Building Resilient, Future-Proof Supply Chains

New report from MPO and Peerless Research Group shows why supply chain leaders have to expect the unexpected and be prepared to adapt and shift gears fast in the face of disruption.

Introduction

The global supply chain is always subject to disruption, with global pandemics, tariffs, trade wars, and natural disasters as some of the higher-profile events that put these critical networks at risk. As most organizations are learning as a result of the current crisis, keeping supply chains operating as planned requires a combination of resilience, visibility, and tenacity.

Defined by IDC as the ability to ensure and preserve the continuity and consistency of product supply—and meet business obligations for product delivery and service to customers—through the anticipation of strategic disruptions, supply chain resiliency has come to the forefront in today's business environment. By identifying and mitigating global risks; deploying supply chain orchestration platforms; and creating win-win relationships with trading partners, companies can improve their resilience and emerge stronger when disruption strikes.

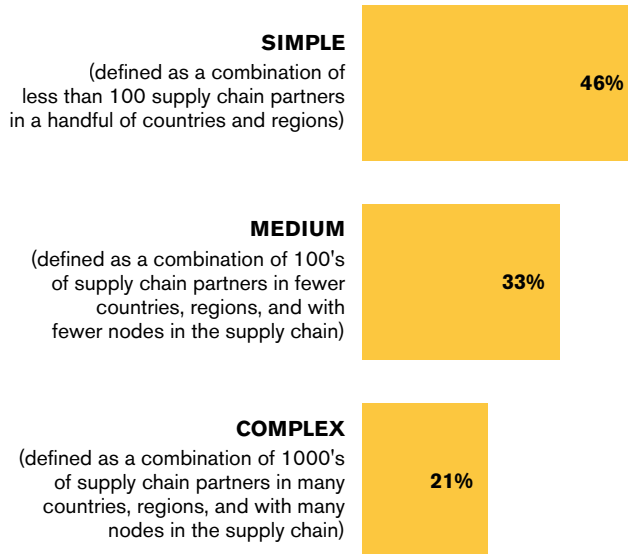To learn more about companies' current supply chain challenges and the roadblocks to resiliency, Peerless Research Group conducted a reader survey on behalf of Logistics Management for MPO. This study was executed in July/August of 2020 and administered online to current Logistics Management subscribers.

The survey's findings are based on information collected from 251 individuals involved in warehouse or distribution center operations decisions. Respondents are employed in the manufacturing, consulting, transportation, warehousing, and distribution for the automotive, food, beverage and tobacco, computer and electronics, industrial machinery, chemicals, and electrical equipment sectors (among others). The study represents companies of all sizes and paints a current picture of their supply chain practices and reaction to disruptions.

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Antiquated Supply Chain Networks

FIGURE 1

How would you best describe the scope of your supply chain network?

SIMPLE
(defined as a combination of less than 100 supply chain partners in a handful of countries and regions)

46%

MEDIUM
(defined as a combination of 100's of supply chain partners in fewer countries, regions, and with fewer nodes in the supply chain)

33%

COMPLEX
(defined as a combination of 1000's of supply chain partners in many countries, regions, and with many nodes in the supply chain)

21%

How are you operating your supply chain network?

47%

19%

24%

10%

Through a legacy framework (spreadsheets, ERPs, etc.) –Network operates under a static set of logic, rules

Fixed network– difficult to make changes and network with partners

Cloud based dynamic network– is flexible/easily configurable, enables dynamic networking

Other

Many companies still rely on legacy technology that's siloed and disconnected to run their global supply chains. Asked how they were operating their supply chain networks, 47% of respondents indicated they were still using legacy frameworks and highly reliant on Excel spreadsheets and on-premise enterprise resource planning (ERP) programs. As a result, respondent say their network operations are under a static set of logic rules.

Meanwhile, 24% of companies operate with a cloud-based dynamic network, which is flexible, easily configurable, and enables dynamic networking. Another 19% say they currently operate with a fixed network, which makes it difficult for them to shift quickly, adapt to new environmental factors (i.e., supply chain disruptions), and network with their partners.
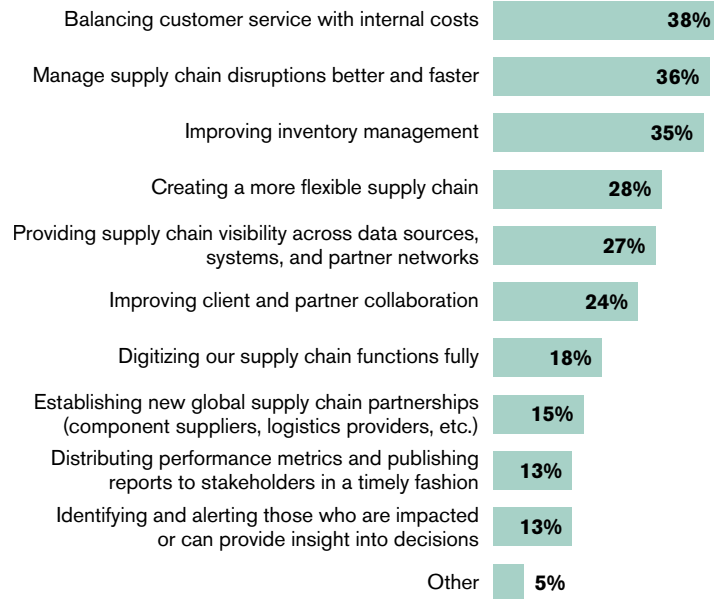
Critical Initiatives

FIGURE 2

Thinking about your company's business strategy, which initiatives would you say will be most important during the next 12 to 18 months?

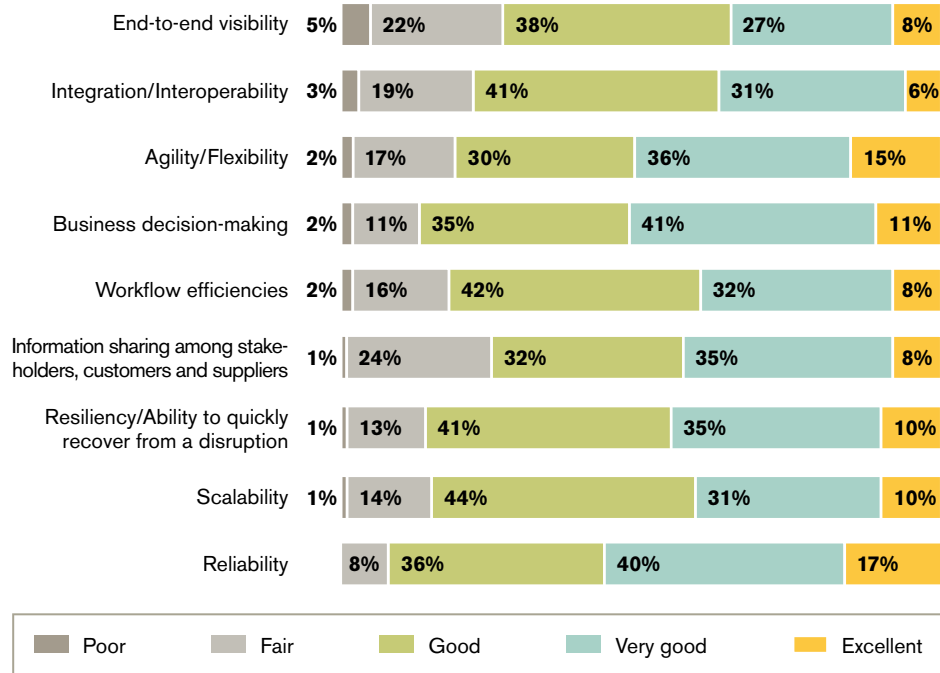| Initiative	Percentage
Balancing customer service with internal costs	38%
Manage supply chain disruptions better and faster	36%
Improving inventory management	35%
Creating a more flexible supply chain	28%
Providing supply chain visibility across data sources, systems, and partner networks	27%
Improving client and partner collaboration	24%
Digitizing our supply chain functions fully	18%
Establishing new global supply chain partnerships (component suppliers, logistics providers, etc.)	15%
Distributing performance metrics and publishing reports to stakeholders in a timely fashion	13%
Identifying and alerting those who are impacted or can provide insight into decisions	13%
Other	5%

When asked which supply chain initiatives would be most important to their organizations over the next 12-18 months, 38% point to balancing customer service with internal costs as their top concern. Other companies (36%) are prioritizing managing supply chain disruptions better and faster, 35% want to improve inventory management, and 28% are focused on creating more flexible supply chains.

These results reveal that low percentage of companies are prioritizing networkwide visibility and improving partnerships (both of which are tightly connected to orchestration, risk avoidance, and resilience). In fact, only 27% want to provide supply chain visibility across data sources, systems, and partner networks, and 24% plan on improving their client partnerships and collaboration.

Assessing Supply Chain Performance

FIGURE 3

In general, how would you rate your supply chain performance on…

Category	Poor	Fair	Good	Very good	Excellent
End-to-end visibility	5%	22%	38%	27%	8%
Integration/Interoperability	3%	19%	41%	31%	6%
Agility/Flexibility	2%	17%	30%	36%	15%
Business decision-making	2%	11%	35%	41%	11%
Workflow efficiencies	2%	16%	42%	32%	8%
Information sharing among stakeholders, customers and suppliers	1%	24%	32%	35%	8%
Resiliency/Ability to quickly recover from a disruption	1%	13%	41%	35%	10%
Scalability	1%	14%	44%	31%	10%
Reliability		8%	36%	40%	17%

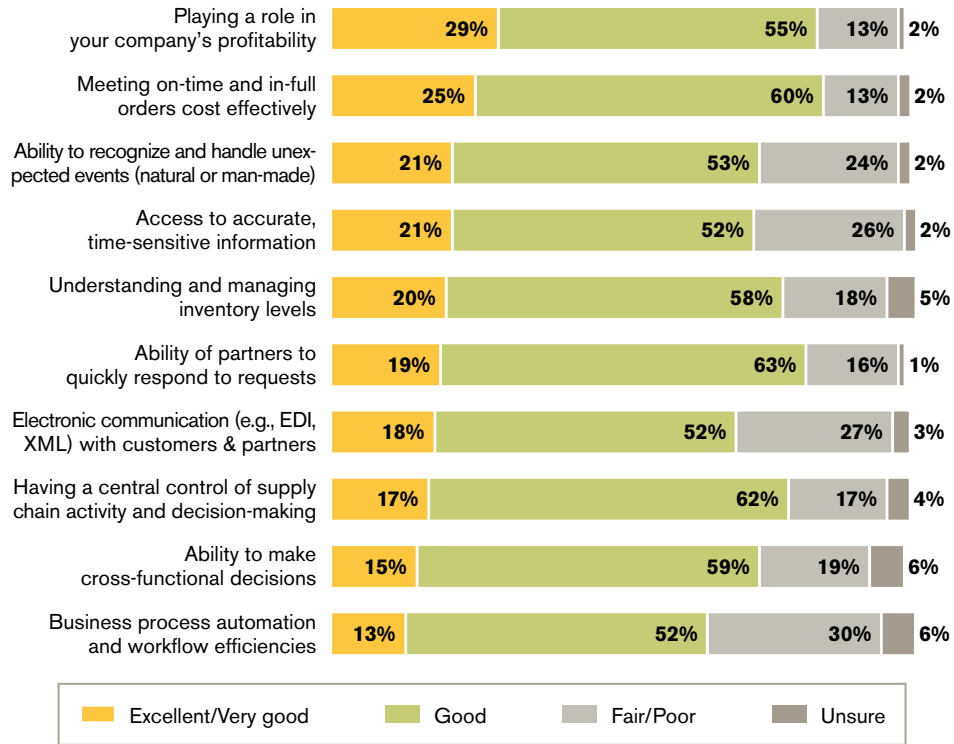Legend: Poor · Fair · Good · Very good · Excellent

As supply chains become more global and intertwined, the need for good visibility and streamlined processes continues to increase. End-to-end visibility is a key concern for about 27% of companies, and a lack of integration/interoperability across systems is a pain point for 22% of respondents. When rating their organizations' supply chain performance, 17% of respondents say their supply chain reliability is "excellent," while 76% rate their reliability as "good" or "very good." Just 8% rate themselves "fair" in terms of reliability, and no respondents rated their companies as "poor" in this area. Fifteen percent of leaders say their supply chain's agility and flexibility are "excellent," while 66% say they're either "good" or "very good."

While they give their own organizations fairly high marks for supply chain performance, survey respondents see "information sharing among shareholders" as a key area for potential improvement. For example, just 8% rate their supply chain information sharing as "excellent," and 24% say they're doing "fair" in this area. Only 6% say they are "excellent" when it comes to integration abilities, while 19% say they are "fair", and 3% say they are "poor." This is likely a direct result of the high number of on-premise, disconnected software systems and spreadsheets that companies rely on to run their global supply chains.

FIGURE 4

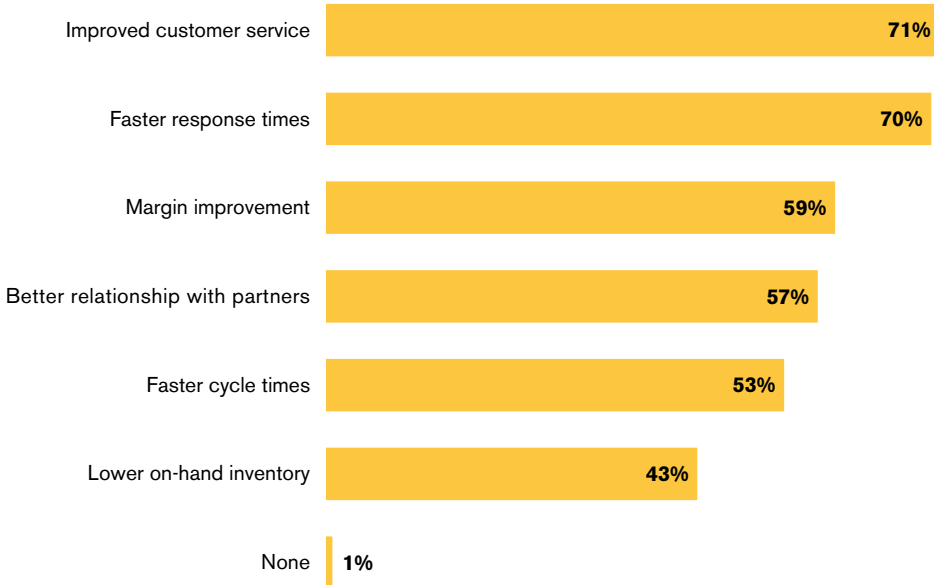### How would you rate your supply chain's capabilities in each of the following areas?

Area	Excellent/Very good	Good	Fair/Poor	Unsure
Playing a role in your company's profitability	29%	55%	13%	2%
Meeting on-time and in-full orders cost effectively	25%	60%	13%	2%
Ability to recognize and handle unexpected events (natural or man-made)	21%	53%	24%	2%
Access to accurate, time-sensitive information	21%	52%	26%	2%
Understanding and managing inventory levels	20%	58%	18%	5%
Ability of partners to quickly respond to requests	19%	63%	16%	1%
Electronic communication (e.g., EDI, XML) with customers & partners	18%	52%	27%	3%
Having a central control of supply chain activity and decision-making	17%	62%	17%	4%
Ability to make cross-functional decisions	15%	59%	19%	6%
Business process automation and workflow efficiencies	13%	52%	30%	6%

Legend: Excellent/Very good, Good, Fair/Poor, Unsure

Respondents do feel confident in the role that their supply chains play in their companies' profitability, with 84% saying they are "excellent," "very good" or "good" in this area. They also do well at meeting on-time and in-full orders cost-effectively, with 25% rating themselves as excellent or very good and 60% rating themselves "good" at achieving these goals. Areas in need of improvement include business process automation and workflow efficiencies (according to 30% of respondents), electronic communication with customers and partners (27%), and cross-functional decision-making (19%).

The Benefits of Resilience

FIGURE 5

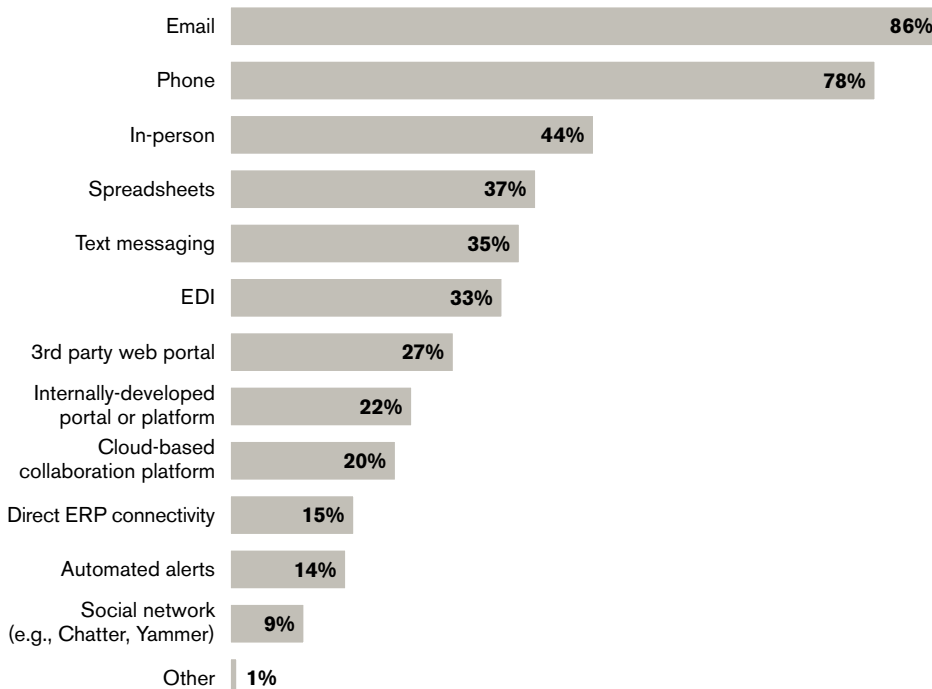### What would you consider to be the benefits/advantages of a resilient supply chain network?

Improved customer service	**71%**
Faster response times	**70%**
Margin improvement	**59%**
Better relationship with partners	**57%**
Faster cycle times	**53%**
Lower on-hand inventory	**43%**
None	**1%**

As the world's supply chains adapt to the challenges that the pandemic has put in front of them, and plan for the future, many leaders are focused on building resilience. To achieve that goal, they're investing in technology and forming stronger bonds with diverse trading partners to establish more flexible supply chains.

As a result of these efforts, a whopping 71% of respondents hope to be able to offer higher levels of customer service and 70% are focused on faster response times. In addition, 59% see margin improvement as a potential benefit of resilience, while 57% say it facilitates a better relationship with their partners. Also, 53% believe resilience results in faster cycle times and 43% say it helps reduce the amount of on-hand inventory needed to fulfill orders quickly and accurately.

Better Communication Tools Needed

FIGURE 6

How do you collaborate with your customers and supply chain partners?

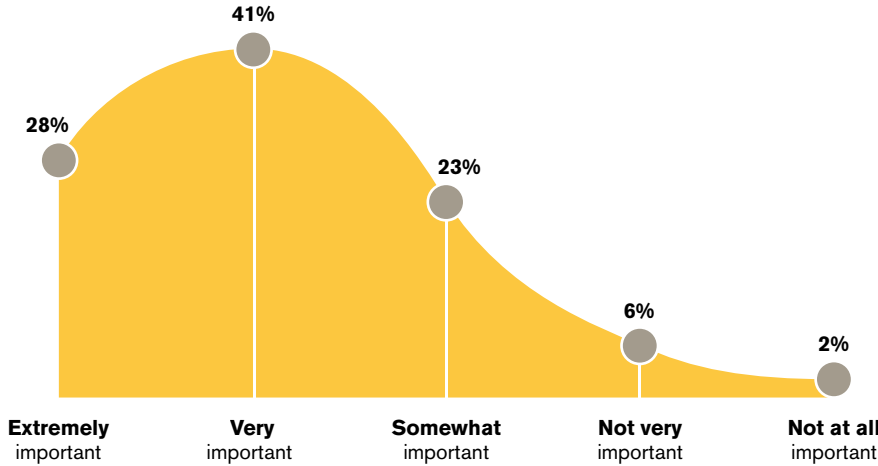|	
Email	**86%**
Phone	**78%**
In-person	**44%**
Spreadsheets	**37%**
Text messaging	**35%**
EDI	**33%**
3rd party web portal	**27%**
Internally-developed portal or platform	**22%**
Cloud-based collaboration platform	**20%**
Direct ERP connectivity	**15%**
Automated alerts	**14%**
Social network (e.g., Chatter, Yammer)	**9%**
Other	**1%**

When collaborating with their customers and supply chain partners, 86% of respondents prefer to use email and 78% are still using the phone to make these valuable connections. While appropriate in some situations, neither email nor phone are effective default tools for supply chain collaboration. Other popular forms of collaboration include in-person meetings (for 43% of companies), spreadsheets (37%), text messages (35%), and electronic data interchange (EDI) (33%).

Other respondents utilize high-tech collaboration tools, with 27% utilizing a third-party web portal, 22% using an internally-developed portal, and 20% communicating via a cloud-based communication tool. Additionally, 15% collaborate through direct ERP connectivity, 14% through automated alerts, and 9% through a social network, like Chatter or Yammer.

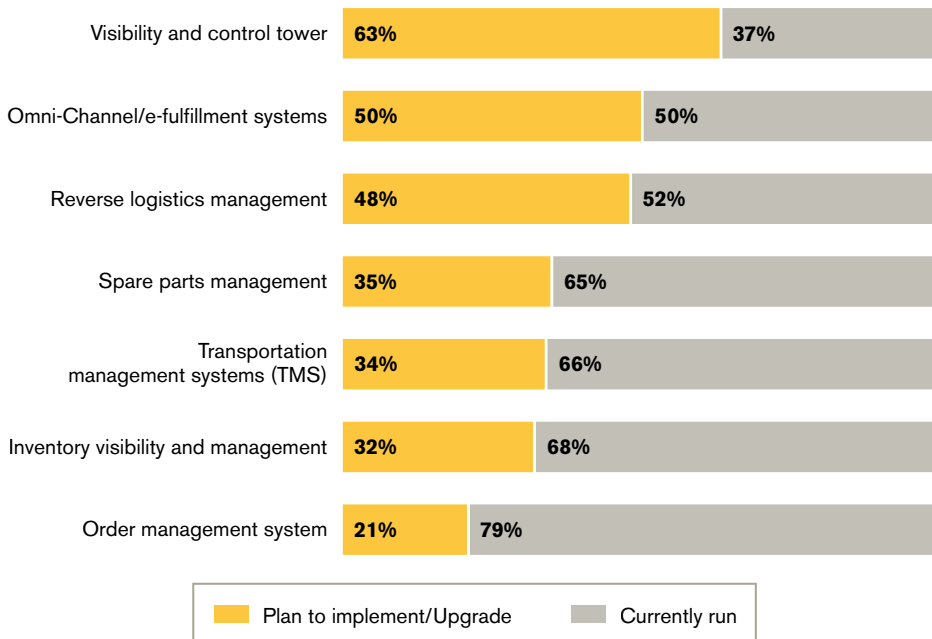## Integration and Interoperability

FIGURE 7

**How important is interoperability–
that is, having diverse systems and solutions working together,
whether they are internal or with customers or suppliers–
to your overall business operations?**

28%	41%	23%	6%	2%
Extremely important	**Very** important	**Somewhat** important	**Not very** important	**Not at all** important

Over two-thirds (69%) of companies say interoperability, or the alignment of diverse systems and solutions (both internal and between customers or suppliers), is either extremely or very important to them. Another 23% see interoperability as "somewhat import-ant." These results illustrate the critical nature of interconnectedness across the modern, global supply chain.

FIGURE 8

**Which supply chain solutions/applications
are you either now running or planning to implement
or upgrade over the next 12-18 months?**

Solution/Application	Plan to implement/Upgrade	Currently run
Visibility and control tower	63%	37%
Omni-Channel/e-fulfillment systems	50%	50%
Reverse logistics management	48%	52%
Spare parts management	35%	65%
Transportation management systems (TMS)	34%	66%
Inventory visibility and management	32%	68%
Order management system	21%	79%

■ Plan to implement/Upgrade   ■ Currently run

The majority of companies (63%) are planning to incorporate visibility and control tower capabilities into their supply chains over the next 12-18 months, and 37% say they're already running these applications. Fifty percent of companies want to imple-ment omni-channel/e-fulfillment systems, while the other 50% already have these solutions in place.

Nearly half of respondents plan to implement or upgrade their reverse logistics management systems, while 52% currently run these systems. Sixty-five percent use a spare parts management application, and 35% plan to implement or upgrade one in the next 12-18 months. Sixty-six percent are using transportation management systems (TMS), 68% rely on inventory visibility and management systems, and 32% plan to implement the latter. Most respondents (79%) already run an order management system (OMS), and 21% plan to implement one in the next 12-18 months.

FIGURE 9

Is there any additional information you would like to share with respect to systems based on the responses selected above?

- Global/international management systems
- The need to have clarity and visibility where our shipments are at all times
- We are currently undergoing a full system review and upgrade
- We need a global TMS, but live with spreadsheets fed by SAP to SQL.
 Error rate is high, and bad information is reported to internal and external customers.

Even with various pieces of technology put in place, organizations need better integration and alignment across those systems in order to achieve high levels of supply hain visibility.

"We need a global TMS, but live with spreadsheets fed by SAP to SQL," one respondent pointed out. "Error rates are high, and bad informationis reported to internal and external customers."

Preparing for Disruption

FIGURE 10

How prepared is your organization to quickly recover from a disruption to your supply chain?

Highly prepared	**40%**
Somewhat prepared	**47%**
Not very prepared	**9%**
Not at all prepared	**4%**
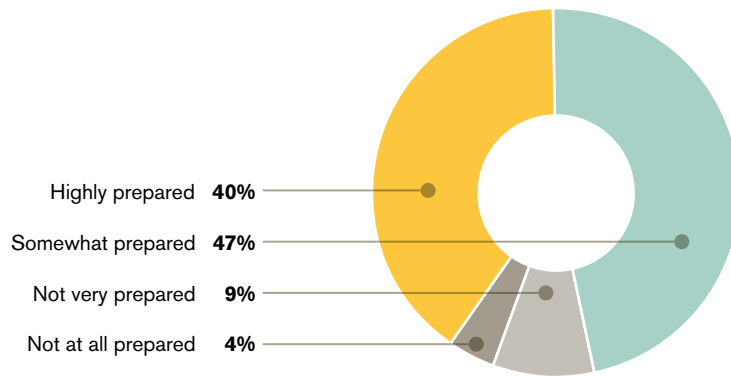
Companies remain confident in their ability to recover from the impacts of supply chain disruption. Eighty-seven percent of respondents say their organizations' supply chains are either "highly prepared" or "somewhat prepared" to quickly recover from such disruptions. Just 9% say their supply chain is not very prepared for disruption, and 4% admit they are not at all prepared.

Of those respondents who have less confidence in their companies' ability to recover quickly from such impacts, these are the key culprits cited:

Why do you say this? What supply chain issues are you not prepared to handle very well?
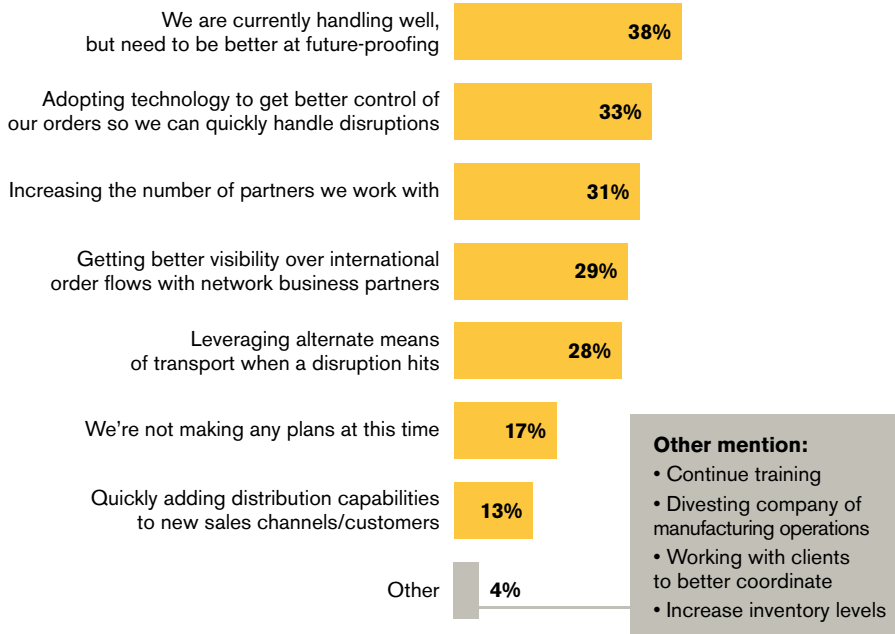
- Decisions are made in silos with no input from executive strategic plans.
- Interoperability not there. Multiple unaligned approaches
- No contingency plans for all the operations

- Decisions are made in silos with no input from executive strategic plans.
- Multiple unaligned approaches due to the lack of interoperability across partners and customers.
- No contingency plans for all the operations.
- Slow pipeline (from suppliers).

FIGURE 11

What actions have you taken or are you planning for your supply chain to better handle disruptions?

We are currently handling well, but need to be better at future-proofing	38%
Adopting technology to get better control of our orders so we can quickly handle disruptions	33%
Increasing the number of partners we work with	31%
Getting better visibility over international order flows with network business partners	29%
Leveraging alternate means of transport when a disruption hits	28%
We're not making any plans at this time	17%
Quickly adding distribution capabilities to new sales channels/customers	13%
Other	4%

Other mention:
• Continue training
• Divesting company of manufacturing operations
• Working with clients to better coordinate
• Increase inventory levels

It's no mystery that 2020 has taken supply chains by surprise. The question is, what actions are organizations taking now to better handle these disruptions in the future? Thirty-eight percent of respondents want to get better at future-proofing their supply chains and another 33% say they're adopting technology that will help them gain better control of their orders.

Thirty-one percent of companies are increasing the number of partners they work with, 29% are focused on gaining better visibility over international order flows, and 28% are leveraging alternate transportation methods. Interestingly, 17% admit they aren't making any plans at this time, despite the pandemic, natural disasters, and other disruptions that emerged in 2020.

What's Your Plan B?

FIGURE 12

When a disruption in your supply chain occurs, does your organization have an alternative plan (a plan B)?

Yes **65%**

No **35%**
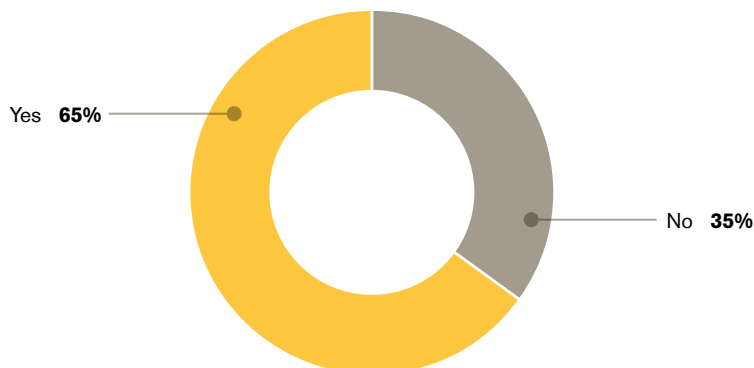
When asked to describe their "Plan B" for dealing with supply disruption, 35% of respondents say their companies have no backup plans at this point. For the 65% of firms that do have a Plan B, these are the most popular alternative plans:

• 80/20 rule: always have backup network and partners performing certain roles.
• Use a model that executes all available resources and methods to be used, thus ensuring that there are always alternate options available.
• Alternative suppliers.
• Qualified suppliers in different regions.

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FIGURE 13

What problems occurred? In which areas do you feel your supply chain may be most vulnerable?

- If a key supplier is unable to meet increased customer orders, no alternate suppliers are in place.
- Lateness in deliveries caused customer defections.
- Need quicker response
- Not enough redundant partners in our supply chain and alternate means of transport
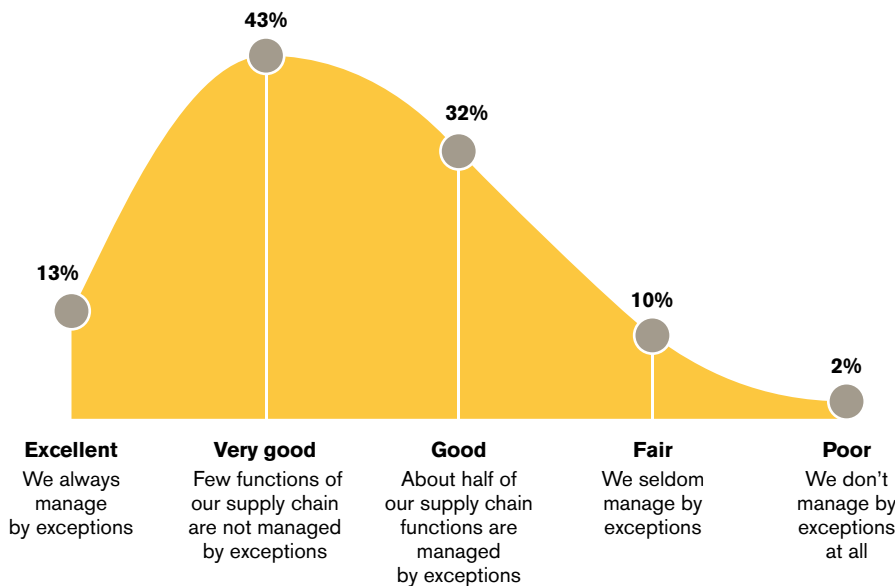- Outside factors just as the virus, the tariffs, things we can't control

Asked to highlight their companies' biggest supply chain vulnerabilities right now, respondents singled out a few different areas of concern, including:

- If a key supplier is unable to meet increased customer orders, no alternate suppliers are in place.
- Lateness in deliveries caused customer defections.
- The need for quicker responses.
- Not enough redundant partners or alternate means of transport in the supply chain.
- Outside factors beyond their control (e.g., coronavirus, tariffs, etc.).
- The use of single suppliers.

Managing Exceptions

FIGURE 14

With the current supply chain solutions in place within your organization, how well are you able to manage issues by flagging exceptions?

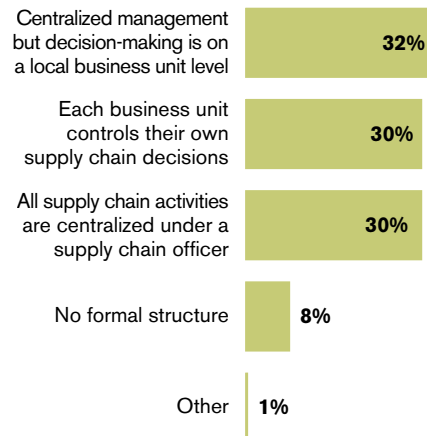| Excellent	Very good	Good	Fair	Poor
13%	43%	32%	10%	2%
We always manage by exceptions	Few functions of our supply chain are not managed by exceptions	About half of our supply chain functions are managed by exceptions	We seldom manage by exceptions	We don't manage by exceptions at all

A tech-centric practice that finds companies tackling supply chain challenges as they emerge, versus having to address all activities in search of potential problems, exception management is an important strategy for 60% of the survey respondents. Another 40% say they're not using exception management at this time.

Of the companies that do rely on exception management, the benefits include being able to quickly resolve supply chain issues (according to 73% of respondents), mitigate risk (68%), and improve business planning (46%). Forty-four percent of participants say the system keeps information up to date, 27% say it helps recover lost revenues, and 24% use it to reduce inventory levels.
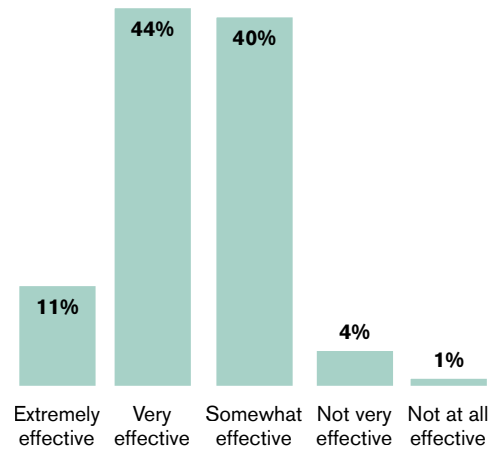
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Supply Chain Management

FIGURE 16

Which best describes how your organization's supply chain(s) are managed?

Centralized management but decision-making is on a local business unit level	32%
Each business unit controls their own supply chain decisions	30%
All supply chain activities are centralized under a supply chain officer	30%
No formal structure	8%
Other	1%

How effective is this strategy in managing your supply chain operations?

Extremely effective	Very effective	Somewhat effective	Not very effective	Not at all effective
11%	44%	40%	4%	1%

Companies are using different approaches to supply chain management. Thirty-two percent of respondents say their supply chain is run by centralized management, but that decision-making happens at the local business unit level. Thirty percent say each business unit controls its own supply chain decisions, while 30% centralize all such activities at a supply chain office. Eight percent of companies have no formal structure for managing their supply chains.

These approaches are working for about 95% of companies (just 5% see their strategies as ineffective), but there's clearly still work to be done in these areas. When asked what they can be doing differently now to make their supply chains more resilient and future-proof, respondents said key areas of improvement include:

- Full integration of supply chain functions.
- Better data analytics.
- New strategic partnerships.
- Alternative/innovative modes of transportation and delivery.
- Establish a supply chain control tower and TMS.
- Have full data exchange from satellite offices to factories (and vice versa).
- Provide complete and accurate tracking data from pack to ship to delivery.
- Keep up with cloud-based technology.
- Build strong relationship with carriers
- Utilize more automated supply chain visibility and reactions.

Always Expect the Unexpected

The global pandemic has put the spotlight on supply chain resilience, and an even brighter one on those organizations that lacked good supply chain management processes and systems before COVID reared its ugly head in early-2020. Certainly not the only disruption impacting modern supply chains—and definitely not the last—the pandemic forced leaders to react quickly. Now, the same leaders are seeking ways to reimagine and future-proof these global networks.

To remain agile and resilient in the face of adversity supply chain leaders must stay on their toes, always expect the unexpected, and adapt and shift gears quickly when needed. To hit all of these goals, organizations need multi-enterprise business networks that offer Plan B" alternatives plus supply chain orchestration platforms that enable dynamic partnering across the entire network. For as we saw with COVID, no supply chain partner is an island; they're all closely intertwined and interdependent.

About MPO

MPO offers the world's only natively unified cloud platform for Supply Chain Orchestration. The platform complements existing enterprise systems with visibility and control, and optimizes order, inventory, and transportation across dynamic, multi-party networks. MPO processes over 2 million orders per day for over 200 leading manufacturers, distributors, retailers, and logistics service providers. For more information, please contact info@mpo.com or visit www.mpo.com.