, AI isn't the futuristic, expensive, unobtainable technology, and touches many of the areas mentioned in this guide, and its use will likely become even more sophisticated as it can enhance demand forecasting, optimise reorder points and automate decision-making.

How can AI support your supply chain management?

AI and machine learning are fundamental to integrating people, processes and systems in different operational environments. While AI needs some human input, it can learn to carry out a task or complete a process over time, finding more efficient and effective ways across supply chain functions and operations.

AI can analyse and interpret the most complex data to allow you to make quick decisions and automate workflows and processes across the supply chain. AI's deep procedural and operational insights can enable early detection of mistakes or issues to help reduce risk and avoid potential losses in the supply.

In turn, this allows you to optimise your inventory control, labour planning and customer experience, forecast risk and demand, and recommend business actions and responses.

Another subset of artificial intelligence is machine learning. Machine learning uses algorithms, software or systems to learn and adjust without specific programming intervention from a human. This comes in handy in supply chain management to analyse trends, highlight anomalies and offer insights that wouldn't be possible in spreadsheets or without time-consuming manual calculations. You can then respond quickly with the best possible workflows and operational strategies, such as finding shorter picking routes in a warehouse, predicting machinery faults or breakdowns and optimising shipments' supply chain journeys.

Another example is the use of digital twins. Digital twins allow you to simulate the performance of an entire supply chain. You can then apply scenario-based planning to understand the impact of multiple potential risks in the future, such as a surge in demand, a delay in stock from a specific supplier, or any of the issues discussed in this guide. They use 'smart' alerts to pinpoint which customers are likely to be affected by disruptions so that you can provide alternatives.

Our article, Artificial Intelligence and Machine Learning in Supply Chain Management, discusses using artificial intelligence and machine learning in more detail.
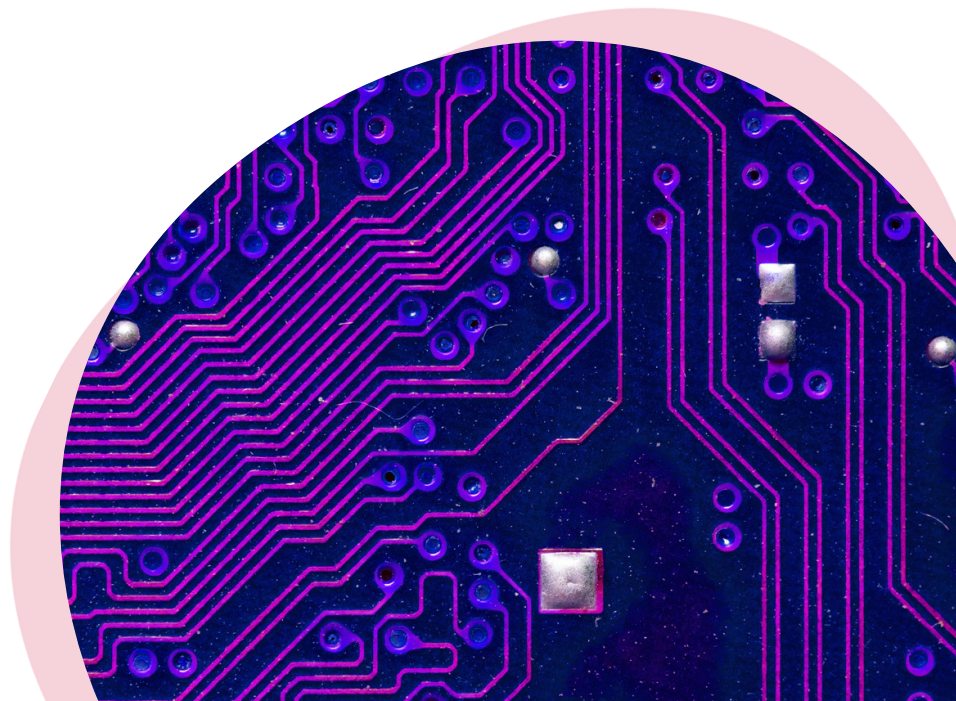
Robotics

The use of robots in distribution centres and warehouses is increasing. While it's easy for your employees to see robots as replacements for their roles, they can actually support and enhance them.

Robots can be beneficial for picking items in large warehouses, especially if there is a labour shortage. Using robots for repetitive tasks can increase efficiency and accuracy. It can also reduce the risk of injuries where items might be heavy or stacked high. This allows your employees to better use their time with other operations that need a human touch.

Another form of robotics is automated vehicles, which are more suitable for smaller warehouses. They can plan the shortest and most efficient routes to move items around warehouses, particularly where items are moving along regular routes.

While robots and AI seem expensive, there are various options to suit different business needs. As they become more common and technology advances, their costs will decrease to make them more affordable for businesses of all sizes.

Cyber security

While digital supply chains bring many benefits, they also make global networks more vulnerable to cyberattacks.

Digitally connecting with partners increases exposure to privacy breaches, identity theft, reputation damage, financial loss, and worse.

Protecting supply chain data and operations from cyber threats will continue to be a significant concern, and investment in cyber security measures will likely increase.

Cybersecurity is essential for supply chain managers because it helps protect the integrity and confidentiality of sensitive information, such as financial data, customer information, and proprietary business information.

You must ensure partners safeguard their networks, devices, people and programs. Investing in firewalls, anti-hacking technologies, and employee training is vital to securing your and your customers' data. This, in turn, can help them maintain customer and partner trust while reducing costs and liabilities associated with cybersecurity incidents.

Along with firewalls and anti-hacking technologies, blockchain technology can increase cyber security.

Blockchain is at the more expensive end of the scale, which might make it less appealing. You can use blockchain technology to protect sensitive information. Blockchain creates tamper-proof digital records of every transaction in the supply chain. By tracking orders, payments, accounts, and production information, you can increase supply chain transparency, traceability

A blockchain is a digital ledger of transactions that is decentralised and distributed across a network of computers. Each block in the chain contains several transactions, and every new transaction is added to the most recent block in the chain. Once a block is added to the chain, it cannot be altered, making the blockchain resistant to tampering or hacking.

Blockchain provides transparency and traceability to increase trust in supply chains by creating a tamper-proof record of every transaction in the supply chain, from manufacturers to end customers.

If you decide to engage blockchain, you will need to find the right partner to work with to understand the best areas for use and implement the technology.

If you haven't already, assess the risk throughout your digital supply chain and ensure you can protect yourself from attacks. Decide how you will mitigate any risks and communicate a response plan to all relevant internal and external parties.

When you review your suppliers, communicate your security needs and any minimum requirements they must adhere to, particularly where you are connecting systems. For example, ensure software suppliers have relevant certifications such as ISO27001 and SOC 2.

ISO27001 is a standard for information security systems and their requirements, increasing resilience to cyber attacks. Working to ISCO27001 standards provides a centrally managed framework that secures information in all formats, whether paper, cloud, or digital.

The American Institute of CPAs developed SOC 2 to specify how organisations should manage customer data. It is based on security, availability, processing integrity, confidentiality and privacy.

Even if you have processes in place, you need to review them regularly to ensure security levels are maintained and that you consider new practices and security methods. Waiting until it breaks could be catastrophic for your company.

There are many short, dedicated and inexpensive courses that can train your teams to be more secure online and in their working practices.

Supplier evaluation and management

Global supply chains enable companies to use international suppliers who might have a lower cost, even if there's a longer lead time. As geopolitical tensions surge and global events affect supply, businesses have been reviewing suppliers and moving to more regional supply chains to increase supply chain resilience and reduce the impact of any disruption.

Supplier diversification, localisation or integration?
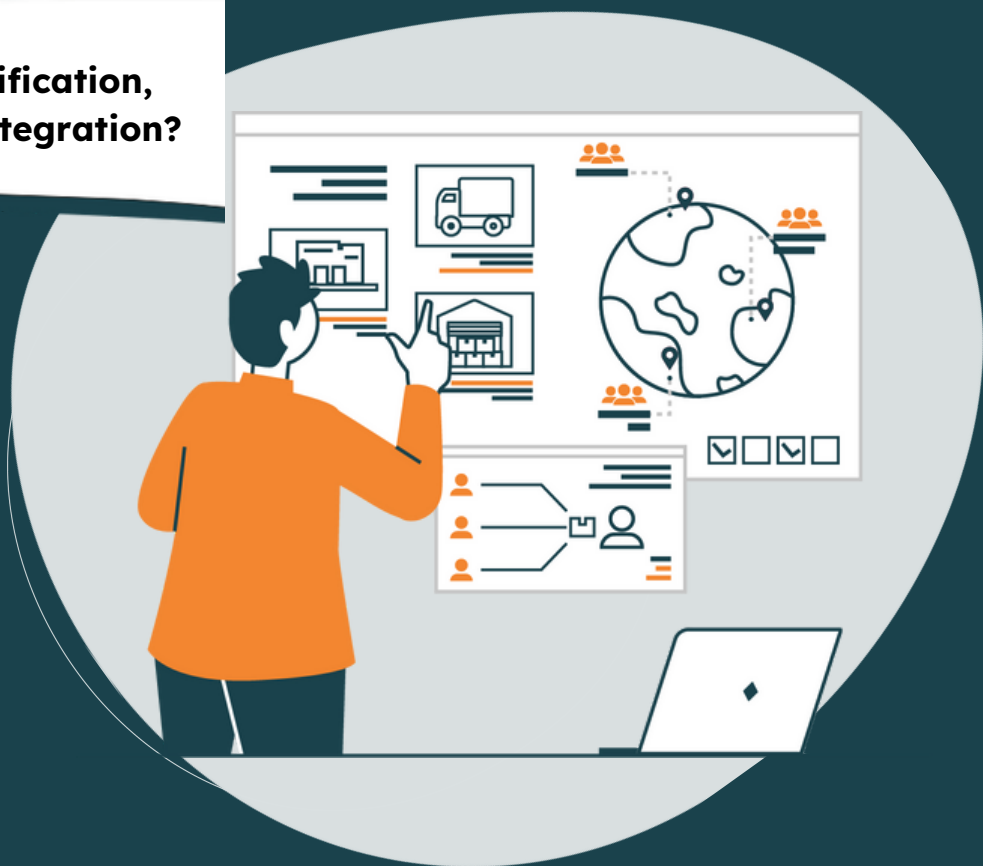
Collaborative supply chain networks and processes are new buzzwords for inventory management. Collaborative workflows around plans, forecasts, orders, shipments, and ETAs can strengthen supply chain networks, eliminating errors and inefficiencies while reducing costs and improving competitive advantage.

Suppliers are fundamental to ensuring you have the right stock to meet customer demand. If they cannot deliver what you need when you need it, you risk losing customers to competitors. Reviewing supplier networks to highlight inefficiencies and ways to reduce supply disruption risks and consequential stock-outs is key to business continuity.

Ensuring continuity of supply relies on excellent communication between you and your suppliers. It's critical that they share details about their current and future supply risks with you. Understanding their reliance on their suppliers and working down each supply chain tier will also highlight potential bottlenecks.

If you don't already, you should implement regular supplier audits and reviews to understand their performance and keep your supply chain running smoothly. A systematic approach allows you to evaluate and rank suppliers on key criteria. You can then collaborate to build and leverage strategic relationships.

Some criteria for ranking your suppliers include lead times, price, location, minimum order quantities (MOQs), quality, compliance, environmental considerations, dependability, and alternative suppliers for the same items.

Using inventory optimisation software can support your supplier selection process. For example, by entering supplier lead times and costs into your platform, the system can recommend the best supplier to deliver your order most efficiently.

Strong supplier relationships can be the difference between success and failure, as they are more likely to prioritise you over other customers where the relationship isn't as strong.

Supplier collaboration can also lead to innovation in the supply chain, particularly in sustainability. Data sharing and joint decision-making can lead to more efficient and responsive supply chains. For example, you could work together to identify new production methods, more economical and efficient transport routes, or ways to develop a circular supply chain.

If this review raises any red flags or you find yourself heavily reliant on one or two suppliers, it may be time to add contingency to your network to limit future disruption.

There are different strategies to do this. The one you follow will depend on your business priorities and objectives.

- Diversification or multishoring
- Localisation or nearshoring and reshoring
- Integration

Diversification or multishoring

If you depend on one or two suppliers for particular items, along with your competitors, any problems significantly impact your business. Whoever has the strongest relationship or pays the highest price will usually get the goods first.

Having multiple suppliers, also called dual- or multishoring, who can provide the same goods will lower the risk of any supply chain disruption.

For example, you can also use your metrics review criteria to compare suppliers based on any of the factors mentioned to see which supplier is the most cost-effective or reliable, depending on your needs.

Another reason for diversification is to spread the risk of supply disruption over more regions or use suppliers who produce and ship from several locations. This can mitigate against an unexpected disruption in one area that could potentially impede or halt operations across an entire network.

Localisation or nearshoring

DW.com found that since the coronavirus pandemic, there has been an increase in businesses looking to nearshore or reshore their production and manufacturing facilities. Closer supply chains reduce transportation, storage and inventory, which are also good for sustainability by reducing greenhouse gas emissions.

Intel, General Motors, and US Steel have all decided to build factories or source suppliers in the US rather than overseas; Lockheed, General Electric and Thermo Fisher are also considering reshoring activities.

When bringing new suppliers on board, consider their locations. Nearshoring your suppliers reduces geographic dependence on global networks and shortens shipping and delivery times.

Although regional or local supply chains can be more expensive, the additional cost can be offset by sales that could have been missed due to supply shortages or backlogs. They can also provide more control over inventory and bring the product closer to you and the end consumer.

Integration

If you understand the transparency of your supply chain, integration is another way to gain more control. Integrating parts of the supply chain into your business can help you avoid disruption, gain economies of scale, and create a competitive advantage.
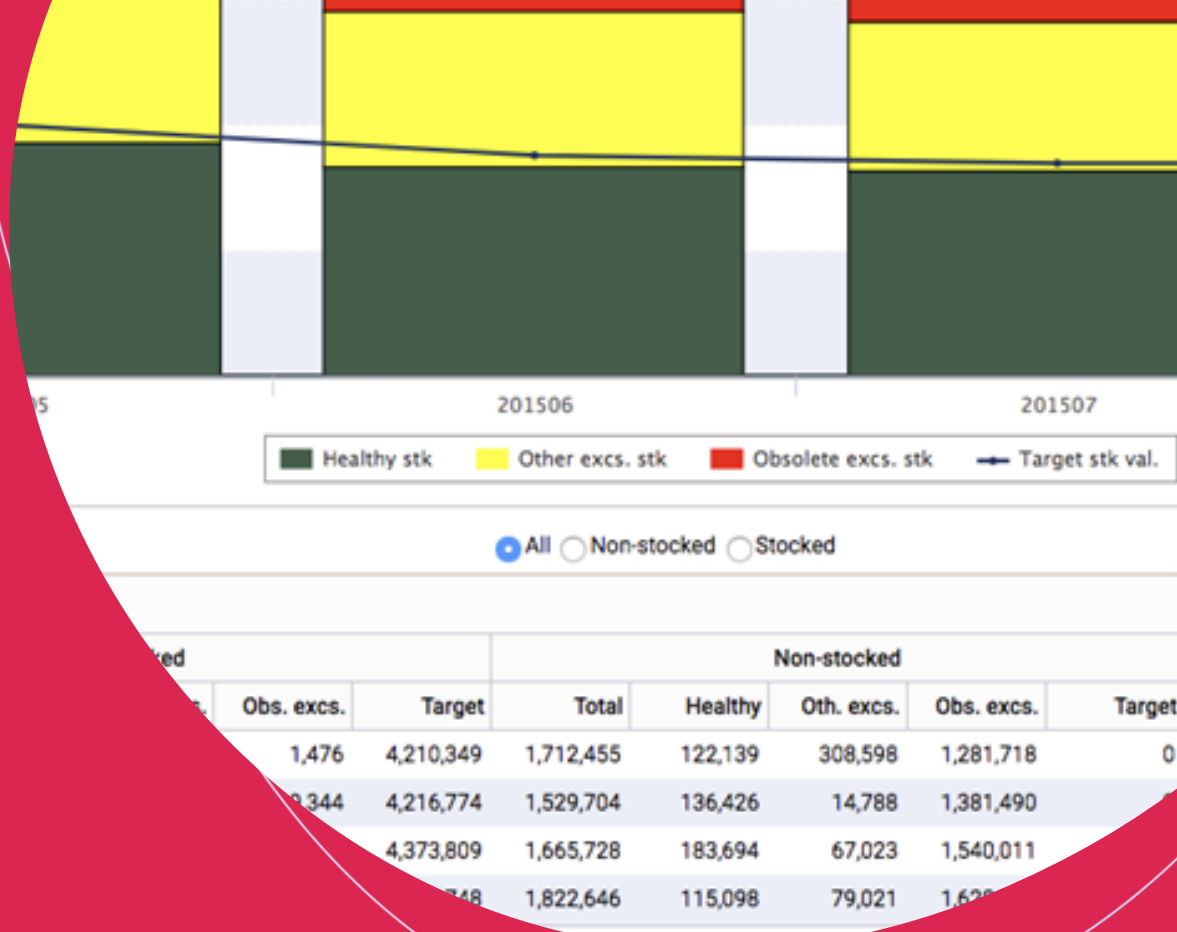
For an SME, full integration may not be an option. There are, however, different scales of integration to help gain efficiencies, such as obtaining a stake in a supplier for preferential terms or signing long-term contracts to show commitment to them.

Vertical and partial vertical integration occurs in industries where suppliers rely on other suppliers to purchase and deliver their goods, creating too many links.

Startingbusiness.com highlights examples in the oil industry, where BP and Shell have adopted vertical integration through daughter companies, subsidiaries, and joint ventures. This provides tighter control over producing crude oil and transporting it to refineries for further processing.

It's similar in car manufacturing, where large companies such as Toyota, Honda and Ford have their own key manufacturing hubs and global distribution channels. Amazon has taken distribution into its own hands by making its own shipping containers, chartering private cargo ships and leasing long-haul planes to beat supply chain issues. Unfortunately, this will be out of reach of most companies.

Complete vertical integration can be expensive to set up, but it can lower costs in the long run. However, it can reduce your flexibility by limiting you to one supplier.

					Non-stocked			
	Obs. excs.	Target	Total	Healthy	Oth. excs.	Obs. excs.	Target	
	1,476	4,210,349	1,712,455	122,139	308,598	1,281,718	0	
	344	4,216,774	1,529,704	136,426	14,788	1,381,490		
		4,373,809	1,665,728	183,694	67,023	1,540,011		
	48	1,822,646	115,098	79,021	1,62			

Inventory optimisation software

You're likely in a competitive environment if you don't have a monopoly over a particular product. With the rise of eCommerce as companies pivoted during the pandemic, customers have become more demanding than ever before. If you haven't got the items in stock when customers want them, they'll find a competitor who has.

Keeping track of all your SKUs manually makes it hard to know whether stock levels are accurate. If you're using manual demand forecast methods or relying on a 30-day rolling average, chances are, your forecasts aren't very accurate, meaning you're seeing stockouts or have excess stock piling up in your warehouse.

Accurate forecasts are essential for maintaining the best inventory levels to meet demand. There are various forecasting methods, but they can be time-consuming and difficult if you're trying to manage with spreadsheets or paper-based methods.

Switching to specialist inventory optimisation software can remove forecasting pain. Instead of relying on manual calculations, the cloud-based software uses sophisticated algorithms to analyse data and predict demand more accurately.

Inventory optimisation software also considers historical sales data, seasonal fluctuations, trends and promotional events to help you optimise your stock levels and improve overall efficiency. The software will also help you set appropriate safety stock levels to reduce the risk of stockouts and maintain good service levels.

With cloud software, you can easily access your inventory data from anywhere with an internet connection. This allows you to make data-informed decisions to respond to market trends and changing economic conditions.

EazyStock's powerful inventory optimisation solution can automate processes, save money and increase operational efficiencies.

Summary

Supply chain leaders face multifaceted and demanding challenges, which come with opportunities for innovation and growth.

To build resilience into your supply chain, you need to review your current systems and processes to highlight any areas for concern. You can then identify and prioritise the most appropriate methods and systems to meet your business needs from this analysis.

While you might find your business facing increased costs due to implementing some of these strategies, it's important to remember that the cost of doing nothing could be more.

- Examine the costs you've already incurred due to previous supply chain disruption. Can you afford to incur them again should something similar happen?
- Consider your suppliers. Are your competitors investing in supply chain resilience so they can respond to market changes faster?
- If so, will they gain a competitive advantage if you decide not to act?
- Think about prioritising specific projects to spread the cost of building a resilient supply chain. Focus on areas that might be quick wins or bring the biggest rewards.

Inventory and supply chain management teams that embrace change and leverage technology like inventory optimisation software will reap the benefits.

eazystock

Learn more about automated inventory optimisation

Contact us