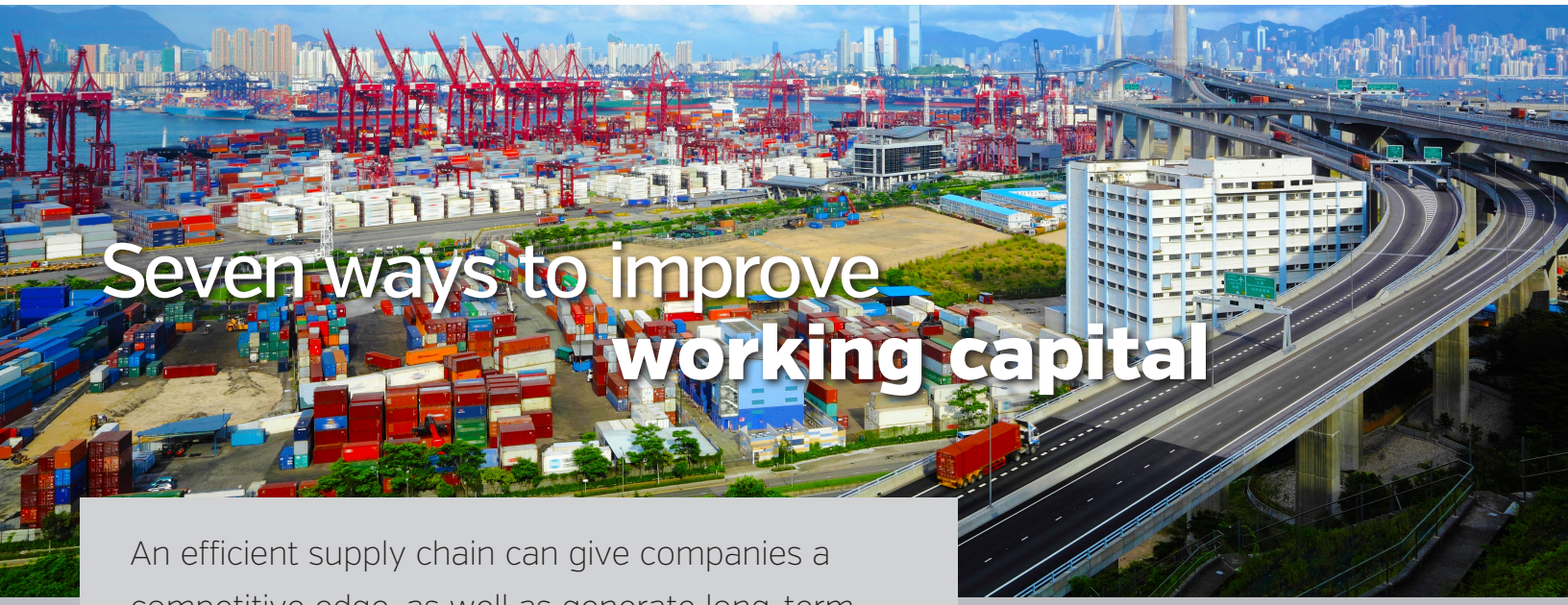
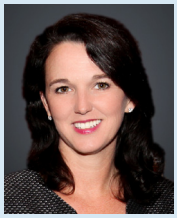


Seven ways to improve working capital

An efficient supply chain can give companies a competitive edge, as well as generate long-term shareholder value. In a new era of supply chain strategies, the following list highlights seven areas of opportunity to improve working capital performance.



Jaymie Forrest

Global Supply Chain Lead

Jaymie Forrest leads the supply chain practice of Alexander Proudfoot – coaching clients on supply chain alignment, improved processes and operational efficiencies through increased supply chain performance. She has 25+ years' experience in supply chain planning and operations as a consultant, technology executive and educator.

1 Reduce cycle time

A complete supply chain is comprised of multiple working parts – understanding how they function will help determine where non-value added and inefficient activities are occurring.

Certain areas of the supply chain have the potential for cycle time improvement. For example, working with suppliers to reduce extended lead times that drive additional inventory and costs. In transport, expensive ports may process freight more efficiently or provide access to a cheaper, or less congested, intermodal system that reduces cycle days and in-transit inventories. It is imperative for executives to understand the proper mix of transport routes, terminals and modes around the organization's global supply network for minimizing total cycle time.

Cycle time reduction not only depends on systems and processes, but physical operations as well. The cycle time of outbound logistics is determined by how fast an order is processed and the amount of transit time it takes to reach the end user. By paying attention to detail, advance shipping notices for instance, supply chain professionals can synchronize fulfilment efforts prior to the arrival of goods. A greater focus on lowering total fulfillment costs will result in better customer service, lower inventory levels, and the acceleration of the invoicing and receivables process . On the other hand, frequent "rush" orders will speed up cycle times, but at a higher cost.

The opportunities for cycle time reduction vary depending on the size and scope of the supply chain. However, the goal remains the same – keep products moving efficiently, avoid unnecessary overhead and non-value added costs, and reduce total time to reduce inventory in the system.

2 Optimize manufacturing plans

Firms tend to be reluctant to change their overall manufacturing capacity plans – it is sometimes for historical reasons that no longer apply. In most cases, there is potential for extra manufacturing capacity and opportunities to reconfigure inventories based on current trends. Essential to this is accurate forecasting through improved sales and operations planning (see below).

It is not unheard of for companies with good sales and operations planning (S&OP) processes to have poor visibility at the manufacturing level. Demand volatility, the impacts on manufacturing trade-offs, and total inventory carrying costs all affect the way manufacturing planning is optimized. If manufacturing planning is not closely aligned with the current market changes, manufacturing will more than likely fail to meet accurate planning shifts for consumer demands. The end result is an imbalance of product mix resulting in higher inventory levels.

The optimization of manufacturing in developing markets presents its own unique set of challenges. A thriving middle class can create rapid changes in purchasing tastes and patterns, as well as volumes. In this case, there are complex trade-offs to be made. Does it make more sense to manufacture domestically to optimize distribution costs, or to leverage manufacturing economies of scale by importing from the manufacturing capacity of a larger market? There are other factors to consider, including tax regimes that favor local manufacturing and the reliability of shipping and importing facilities. Estimating the actual cost to serve an emerging market, as well as determining its value, is even more challenging than estimating one that is well-established.

> “ It is not unusual for companies with good sales and operations planning to have little visibility at the manufacturing level. ”

3 Improve sales and operations planning (S&OP)

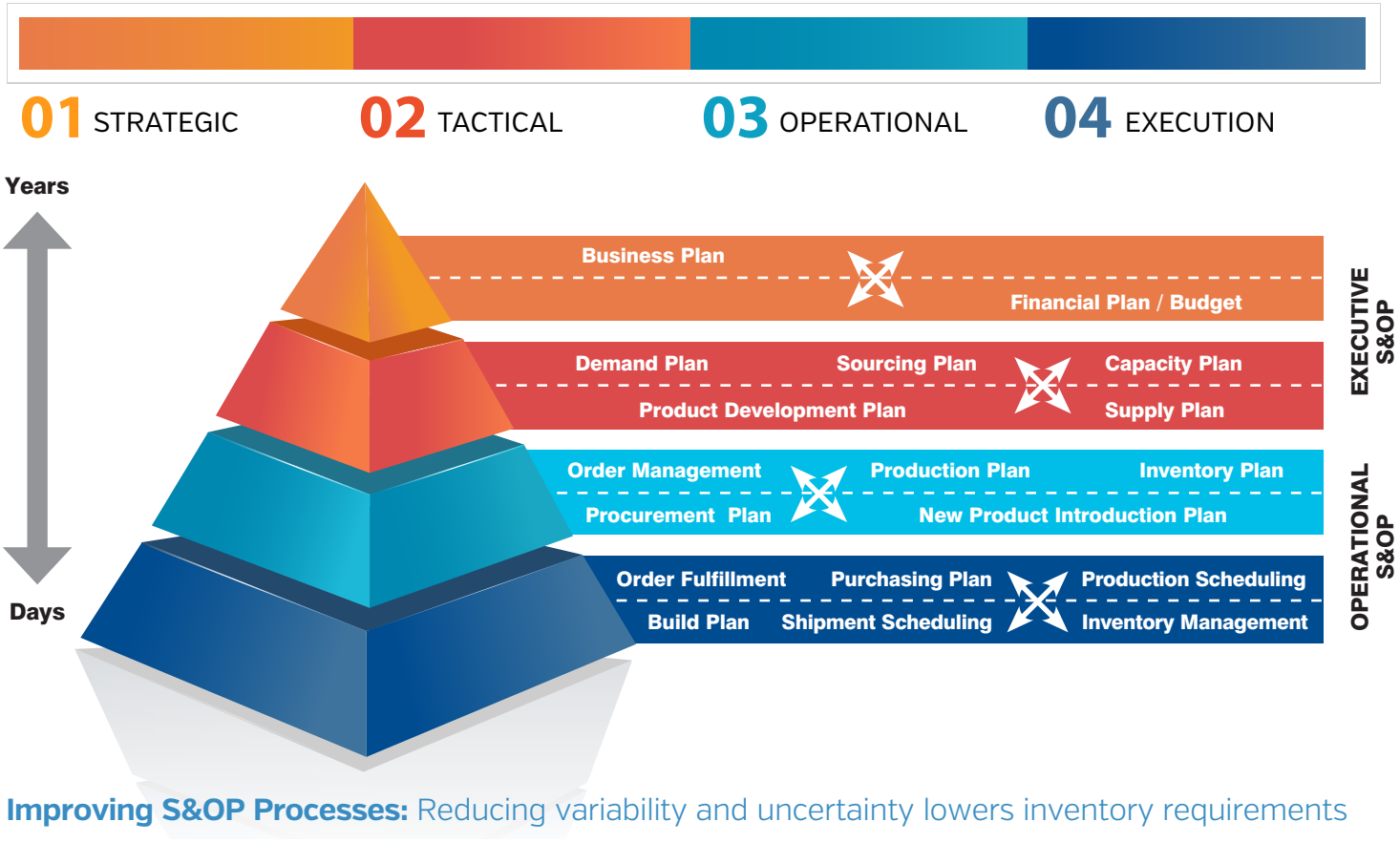
Most firms still approach orders from a manufacturing point of view – running the factory to optimize production efficiency. Supply chain methodology drives the process from the other direction. Understanding demand and planning for the best way to manage variability of demand is just as, if not more, important. E-commerce, for example, is making demand more variable with frequent “spikes” in sales. It is also becoming more disaggregated, as increasing numbers of orders are placed in smaller quantities by end-users rather than intermediaries ordering in pallets or truck-loads. Planning for this variation will keep the supply chain responsive and maintain operational cost control. Integrating the supply chain to be more agile, flexible and responsive to changes in the sales and operations planning process is a critical step to remain competitive without driving additional operational costs. Shorter time frames, smaller shipment sizes, mobile e-commerce, and increasing return flows do not necessarily require a technological solution per se, but would benefit from a process improvement focus. Manufacturing, sales and marketing must focus on creating an integrated picture of demand from a supply chain perspective. Developing short interval process controls that respond quickly to demand will allow the supply chain to remain responsive and maintain cost efficiencies.

Integrating supply with demand requires more than just having people and systems talking to each other – they have to be in strategic alignment. It is having a cohesive operating plan with all departments moving in the same direction with the same effective metrics. A more sophisticated sales and operations planning processes would also have alignment with their suppliers and customers. The lack of integration between supply and demand can lead to fragmented inventory and eroded margins. By contrast, an effectively integrated S&OP process can often yield measurable benefits of up to 5-10% improvement in total supply chain costs, a 7–15% inventory reduction and a 5-10% improvement in gross profit.

Although demand is becoming less predictable, the sales and order process is producing an abundance of in-depth data about customer preferences, requirements and buying patterns. How to use this data is the real question. It raises strategic issues, such as how much it will take to manage demand patterns, or reduce risk, by influencing customer requirements (e.g. delivery service levels).

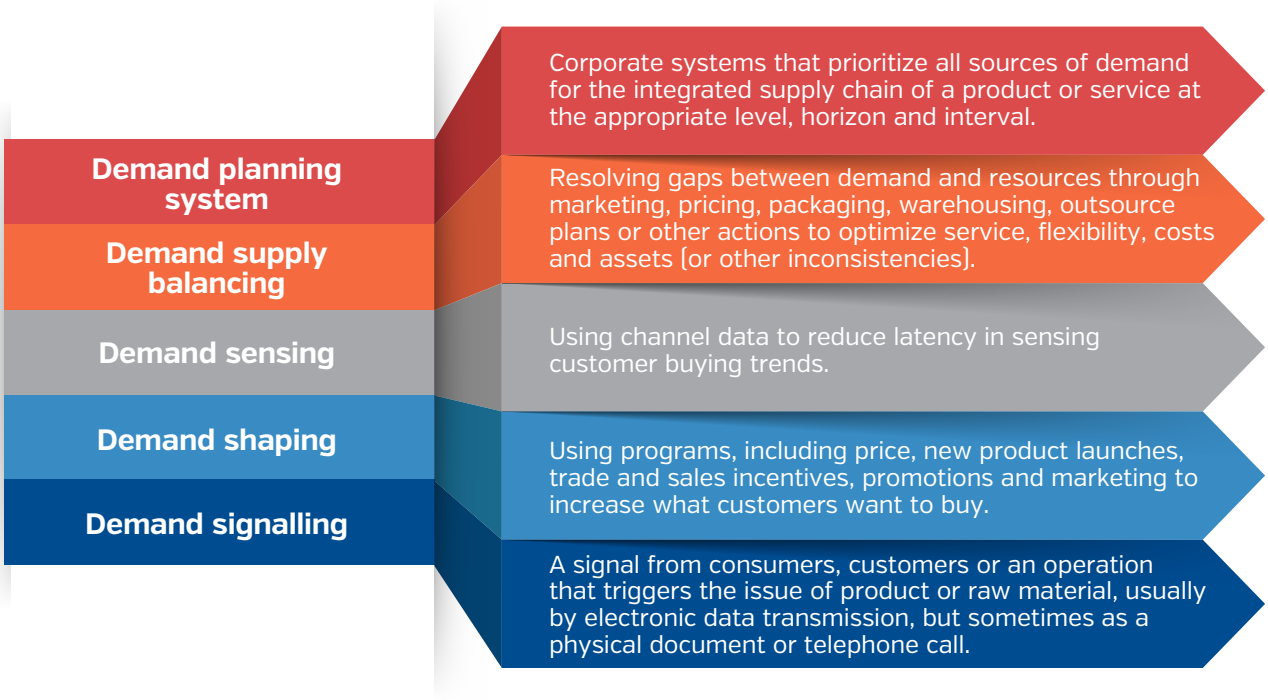
However, not only do most companies have trouble recognizing customer buying patterns (a demand-side failure), they often overlook costs and profitability as they relate to different products and servicing arrangements (a supply-side failure). Finding ways to bridge these gaps is not easy; leveraging best practices in supplier relationship management and supply chain management can play a significant role.

> “ E-commerce in particular, is making demand more variable. ”



Improving S&OP Processes: Reducing variability and uncertainty lowers inventory requirements

Managing Demand: Five elements of an efficient operating system



4 Integrate sourcing and procurement with supply chain operations

In most instances, procurement and supply chain operations work and plan independently of each other. Yet, procurement decisions have a critical influence on the effectiveness of the wider supply chain. If, for whatever reason (often unit price), procurement sources from multiple suppliers only supply in volumes equating to their recommended shipment size or full container volumes, the cost side of the supply chain will suffer. In contrast, if procurement works with the supply chain operations to determine where the costs of transportation, inventory carrying, cycle delays and inflexibility are affecting the bottom line, beneficial policies and processes can be developed.

Typically, firms should be seeking to segment their offering into a small number of operational "lanes" that feature the most appropriate pricing, service offerings and supply chain processes. A typical three-lane strategy approach may look something like the following:

In **Lane one**, stock packages based on a thorough knowledge of buying patterns are stored as finished goods inventory; likely close in proximity to the customer. Short lead times attract more customers to these lanes; proximity and customer insight improve forecast accuracy and operational efficiency while reducing inventory. Finished goods inventory might actually rise to maintain service levels, but overall inventory in the system can be reduced because there is a greater sense of confidence in what will sell with fewer stock-keeping units. Sales staff may need extra incentive to push products toward this lane, as this narrows customer flexibility. High confidence levels mean procurement can offer suppliers attractive long-term contracts from a strengthened negotiating position and confidence in meeting required allocations. Transport consolidation opportunities may also exist. Adept management of this lane shows the supply chain as a real vehicle for competitive advantage.

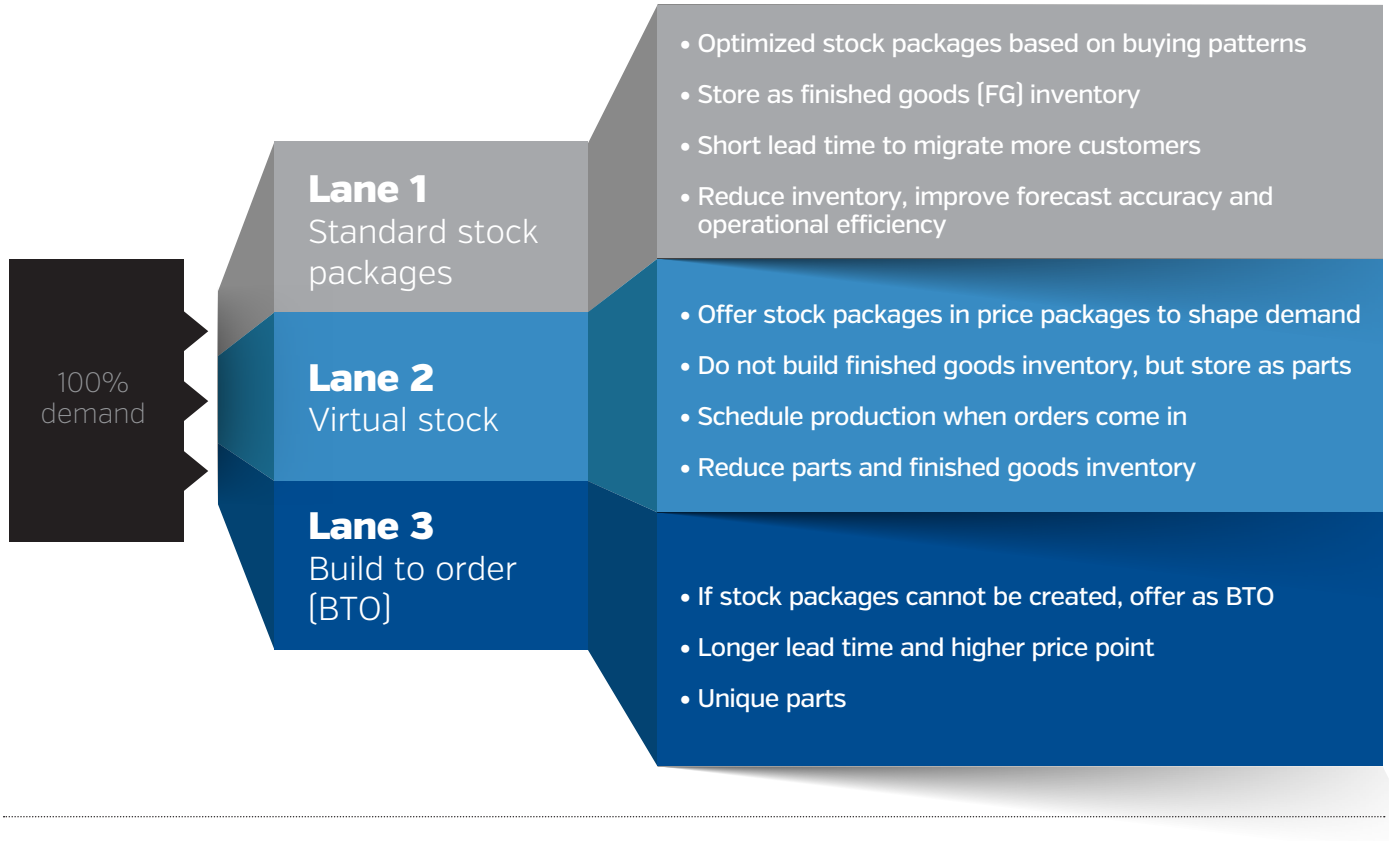
Lane two offers stock packages priced to shape demand and expectations. Inventory is stored as parts and assemblies rather than as finished goods (with final assembly or configuration per the customer's order). This lane is not necessarily served by the same suppliers as lane one; this may offer flexibility to deal with more specialized customer requirements. And, although cycle

and fulfilment times still have to be closely controlled, they are not as troublesome as previous supply operations where demand requirements were not as predictable. This keeps operating costs under control and the supply chain responsive.

Lane three represents the small remainder of products where stock packages cannot sensibly be created and are classified as "engineered to order." These may involve unique parts and suppliers; available only on longer lead times and at higher prices. This approach not only encourages the sale of standardized product with known margins, but also drives cost savings in both supply chain and procurement. This approach increases visibility of the true total cost of the sale.

> "Overall, inventory in the system can be reduced because there is greater confidence in what we sell."

Integrating sourcing and procurement with supply chain operations: A three-lane strategy



5 Improve asset utilization

There are opportunities to leverage working capital wherever assets are deployed throughout the supply chain; in manufacturing, storage, distribution and transportation. There are many operational tweaks that can improve asset utilization; most decisions revolve around how orders are grouped, planned and prepared. Clearly there are benefits of longer production runs for machine utilization, but what operational costs are being affected by producing excess inventory? Is it possible to better sequence jobs to minimize changeover times? Can loads and destinations be consolidated to make better use of vehicle capacity and reduce mileage? Can idle time be reduced to improve the efficiency of allocated vehicles and warehouses in order to operate the same level of output in a shorter time frame or less shifts? The irony is that the most efficient warehouses are almost always empty. Such pre-planning for asset utilization not only improves manufacturing and transportation efficiency, but invariably reduces inventory-carrying costs.

Focusing on transportation assets, there are several sweet spots for intervention. Despite the fact that some solutions may require investment to participate, these opportunities can yield cost or productivity improvements of 10–25%. These improvements include better route planning or improvements in master route creation to achieve higher asset utilization. Understanding opportunities in transportation planning for consolidation or backhaul opportunities can provide significant cost reductions and asset utilization improvements. Technology and process improvements can also be used to further optimize delivery of goods already in transit. Automation such as handheld devices and telematics can decrease stop times by reducing or eliminating paperwork at the point of delivery. Understanding which processes to automate and which ones require redesign is essential to better business process improvement, improving customer service and managing total operating costs. Once again bringing visibility to the right metrics and providing real information for better decision making can drive working capital improvements.

Improving asset utilization: Five areas of opportunity

Opportunity area	Concept	Investment level	Impact on cost/productivity
Automated route planning/ centralized planning	The ability to consider more options in a timely manner using decision support technology	Medium-high	10-25%
Master route creation	For clients that are predictable in their type of orders [frequency/size], providing the ability to manage variability by exception	Low-medium	10-15%
Increase truck utilization	Batter order/stop planning reduces the cost per stop and increases distribution profitability	Medium-High	10-20%
Decrease total distance driven	Efficient deliveries/pick-ups decrease overtime hours, maintenance expenses, and/or overnight trips, reducing the number of trucks required	Medium-High	10-35%
Decrease stop times	Handheld technology can reduce delivery/pick-up time by half compared to manual paperwork and compliance forms	Medium-High	25-50%

6 Evaluate operating strategies

Nobody expects to operate in an entirely stable business environment, so most operating strategies tend to be short lived. The mark of effective supply chain planning is a strategy that consistently realigns with the firm's overall business strategy – anticipating future market growth and change, as well as new channels to market and marketing strategies. Many firms find that, over a period of 5–10 years, they have evolved into an entirely new operating model, so the supply chain must evolve at similar pace. Taking all of this into account, supply chain operators must have responsiveness, flexibility and fluidity in the nature of assets deployed and how they are owned, managed and utilized. For the most part, physical or contractual commitments that extend for 5, 10 or even 20 years are no longer the norm.

A comprehensive review of operations in tandem with a rigorous cost-benefit analysis can provide a holistic view of the entire supply chain. The review should identify and focus on areas with high impact that present reasonable opportunities for significant improvement.

High-impact priorities will be different for each company, but typically some or all of the following should be considered:

- **Warehouse operations by a third-party logistics provider (3PL)** – It has the potential to improve customer service and lower storage costs; sometimes involving economies from shared usage of warehousing facilities.
- **Removing obsolete inventory** – It has a direct impact on inventory carrying cost reduction. This involves more than just the removal of obsolete or out-of-date products; it requires monitoring of slow moving product lines where costs are close to outweighing any possible profit.
- **Transportation management by a 3PL** – A way of improving customer service and lowering transportation costs. There may be significant administration savings in transportation in addition to opportunities to reduce cost through consolidation or leveraged economies of scale. In some territories, it can eliminate problems associated with capacity or driver availability and add a level of flexibility for variable demands.
- **Embed change management techniques** – An essential component for other initiatives, the supply chain at all levels needs to foster a culture that continuously seeks improvement. The point is to not only perfect the existing model, but actively consider changes as they become relevant to the business. Adapt KPIs that drive sustainability is often an overlooked component to delivering efficiencies.
- **Manufacturing reliability initiatives** – Having the confidence that the required product will arrive at the right place and time allows for inventory reduction, asset utilization and other service programs to be executed successfully.
- **Consumer direct fulfilment operations** – Serving the consumer "straight from the factory" can enhance revenue, improve margins, create more direct visibility and provide a better understanding of markets. In theory, greater margins are made possible by eliminating the middleman or eliminating additional costs structures. In practice, direct fulfilment can involve a significant investment, or different third parties to be engaged. However, depending on the situation, the benefits can be substantial.
- **Improved distribution resource planning (DRP) and deployment** – Smarter distribution resource planning has major cost-saving implications and can enhance customer service.

7 Balancing transportation costs and inventory levels

Of all the trade-offs and balances in supply chain operations, the one that exists between transportation costs and inventory levels is perhaps the most critical. Essentially, small shipment sizes involve less inventory but higher transportation costs, and vice versa. However, there is more to the story.

"Inventory level" implies both the total amount of stock in the system and its location. The same stock carried in many small local warehouses will have a very different transportation cost profile (both inbound and outbound) compared to the same level of stock held in one or more central warehouses. The issue here is not transportation costs alone; the size of typical shipments (truckload, pallet, case, etc.) impact how much firms have to transport and supply on both ends. An optimum order size from the point of view of manufacturing, or warehousing may not always be ideal for the customer (i.e. they may not have the funds or capacity to accommodate such an order), but can be negotiated to provide the best cost benefit to the total operations.

Missing Link

Supply chain decisions can have significant impact and influence on the overall business and shareholder strategies. However, our experience tells us that most companies underestimate how difficult it is to execute these strategies – they neither have the time nor the resources to execute a transformative plan while maintaining day-to-day operations. Having the right outside expertise and experience is often the missing link needed to accelerate the delivery of long-term, sustainable results. ■

> “When firms finally analyze their supply chains, it is common to find that the problem they thought they had isn’t the problem that needs fixing.”

Jaymie Forrest has 26 years’ experience in supply chain operations. Over the course of her career, she has managed more than 100 projects where her expertise in strategic network design, supply chain management technologies, routing planning and dispatch, and distribution execution solutions was applied. Prior to Alexander Proudfoot, Ms. Forrest served as Managing Director of the Georgia Tech Supply Chain and Logistics Institute (SCL) where she was responsible for strategic planning and development of industry outreach, research and leadership initiatives.

In addition to her vast experience, Ms. Forrest also was selected as a finalist for Atlanta’s 2012 Supply Chain Professional of the Year Award and was recognized as one of the top female supply chain executives in 2013 by *Supply and Demand Chain Executive* magazine.

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