Enabling Digital Supply Chain Collaboration for Smart Enterprises

Abstract

The onset of the digital age has forced companies to re-imagine their supply chain to create a value system that brings greater benefits to them, their suppliers, and customers.

As demand, supply, and regulatory conditions constantly shift, companies require a solid relationship with their supply chain partners to help them navigate market volatility. It has become critical to work closely with value partners to generate profitable, value building growth. This entails creating close, collaborative relationships with key suppliers and customers beyond the transactional level to unlock and realize benefits in an end-to-end value chain.

This paper offers a framework for companies to approach supply chain collaboration in the digital world. It also offers guidance on how companies should invest in their digital future.
Moving to Digital-Speed Supply Chain Collaboration

Supply chain collaboration effectively brings every member of the chain closer to the customer’s wants and needs. Digital collaboration raises the capabilities of a supply chain and vastly increases speed-to-market. It paves the way for companies to communicate with their partners in new ways about things they couldn’t before.

Digital collaboration connects partners in the supply chain, their people, data, and systems through electronic means. Digitalization makes it easier for suppliers to do business by automating the two-way exchange of critical business information, reducing material lead times, streamlining replenishment techniques, and improving inventory planning and visibility. A digital supply chain enables instant sharing of not only structured information such as demand forecasts, production, and capacity plans and orders but also unstructured content such as social media data in the form of tweets, hashtags, trends, or RSS feeds.

Supply chain managers may wish for greater collaboration when faced with an availability or lead-time crisis, or when dealing with a significant, upstream risk. True digital collaboration however cannot be hurriedly implemented in response to a tactical crisis. It requires investment in a new mindset that values customer experience, service over product, and the ability to instantly share and use data to drive awareness or decisions.
Consider the example of a US-based car manufacturer which began a gradual transformation in how it shared crash test data with its vast network of design engineers and architects. A centralized system was created to allow internal and external designers and engineers to share and review 3D design documents online. Collaborative and web-conferencing software tools enhanced supplier communications, radically 'accelerating' the vehicle-review process!

Drivers for Digital Supply Chain Collaboration

Improving supply chain visibility is a top priority for supply chain leaders, and multi-enterprise collaboration enabling multi-tier visibility helps organizations mature to higher supply chain maturity levels.

Some of the primary drivers behind digital collaboration in the supply chain are:

a. **Complexity and Uncertainty**: The complexity of products, sales channels, and corresponding supply chains requires information to flow quickly and at a high bandwidth. Similarly, the pace at which new data sources, apps, tools, and computing models are appearing is dizzying and can create tremendous uncertainty if companies try to 'go at it alone'. Many organizations freely admit that they are not tech-savvy enough to capitalize on all of the digital capabilities available today as well as the emerging ones. Companies that do business together digitally can invest in innovative techniques and relieve the burden of having to face these challenges individually.

b. **Speed of Business**: Social networks and collaborative tools connect people, information, and company assets in more effective ways. Leveraging social media can help organizations quickly and effectively gain feedback about market positioning, customer needs, and product acceptance. This information may even embolden non-traditional entrants to venture into new markets with new approaches and ways of interacting with customers.

c. **Big Data**: Highly complex and global supply chains bring large volumes of both structured and unstructured data into the system. The struggle is not with gathering data but deriving value out of it. Hence, businesses see great potential in Big Data and analytics projects to make smarter business decisions.
Creating Value with Effective Collaboration – The Right Approach

Of course, collaboration is not a binary activity that requires either full or no engagement on all fronts. Companies can pick and choose those aspects of their business where collaboration with partners is mutually beneficial.

Identifying the right areas in which to collaborate is important to its ultimate success. Table 1 provides a few use cases of collaboration.

<table>
<thead>
<tr>
<th>Collaboration Use Cases</th>
<th>Key Stakeholders</th>
<th>Focus areas</th>
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<tbody>
<tr>
<td>Collaboration with suppliers and external manufacturers on demand, supply, inventory,</td>
<td>Planning, procurement, sourcing, suppliers/external manufacturers</td>
<td>- Improving supply reliability&lt;br&gt;- Supply lead time reduction&lt;br&gt;- Optimizing component, raw material,</td>
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<tr>
<td>and related supply chain processes</td>
<td></td>
<td>or finished good inventory</td>
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<tr>
<td>Collaboration with demand channels and trading partners</td>
<td>Planning, sales/marketing, channel management, trading partners</td>
<td>- Real time visibility and ability to shape demand and inventory in sales channels&lt;br&gt;- Supply and</td>
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<tr>
<td></td>
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<td>demand alignment with efficient inventory management</td>
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<tr>
<td>Collaboration with 3 PL or 4 PL on logistics and transportation management</td>
<td>In-bound/out-bound logistics services, planning and warehouse management, 3PL/4PL</td>
<td>- Real-time track and trace visibility&lt;br&gt;- Customer satisfaction and responsiveness</td>
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<tr>
<td>New product development/product launch collaboration across supply chain</td>
<td>R&amp;D, engineering, planning, manufacturing, and channels</td>
<td>- Idea generation for new product launches&lt;br&gt;- Concept development and commercialization</td>
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<tr>
<td>Collaboration for supply risk management</td>
<td>Planning, procurement sourcing, suppliers/external manufacturers</td>
<td>- Assess, monitor and develop risk management plans&lt;br&gt;- Multitier visibility</td>
</tr>
<tr>
<td>Quality collaboration</td>
<td>Procurement sourcing, suppliers/external manufacturers</td>
<td>- Tracking product quality across multi-tier, multi-stage supply chain ensuring regulatory compliance</td>
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</table>
Once the business need and the type of collaboration has been identified, we recommend that organizations follow a structured process to form, launch and manage their collaboration areas. Figure 1 gives a five-step logical process companies can use to form effective digital supply chain collaborations.

1. Develop vision, strategy, and roadmap
   
   Establish a vision and a strategy for your collaboration program. The challenge with multi-enterprise, multi-tier collaboration is to stratify suppliers and trading partners into those with whom the relationship should be strengthened to create shared value opportunities and those to be kept at arm’s length. Developing a collaborative program requires an increased focus on people and implementation. For organizations trying to analyze their digital needs and develop ways to accommodate those needs, this could require a significant cultural shift.

2. Define digital drivers and their impact
   
   The drivers or primary tools for enabling digital collaboration need to be identified, assessed and incorporated into the program. It is important to do this at the outset. Examples of digital drivers include social media, Big Data and analytics and cloud.
3. Design processes and technologies

Design and implement the relevant supporting processes and technologies in advance to support collaboration, including roles, information flow, decision-making, data security, and other critical aspects.

4. Define program roll-out and governance

Collaboration program rollouts and overall governance must be tailor-made. Some companies tend to start with a few suppliers and trading partners and learn from them before rolling out the program to a wider field. Others focus on the business segment where benefits can be reaped easily before extending.

5. Develop performance measurements

Another critical aspect is defining and measuring the KPIs of the collaboration program, for all parties involved. Behaviors are often driven by what is measured, and KPIs that primarily evaluate only transactional, tactical performance will similarly focus attention away from the strategic aspects of the relationship. Performance indicators can greatly contribute to collaboration success when they reflect the entirety of the relationship, not just the transactional elements.

Conclusion

The speed and rapidly changing nature of the market has made it critical to integrate different supply chain functions such as product development, procurement, production, maintenance, and logistics across locations and outside of organizational walls. Highly automated end-to-end processes, flexible bundling of activities and increased visibility are the hallmarks of a fully digital supply chain. Linking digital collaboration initiatives with supply chain goals and adopting a structured operating model to realize the untapped potential of existing resources is essential to fully realize the benefits of a digital supply chain.
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