IDC PERSPECTIVE

Evolving from ERP to Network-Centric Supply Chain Applications

Simon Ellis

EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Network-Centric Supply Chain Applications

As participation in supply chain networks grows, we will begin to see supply chain applications that are designed specifically for networks; moving from 'enterprise native' to 'network native' applications . By the end of 2020, IDC expects that half of large manufacturers will have begun shifting their supply chain applications from enterprise-centric to network-centric, driving productivity gains of 2 percentage points.

Key Takeaways

- IDC has championed the transformative role of multi-enterprise supply chain networks on the ways in which supply chains will operate in the future.
- Businesses must be more connected and more resilient – networks enable both and must be supported by network-centric applications that are able to work at the speed and level of detail of the network.
- Manufacturers increasingly see an opportunity to leverage their supply chain ecosystem across an extended, connected supply chain. Companies have poor visibility into potential supply/partner risks and are not efficiently managing their trading relationships for complete efficiency and effectiveness.

Recommended Actions

- For manufacturers, retailers, or wholesalers looking to participate in multi-enterprise supply chain commerce networks, take your time in evaluating vendors. The decision to engage should be backed up with due diligence to ensure that the vendor selected has the appropriate levels of experience in your area of need.
- Look to vendors that have experience in your market segment and have the established network scale you require.
- Ensure that part of the evaluation considers your current set of supply chain applications. The evaluation should be in terms of either how the network will integrate with those applications or using the network as a complete/partial replacement of those tools.

Source: IDC, 2019

September 2019, IDC #US45282217

SITUATION OVERVIEW

The long-term movement of the supply chain to one that is highly outsourced and distributed has created both opportunity and challenge. The opportunity, of course well known, has been to allocate activities either to external parties for whom said activity is core competency or as labor arbitrage. While we might argue that the latter is less "plentiful" than in the past, the focus on outsourcing partners with core competencies in key areas of the supply chain remains an important component of the supply chain today and will continue to be so in the future. The challenge of an outsourced supply chain is that the ability to communicate in real time and have acceptable levels of visibility both upstream and downstream has become increasingly problematic. Examples of this are common in the extended supply chain — companies that diversified tier 1 supply to gain resiliency discover to their dismay that all of the tier 1 suppliers rely on a single tier 2 supplier that acts as a choke point.

IDC has observed for some years now the potentially transformative role of multi-enterprise, cloud-based networks on the ways in which supply chains will operate in the future. In a few places, we have stated that networks will have the most influence on the future of the supply chain. A bit hyperbolic perhaps, but we do believe that the ability to work within the appropriate set of supply chain networks will raise the performance of the supply chain materially. In IDC's 2018 *Supply Chain Survey,* 90% of companies are participating in at least one cloud-based supply chain network, with two-thirds of those participating in more than one. When we redo this survey in 2020, we fully expect this level of participation to approach 100%.

As participation both deepens and broadens, it is our view that we will begin to see supply chain applications that are designed specifically for networks — moving from "enterprise native" to "network native" applications, if you will. We expect that by the end of 2020, half of large manufacturers will have begun shifting their supply chain applications from enterprise centric to network centric, driving productivity gains of 2 percentage points.

The Network as Driver of Change

IDC Manufacturing Insights defines a multi-enterprise supply chain network as any platform that facilitates the exchange of information and/or transactions among disparate parties pertaining to the supply chain or to supply chain processes. In today's fast-paced, highly analytical supply chain, the use of networks to facilitate commerce and collaboration can mean the difference between meeting supply chain performance goals and not meeting them:

- **The race to innovate:** The speed of change, delivery, and operations drives differentiation — not just in the ability to do the things companies do today better but as an enabler of new capabilities that were not possible previously.
- **Turning data into value:** It is the view of this researcher that the thing that will most differentiate top supply chains of the future from their more pedestrian competition is the ability to collect and analyze all available data and convert it to insights in real time. The supply chain network is a key enabler.
- **Rising customer expectations:** Customers expect more convenience, customization, and control.
- **Increasing collaboration.** The connected and intelligent enterprise means next-level collaboration across both suppliers and customers.

The usefulness of a supply chain network is a balance between what companies need today and what they may need in the future. In some ways, the more interesting discussion is about what the longer-

term supply chain looks like, where new technologies and consumer expectations will dramatically affect the way that supply chains operate.

The Shift from ERP Centric to Network Centric

Some years back, there were conceptual discussions within the supply chain about a shift from systems of record to systems of engagement. While the idea was compelling, the technology was not capable. That is no longer the case. Data sources are now robust, and sources (like IoT) proliferate. Collaboration platforms are common, and data validation and analysis technologies like blockchain and AI, respectively, are rapidly emerging. Taken together, the multi-enterprise supply chain network is not just possible but practical. This, however, has profound implications for traditional supply chain applications. We are not suggesting that today's best-in-class supply chain applications are impediments to progress today but that, over time, they must evolve as the importance of the network grows. Specifically:

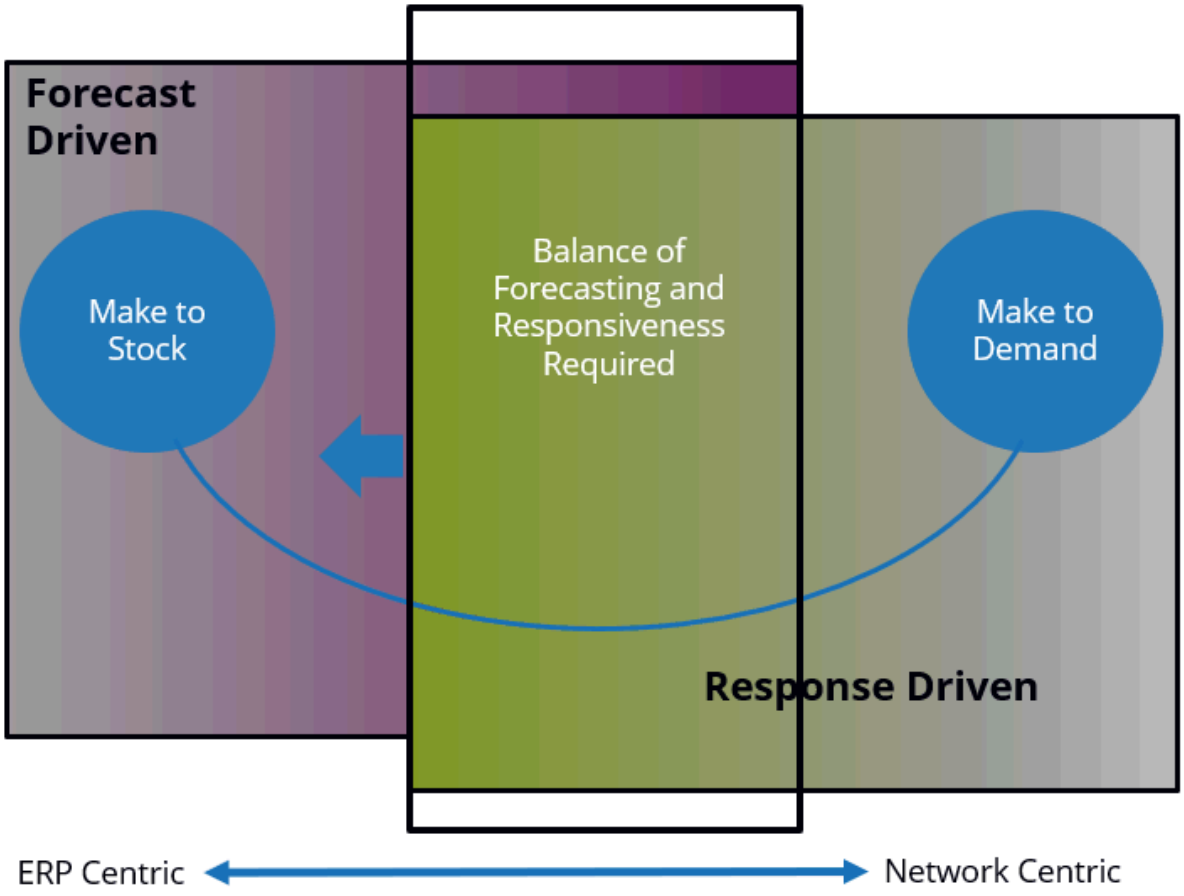
- Businesses must be more connected and more resilient — networks enable both and must be supported by network-centric applications.
- Applications must be able to work at the speed and level of detail of the network (ERP = system of record; network = system of engagement).
- This shift from enterprise to network will require a commitment to the cloud and to a set of applications that leverage modern, underpinning technologies like IoT and AI.
- Network-native applications will introduce new levels of security risk, and security tools and policies must be adapted accordingly.
- Moving to a network-centric digital supply chain suite should be part of the IT road map.

At IDC, we have also made the point in the past about the supply chain being common at the core and diverse at the edges. While we've used this analogy to think about resiliency, it applies equally to the notion of network centricity. It is our view that the supply chain must be linked to the ERP-centric system of record but be operational, opportunistic, and resilient to the systems of engagement. In this case —the multi-enterprise supply chain network.

That manufacturers are seeing a gradual but inexorable shift away from forecast-driven demand (high volumes but low variability) to demand-driven demand (low volumes but high variability) further reinforces the need to be diverse at the edges (see Figure 2). Indeed, as we have written recently, this shift to network-centric response may well mean that, in the long run, the short-term forecast becomes unnecessary — at least for a significant portion of the SKU portfolio.

FIGURE 2

Balance Shift Between Forecast and Response



Source: IDC, 2019

Automotive Case Study

At IDC, we are seeing the emergence of some interesting use cases embracing network centricity. One example is the work that a large automotive manufacturer has done in partnership with Tata Consultancy Services (TCS). Conceptually, it's an extension of business 4.0 adoption in the industry – embracing risk, customizing, creating value, and leveraging ecosystems. Specifically, it's a trading/direct procurement use case with the ability to buy from anywhere/sell from anywhere, build a cost-efficient supply chain by leveraging trade agreements and business relationships across the globe, and ensure business continuity in a multi-geography business environment. For the supply chain, both planning and execution, ecosystem leverage means connected operations and connected planning.

In this particular use case, the "trading entity" is for components/parts for the automobiles with a value of approximately $3.5 billion annually, purchasing bill of material from all suppliers and bringing the direct materials into a centralized fulfillment network. This automotive manufacturer wants to leverage

its supply chain ecosystem across an extended, network of suppliers and vendors. Business scope was specifically to:

- Set up a centralized supply chain hub for all global manufacturing plants.
- Organize multiple export service centers across Europe and Asia to consolidate and cross-dock direct materials procurement for global manufacturing.
- Establish business scenarios/use cases to improve the efficient trading/procurement of direct materials.

It had generally poor visibility into the potential supply/partner risk and was not efficiently managing its trading relationships for complete efficiency and effectiveness. Parts and material costs were deemed to be excessive, and procurement timelines were often unnecessarily extended, resulting in factory inefficiencies, material shortages, and operational risks.

The idea was to bring in a more collaborative, network-based approach across the entire trading entity, centralizing the procurement and fulfilment across the entire network for international operations, thus alleviating risks and creating value. In creation of the trading entity, this enabled the global operations network to leverage central procurement benefits in terms of cost and assurance of supply. Ultimately, the goal is to create a "scalable global supply chain solution for sourcing parts from around the world and supplying parts to plants anywhere in the world cost effectively and efficiently."

The benefits to this automotive manufacturer from the trading entity use case have been substantial. The direct shipping of transmissions from the United States to Asia saved $12 million in its last fiscal year; the creation of a consolidation center in Europe to remove existing capacity bottlenecks has saved an additional $2 million and enabling engine parts supply agreements resulted in an annual throughput increase of almost 12,000 vehicles. The project is ongoing, and further future savings of $7 million are anticipated through efforts to improve and consolidate parts import from China and India and the arrangement of direct ship bonded warehouses in Europe. The simplicity and scalability of this will continue to deliver exponential value as the global manufacturing footprints grows.

ADVICE FOR THE TECHNOLOGY BUYER

For manufacturers, retailers, or wholesalers looking to participate in multi-enterprise supply chain commerce networks — either for the first time or as a complement to existing network participation — IDC offers the following guidance:

- Take your time in evaluating vendors. The decision to engage should be backed up with due diligence to ensure that the vendor selected has the appropriate levels of experience in your area of need.
- Be clear about the need. Is it about supporting ecommerce, enabling greater visibility, or managing collaboration/transactions with upstream suppliers or downstream customers? What are you looking to gain from network participation, and do certain vendors support necessary focus better than others?
- Look to vendors that have experience in your market segment and have the established network scale you require.
- Ensure that part of the evaluation considers your current set of supply chain applications. The evaluation should be in terms of either how the network will integrate with those applications or using the network as a complete/partial replacement of those tools.

- Ensure that the vendors you consider have both the existing necessary functionality and the future capabilities you will likely need.

The usefulness of a supply chain network is a balance between what companies need today and what they may need in the future. In some ways, the more interesting discussion is about what the longer-term supply chain looks like and where new technologies and consumer expectations will dramatically affect the way that supply chains operate. Ensure as you engage with a network vendor that the vendor is at least thinking about what tomorrow may look like.

LEARN MORE

Related Research

- *IDC MaturityScape Benchmark: Digitally Enabled Thinking Supply Chain in the United States, 2019* (IDC #US44930219, March 2019)
- *IDC MarketScape: Worldwide Multi-Enterprise Supply Chain Commerce Network 2018 Vendor Assessment* (IDC #US44514117, December 2018)
- *IDC FutureScape: Worldwide Supply Chain 2019 Predictions* (IDC #US44376118, October 2018)

Synopsis

This IDC Perspective looks at the inevitable evolution of supply chain capabilities linked to multi-enterprise networks.

"Businesses need to be more connected and more resilient – networks enable both and must be supported by network-centric applications. Those applications must be able to work at the speed and level of detail of the network," says Simon Ellis, program VP for Supply Chain at IDC.

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Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com