IBM Business Consulting Services

Consumer-driven supply chain networks

Building the supply chain of the future

An IBM Institute for Business Value executive brief

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Introduction

With increased pressure from consumers and retailers, consumer products companies can no longer afford to operate linear, "one size fits all" supply chains. What steps must consumer products companies take to help ensure that their supply chains efficiently respond to rapidly changing retailer and consumer demands? What capabilities should they develop to achieve greater focus in their supply chains? In response to the strategic challenges that will emerge between today and 2010, industry competitors will need to radically change the nature of their supply chain operations to become truly consumer-driven.

Executive summary

The growth and financial strength of consumer products companies over the last century have been based on a single principle: branded goods are the consumer's first choice across virtually all product categories. However, today's environment is rapidly changing.

In many categories, consumers are concerned more with price and product quality than brand. For commodity products, retailers now often have greater mind-share among consumers than manufacturers. Vigorous expansion has produced a new breed of megaretailer that is asserting ownership of the consumer relationship, as well as placing increased demands on suppliers to deliver higher levels of service. More stringent growth objectives and regulatory requirements are compounding the pressures felt by the industry.

Consumer products companies must take bold steps across their value networks to address these challenges. Supply chain operations is one major area that every company should examine. The supply chain has a key role to play in fueling growth and profitability, yet in many cases it has not adequately evolved to meet the demands placed upon it by retailers and consumers.

There is little doubt that the supply chain is one of the key functional areas where costs can be significantly improved. With product development and marketing costs rising constantly, the supply chain must become more dynamic, flexible and cost-efficient. At the same time, out-of-stock levels on the retail shelf are still too high, particularly when a product is on promotion. Unless service levels are improved, consumers will choose other brands at other stores. To date, most consumer products companies have pursued piecemeal initiatives to take costs out of the supply chain and improve service levels. However, the potential of these adhoc initiatives has been largely exhausted. It is now time to make radical changes to the supply chain to deliver step changes in performance.

Companies need to transform existing supply chains into *consumer-driven supply chain networks*. More specifically, companies will need to tailor their supply networks to a particular purpose – either to increase responsiveness to changing consumer tastes and buying patterns *or* to deliver greater efficiency and value for commodity products. New processes, partnerships and technologies will be instrumental to enabling greater focus, responsiveness and flexibility in the supply chain of the future. To achieve these ends, consumer products companies must tackle six key areas:

- *Build "fit-for-purpose" supply chain networks.* Configure supply networks to deliver innovation and responsiveness for premium products and high efficiency for mass value products.
- *Accelerate innovation.* Introduce new products and promotions into stores more quickly and cheaply.
- *Reinvent the value chain.* Redefine the end-to-end value chain to radically cut costs and proactively meet consumer demands.
- *Comply or face the consequences.* Increase product performance and quality and assure regulatory compliance.
- *Think outside the box.* Work effectively with trading partners by building a new framework for collaboration.
- *Leverage technology.* Exploit new technologies in innovative ways to unlock performance improvements.

Today's "one size fits all" supply chains cannot provide an adequate response to the challenges now faced by consumer products companies. Yet, transformation does not happen overnight; it may take years to transform a static, inflexible supply chain into a dynamic consumer-driven supply chain network. To drive profitability well into the future, they must begin this process of change immediately.

Consumer products supply chains are facing pressure from all sides

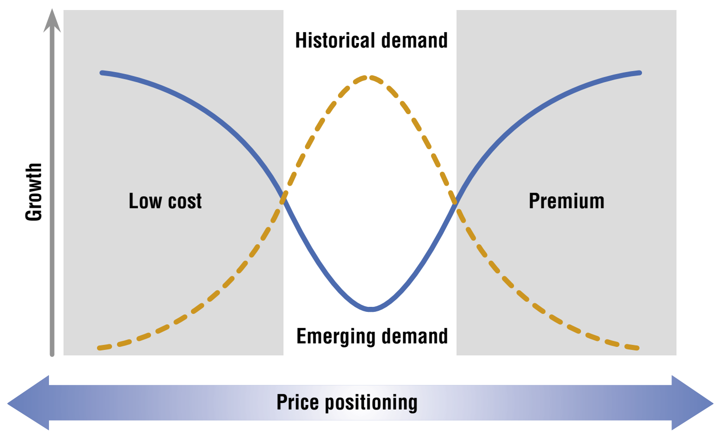
Consumer products companies are increasingly being squeezed by changing consumer buying behaviors, increased retailer demands, more stringent growth objectives and new regulatory pressures. (See the IBM executive brief "Consumer products 2010: Executing to lead in a world of extremes" for more details.) The supply chain plays an essential role in addressing these demands on the business; however, most companies' supply chains are ill-equipped to do so. Without a transformational road map that enables consumer products companies to both restructure their supply chain and generate short-term returns, they will struggle for growth in the future.

Consumers polarize toward both low-cost and premium products

Pronounced shifts in demographics and attitudes are changing consumer buying behaviors and increasing their complexity. One change in particular has a substantial impact on the way supply chains should be designed. Where consumers were once content to buy a "pretty good product at a decent price," they are now much more selective and their purchasing patterns have polarized (see Figure 1). As consumers seek to optimize their own personal value, they are paying premiums for "meaningful" products that respond to their emotional needs, while aggressively looking for "good enough" quality at rock-bottom prices for commodity items. Unfortunately, most consumer products supply chains have not been built to support these trends.

A "pretty good product at a decent price" was fine for yesterday's shoppers – today, they have polarized toward both low-cost and premium products. Traditional supply chains are ill-equipped to deal with either extreme.

Figure 1. The consumer marketplace is polarizing.



Source: IBM Institute for Business Value.

Low-cost products require a company to manage massive volume, whereas premium products necessitate flexibility in planning methods and the physical supply network to anticipate unique market demand characteristics. Traditional supply chains are either too complex and cost-laden to distribute low-cost products effectively or too asset-intensive and inflexible to quickly harness and deploy innovation.

Retailer power and expectations grow

Not surprisingly, retailers are demanding more supply chain prowess from consumer products companies. Their objectives are to synchronize inventory flow to the store shelf in anticipation of shifts in shopper demand and, increasingly, to reduce in-store labor and overall retailer supply costs.

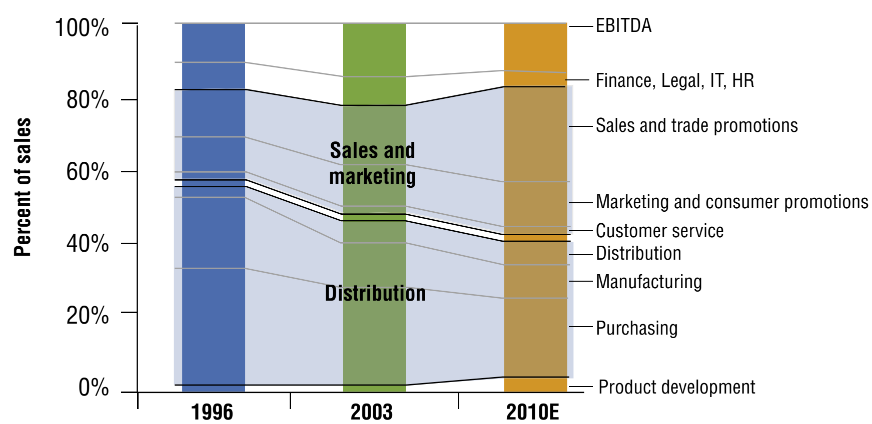
Retailer needs may be as simple as how a pallet will be configured, shrink-wrapped and marked, or as complex as how that pallet is loaded on a truck, radio frequency identification (RFID)-tagged and date-sequenced. They may also extend to how product and demand data will be shared and used for analysis and planning. Account-specific requirements often mean that standardization and automation are difficult. Meeting these demands can be complicated and time-consuming, and consumer products companies have less and less ability to resist them. Consolidation, geographic expansion and an increase in goods sold on promotion are strengthening the relationship retailers have with consumers and reducing the influence and importance of consumer products companies.

Growth requires handling of more volume at even lower cost

As consumer products companies respond to stakeholder demand for growth, they must address two key pressure points. First, companies need to determine how to provide more service and volume in their supply chains at a lower cost. Second, they must address the organizational issues that stem from lack of sufficient resources to support all growth initiatives in the supply chain. Companies need to make choices on where to focus and where to partner.

Over the last few years, consumer products companies have reduced supply chain costs as a percentage of revenue to improve profits in a flat-growth market (see Figure 2). Now, in order to maintain margins while driving growth in demand, supply chain costs must be reduced further to free-up funds for new sales and marketing efforts. The pressure on supply chains to "do more with less" becomes even more intense as the traditional approaches to cost-cutting are exhausted.

Figure 2. Supply chain costs must continue shrinking to release cash for sales and marketing.



Source: IBM Business Consulting Services analysis based on client experience.

Regulatory pressures mount

In addition to the general competitive and consumer changes outlined above, compliance – and, in particular, traceability – is becoming more important. There is now tremendous momentum in the industry to react to a wide range of regulatory and political pressures:

- New regulations such as Sarbanes-Oxley create a greater onus to make accurate public disclosures.
- Corporate ethics are becoming increasingly scrutinized by consumers.
- Tariffs and import restrictions are more stringent than ever.
- Restrictions on the use of genetically modified organisms (GMOs) have been tightened.
- The threat of bio-terrorism may lead to new product safety regulations.
- Traceability of raw materials is being demanded by government regulatory bodies in response to public health issues.
- Consumer privacy safeguards are increasingly required by governments and consumers themselves.

The consequences of noncompliance can be significant. Consumer products companies could see brands damaged by negative publicity or a major product recall. Retailers could “delist” products, and banks or analysts might deem some companies too high an investment risk. Finally, companies might be hit with significant regulatory penalties, which could lead to increased legal costs and higher insurance premiums. In all of these cases, the key challenge is not simply to comply, but to make the required changes in supply chain operations at the lowest possible cost to the organization.

Emerging markets: an alternative view

In emerging markets, the broader global trends may be tempered by specific local issues and opportunities. A closer look at two such markets – India and China – illustrates how the local business and regulatory environment generates requirements that need to be addressed in addition to the common global challenges.

The rapid growth of the urban middle class across India – coupled with a favorable economy – creates fertile ground for rising consumerism. The prevailing regulatory environment, however, has made it difficult for multinational companies (both manufacturers and retailers) to enter the Indian market. While regulations are relaxing and determined companies have found footholds through foreign equity participation and wholesale trading operations, some consumer products companies – in food, personal care and apparel, for instance – are successfully exploring direct-to-consumer strategies that, almost as a by-product, allow them to build and maintain that strong consumer relationship that has eroded in so many other markets.

In China, the sheer scale of the population makes the market unique. Middle-class consumers are increasingly exhibiting the "extreme" shopping behaviors seen elsewhere, with shoppers buying based on personal values and the younger generation guarding their personal information more closely. Multinational retailers are not commonplace in China (yet), though we already see the beginnings of retailer consolidation. With the increasingly open economic environment, growing dominance by major players is entirely possible. This has already proved to be the case in some areas of manufacturing. For example, the Chinese company Galanz, which manufactures microwave ovens, controls 45 percent of the global market.[1, 2]

The unique attributes of emerging markets, whether in the Asia-Pacific region, Latin America or Eastern Europe, provides enormous opportunity for supply chain innovation. For instance, while few companies in China are using bar codes in their supply chains, many are looking to leapfrog to the next generation of technologies and quickly adopt RFID. And because the costs of serving some remote sales channels are prohibitive, collaboration between noncompeting firms, such as sharing warehouses or delivery routes, may provide companies with the economies of scale they need to reach consumers they would otherwise have to ignore.

With different conditions in these markets, the supply chain capabilities must also differ. Around the globe, multinational and local consumer products companies must tailor their supply chain capabilities and priorities to meet the specific needs of individual markets, both to identify opportunities as they emerge and to execute for competitive advantage.

Building consumer-driven supply chain networks

The term “supply chain” evokes the image of a predefined and fixed series of linkages, which are serially connected and unidirectional – currently an accurate description in most cases. The traditional supply chain exists within the “four walls” of an enterprise, where material and information flow linearly along fixed routes starting with the receipt of raw material through to shipment of the customer order. Some supply chains have been extended to share information with trading partners, though these relationships are generally limited to long-established, trusted customers and suppliers.

To address the looming competitive, consumer and regulatory pressures, consumer products companies must transform their linear, internally-focused supply chains into *consumer-driven supply chain networks*. The consumer-driven supply chain network is best thought of as a dynamic construct of organizations and supply chains that come together, at a given point in time, to provide a seamless pipeline for products and information from source suppliers through to end consumers. This union may be temporary – perhaps a single transaction – or an enduring alliance. It will consist of multiple partners, each with a role to play: from brand owners, product designers and contract manufacturers, through to co-packers and other service providers which, when combined, act as a single entity to deliver the overall business value sought by retail customers and consumers.

Key capabilities of a world-class, consumer-driven supply chain network

- Close and deep collaboration with customers, suppliers and service providers
- A single consistent set of information visible across the whole “supply network” (for example, inventories, committed orders and forward production schedules)
- Near-realtime information, blurring the distinction between planning and execution systems
- The ability to make future commitments, not only “available to promise” but also “capable to promise,” with online availability, configuration and pricing that takes account of all parties within the network
- Elimination of the traditional gaps among supply chain management, customer relationship management and supplier relationship management
- Web-enabled and “e-market capable” systems to facilitate speed and ease of connectivity
- Automated and intelligent exception-based decision making and process management
- Focus on profit optimization while maintaining continuity of supply.

To respond to polarizing consumer tastes, successful companies will differentiate and focus; to remain relevant and attractive to retailers, they will offer higher service levels in a greater range of areas. The leading companies will operate comfortably in a more fluid and complex environment where the line between raw materials supplier, manufacturer and retailer is blurred. To better reach consumers, they will increase the number of channels to market and work efficiently with fragmented distribution volumes. To respond to the incessant drive for innovation, they will shorten product lifecycles and cope effectively with many more product launches. Leaders will rely on data to build insights and drive efficiency, and they will develop a governance structure where the traditional barriers among geographies, divisions and functions are eliminated. And (as if that weren't enough) they will do all of this at lower costs than ever before to maintain margins while investing in growth initiatives or reducing prices. Tackling these challenges is not an option – it is essential for success in the hyper-competitive, increasingly complex and globally integrated marketplace that will emerge over the next few years.

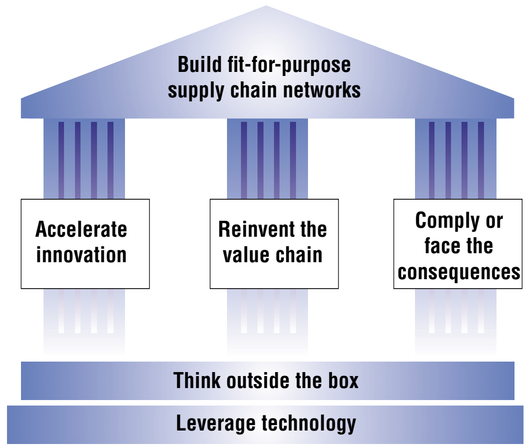
There is a bewildering array of improvement initiatives that companies might consider, but resources are scarce and managing too many initiatives is as bad as too few. To position themselves effectively, consumer products companies must have a clear view of what to prioritize and where to partner. To build a consumer-driven supply chain network, we believe companies must concentrate on six key areas (see Figure 3).

To begin from a strategic point of view, companies need to *build "fit-for-purpose" supply chain networks*. This involves configuring supply networks in a tailored fashion to deliver innovation and responsiveness for premium brands and high efficiency for mass value products.

Next, companies should make three key operational changes to how they manage their supply chains. First, *accelerate innovation* processes, so that new products and promotions can be introduced into stores more cheaply and quickly. Second, *reinvent the value chain* by reconfiguring operations to radically cut costs and proactively meet consumer demands. And third, *comply* with new regulatory requirements to increase product performance and quality (*or face the consequences*).

The foundation of these strategic and operational changes are new approaches to managing trade relationships and the underlying technology infrastructure. Consumer product companies need to *think outside the box* and achieve more effective collaboration with their retail partners across various process areas. And they should *leverage technology* in innovative ways to unlock performance improvements across the supply chain.

Figure 3. Key steps in building the consumer-driven supply chain network.



Source: IBM Business Consulting Services.

"The key to success for modern retail chains is to compete either on price or on really high quality, not to be somewhere in between."[3]

Build "fit-for-purpose" supply chain networks

In a market where consumer shopping behavior polarizes into low-cost and premium extremes, consumer products companies need to more precisely align their supply chain capabilities with the specific characteristics of each part of their business, which may vary by product, channel and geography.

A few companies may have it comparatively easy: those with a single brand, a few customers in a few countries, or a very focused portfolio with a homogeneous customer base and the same market position across a number of countries. For such competitors, a single, focused supply chain may be all that is needed. But for the vast majority of consumer products companies – those with multiple brands, customers and markets – the challenge is more difficult; today's "one size fits all" supply chain cannot accommodate the varied needs both cost-effectively and proficiently. At the same time, operating and managing many different supply chains tailored to each product-customer-market combination is not a viable option – a separate supply chain for each product would clearly be cost-prohibitive and unmanageable.

Consumer products companies need to find a middle ground that leverages common supply chain elements as much as possible while distinguishing those few elements where differentiation is needed. Such an approach allows companies to innovate and help assure the quality of premium products, while providing the lowest-cost operations for price-driven lines. For any given business unit, companies can thus establish a fit-for-purpose, differentiated supply chain that offers the right combination of flexibility, efficiency and cost-effectiveness. To build these supply chain networks, industry executives should follow – and regularly revisit – four key steps:

Step one: Assess the relevant capabilities

Companies must first assess which capabilities are most relevant to their target market segments. Broadly, supply chain requirements fall into two categories (see Figure 4).

Figure 4. Two distinct approaches to designing supply chains.

"Mass value"

Cost is king

- "Lights out' replenishment
- Continuous replenishment (CRP) or retailer demand triggers
- Synchronization is dead - move to manufacturing push, packaging pull
- Smart outsourcing
- Manufacturing: High volume, consistent, resilient

Focus on the *customer*

- High availability
- High packing variability
- Multichannel logistics for multichannel retail
- "Supplier inside" with a value focus

"Sense and respond"

Optimize demand management

- Smart replenishment; planning focus
- Complex and unpredictable consumer demand triggers
- Synchronized extended supply chain network
- Outsource to de-capitalize
- Manufacturing: Shorter, flexible production cycles, demand-driven planning

Focus on the *consumer*

- Complexity driven by number, type and frequency of innovation and promotions
- Store and shelf focus
- Multichannel logistics for multichannel sales
- "Supplier inside" with focus on innovation and flexibility

Source: IBM Business Consulting Services.

- The "mass value" supply chain caters to the value-driven segment and operates on a low-cost basis. It is designed for low-priced commodity products that are predominantly sold at high volume through major retailers. These products typically do not enjoy strong consumer loyalty, with shoppers purchasing alternative brands if a particular brand is not available on the shelf, thus placing the risk of supply chain problems predominantly on the consumer products company. The primary concern is to provide greater levels of service to the retail customer to support consistent availability of the product on the shelf.

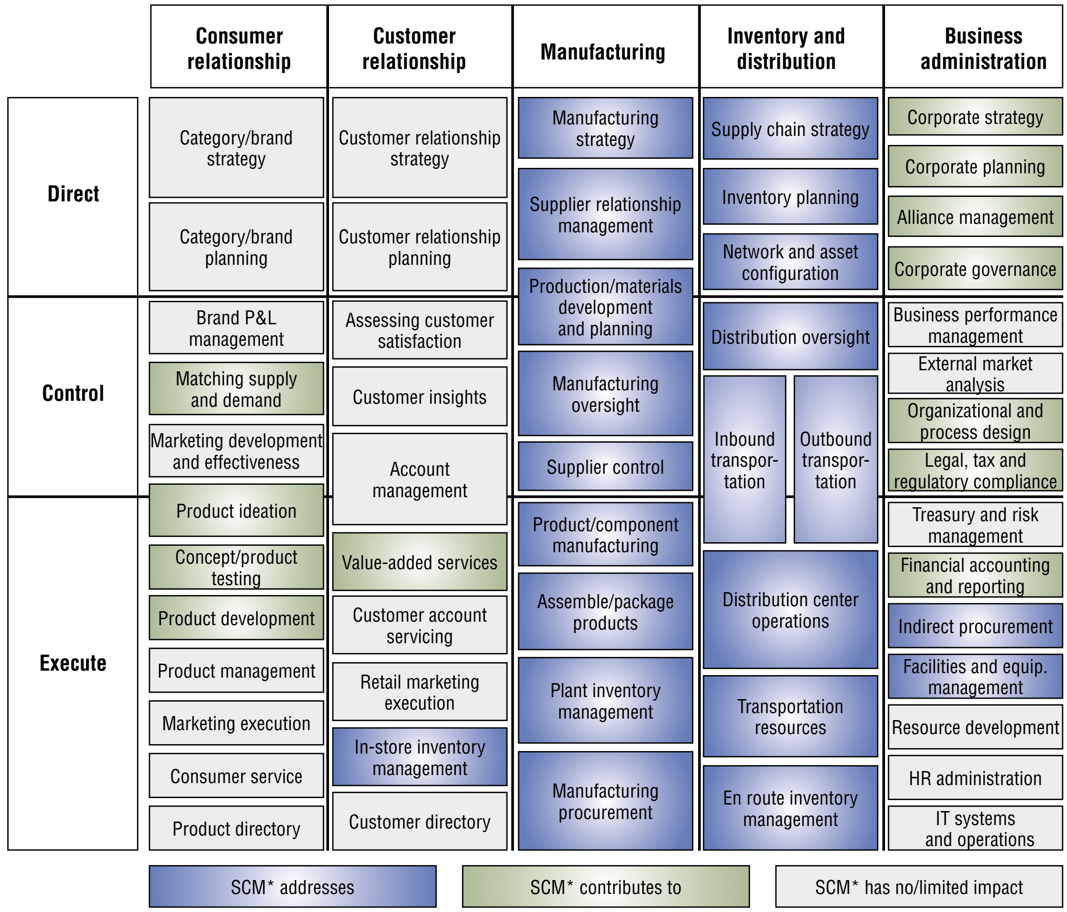
- In contrast, a "sense and respond" supply chain is needed to support high-margin, premium brands. It optimizes value, innovation and responsiveness for consumer brands and provides a high level of service for a premium. Production and distribution are tuned to satisfy fluctuating consumer demand levels, and products are often sold through a wide range of channels. Supply chain risk is borne by both retailers and suppliers. Consumers specifically seek out these products and will delay purchases or shop elsewhere if the product is not available, thus requiring consumer products companies and retailers to work together closely.

Step two: Componentize the supply chain

Next, companies should reassess their existing supply chain capabilities. Because traditional process-oriented analytical techniques reinforce the rigid, linear nature of existing supply chains, a new approach is needed. Component business modeling (CBM) is a new tool for analyzing a company in terms of its basic activities (see Figure 5). CBM can help overcome internal biases resulting from existing practices and organizational boundaries to help companies discover and eliminate redundancy, realize unrecognized synergies and optimize the management of specific parts of their business.

A "business component" is a discrete set of business activities that has the potential to operate as a distinct entity. It has a unique purpose and includes the resources, people, technology and know-how necessary to accomplish that purpose. By breaking down their current supply chains into business components, consumer products companies will be better able to identify which parts effectively meet market needs and which need to change.

Figure 5. Representative component business model for consumer products companies.



**Supply chain management*
Source: IBM Business Consulting Services.

Step three: Identify common and unique elements across the business

While a "one size fits all" supply chain will not work because of chronic inefficiency, having a supply chain for each product group or category is also doomed to failure because of its complexity. To find the best trade-off between differentiated product availability, economies of scale and manageability, consumer products companies will need to identify those components across geographies, product groups and channels that need to be differentiated, and those that can be common.

Step four: Decide how best to manage each component

Having determined what supply chain capabilities are required for a given business unit and which components are common or differentiated, the last step is to evaluate how best to manage each component to optimize operational efficiency and flexibility. The decision on how best to manage a business component is a critical one. Each business component must be evaluated carefully, factoring in the nature of the component involved, its strategic importance to the business and how unique it is to the company to determine which particular sourcing arrangement is most appropriate.

Companies have four options when deciding what to do with each component (see Figure 6):

- *Achieve superiority:* Invest to gain competitive advantage in areas that are strategic differentiators for the business and where it is essential for the company to become best-in-class.
- *Consolidate:* For activities that are not differentiating to the business, but are specialized in the way they are performed at a company level, consolidate these activities within the business to optimize efficiency and consistency.
- *Manage as a utility:* For activities that are generic to the industry and provide little competitive advantage to the business, seek explicit service-level and variable pricing agreements with service providers to benefit from the economies of scale they offer.
- *Leverage specialists:* Where internal capabilities are not unique and best-in-class service providers exist, seek tightly integrated, exclusive relationships with partners.

Figure 6. Selecting internal or external ownership of business components.

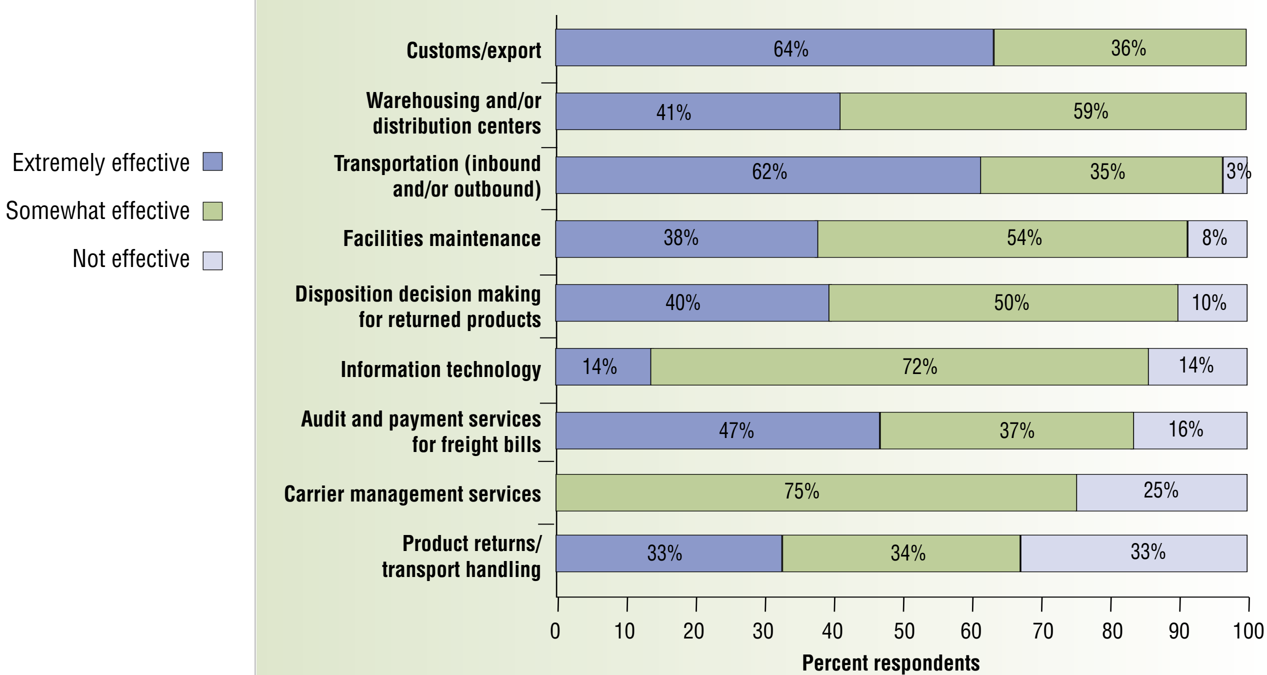
	Efficiency	*Effectiveness*	
Organization-specific	**Consolidate** • Optimize efficiency and consistency • Cannot outsource due to customization and integration with other business activities	**Achieve superiority** • The focus of the business - strive for best-in-class performance • Invest to gain unique competitive advantage	*Internalize*
Industry-generic	**Manage as utility** • Operate on specific service-level agreements and variable pricing • Use partners with scale, low entry and switching costs and high reliability	**Leverage specialists** • Internal capability not unique; best-in-class partners exist in marketplace • Seek tightly integrated relationships and block competitor access	*Externalize*

Source: IBM Institute for Business Value.

The choice depends on the degree to which the component is organization-specific and to which it is a differentiator for the business. In many industry-generic and non-differentiating areas, the chosen approach is to outsource. For example, a mass value product manufacturer would naturally view manufacturing as a core competency, yet may outsource IT. In contrast, a consumer products company specializing in premium goods would be more likely to keep product ideation in-house but could outsource manufacturing or distribution.

Outsourcing can be an extremely effective tactic when used for the appropriate component. In a recent IBM and *IndustryWeek* supply chain study, we found that of those logistics functions that were outsourced, most had been effective in reaching the company's desired objectives.[4]

If outsourced, how effective has each business function been in reaching desired objectives?



Source: IBM Institute for Business Value analysis based on data from the study "Energize your supply chain network." IBM and IndustryWeek, *January 2004.*

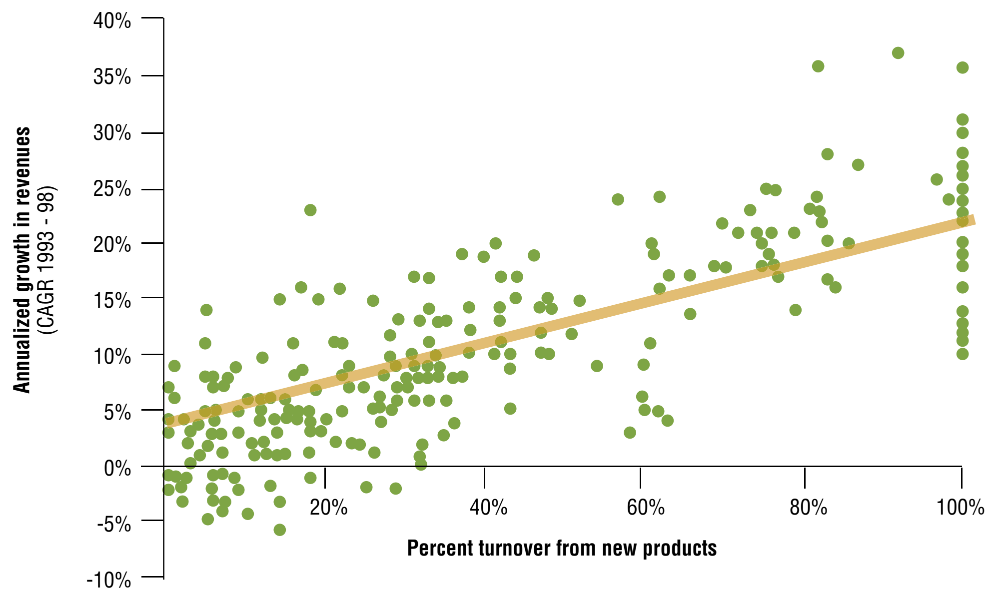
By following the four steps outlined above, consumer products companies will begin to prepare their supply chain networks for the unique demands of different groups of consumers and retail customers. For a given situation, unique and relevant supply chain components must be assembled. Mixing elements of both "mass value" and "sense and respond" supply chains is unfeasible, resulting in a supply chain that is too costly for mass value products and too inflexible for premium products.

To grow shareholder value, consumer products companies must increase the quantity and speed of introductions of new and renovated products. Companies that innovate in keeping with consumer demands will grow revenue and market share faster.

Accelerate innovation

A key facet of consumer-driven supply chain networks is the ability to accelerate innovation and drive greater responsiveness to new market needs. As historical evidence demonstrates, highly innovative companies that have larger proportions of turnover from new products and services tend to grow revenues faster (see Figure 7). Yet, most new products do not generate high revenue, with only around 50 percent of new products being commercially successful (according to a recent IBM and *IndustryWeek* supply chain study).[5] Given the difficulty of improving the hit rate for new products, to increase the possibility of success consumer products companies need to drive a higher volume of new introductions – the key is to innovate and renovate more often.

Figure 7. Revenue growth versus turnover from new products, 1993-1998.



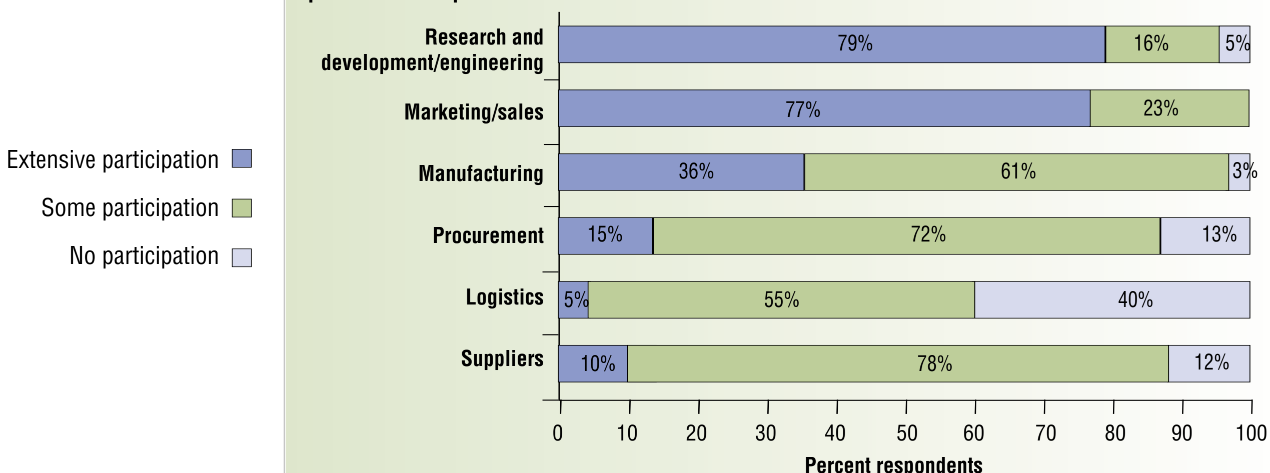
Note: Sample size is 258 U.S. and U.K. companies.
Source: Davis, Trevor, "Innovation and Growth: A Global Perspective," IBM Business Consulting Services, January 2000.

The supply chain is critical to successful and speedy innovation and can help deliver substantial benefits to a company (see Figure 8). Supply chain improvements need to focus on four key elements in this regard:

- *Time-to-market.* Consumer products companies need a supply chain that enables them to get new products to the store shelves faster than their competitors. The goals should be earlier revenue generation and first-to-market advantage, in terms of both time to "first market" and time to "full market." Leading innovators are using project portals, stage gate processes and technology to enable high-speed development at minimum cost.

New product development relies first and foremost on a company's strength in research and development and marketing. Nonetheless, supply chain functions such as supplier management, manufacturing and logistics are also critical to successful and speedy innovation.

To what extent does each of the following organizational groups participate in new product development?

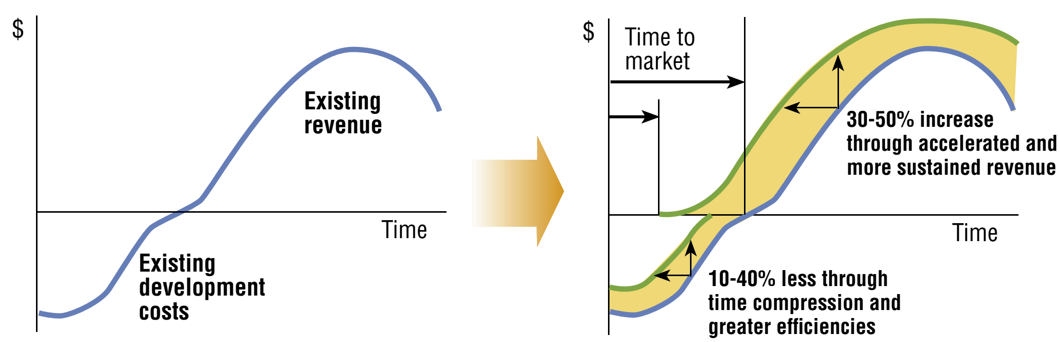


Source: IBM Institute for Business Value analysis based on data from the study "Energize your supply chain network." IBM and IndustryWeek*, January 2004.*

- *Internal integration.* Integrated planning and execution among the disparate divisions of a consumer products company can help cut through the red tape that inhibits creativity and innovation. Early involvement of procurement, manufacturing, logistics, customer service and planning from the start will reduce inefficiencies and optimize revenues. Whether it is innovation or renovation, the ability to capture, distribute and reuse knowledge, information and content enterprisewide will prove invaluable. Greater levels of integration – including consistent cross-business metrics – will help deliver project-wide visibility and synchronization across functions and divisions.

- *External partnerships.* The recent IBM and *IndustryWeek* study showed that less than 50 percent of companies shared new product information, such as specifications, electronically with their business partners.[6] Wider collaboration with suppliers, distributors and retailers will be key to achieving new levels of cost and service efficiency. Retailers, in particular, need to be involved early in the new product development process; their cooperation and advice on timing can determine the success of a new product introduction. It is about more than just virtual teamwork; companies must consider new ways of working together across functions. They can achieve this by drawing on expertise from suppliers, creative partners, trading alliances and pursuing joint ventures for both idea generation and the execution of innovation.
- *IT enablement.* New technologies enable companies to involve suppliers and partners in idea generation and to execute innovation across the new product development and introduction process. Collaborative applications and business integration middleware are reaching sufficient levels of maturity; however, there is no single solution that meets all requirements. Competitors who seek to build competitive advantage will need to adopt best-of-breed solutions to fill selected gaps, integrating them with legacy systems to enable end-to-end processes and provide global visibility of the innovation "pipeline."

Figure 8. Accelerating the innovation process.



Source: IBM Business Consulting Services.

Kick-starting new product development: Boots Healthcare International[7]

With products sold in over 130 countries, Boots Healthcare International (BHI) is one of the fastest growing over-the-counter healthcare companies in the world. In particular, BHI strives for leadership in three core categories – analgesics, cough and cold, and skincare – with its power brands Nurofen, Strepsils and Clearasil. To meet ambitious organic growth targets, the company needed to accelerate time-to-market. In the short term, the company also needed to hit a fixed window of opportunity for a key brand renovation.

Under its “Oxygen” change program, the company embarked on a fast track reengineering project to improve its new product development and introduction process. As part of the effort, BHI adopted best practice stage gate processes from the consumer products industry (versus healthcare peers). The company also implemented organizational changes to clarify accountability at every stage – from initial insight to product withdrawal. Its updated processes included earlier involvement of supply chain and channels and a new approach for addressing regulatory requirements. To better support these revamped processes, BHI implemented a new product lifecycle management system that allowed the company to collaboratively plan and execute on a global basis.

Within 16 weeks, the program identified ways to cut development time by 25 percent for an upcoming product introduction. This type of acceleration is expected to yield multiple millions of U.S. dollars in additional revenue during the initial five years of each new product release.

Reinvent the value chain

Traditional value chains hamper the development of consumer-driven supply chain networks, limiting enterprise flexibility and responsiveness in the face of specific retailer and consumer demands. Thus, companies must redefine the end-to-end value chain and identify more efficient ways of managing the supply chain both to cut costs and to achieve substantial service improvements.

Traditional methods to cut supply chain costs have now been virtually exhausted; many business areas are now dealing with a rising cost base.

Cost reduction

With traditional cost reduction methods largely exhausted, consumer products companies need to think and act more radically. They need to consider a broader range of activities for cost-cutting opportunities, including those beyond the organization’s four walls. For example, IBM Business Consulting Services analysis for one consumer products company revealed that reductions of 10 percent in indirect materials spend and 5 percent in packing materials spend translated to a 35 percent improvement in operating profit.[8] There are still sources of untapped potential, provided companies examine the end-to-end supply chain, exploit new technologies such as RFID and include suppliers, retailers and the outsourcing of business processes in their assessment.

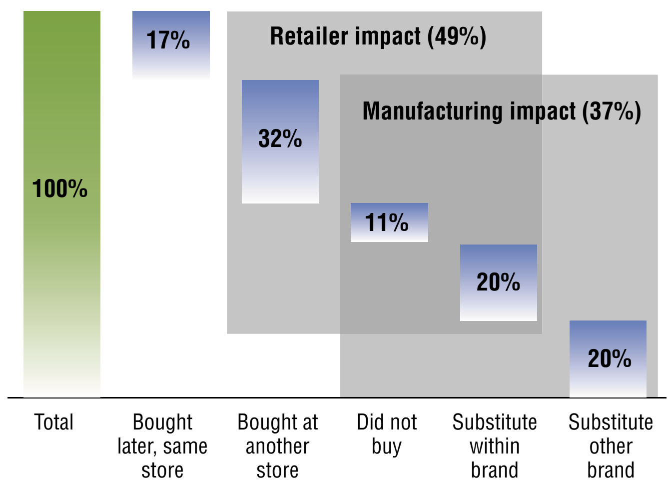
Opportunities remain for consumer products companies to improve sales by lowering out-of-stocks. The consumer-driven supply chain network enables even better synchronization of supply to improve on-shelf position.

Service improvement

Even when taking into account all the work that has been done over the last twenty years to synchronize the supply chain, there are still massive amounts of out-of-stocks which occur in the market, representing multibillion dollar opportunities for improvement (see Figure 9). While beneficial, the Efficient Consumer Response (ECR) and Quick Response movements, followed by the creation of trade exchanges and the development of collaborative planning, forecasting and replenishment (CPFR), have not come close to solving the problem.

This issue encompasses both out-of-stocks for newly introduced products and that for existing products. Predicting new product sales is more art than science, but at a minimum, improvement can be made by receiving demand signals early in the product launch and finding ways to quickly integrate those signals into demand planning. For existing products, even more improvement is possible by revamping forecasting and demand planning into a common, new framework.

Figure 9. Impact of out-of-stocks to the retailer and manufacturer.



Source: Gruen, Thomas W.; Corsten, Daniel S.; Bharadwai, Sundar. "Retail out-of-stocks." Grocery Manufacturers of America. 2002; IBM Business Consulting Services analysis.

For both new and existing products, the solution lies in making better use of the data that is available. The first step is to gather and store the multiple data streams from vendor managed inventory (VMI), point-of-sale (POS), CPFR and retail forecasting systems in a demand repository. The second step is to perform sophisticated analysis on that data to forecast each stream, rather than generate an aggregate forecast based on general sales history that would create a “one size fits all” output to drive all strategic, tactical and operational decisions. The final step is to redesign planning systems to move from monthly and weekly planning to a well-defined 168-hour (24x7) planning cycle, taking into account retailer data streams and shipment schedules.

Why reinvent the value chain?

For many years, companies have applied traditional approaches to improve customer service and cut costs. While there have been significant improvements in performance, in many cases this has been to address problems rather than achieve competitive excellence. For the industry as a whole, there still remain many areas where performance can and must improve:

- Only 45 percent of consumer products companies achieve order fill rates above 97 percent.[9]
- Twenty percent have customer order cycle times greater than 20 days, with the average being 14 days.[10]
- Nearly 30 percent of companies take more than 10 hours to put away received stock and over 20 percent take more than 10 hours to ship stock that has already been picked.[11]
- There is ample evidence that an online trade exchange can help reduce purchase costs, yet nearly 80 percent of consumer products companies do not use one, and only 5 percent transact more than 10 percent of their purchases through one.[12]

Traditional approaches have run their course; companies must adopt radical techniques to transform their supply chains and achieve the necessary step change in performance.

Comply or face the consequences

Consumer-driven supply chain networks must be able to respond quickly to the compliance demands and regulatory pressures placed upon them by consumers, retailers and governments. A common and key capability that companies need to develop to meet various compliance requirements is traceability – the ability to identify the location of a finished product after it has entered the distribution network, to trace backward to identify the source of its constituent raw materials and to track the route of raw materials through the conversion process. Companies may also need to identify other finished products that may have shared a raw material or conversion process. For instance, the European Union has recently introduced regulations around genetically modified (GM) food and animal feed requiring each GM line to be tracked and labeled throughout the food chain.[13]

Most consumer products companies today have some capability to manage traceability issues, although the systems they rely upon are generally manual and paper-based. But while companies can answer some traceability questions, they do not capture enough detail to be able to answer them all, and certainly cannot answer them quickly.

This issue must be addressed on several fronts. Companies need both the applications to capture the information and an IT infrastructure that can store, cross-link and make the information easily accessible. New capabilities that companies should consider include:

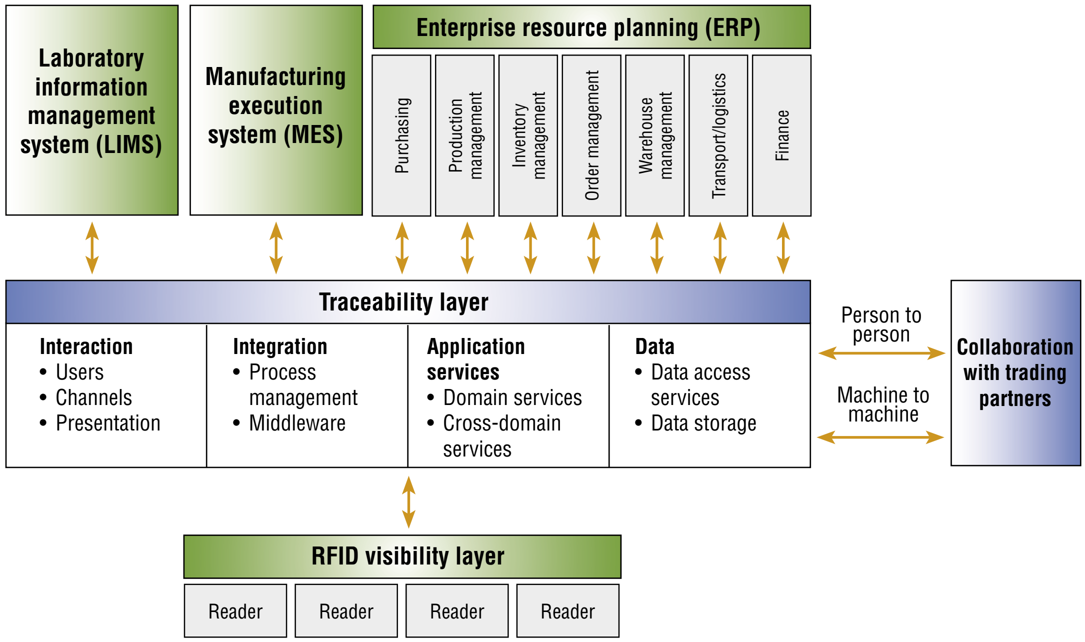
- Manufacturing execution systems to provide improved tracking and lot traceability
- Laboratory information management systems to streamline the capture of lab and R&D data
- RFID-enabled systems to help trace both inbound material and outbound product flow.

Radio frequency identification (RFID): Unlocking the wireless opportunity

RFID is one of the key technologies transforming the industry, enabling products to be easily tracked electronically at every step in the supply chain. As the cost of RFID tags comes down, the rate of adoption is forecast to expand exponentially. Several major retailers are already asking their suppliers to support RFID initiatives. However, RFID has significant value creation potential for consumer products companies as well, including improved labor efficiency, fewer supply chain errors, better visibility of inventory and its location, reduced theft, lower levels of safety stocks and an ability to serve the retail customer more effectively. RFID can enable businesses to react much faster to changing market and operating conditions. Consumer products companies need to carefully plan a strategy to optimize the value to their own businesses from implementing RFID capabilities. At the same time, they need to avoid simply reacting to multiple retailers' mandates with potential duplication and inefficiency. Embracing industry standards and roadmaps will be critical. (See the IBM/Global Commerce Initiative report "Global Commerce Initiative EPC Roadmap" for more details).

The substantial amounts of data that a comprehensive compliance system generates need to be effectively managed (see Figure 10). The success of any compliance program will rest on its ability to deliver the necessary requirements at the lowest possible costs. Companies will need to standardize business processes and equipment to reduce deployment time and simplify their rollout. Applying a common approach across the whole organization, with a preference for low-cost, scalable and repeatable application integration, will also help reduce the cost of compliance.

Figure 10. Compliance tracking infrastructure.



Source: IBM Business Consulting Services.

Think outside the box

A fundamental success factor for the development of consumer-driven supply chain networks is finding new ways of driving innovation, managing the end-to-end value chain and complying with market demands. Consumer products companies need to develop stronger relationships with trading partners to improve process management and responsiveness to the end consumer. The benefits of a more rigorous approach to trading partner collaboration are evident from a wide range of industry examples and studies. For example, the IBM and *IndustryWeek* study found that: "Collaboration is becoming the next frontier of improvement to reach a new level of operational excellence. True partnerships are required to develop new products and services (faster, better and more complex), produce hybrid and cost-effective products and services, and deliver them to multiple channels."[14]

Yet many consumer products companies have not wholeheartedly embraced collaborative initiatives and processes – industry executives need to think "outside the box" to prepare their organizations to work with retail customers in new ways, exploiting new capabilities to deliver higher value to trading partners and thus greater sales and profits for themselves.

"Collaboration with external partners is hampered by manufacturers' own ability to collaborate internally – especially between the Logistics and Sales/Marketing functions. One of the main reasons for this lack of internal collaboration is the misalignment of common goals and objectives. Customer teams are helping companies to improve the alignment and integration between different functions. These teams are cross-functional by design and seek to balance cost and service trade-offs by collaborating internally and externally."[15]

Working effectively with trading partners is vital for successful innovation, cost reduction, service improvement and compliance. The old barriers of excessive cost, risk and effort are falling thanks to developments in technology:

- Efficient, cost effective and safeguarded communications; for example, Web-based electronic data interchange (EDI)
- Usable item registry and data pools
- Industrywide adoption of standards
- Shared sense of urgency between trading partners due to financial pressures.

To be successful in this area, consumer products companies need to establish a framework for enhanced collaboration by determining precisely with which retailers and in what areas they should collaborate. The emphasis must be on tighter integration with carefully selected trading partners, rather than a broad partnership with everyone.

Seven steps to effective collaboration

1. Develop alliance management as a core capability, including the development of a mechanism to share savings and opportunities between partners
2. Interact easily and efficiently with partners via broad adoption of industrywide data standards and data synchronization
3. Present "one version of the truth" across multiple systems through application and process integration and coordination
4. Develop end-to-end visibility through realtime, event-driven processing and RFID
5. Design easy to use, scalable solutions (such as workflow, process choreography and portals)
6. Implement internal processes (such as alerts and contingency planning) that can respond to unforeseen events
7. Create an adaptive organizational structure that can align with individual customers' needs (e.g., through a component-based business model).

Leverage technology

Technology is the underpinning of all the other elements of a consumer-driven supply chain network. However, resources for new technology investment are scarce in consumer products companies today. Most IT departments are busy stabilizing current projects and operations and have little capacity for new development.

Nevertheless, companies need to find creative ways of reallocating resources to invest today in the supply chain technology infrastructure necessary to compete effectively in the future. Three key areas that require attention are the current IT architecture, application integration and the link between the digital and physical worlds.

Fixing the current architecture

Today, consumer product companies' technology architectures are often characterized by:

- Disparate business operating models resulting from merger and acquisition activity
- Very complex application and information architectures
- Large, multifaceted projects to support business change
- Short-term activities that do not realize benefits.

Companies must resolve these distractions and build a comprehensive, "wall-to-wall" set of applications that work, enabling the reallocation of time and resources for more value-adding investments.

Integrating between applications internally and externally

Consumer products companies need to exploit technologies that give them full visibility across their extended supply chain networks – they must seamlessly integrate internal applications and link to external partners' applications. This will enable them to better respond to both consumer and customer demands as well as provide them with the visibility to anticipate any changes in market conditions.

Linking the digital and physical worlds

Consumer products companies' online planning and execution systems must link to the physical world to sense what is happening to their products. Waiting for an inventory shortage report or a driver's delivery docket to be put into the system is not good enough. For dynamic response to real-world issues, companies need technologies such as satellite tracking and RFID, as well as analytical systems to identify critical problems in service – resolving them rapidly, if possible, and prioritizing and escalating them, if not.

The path forward

In the next five to ten years, the consumer marketplace is likely to undergo rapid and extensive change, driven by shifts in consumer behavior, retailer demands, and regulatory requirements. Consumer products companies need to radically re-engineer their supply chain into "consumer-driven supply chain networks" just to keep up with these developments and maintain competitiveness. They need to start now, as these changes will take time to implement, and the future will not wait.

The transformation required to develop a consumer-driven supply chain network should be viewed as a gradual process through which a consumer products company becomes ever more responsive to its customers and consumers. Companies will need to take a fundamentally new approach to their supply chains, actively making use of partnerships and new technologies.

In the near term, companies must clearly articulate a vision for how their supply chains will be made "fit-for-purpose", to serve multiple and distinct products, customers and markets, and they need to map out a series of linked initiatives that will achieve the desired objectives. Accelerating innovation, restructuring the end-to-end value chain and developing the capabilities to comply with new regulatory issues will be critical to achieving this vision. Essential foundational elements will be the development of collaborative trade relationships and investment in a flexible, integrated technology infrastructure. Consumer products companies must prioritize these efforts according to their unique business needs – in order to achieve significant cost reductions, provide optimal customer service and optimize return on investment.

Every step consumer products companies take must bring them closer to the overall objective: to be capable of responding quickly and efficiently to increasing and rapidly changing demands from both retailers and consumers. By building consumer-driven supply chain networks, they will position themselves well to respond to today's marketplace challenges and those that are sure to arise in the future.

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