Redefining the value from END-TO-END INTEGRATION

BY STEVEN BOWEN AND MIKE BURNETTE

In the developed economies that emerged after World War II, business was centered on the mass production of low-cost, standardized goods to meet burgeoning consumer demand. Efficiency and scale ruled the day. Companies made massive investments far in advance of actual sales, focused narrowly on reducing in-house production costs and watched for opportunities to vertically integrate. Meanwhile, expanding consumer markets protected many manufacturers from the consequences of poor capacity and inventory planning. In that era of mass production, companies could simply afford to be less closely integrated with their supply chain partners.

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Total value optimization

Of course, the economic, demographic and competitive environment in which we live today is dramatically different than the postwar period. Despite these differences, today’s dominant business model still rests on the assumption that companies can operate within their four walls, taking orders as they come from customers, and expecting suppliers to ensure necessary material and service flows. Research has shown, and industry experience has vividly illustrated, when companies narrowly focus only on their slice of the value creation process—without considering the effects of their decisions on other parts of the supply chain—total supply chain performance suffers.

Lack of supply chain integration can be seen in misguided capacity plans, poorly calibrated production schedules, a cost imbalance for a given supplier, who may even end up out of business, buildup of excess inventory, inefficient use of logistics resources, poor customer service, lost revenues and ultimately diminished returns. And unlike before, companies today face sophisticated and dynamic consumer markets that brutally expose the problems associated with failing to have an end-to-end supply chain integration strategy. On the other hand, the benefits of supply chain integration through total value optimization (TVO) can be substantial, including:

• improving cost, reliability, inventory turns and cycle time at each activity node in the supply chain, while eliminating non-value time, work and other types of waste;
• providing supply chain partners with visibility to proactively identify issues and major cost savings that may have been difficult to see before;
• reducing average lead times and lead time variability;
• shrinking total order cycle time and supply chain cycle stock;
• Improving responsiveness and customer experience though more demand-driven supply chain operations;
• postponing buy, make and deliver activities until demand is better known, thereby reducing the costs of uncertainty;
• depending less on safety stock to manage variation; and
• entering markets that may have seemed too volatile under a traditional non-integrated supply chain.

Despite these benefits, end-to-end supply chain integration has proven to be one of the most difficult challenges that managers confront. Integration work is complex. It requires a significant investment of resources and a leadership team committed to the long-term growth of supply chain capabilities. Moreover, companies need to cut through the hype surrounding the latest integration fad and get down to proven best practices that industry leaders have used to transform their supply chains. All this leaves many organizations, even those that have moved toward organizational structures led by a single chief supply chain executive, asking: “Now that we are committed to supply chain integration, what do we do next?”

Research from the University of Tennessee’s Global Supply Chain Institute provides some preliminary answers to that question. Field interviews were conducted with dozens of top supply chain managers who are leading their companies through the end-to-end supply chain integration journey. The goal was to discover best practices that could be applied in a wide range of industry contexts. Below, we discuss eight of these best practices. But first, one key insight of the interviews was that a major factor contributing to the challenge of integration is a lack of agreement on the very definition of what companies are trying to achieve, making a practical definition of supply chain integration a key factor in success.

Defining supply chain integration

Research by Daniel Pellathy and Ted Stank, who contributed to this article, and Diane A. Mollenkopf and Chad W. Autry has defined supply chain integration as the process of connecting decisions and actions across an end-to-end supply chain (from supplier’s supplier to the point of consumption) in order to drive total value for all stakeholders.

It requires aligning strategies, effectively managing operations and maintaining reciprocal flows of information among supply chain stakeholders to consistently optimize results for the entire supply chain. This means having a united and cohesive supply chain team within your company’s four walls that includes not only the typical supply chain functions but also representatives from other major functional areas such as IT, finance and marketing. It also means working with external supply chain stakeholders to defined goals based on a common understanding of the total value being created. This strategy is the foundation of the TVO strategy.

This research has also shown that supply
Supply chain integration consists of the following three core elements.

**Supply chain collaboration.** The process of working with strategic partners to identify, define and pursue specific business opportunities that have the potential to increase overall supply chain value and to identify the role each stakeholder will play in achieving specific objectives.

**End-to-end process management.** Linking activities into a single, seamless process that supports supply chain value while considering the impact that increased customer service has on factors such as forecast accuracy, supply chain complexity, fulfillment cost and inventory levels.

**Reciprocal flows of high-quality information.** Collecting and storing data while using data analytics to provide real time information for leadership/management to improve decision making.

Supply chain integration typically occurs at both the strategic and operational levels. At the strategic level, integration starts with a clear and unified understanding of the value that each supply chain activity is meant to create for consumers and stakeholders. Once a clear understanding of each activity’s contribution is achieved, strategic integration shifts to defining how each stakeholder will manage activities under their control and then holding partners responsible for their commitments. Operational integration occurs at the level of supply chain business processes, including customer relationship management, sales forecasting and demand management, production and operations management, purchasing and supply management, order fulfillment, resource management, new product development, end of product life and commercialization, reverse supply chain management and data management.

Operational integration forces partners to optimize the overall flow of supply chain activities, rather than simply executing activities along the different supply chain nodes.

Partners must also work to resolve conflicts in decision-making to ensure that the sequencing and timing of activities are matched with maximum efficiency. The goal is to create more streamlined and consistent supply chain operations that provide value to the stakeholders while generating a remarkable experience for customers.
The bottom line: End-to-end integration delivers supply chain and financial results

A high-tech solutions provider offering technologies and products in the global transportation industry had seen significant growth through acquisitions. As a result, the organization had an ecosystem of more than 1,500 suppliers, many with high cost bases. A lack of collaboration between leadership and cross-functional teams, not operating within an established new product introduction (NPI) process, an immature procurement function and poor visibility of the end-to-end supply chain led to time and budget overruns. To optimize the supply chain, the firm would need to kick-start a major transformation across the entire global business. This would require supply chain integration and collaboration, utilizing a total value optimization (TVO) strategy to achieve the desired results.

To achieve the vision of becoming an innovation-led manufacturer, the company’s leadership sought to change the overall production footprint, streamline the NPI process and optimize procurement to be more strategic and forward thinking.

An initial analysis by Maine Pointe, a global supply chain and operations consulting firm, saw that the process of dealing with suppliers included only limited business rules and lacked accountability, with sales and engineering driving most of the supplier definitions. The global supply chain, which spanned two continents and five countries, did not have sufficient accountability built into the process.

The company's strategic vision was realized quickly by leveraging the TVO approach across the entire organization. Advanced data analytics was used to provide better visibility of the company’s end-to-end supply chain. The transformation also introduced asset rationalization, sales and operations planning, new product introduction and leader and organization improvement.

Leadership was aligned around defined business rules, and a global, unified vision was identified, along with clearly defined roles and responsibilities across the organization. Higher-cost outsourcing operations in Canada and Germany were transferred to other relevant locations in the United States, Asia and Europe, in some cases moving to sourcing from outside suppliers. An initial focus on quick-win supplier negotiations led to new agreements, preferred pricing and incentives.

At the same time, a new procurement management operating system (PMOS) was identified to ensure a more sustainable supplier ecosystem and improved relationships.

Other improvements included enhanced customer service and operational efficiency, identification of relevant key performance indicators, and defining an NPI process model and playbook. Greater collaboration was achieved with development of a cross-functional sales, inventory and operations planning process across the entire organization, with buy-in from all areas.

The plan brought in a more strategic focus to sourcing, rationalized internal manufacturing facilities and established a greater level of accountability and collaboration through all phases of sales, inventory, operations and planning. The new approach also significantly reduced errors and improved supplier selection, securing the company’s consistent future growth with a double-digit improvement in EBITDA as well as a meaningful reduction in global procurement spend.

These improvements in the supply chain, new sourcing relationships and business rules delivered results that went far beyond simple cost savings. Together with lasting EBITDA improvements, the transformation brought greater visibility and improvements to the end-to-end supply chain, improvements in operational performance, realistic KPIs and a more strategic sourcing operation that laid the groundwork for consistent future growth.

Best practice research

As part of our research, interviews were conducted with managers spanning the CPG, heavy equipment, food, automotive, chemical, packaging, retail and textile industries. The supply chain organization (procurement, planning, manufacturing, engineering, process, warehouse, transportation, etc.) in each of these companies reported to a single supply chain officer who was a member of the top leadership team and reported to the CEO.

These organizational reporting structures helped to promote common vision, strategies, measures and priorities—but every manager we interviewed commented that internal organizational alignment realized only a fraction of the potential value that could be achieved through true supply chain integration.

The interviews revealed eight supply chain best practices that benchmark companies are using to drive value through integration. The following is a summary of those practices.

1. Jump-start supply chain integration with passionate top leadership. Top supply chain leadership must visibly
embrace and model integration work. This includes leading business processes such as demand/supply integration or S&OP, integrating new product development and launch processes and championing platform life cycle management. Leaders must also work across internal supply chain disciplines and between internal and external stakeholders.

2. Design a seamless supply chain team built to create total value. Benchmark companies organize their supply chains under a single supply chain leader who is a member of the corporate leadership team. In this way, the supply chain team is truly multi-disciplinary, with qualified representatives from all affected supply chain areas. This structure also enables the supply chain leader to act as a strong advocate for the value of integrated end-to-end supply chain systems. Supply chain integration is linked to business strategy and is viewed by business leaders as a critical tool for achieving enterprise goals.

3. Map the supply chain and then prioritize the biggest total value opportunities. Top companies flow chart supply chain activities across all suppliers, plants, warehouses and customers for all product lines. When done well, mapping the supply chain reveals areas where additional value can be created, beyond simple cost-cuttering. A significant side benefit of mapping the supply chain is that the team also gains a far better understanding of the key drivers of overall supply chain performance.

4. Drive progress through a drumbeat of rigorous SC and business reviews. “You get what you measure” is a common business phrase. Benchmark companies take this idea to heart when it comes to supply chain integration. Leadership and team reviews are performed regularly within the supply chain and within multi-functional business forums.

5. Simplify, streamline and then integrate. Benchmark companies first simplify supply chain activities and then streamline and standardize work to avoid unnecessary integration work. For example, one of the benchmark companies we talked to focused first on standardizing equipment, materials and processes to streamline supply processes, and then leveraged these gains into improved customer service and responsiveness through better integration.

6. Partner to win—integrating customers, partners and suppliers. A company may not have the resources or brainpower to achieve end-to-end integration alone. Internal supply chain capabilities may not be sufficient to deliver on expanding business requirements. That’s why involving customers, third-party providers (3PL, 4PL, contract manufacturer, engineering design firm, consultants) and suppliers in the integration process is critical to assembling the solutions and resources needed to complete integration work.

7. Integrate digital information systems enabling real-time end-to-end decision-making. An end-to-end integrated information system is required for end-to-end supply chain management. In the past, the cost and complexity of these systems limited their use to larger enterprises. But the digital revolution is eliminating these barriers. Benchmark companies modified their information systems to ensure that information was passed between critical nodes/transitions, and that information needed for planning, processing, and decision-making was real-time and accurate.

8. Create a new breed of holistic supply chain leaders. Benchmark companies have renewed their talent strategies to support their end-to-end supply chain integration strategies, shifting the leader’s focus from optimizing their own department to driving end-to-end value. This shift requires leaders who can think broadly, work effectively across organizational boundaries, utilize new digital/Cloud-based tools, embrace change, continuously learn, think externally and react to the latest business requirements.

Driving value

The results of the benchmark company interviews demonstrate that true end-to-end supply chain integration goes well beyond appointing a single supply chain leader, developing an organizational chart that includes all of the supply chain disciplines or even creating a single supply chain scorecard. Benchmark supply chains drive value by verifying all activities and ensuring that transitions in the supply chain are integrated at both a strategic and activity level.

Is an end-to-end supply chain integration strategy right for your business? If you have complex, global supply chains, have multiple acquisitions, have significant customer service issues, or have a small pipeline of large cost savings projects, your supply chain is a prime candidate for this strategy.

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