Establish an Agile Supply Chain Planning Process to Respond to and Recover From COVID-19

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Initiatives: Supply Chain Planning and 1 more

The COVID-19 crisis has created massive uncertainty around supply and demand, forcing many organizations to reshape their planning process. This research helps supply chain planning leaders to create an agile process to manage short-term risks while preparing a longer-term recovery plan.

Overview

Key Challenges

- The traditional monthly cadence of the S&OP process has proven too slow to provide timely planning updates across the end-to-end supply chain during the COVID-19 crisis.

- Supply chains are being pushed to redefine what short-term planning forums need to be used to make near-term execution-oriented adjustments to the weekly and monthly plans.

- Companies remain heavily focused on short-term needs and are not sure how to start preparing a long-term recovery plan post-COVID-19.

Recommendations

Supply chain leaders responsible for planning should:

- Create an agile planning process for better balancing demand and supply by implementing a faster cycle, closer horizon integrated planning process.

- Manage constant changes in demand and supply by emphasizing the S&OE process as the primary forum for real-time response planning.

- Develop a medium-term recovery plan by validating planning assumptions, developing scenarios and setting boundaries on risk and cost.

Introduction

Supply chain planning plays a critical role in managing current and future supply and demand challenges both during the COVID-19 pandemic and after. An agile planning process must at least
temporarily replace the traditional planning approach to enable faster decisions as supply and demand surge in some businesses and plummet in others.

At the same time, too much focus on firefighting puts a longer-term recovery plan at risk. Failure to create a longer-term plan could introduce another shock into the supply chain. Supply chain planning leaders need to validate assumptions, develop scenarios and establish boundaries on how much risk and cost they are willing to tolerate as they anticipate a recovery.

Gartner has conducted interviews with manufacturers based in China during and after the COVID-19 lockdown, and has fielded many client inquiries across the globe. This research provides key lessons learned from leading organizations involving how they plan to reshape and leverage the planning process to cope with ongoing challenges from demand and supply fluctuations.

As a result of uncertainty caused by COVID-19, it’s important to integrate demand and supply planning by focusing on each planning horizon: immediate- to short-term, short-term to medium-term, and longer-term (see Table 1).

Table 1: Planning Horizons During COVID-19

<table>
<thead>
<tr>
<th>Immediate-to Short-Term (Next 30 Days)</th>
<th>Short- to Medium-Term (Month 1+ to Month 3)</th>
<th>Inputs to Longer-Term (Month 3+ to Month 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage constraint demand in high constraint supply environment</td>
<td>Review phasing/seasonality change</td>
<td>Prioritize/deprioritize future promotions and NPIs</td>
</tr>
<tr>
<td>Closely track key metrics and review trends</td>
<td>Classify how different products might have different phasing magnitude (i.e., expandable consumption versus nonexpandable)</td>
<td>Review key assumptions with business leaders</td>
</tr>
<tr>
<td>Consider external inputs (such as World Health Organization, government policies, social media)</td>
<td>Adjust channel/customer/product mix based on allocation rules and constraints</td>
<td>Plan for risks and opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Build different demand scenarios with P&amp;L projections</td>
</tr>
</tbody>
</table>

Source: Gartner
In the immediate-term to short-term horizon, the focus remains on resolving execution challenges for the next 30 days when there is much better visibility compared to the long-term horizon. Inputs in the short term must also consider external indicators.

In the short-term to medium-term horizon, it’s important for organizations to review the phasing impact potentially caused by panic buying and to continue to review and adjust allocation rules based on constraints from capacity or materials supply.

In the longer-term horizon, organizations focus on assumption-based scenario planning, reshape their demand and look into possible constraints in the supply network, and form consensus contingency plans. Gap closing plans must be reviewed with a realistic revenue outlook and reconsideration of future new product introductions (NPIs) by assessing potential market and consumer behavior changes.

While there are distinct focuses in different horizons, the connectivity between the short-term and longer-term horizons becomes even more critical. The planning process must become a constant flow of information and decisions made between these two horizons.

**Analysis**

Create an Agile S&OP by Implementing a Faster Cycle, Closer Horizon Integrated Planning Process

A more agile planning process is needed due to the massive uncertainty stemming from the pandemic. Organizations need to implement fast change when demand and supply surge or plummet. The traditional S&OP process is rigid and linear, with product portfolio, demand, supply and pre-S&OP/executive S&OP steps following in sequence. Agile planning blends and shortens the traditional time horizons at daily, weekly and monthly levels.

In an agile planning process, daily sensing becomes essential, and weekly supply and demand planning work together rather than as separate steps. The monthly S&OP focuses on key assumptions review and scenario planning with supply planning and demand planning synchronized and flowing from weekly planning. For example, if the crisis causes a materials shortage that impacts inventory, supply and demand must be replanned and adjusted together at the daily level, if required. When actions are required to allocate constrained supply, supply and demand will be reviewed and actions will be taken at the weekly level. These actions flow through into monthly S&OP, allowing senior leaders to continue to assess and make critical decisions on recovery plans (see Table 2).

**Table 2: Traditional Steps of S&OP vs. New Agile S&OP Approach**

<table>
<thead>
<tr>
<th>Traditional Steps of S&amp;OP</th>
<th>New Agile S&amp;OP Approach</th>
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To enable an agile planning process, organizations need to focus on people and technology.

Many companies are reassigning people based on tasks and their capabilities. Junior demand planners are often assigned to work closely with the supply planning team and to manage daily product portfolio. Product portfolio becomes part of a monthly review with the executive team where decisions will be made for the short-term and medium-term with increasing focus on core range, longer-term on NPI and end of life (EOL) roadmap.

Demand sensing becomes the daily norm. Weekly demand planning is focused on key assumption validation and flows into the S&OP process for scenario planning. Key activities include:
- Collaborate with customers frequently on joint demand.
- Take into consideration external indicators that might impact the demand.
- Focus on demand shaping activities to manage service risks.
- Build in assumption-based scenario planning for the recovery plan.

Supply planning and pre-S&OP meetings are combined into one process by reconciling and ensuring all possible supply solutions are explored and actioned. The business leaders’ role is to set parameters for planning decisions that will direct and guide the planners in their work. A process where leadership approval is required for every new decision will be too slow to keep up with the fast-changing environment.

Executive S&OP meetings for some might remain monthly while others require increased frequency such as fortnightly, or some such as FMCG might require weekly. These meetings will include sharper discussions and decisions on setting guidance for:
- Customer, product and resource prioritization
- Investment for capacity and innovation
- Sourcing options and impact to customer experience
- Multiple key demand-supply scenarios impacting service, revenue and profit
- A consolidated framework for planning that allows multiple functions and trading partners to align on for execution.

Source: Gartner

Traditional Steps of S&OP

<table>
<thead>
<tr>
<th>New Agile S&amp;OP Approach</th>
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<tbody>
<tr>
<td>Product Portfolio Planning</td>
</tr>
<tr>
<td>Demand Planning</td>
</tr>
<tr>
<td>Supply Planning and Pre-S&amp;OP Meeting</td>
</tr>
<tr>
<td>Executive S&amp;OP Meeting</td>
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Source: Gartner
demand/supply rebalancing and demand allocation. They also run multiple daily reports and gather information from commercial teams or work directly with key customers. Senior demand planners who are freed up to work on key assumptions-based planning are sometimes called COVID-19 intelligence agents (see “What Western Business Can Learn as China Comes Out of COVID-19 Lockdown”).

Demand and supply situations can change fast, often multiple times in a day. Decisions on actions to be taken to rebalance the demand and supply often can’t wait for all stakeholders to be available for a meeting. At times like this, the supply chain planning leader’s role is to define the playbooks with operating parameters and rules for the planners and the rest of the supply chain operations teams. When a need for different action is required, the teams who must make a new plan and execute it are empowered to make decisions as long as they are operating within the confines of the playbook(s).

Contemporary supply chain planning (SCP) technology is an important enabler to introduce more agility into the supply chain planning processes because modern technology is usually — if not always — faster and more flexible than previous solutions. We see three options:

■ **If you already have modern — usually cloud-based — technology in place**, ensure that you utilize the capabilities in terms of the advanced analytics, simulations and scenario planning, as well as collaboration features to speed up your decision processes.

■ **If you are currently implementing an SCP solution**, evaluate how to accelerate this process in order to get visibility and agility into your supply chain planning processes faster.

■ **If the SCP technology is not in place**, you will have to find alternative ways to create agility as it will take too much time and effort — and investment — to implement a new SCP solution from start to finish. It is, therefore, important to leverage what you already have in your technology portfolio (e.g., ERP systems, current planning systems, analytics solutions). However, you must also recognize that what you may be creating is an intermediate solution that will need to be replaced with a more sustainable and robust solution, when possible. Using analytics platforms may be a fast way to get a certain degree of visibility and overview into the supply chain (see “COVID-19 Puts Data and Analytics Opportunities Center Stage in Healthcare”), which can bring relatively fast value into your processes. But the data foundation is still key as the output depends on the degree of data quality. Alternatively, it could also be an option to look into leveraging a third-party solution provider’s expertise, which means outsourcing specific parts of the planning tasks for an interim period. This, again, requires data to be in place and of high quality, since a third-party provider does not have the detailed knowledge about the specific processes in your organization. Therefore, the third-party provider has to rely on what can be read through the data.

When implementing or developing new solutions is not an option, then the planning workload must be fitted to the available planning capacity. Spreadsheet-based planning tools and models have
limited capabilities. A viable option is to limit the products offered to the markets. Several companies have trimmed their product selections to the top runners to be able to better predict demand and better utilize their available capacity. Another option may be to set the less important products to be supplied based on inventory minimum/maximum or use reorder-point-based replenishment to free up planners’ time for planning the most important products.

**Leverage S&OE to Manage Short-Term Demand and Supply Challenges**

Many companies established command centers or task forces at the regional or global level. To avoid reactive planning and confusion over direction, supply chain planning leaders should use the sales and operations execution (S&OE) process to connect with the business command center and manage the execution of demand and supply. S&OE is the process used to manage exceptions, so there is no need to create another process that will complicate an already complex situation. Companies without an S&OE process should quickly form one.

The S&OE process normally runs weekly but should run more frequently as required during the crisis to manage constant changes and decisions required in the short-term horizon. It will also be required to continue running frequently after the crisis as supply chain planning leaders may experience increased uncertainties and demand/supply volatility. The daily/weekly meeting should focus on the next few weeks due to lack of visibility beyond that. Critical decisions such as producing large, prebuilt inventories or canceling major promotions should not be made without visibility further out and understanding the business impacts longer term.

Demand and supply must be well integrated into the S&OE process to respond to developments such as demand surges, shutdowns, materials shortages and capacity issues. Planning leaders must work closely with commercial, logistics and procurement teams and should be in daily/weekly contact with key customers and suppliers to get the most updated demand and supply inputs.

The S&OE process should be used to connect key network partners, including customers and suppliers. It should also provide better visibility of the entire supply network, including inventory levels, production plans and scheduling, and sell-out data. The supply network makes centralized decisions and creates a common watch list, such as large variations with top-selling products. Full visibility allows better decisions on allocating stock to where it is most needed and to avoid panic buying from customers and suppliers that leads to a bullwhip effect within the supply network. It also instills confidence in the network to drive better collaboration. Figure 1 provides a few examples of key actions that should be reviewed and executed in S&OE.

*Figure 1: Key Actions in S&OE*
Giving the S&OE team the ability to make timely decisions on execution is essential for the success of crisis management. Senior leadership’s presence and ensuring that the team below them is empowered are required. With workforces now increasingly remote, digital chat groups are needed for fast communications. Demand and supply team connections can be maintained via WeChat, WhatsApp and Microsoft Teams group chats.

Some companies, such as those selling dry foods and medical devices, are experiencing sharp increases in demand, while others, such as retailers operating physical stores, are suffering big declines due to government-mandated social distancing. In cases of high demand, use the S&OE process to allocate which customers will receive products. Those constraint decisions should be based on direction and priorities set by the command center.

In cases of low demand or due to issues such as border closings that block movement of materials, S&OE needs to focus on reducing factory output. S&OE also needs to identify alternative materials and use them on products that have a strong likelihood of selling. Many organizations increased their focus on core ranges where they also deliver higher margins and often have better safety stock cover.

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**Key Actions in S&OE**

**Provide Inputs to Recovery Plan**
- Prepare demand best- and worst-case scenarios
- Prepare supply scenarios with projected cost and inventory impact

**Update Key Assumptions**
- Review lead time, output and available capacity
- Use insights from internal/external indicators on customer buying behaviors

**Do Joint Planning With Key Suppliers and Customers**
- Understand risks and opportunities
- Address risks and benefit sharing

**Align to Business Rules**
- Follow product segmentation and prioritization
- Use customer order allocation rules

**Manage Service Risks**
- Seek alternative suppliers, materials, product design, formulation
- Simplify product portfolios

**Provide Inventory Visibility**
- Regularly update on key product inventory position
- Provide short-term inventory projection

Source: Gartner
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One lesson we heard from companies is that, in a crisis like this, the organization is looking for its top leaders to make the most important decisions on people, product and customer. Then, the rest of the leadership team will ensure these decisions are shared and executed well within each function. Once the command center decides which products to make and what demand to stock, supply chain planning leaders use S&OE to ensure supply is produced, output is maximized and inventory is positioned. If physical stores are shut down, then stock will be allocated to online.

It’s important to call out that the key purpose of S&OE is to protect service. Many organizations Gartner talked to highlighted the importance of customer service during the crisis. For organizations experiencing high demand such as those selling food, medical equipment and personal care, customer service means delivering what is essential for the end consumers. In the case of the medical equipment industry, end consumers are patients in intensive care. For other organizations experiencing demand decreases, such as those selling white goods, automotives and other nonessential consumer product groups, protecting service is essential to protect their revenue. Sales lost during a crisis will have to be recaptured later.

**Validate Assumptions and Develop Scenarios to Prepare for Medium- to Longer-Term Recovery**

A structured approach should be taken to build an assumption-based recovery plan (see Figure 2). To prepare for a recovery, supply chain planning leaders should:

- Agree on a set of key indicators related to the impact of the crisis at the macro, industry, company and category level for your organization.

- Use indicators to detect and align assumptions on different demand shapes. A V-shaped (quick recovery), U-shaped (delayed recovery), W-shaped (second wave) or L-shaped (long recovery) demand curve could possibly occur post-COVID-19 for different markets, channels and product groups.

- Use these assumptions to drive discussion in S&OP for a longer-term recovery plan leveraging the building blocks on:
  - Product — Do we need to reinvent, reduce or retire our portfolio?
  - Place — Should we rescale our online channel to drive further growth?
  - Price — Is our current pricing strategy still relevant to the market? Should we have different pricing strategies for different markets?
  - Promotion — How might our planned promotion change? Should we change our promotion tactic (i.e., TV versus social media)? The traditional marketing 4Ps should be used to beat the curve identified.
Provide projections on volume, revenue, margin and inventory. These projections should be compared to the thresholds on constraints and maximum risks a company can absorb.

**Figure 2: Prepare and Plan for Recovery Framework**

### Prepare and Plan for Recovery Framework

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Recovery Curve</th>
<th>Building Blocks</th>
<th>Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro-level</td>
<td>V-shaped</td>
<td>Product</td>
<td>Volume</td>
</tr>
<tr>
<td>Industry-level</td>
<td>U-shaped</td>
<td>Place</td>
<td>Revenue</td>
</tr>
<tr>
<td>Company-level</td>
<td>W-shaped</td>
<td>Price</td>
<td>Gross profit</td>
</tr>
<tr>
<td>Category-level</td>
<td>L-shaped</td>
<td>Promotion</td>
<td>Inventory</td>
</tr>
</tbody>
</table>

Assumptions related to increases or decreases in demand should be evaluated to determine if they are related to panic buying that may not be repeated or restrictions that may last longer. A massive increase in traffic for the industry or company might lead to an assumption that, as long as the restriction lasts, high traffic online is expected. That assumption then leads to preparations for how planning and logistics are impacted, unless it's temporary panic buying. A growth in working from home may lead to demand for new essentials, such as office supplies, that creates an assumption for future growth through expansion of the product portfolio.

Set up a recovery scorecard to track and validate key assumptions (see Table 3). Some organizations track assumptions daily while others may track them less frequently. Seek leadership for high-level assumptions given that there is no trusted data that can be used. A recovery scorecard is often used to track against established KPIs in the past and compare them to the current KPIs organizations are tracking to assess the level of recovery. This also helps with capturing the ongoing trends that might indicate a “new normal” is forming.

<table>
<thead>
<tr>
<th>Level</th>
<th>Indicator</th>
<th>Current vs. Previous</th>
<th>Frequency</th>
<th>Time period to monitor</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

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| Macro | COVID-19 case increase rate | Percentage increase or decrease | Daily | 6 months |
|        | Unemployment rate            | Dollar investment from government | Monthly | 12 months |
|        | Purchasing managers’ index   |                                 | Quarterly | Ongoing |
|        | Government economic recovery plan |                           |         |         |

| Industry | Consumer sentiment index | Percentage increase or decrease in different industry | Weekly | Ongoing until trends start to form |
|          | Extent of behavior shift  | Percentage growth or decline | Monthly |         |
|          | Extent of travel reduction|                                 | Quarterly |         |
|          | Commodity prices          |                                 |         |         |
|          | Competitive activity      |                                 |         |         |

| Company | Voice of the customer | Key themes | Increased frequency | Ongoing until “new normal” is established |
|         | Foot traffic online/in-store | Frequency |                           |                                      |
|         | Conversion rate         | Percentage increase or decrease |                           |                                      |
|         | Suppliers scorecard     |                                 |                           |                                      |
|         | Sales back to field percentage |                       |                           |                                      |
Once assumptions are validated, develop scenarios related to best and worst cases for demand. If demand rose more than 300%, what does that mean for the supply chain? If sales undersold by 50% for another six months, what impact would that have? How can we shape demand to close the gap? The supply scenario plans should also be built based on demand assumptions. In creating scenarios, supply chain planning leaders need to be realistic about demand as plans are created to ramp up or down.

Scenarios also need to be developed now that restrictions are being lifted. For example, consumers may be more health conscious after COVID-19, so sports shoes might sell more than fashion shoes in the future. What do those changes in consumer behavior mean for demand in different categories? Which changes will impact how the supply chain is designed and managed? As another example, chemical manufacturers might forecast that oil prices will continue to drop, which might lead their customers to expect better prices in the future. Do they change their inventory strategy to reduce more expensive inventory stock on hand and procure additional inventory with the lower price point? How might different assumptions impact demand and supply, not only for your own organization but also for your supply chain network, including suppliers and customers?

Demand planning teams must lead discussions on scenario planning and verifying assumptions, while supply planning teams provide critical inputs such as raw material risks and potential capacity constraints due to reduced outputs or factory shutdowns. An agreement needs to be reached on what the likely future demand and supply scenarios are. Then, the action plans that support those scenarios should be captured and documented in playbooks that can then be used in making planning and execution decisions.

Scenarios should lead to a consensus plan on actions to take such as how much inventory buffer is necessary. For the worst-case scenario, evaluate advancing promotions and introducing new products sooner, while delaying certain products not in demand during the crisis to shape demand to address revenue gaps. Commercial decisions to close revenue gaps with those moves will provide guidance to the supply chain.

<table>
<thead>
<tr>
<th>Category</th>
<th>Demand variations</th>
<th>Forecast accuracy</th>
<th>Increased frequency</th>
<th>Ongoing until “new normal” is established</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Run rate</td>
<td>■ Forecast bias</td>
<td>■ Service rate</td>
<td>■ Days on hand</td>
<td>■ Ongoing until “new normal” is established</td>
</tr>
<tr>
<td>■ Loss of sales</td>
<td>■ Forecast accuracy</td>
<td>■ Days on hand</td>
<td>■ Capacity utilization</td>
<td>■ Ongoing until “new normal” is established</td>
</tr>
<tr>
<td>■ Production output</td>
<td>■ Forecast accuracy</td>
<td>■ Days on hand</td>
<td>■ Capacity utilization</td>
<td>■ Ongoing until “new normal” is established</td>
</tr>
<tr>
<td>■ Inventory level</td>
<td>■ Forecast accuracy</td>
<td>■ Days on hand</td>
<td>■ Capacity utilization</td>
<td>■ Ongoing until “new normal” is established</td>
</tr>
</tbody>
</table>

Source: Gartner
Decisions related to prebuilt finished goods for upside scenarios should be delayed as long as possible because of the uncertainty, but supply chain planning leaders need to anticipate and set deadlines for making those decisions. The best-case scenarios can't go beyond supply chain's physical limitations. Produce projections and set boundaries related to risk and cost, such as the maximum cash impact the organization can withstand in holding inventory, or identify the trigger point for layoffs.

**Recommended by the Authors**

- Develop a Clear Allocation Management Process Before You Need It
- What Western Businesses Can Learn as China Comes Out of COVID-19 Lockdown
- Set Up Sales and Operations Execution Process to Support the S&OP Cycle
- How the COVID-19 Coronavirus Has Changed the B2C Marketing Approach in China and What Western Brands Can Learn
- COVID-19: Lean on Principles and Values in Tough Times

**Recommended For You**

- Supply Chain Planning Primer for 2020
- Video: Silicon Labs — Advanced Supply Chain Planning
- Supply Chain Brief: Expand Capacity Planning Beyond Manufacturing for Feasible and Optimized Supply Plans
- How Mondelēz Reinvented Its Supply Chain
- Apply 4 Principles for Integrated Supply and Inventory Planning Capability

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