

Digital operations transform the physical

NIST Supply Chain Operations Workshop
Georgetown University



Executive summary

- Digital operations requires real-time optimization across the value chain to instantly respond to “always on” customers & business partners
 - For the last few years, operations executives have been “kicking the can down the road”
 - They are failing to achieve this vision
- In 2010 Operations Executives said that their value chain flows would be optimized
 - At the 5-year mark, only a handful (9%) claim success
 - They are struggling to instrument their value chains (integrated with Internet of Things, cloud applications, advanced analytics and real-time insights)
- However, leading companies are integrating and optimizing to create fluid value chain flows, with:
 - Perpetual planning
 - Optimal orders, and
 - Dynamic distribution

Analytics + real-time signals = **Perpetual Planning** to optimize value chain flows

Become real-time demand-driven

Evaluate demand signals from your customers and channel partners. Remove any latency and move to a real-time environment. Build business rule engines to automatically alert management to out-of-tolerance situations. Message them anywhere through mobile device access to enable immediate responses when critical discrepancies occur.

Collaborate at both ends of the value chain

Integrate with marketing insights for better knowledge of customer demand and buying patterns. Incorporate these insights in the planning and product lifecycle management processes. Also collaborate with suppliers and business partners on customer demand plans and bring real-time visibility to all key planning processes (such as manufacturing, transportation and logistics).

Plan continually

Shrink planning horizons from weeks or days to a continuous planning cadence. Start by implementing your S&OP in an environment for global access by stakeholders “24 hours a day, seven days a week” to support real-time collaboration. Then build an analytics engine to yield predictive and prescriptive business intelligence and insights.

Analytics + real-time order flows = **Optimal Orders** to keep customers loyal

Create a unified internal view of real-time order fulfillment

Optimize your order-to-cash (OTC) processes across the enterprise for labor utilization, cost efficiency and data integration. Review end-to-end processes and remove activities that don't add value. Start with an end-to-end OTC performance evaluation of costs and time-to-service. Next, as these cross-functional processes are simplified and standardized across geographies and business units, apply advanced technologies – such as analytics, modeling and simulation of processes – in a seamless environment that immediately conveys order status from beginning to end.

Integrate to provide external order-to-cash visibility

Integrate enterprise applications with business partners and suppliers to provide real-time visibility of the status of all order-to-cash, service-to-cash and purchase-to-pay processes. Order status must be available simultaneously and instantaneously to corporate management, suppliers, transportation/distribution service providers and third-party manufacturers. ERP and logistics systems that contain order status information become real-time and available for immediate access by all stakeholders (customers, suppliers, logistics providers, management) when such information resides in a cloud-based environment.

Create an order environment conducive to your goal

As customers and consumers demand more, measure and monitor customer touch points to aim for that optimal order experience. From order-to-cash transactional activities, measure the customer's view – not the enterprise view – of right time, right product quantities, right condition and right price. For example, the customer's original delivery date/time should be honored and measured, not adjusted delivery times. This applies to quantities, price and condition as well. An optimal order environment is designed to increase customer satisfaction and loyalty by consistently meeting requirements. Create a customer measurement and monitoring system that continually monitors customer satisfaction criteria.

Analytics + real-time logistics tracking = **Dynamic Distribution** to deliver on the customer promise

Optimize your networks

A key component of dynamic distribution is optimizing the network of manufacturers/assemblers, suppliers, third-party logistics and other service providers to seamlessly deliver across a multitude of touch points. The complexities of today's markets and rapid distribution needs require an active and aggressive network optimization capability. Evaluate the trade-offs: inventory versus costs for various transportation modes; and distribution points against constraints such as time, fuel, labor, energy usage, carbon footprint and others. Network optimization is not a "study" to be conducted every couple of years. In today's era, where technological advancement meets volatile customer demand, networks must be optimized continually.

Implement real-time logistics operations

Real-time logistics – tracking end-to-end across the entire value chain network – is no simple feat. Many companies implement cloud applications to deliver the "real-time promise" of providing product whereabouts and delivery schedules at the tap of a finger. Leading practices include web-based connectivity, but also collaborative and social applications to support communications with a myriad logistics partners.

Incorporate dynamic distribution

Provide monitoring of real-time logistics and order/demand signals to be able to re-route and re-distribute products and services – even in transit – while automatically reallocating inventories at various distribution points along the value chain. Inform appropriate parties of the disposition of product whereabouts – through automatic notifications, messages and alerts.