UNCOVERING CHRONIC DISRUPTION IN SUPPLY CHAIN AND OPERATIONS MANAGEMENT
ABOUT THIS REPORT

Sudden, acute supply chain disruptions—such as those caused by natural disaster, civil unrest, or financial calamity—are highly visible and typically get the attention of organization management. However, visible supply chain disruptions are not the only disruptions supply chains face.

Chronic disruption occurs with little notice and is neither obvious nor pressing to management. Its causes and consequences are hard to see, making it easy to underestimate the damage it causes. In the drive toward supply chain excellence, this folio spotlights chronic disruption and recovery from its effects. It discusses the definition, causes, and solutions of chronic disruption, along with research about supply chain professionals’ responses to this type of disruption.

This report was developed by APICS Supply Chain Council, a foundation that advances supply chain and operations management and innovation through research, education, and publications. APICS SCC maintains the Supply Chain Operations Reference (SCOR®) model, the supply chain management community’s most widely accepted framework for evaluating and comparing supply chain activities and performance. For more information, visit apicssupplychaincouncil.org.
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Additional Resources
These programs and publications provide resources and detailed information about the topic.

APICS Risk Management Certificate Program
apics.org/risk

APICS Supply Chain Risk and Reward Folio: Measuring Risk in Your Supply Chain
Minimizing risk while maximizing reward is a critical practice when it comes to optimizing your supply chain. Purchase your APICS Risk and Reward Folio to access tools that enable informed decision-making, including Monte Carlo simulation exercises; Value at Risk (VaR) examples; a risk-reward scoring chart; a checklist for identifying, assessing, and mitigating risk; and more.
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Chronic disruption reduces the benefits of supply chain co-destiny.

The APICS Dictionary, 14th edition, defines co-destiny as “The evolution of a supply chain from intraorganizational management to interorganizational management.” Interorganizational management considers all partners in the supply chain, which reduces the chances for chronic disruption because causes, risk factors, and solutions are visible to more individuals. Co-destiny tends to be the direction of highperformance supply chains.
Chronic disruption likely is plaguing or has plagued your supply chain, and you might not even know it. APICS recently examined this newly defined phenomenon in order to assist supply chain and operations management professionals in their day-to-day tasks and as they seek to enhance their company’s supply chain strategy.

Supply chain chronic disruption is defined as low-to-moderate disruption that features one or more of the following:

- is persistent
- is difficult to permanently eradicate and routine tactical solutions are ineffective
- has root causes that are not always visible to all supply chain stakeholders
- that is abnormal but becomes tolerated over time

Supply chain chronic disruption is common but not well understood. Part of the reason it is not well-known is that most supply chain disruption research only covers acute disruption, such as sudden events. Another reason is that it is difficult to fix chronic disruption and it often is not entirely visible to stakeholders. Companies frequently tolerate chronic disruption, which may lead to supply chain performance problems.

The APICS body of knowledge covers core components of chronic disruption such as strategy, risk frameworks, supply chain synchronization, and supplier relationship management. Achieving supply chain and operations management excellence means detecting and eliminating everything that interferes with optimal efficiency, including supply chain chronic disruption.

More than 73 percent of respondents to an APICS survey reported experiencing chronic disruption in their careers.
**Causes of Chronic Disruption**
Often, there are internal, soft causes for chronic disruption, and these are hard to measure. Survey respondents reported the following causes of chronic disruption at their organizations:

- Accountability is placed solely on the supplier(s)
- Inability to communicate actual demand
- Inactive stakeholders
- Inadequately defined requirements
- Lack of manpower or trained manpower
- Lack of updated information technology
- Management that does not correct existing problems
- Procurement professionals performing tasks better suited to accounting professionals
- Short-term financial pressures
- Under staffing
- Management that is not well-informed or trained

**APICS 2013 Chronic Disruption Insights and Innovations**
Recognizing chronic disruption enables supply chain and operations management professionals to improve supply chain strategy and risk management. Awareness of risks due to chronic disruption helps develop improved perspective, not only with suppliers, but with internal performance challenges. Eliminating chronic disruption usually requires improvements in strategy, policies, processes, and procedures.

Preventing and remedying chronic disruption requires the evaluation of on-time delivery patterns and improved use of vendor quality notifications systems. In addition, professionals should examine the bigger picture, both internally and externally, to discover what is enabling chronic disruption, or any other risk. Due to the complex nature of most supply chains, it is often difficult to differentiate chronic disruption from other disruptions. Chronic disruption demands consideration of supply chain disruptions that are tolerated over time and the resulting costs of those disruptions.
Using Chronic Disruption Knowledge to Advance

- Addressing chronic disruption helps position a professional as one who can solve issues others cannot.

- Knowledge of chronic disruption requires seeing internal and external root causes in the big picture of the supply chain and forming effective solutions that go beyond ordinary tactics. This makes the professional rare and valuable in an organization.

- Knowing the risks and circumstances that enable chronic disruption and the value of avoiding these risks will enable professionals to make valuable contributions at their organizations.

- As professionals achieve the rewards of just-in-time and lean practices, they should also reduce the risks that chronic disruption poses.

Managing Chronic Disruption Through Best Practices

Improve relationships with suppliers, particularly in the areas of risk management, and long-term or strategic planning.

Increase supply chain communication and information sharing, particularly when experiencing unexpected or unstable demand.

Look for root causes and enabling conditions both internally at your organization and at the supplier when supplier difficulties arise. Increase the visibility of these causes and enablers at both organizations.

Increase supply chain flexibility (for example, in terms of supplier variety and location).

Consider potential group purchasing organizations.

Evaluate the possibility of alternative components and services.

Watch for the appearance of chronic disruption risk factors. These factors might include ordering rare or difficult-to-produce goods or services, or use of suppliers that find your orders challenging, such as payment, delivery, or logistics areas.

Build awareness among stakeholders of the possibility of chronic disruption developing.
KEY SURVEY FINDINGS

1 Variable demand, forecast, and logistical errors are common causes of chronic disruption. An acute disruption, such as an earthquake, can trigger later chronic disruption, where no chronic disruption existed previously.

2 Inefficient supply chain strategy and design are a significant cause of chronic disruption challenges. Strategy and tactical execution of strategy assist in resolving chronic disruption.

3 Lack of visibility is a problem, but root causes are not always evident. Supply chain and operations management professionals and procurement professionals often can spot issues related to chronic disruption before other team members, and it still may take weeks or months to notice.

4 Changing supply chain strategy, finding substitutes, and making substantial changes to supplier or partner standards are commonly reported solutions to chronic disruption. However, approximately 36 percent of respondents report that current chronic disruption challenges in their supply chains have not been resolved.
**Questions for Discussion**

Use these questions to help assess the role chronic disruption plays in your organization:

- Is supply chain chronic disruption occurring at your organization?

- If supply chain chronic disruption is occurring at your organization, does it have the visibility it needs to be addressed?
Respondent Profile

1/2 of those surveyed have spent more than 12 years in a supply chain or operations management role.

83% of respondents were part of a business unit with a formal supply chain strategy role.

>73% of respondents reported experiencing chronic disruption at some point in their careers.

1/4 of respondents indicated that their organizations generally take more than a few months to recognize that they are experiencing chronic disruption.

~43% of respondents were part of an organization where, over time, chronic disruption became expected and/or tolerated.

35% of respondents’ organizations formally included chronic disruption in their risk factors.
Length of professional employment
Respondents were asked to indicate the amount of time they have been a supply chain and/or operations management professional.

- More than 12 years: 49%
- 8-12 years: 14%
- 3-5 years: 11%
- 1-3 years: 7%
- >1 years: 4%

Supply chain roles
Respondents were asked to indicate the supply chain role(s) of their business units.

- Supply chain strategy: 82%
- Supply chain partner relationship management: 59%
- Supply chain risk management: 47%
- Supply chain sustainability: 44%
Alignment with strategy
Respondents were asked to indicate how well-aligned their supply chains are to their business unit strategy and vision.

<table>
<thead>
<tr>
<th>Poorly aligned</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Moderately Aligned</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>Very well aligned</th>
<th>Average rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>3%</td>
<td>10%</td>
<td>7%</td>
<td>27%</td>
<td>11%</td>
<td>16%</td>
<td>16%</td>
<td>5%</td>
<td>3%</td>
<td>5.77</td>
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</table>

Disruption frequency
Respondents were asked to indicate how often their organizations experience persistent, unsatisfactory performance from their supply chains.

<table>
<thead>
<tr>
<th>Never</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Sometimes</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Always</th>
<th>Average rating</th>
</tr>
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<tbody>
<tr>
<td>&lt;1%</td>
<td>5%</td>
<td>11%</td>
<td>12%</td>
<td>34%</td>
<td>12%</td>
<td>10%</td>
<td>12%</td>
<td>2%</td>
<td>2%</td>
<td>5.35</td>
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</table>

Chronic disruption experience
Respondents were asked whether or not they have experienced supply chain chronic disruption (persistent disruption that substantially degrades but does not inhibit supply chain function, and that does not respond to traditional remedies) at any point in their careers.

- 73% Yes
- 16% No
- 11% I don’t know
### Characteristics
Respondents were asked to characterize their last chronic disruption occurrences using one or more of the provided answer choices.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disruption had root causes that were not obvious to all supply chain stakeholders</td>
<td>49%</td>
</tr>
<tr>
<td>Disruption was recurrent</td>
<td>46%</td>
</tr>
<tr>
<td>Disruption was difficult to eliminate despite a wide variety of attempted solutions</td>
<td>44%</td>
</tr>
<tr>
<td>Disruption became expected over time</td>
<td>43%</td>
</tr>
<tr>
<td>Disruption became tolerated over time</td>
<td>43%</td>
</tr>
</tbody>
</table>

### Causes
Respondents were asked to identify the cause(s) of chronic disruption at their organizations.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continually varying supplier performance</td>
<td>58%</td>
</tr>
<tr>
<td>Low visibility of significant supply chain risks</td>
<td>46%</td>
</tr>
<tr>
<td>A slowly unfolding, underestimated challenge to the supply chain</td>
<td>36%</td>
</tr>
<tr>
<td>Poorly suited supply chain strategy and design</td>
<td>33%</td>
</tr>
<tr>
<td>The causes are currently under investigation</td>
<td>9%</td>
</tr>
<tr>
<td>I don't know</td>
<td>4%</td>
</tr>
</tbody>
</table>
Chronic disruption resolution
Respondents were asked to identify way(s) their organizations typically resolve chronic disruption.

- 37% We have not yet resolved it
- 33% We found substitutes for components, products, or services associated with chronic disruption
- 29% We substantially changed our suppliers or partner standards, metrics, or contracts
- 27% We changed or updated our supply chain strategy
- 24% We increased supply chain diversity or flexibility in terms of asset locations, partners, or practices
- 20% Senior management elevated and resolved the issue at that level
- 20% We substantially changed our logistics or distribution functions or practices
- 2% We no longer serve markets or customers associated with chronic disruption
**Associated soft risks**

Respondents were asked to select the soft risks (risks that are difficult to precisely define or measure) that accompany chronic disruption.

- Unexpected or unstable demand: 67%
- Falling levels of relationship trust with supply chain partners: 55%
- Increasing complexity: 47%
- Shifting customer or market preferences: 33%
- Decline in economy or customer economic health: 27%
- Shifting or changing leadership: 24%
- None of the above: 2%
- There are no accompanying soft risks: 2%

**Response time**

Respondents were asked to indicate the typical amount(s) of time passed before recognizing an occurrence of chronic disruption.

- A few weeks to a few months: 42%
- A few days to a few weeks: 36%
- A few months to a year: 20%
- Immediately: 15%
- More than one year: 4%
**Chronic disruption recognition**
Respondents were asked to identify who generally recognizes occurrences of chronic disruption.

- Supply chain colleagues: 61%
- Myself: 60%
- Operations management colleagues: 46%
- Customers: 21%
- Sales and marketing: 21%
- Senior management: 18%
- Other supply chain partners: 18%
- All of the above: 14%
Supplier difficulties
Respondents were asked to identify their experiences with supplier difficulty.

- Our business was not substantial enough to warrant sufficiently high supplier priority: 50%
- Our orders often fell outside of the supplier’s expectations of volume, delivery, or payment methods: 44%
- Our orders were for rare or difficult-to-produce products or services: 32%
- Our orders were in a market that was difficult for the supplier to serve: 24%
- Our orders did not fit the supplier’s core offerings: 19%
- None of the above: 16%
- We have no supplier difficulties: 2%
Responses to supplier difficulties
Respondents were asked to select their response(s), if any, to supplier difficulties.

- Jointly investigated supplier structural changes, including logistics, distribution, buying processes, and information sharing: 57%
- Requests that organization’s senior management speak to the supplier’s senior management: 55%
- Engaged risk management in both the organization and the supplier’s organization: 36%
- Did not perform any of these actions: 14%
- Investigated group purchasing organizations: 11%
- Supplier difficulties have not caused chronic disruption, or we have no supplier difficulties: 2%

Risk management consideration
Respondents were asked to select all applicable responses to whether or not their organizations’ risk management functions formally consider chronic disruption to be a risk factor.

- Yes: 35%
- No, but they should: 32%
- No. They consider sudden acute disruption to be a risk factor, but not chronic disruption: 28%
- Not sure: 12%
- No: 3%
Chronic disruption versus routine difficulties and performance variations
Respondents were asked to identify good methods to distinguish between chronic disruption and routine difficulties or performance variations.

58% Chronic disruption involves more complex causes and consequences than routine difficulties

35% Length of time—routine difficulties resolve themselves in the short-term

32% Routine difficulties have routine solutions; chronic disruption does not

27% Routine difficulties are visible to most everyone, and chronic disruption is not very visible

10% There are no good ways to distinguish chronic disruption from routine difficulties; there are too many variables and complexities involved

Visibility
Respondents were asked the following question: Does the challenge of chronic disruption have sufficient visibility throughout the industry?

<table>
<thead>
<tr>
<th>Definitely not</th>
<th>2</th>
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<th>4</th>
<th>Perhaps</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Definitely yes</th>
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APICS SUPPLY CHAIN COUNCIL RESEARCH
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