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# Supply Chain Management and Retailer Performance: Emerging Trends, Issues, and Implications for Research and Practice

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**Abstract**

In an environment with increasing competition and a growing need for operational efficiencies and customer orientation, retailers are looking beyond their organizational boundaries to develop and leverage the resources and capabilities of their supply chain partners to create superior value and competitive advantages in the marketplace. In this article, the authors discuss how three recent trends—global sourcing practices, multichannel routes to market, and relationship-based innovation—are transforming the retail landscape and leading to a variety of performance improvements with regard to brand image, reputation, sales and profits, innovation, and relationships. For each of these major trends, this article highlights key issues, identifies relevant literature, and offers propositions for further research.


## Introduction

In the modern retail environment, retailers must deal with increased competition both domestically and globally through both traditional and nontraditional channels. Changes in customer expectations about product assortments and service, regulatory pressures for accurate data (e.g., Sarbanes-Oxley Act[5]), and business demands for "more for less" all drive efforts to deliver improved business performance and customer service. As a result, retailers look beyond their organizational boundaries to evaluate and integrate the resources and capabilities of their suppliers and customers and thus create superior value and a competitive advantage that they might sustain over time. Our discussions with retail managers in various conference sessions have underscored these concerns; in particular, managers name three major supply chain trends that appear to be transforming the retail landscape: global sourcing practices, multichannel routes to market, and relationship-based innovation. As a result of these trends, various improvements are emerging in terms of brand image, reputation, sales and profits, innovation, and relationships.

Collaboration between retailers and their suppliers has been ongoing for decades, but in recent years, the level of complexity and coproduction of competitive advantages have reached new heights. Retailers must not only balance returns on assets, growth, and inventory turns but also develop strategic approaches in collaboration with their supply chain partners to drive demand. Supply chain management has come to the fore, such that experience in the field now represents a viable path to CEO positions, as has been the case at IBM, Proctor & Gamble (P&G), Wal-Mart, and Dell.

To this end, our goal in this article is to *discuss how recent trends and changes in retailer supply chain practices*

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[5] Section 302 of the Sarbanes-Oxley Act mandates a set of internal procedures to be followed to ensure accurate financial disclosure. The signing officers must certify that they are responsible for establishing and maintaining internal controls and have designed such internal controls to ensure that material information relating to the company and its subsidiaries is made known to such officers by others within these entities.

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*influence retailer performance*. Specifically, we investigate three notable directions in which retailers are leveraging upstream and downstream relationships in the supply chain to create key performance outcomes for brands, reputation, revenues, innovation, and long-term prospects. The first trend involves a move toward sourcing practices on a worldwide basis. We investigate the growing need for corporate social responsibility (CSR), various country-of-origin (COO) concerns, and some best practices for electronic procurement activities. The second important trend pertains to the disaggregation and innovation that arises from employing a multichannel route to market and the delicate power balance and conflict management needs that result. Finally, we consider how the nature of interfirm ties between retailers and their organizational partners might better facilitate either product or process innovations among players. Throughout this discussion, we consider how changes in technology and the structural characteristics of the organization impede or facilitate attempts to advance the joint efficiency frontier. In the following sections, we delve into each trend, review relevant literature, and offer propositions that outline a clear direction for further research; in Fig. 1, we provide an overview of the structure of our discussion and the key issues. In conjunction, these three trends represent new and emerging paths by which retailers and their supply chains can grow the "benefits pie."

## Impact of global sourcing decisions on retailer brands

Most merchandise that U.S. retailers sell is manufactured in less developed countries and imported into the United States. Global sourcing decisions generally are invisible to consumers and thus have limited effect on their shopping behavior, though reports by the press, discussion among public interest groups, and even comments by retailers are increasing customer awareness of sourcing practices. Thus, retailers increasingly worry that their sourcing practices might have significant positive or negative effects on their brand image, customer attitudes, relationships with vendors, and demand for products and services.

Three factors affect growing interest in sourcing practices: (1) heightened consumer concerns about CSR, (2) the rise of global sourcing and reliance on Internet-enabled sourcing practices, and (3) growing interest among retailers in developing and selling private-label merchandise. In this section, we address each factor in turn and provide directions for management and further research in these areas.

### *Corporate social responsibility concerns*

Social responsibility perceptions affect the images of brands and firms, the propensity of consumers to buy specific brands and patronize certain retailers, and the financial performance of firms (Luo and Bhattacharya 2006). For example, widespread criticism of Wal-Mart centers on the labor practices of its suppliers in developing countries and its impact on the environment. Growing concerns about CSR have motivated Wal-Mart and other retailers to move beyond offering products and services with good value to also address social issues (Colvin 2007; Mui 2008). Whole Foods emphasizes its active support of organic farming, which produces products without artificial additives, and its promotion of sustainable agriculture to protect the environment and farm workers. Jewelry retailers proclaim that the diamonds they sell comply with the Kimberley Process Certification Scheme, designed to certify that the source of the rough-cut diamonds is legitimate and avoids support of war crimes and human rights abuses.

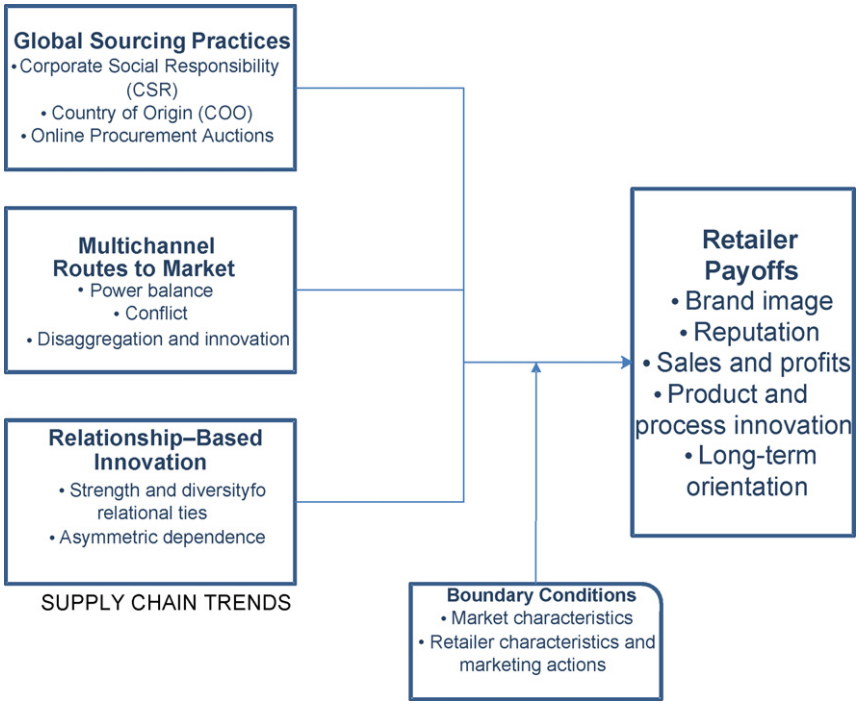


Fig. 1. Overview of emerging sources of retailer payoffs.

After they have encouraged their suppliers to accept socially responsible practices, retailers often use marketing programs to communicate these sourcing practices to consumers and thus solidify their favorable reputation as socially responsible firms, enhance their brand images, and increase sales and profits. For example, the Internet-based retailer Fair Indigo emphasizes on its Web site that its commitment to selling fair trade merchandise goes beyond using suppliers that agree to labor laws; buyers travel extensively and conduct research to locate suppliers that pay their workers more than the prevailing minimum wage and offer other benefits, such as on-site medical treatment (Mustafa 2007). According to a company survey, 86 percent of apparel customers care about whether clothing is made by workers who are paid fairly and treated with respect. Therefore, we posit:

$P_1$: Offering merchandise produced in a socially responsible manner can enhance a retailer's brand image.

Yet concerns about social responsibility in sourcing may conflict with a retailer's interest in providing high-quality products at reasonable prices. For example, Starbucks has received considerable recognition for its CSR activities and its mission statement—to "provide a great work environment and treat each other with respect and dignity"—but research by the nongovernmental organization Global Exchange suggests that Starbucks' success has come at the expense of coffee farmers who were not paid a fair price for their coffee beans. Global Exchange threatened a national boycott of Starbucks; Starbucks responded that if it only used fair trade coffee, the quality of its coffee would decline and prices would have to increase, because there simply was not enough certified fair trade coffee grown that met its quality standards. Ultimately, Starbucks pursued a middle ground alternative: The coffee retailer continues to try to increase its purchases of fair trade coffee but still insists that fair trade-certified co-ops cannot provide sufficient volume or consistency of quality, and the large suppliers that offer these benefits cannot receive fair trade certification because of their size (Argenti 2004; see also MacDonald 2007).

Even when retailers devote significant resources to encouraging suppliers to adhere to socially responsible practices, violations and associated negative publicity occur. Recent research notes several reactions to situations in which consumers have been exposed to both positive statements promoting the retailer's CSR and negative information about its practices. When faced with such incongruent information, consumers react negatively to the retailer's CSR, particularly when the retailer promotes its CSR activities before the negative practices are revealed. The negative effects generated by socially irresponsible behaviors, however, can be mitigated by an inoculation strategy (Wagner, Lutz, and Weitz 2008). The underlying rationale is that, if consumers receive weakened forms of identical or similar negative information from the retailer prior to third-party attacks, consumers are assumed to "build-up immune systems" to defend against subsequent attacks on their belief system.

$P_2$: The negative impact of socially irresponsible activities can be reduced by limiting the promotion of CSR activities and providing inoculation communications.

*Global sourcing management*

As the retail industry continues to experience consolidation, larger retailers enjoy scale economies that enable them to source raw material for and manufacturing of their products globally. Although global sourcing reduces manufacturing costs, it also increases the length and complexity of the firm's supply chain—and the associated risks. These risks entail (1) country of origin (COO) issues, (2) the use of codes of conduct for suppliers, and (3) Internet procurement auctions.

*Country of origin*

Global sourcing makes it more difficult for firms to monitor the processes used to make the products they buy and assess the quality of those products (see Roth, Tsay, Pullman, and Gray 2008). For example, Mattel's brand image and profitability suffered tremendously when it had to recall toys sourced from China because the production process used lead paint. For many consumers, COO serves as a cue for inferring characteristics and the quality of a product. In addition, COO provides symbolic and emotional meaning to consumers and can trigger consumer feelings about national pride and status or autobiographical memories, which can have broader effects on product image, beyond simple cues of quality (e.g., Han 1989). Vendors often attempt increase the saliency of the country or place from which a product originates, such as French wine, Columbian coffee, or Chilean sea bass, to bolster brand images.

The impact of COO on consumer attitudes is greatest for high-involvement, higher priced products and luxury goods, particularly when the image of the country matches aspects of the product valued by consumers (see Maheswaran and Yi 2009; Srinivasan and Jain 2003; Verlagh and Steenkamp 1999). However, some research also suggests that due to globalization, the impact of COO on consumer attitudes and behavior is declining. Most consumers do not know the COO of the products they buy, and in many cases, the origin is ambiguous, because products and their components get manufactured, assembled, and branded in many different countries (Saimiee, Shimp, and Sharma 2005).

$P_3$: The nature of the product and buying decision may affect the impact of COO on consumer attitudes and purchase behaviors.

$P_4$: The impact of COO on consumer attitudes and purchase behaviors is decreasing over time.

*Codes of supplier conduct*

In an effort to be good corporate citizens, many retailers adopt codes of conduct that outline acceptable practices for suppliers. However, enforcing these codes creates agency problems, because the manufacturers are geographically, economically, and culturally diverse. In developed countries, some agency problems can be addressed by laws and regulations pertaining

to labor practices and environmentally sensitive actions; in less developed countries, however, government enforcement is more limited. Multinational corporations can play a significant role in encouraging socially responsible practices by a country's manufacturers, though critics express concern about the motivation of multinational firms to monitor and enforce responsible practices accurately (O'Rouke 2003).

Pedersen and Anderen (2006) provide an interesting conceptual overview of how firms might deal with such agency issues and relate this overview to IKEA's practices. IKEA's code of conduct for its suppliers, *IKEA's Way on Purchasing Home Furnishing Products* (*IWAY*), includes more than 90 issues on which the furniture company expects compliance. In turn, it uses two approaches to motivate compliance with these codes: (1) monitoring and sanctions and (2) establishing goal congruency. All suppliers receive periodic audits by IKEA employees. When these audits detect violations by suppliers with which IKEA has a long-term relationship, the supplier has 24 months to take corrective action. Suppliers that show limited interest in conforming to the *IWAY* code are terminated. In addition to monitoring and direct sanctions, IKEA selects suppliers initially that have similar CSR goals. During the selection process, it emphasizes that meeting the IWAY requirements is an important goal, not just to become an IKEA supplier but also for being a responsible firm for employees and the environment. Finally, it provides suppliers with technical assistance and financial support, ranging from employee training to paying for wastewater treatment plants. Considering this example, we pose that

$P_5$: Establishing codes of conduct, monitoring and sanctioning code violations, and increasing goal congruence can reduce the negative effects of sourcing problems on a retailer's brand image.

However, an empirical study of the effectiveness of Nike's sourcing practices indicates that establishing a code of conduct and monitoring supplier practices has only limited effects on working conditions, even though Nike devoted considerable effort and investments to its monitoring program (Locke, Qin, and Brause 2007). Suppliers simply lacked the management skills to improve working conditions in a cost-effective manner. However, the working conditions improved when Nike combined monitoring with collaborative activities with suppliers that were designed to improve working conditions, such as developing systems to improve production planning and reduce overtime.

$P_6$: Collaborative activities with suppliers can be more effective than using monitoring and sanctions to (a) reduce irresponsible supplier behavior and (b) improve the suppliers' socially responsible practices.

*Reverse auctions*

Another major management trend affecting global sourcing risks is the increased use of online procurement auctions to access the goods and services of vendors on a global basis and negotiate in real time. In these auctions, sellers, instead of buyers, bid, with the goal of pushing the price down rather than up. The popularity of these auctions derives from the tremendous price savings they can yield, from 5 to 40 percent, though 15 percent is the average. Prior to these auctions, pricing information was difficult to obtain, and most negotiation occurred in sequential, one-on-one meetings between retailers and their vendors over weeks at a time. During online auctions, pricing information from multiple vendors gets displayed to all potential competitors (bidders) over the course of a few hours and negotiated publicly in real time. This scenario creates tremendous pressure on vendors, many of which believe (rightly or wrongly) that buyers are using the new technology opportunistically to exert inordinate pricing pressure (Jap 2003). Various suppliers deride these sourcing activities as too heavy handed and price focused—and perhaps fatal to the development of long-term exchange relationships (Carter et al. 2004; Smeltzer and Carr 2003).

However, research also shows that online auctions can provide powerful wake-up calls to vendors, increasing their willingness to make specific investments and adaptations on behalf of their customers, which in turn add tremendous value in terms of expanding the benefit pie for both vendors and retailers (Jap 2003). The deleterious effects of information sharing also can be mitigated by better designed auctions (Jap 2007). For example, simply adding more bidders, raising the contract stakes, or making the pricing information less fully visible can improve the relationship quality of the exchange and reduce suspicions of opportunism. In other words, instead of allowing every bidder to view every price bid from every competitor, buyers might provide only the lowest point bid at any time or indicate only the rank order of bids. These approaches can improve the efficiency of retailers' online sourcing practices while also preserving valuable, long-term relationships with vendors. More research should consider the conditions that preserve both price savings and relationship capital.

In addition to their impact on vendor relationships, Internet-enabled auctions can produce process benefits (Beall et al. 2003). For example, the METRO group, the third-largest trading and retailing group in Europe and the fifth-largest in the world, purchases products worth more than 1 billion Euros in the course of thousands of online reverse auctions. It reports that this process (1) forces buyers to engage in more sophisticated negotiation preparation, (2) drastically reduces negotiation time (from 5 to 20 rounds over weeks to 90 min), (3) improves geographical reach and includes multiple internal colleagues (e.g., production, logistics), and (4) improves fairness and reduces uncertainty in the process. According to one salesperson, because of auctions, "Now I know where I am in my competition."

$P_7$: Global sourcing through the use of online auctions can reduce the retailer's costs but also inhibit the development of long-term partnering relationships.

$P_8$: The design of online auctions can mitigate the negative effects of online auctions on vendor–retailer relationships.

*Interest in private-label merchandise*

Corporate social responsibility issues and global sourcing practices become more important for retailers that rely more on their own private-label merchandise. This merchandise enables retailers to differentiate their offerings from those of competitors and build a sustainable competitive advantage (Groeber 2008). However, private-label merchandise also increases the retailer's exposure to sourcing problems. When national brands experience sourcing problems, consumers may attribute them to the national brand vendor, not the retailer selling the merchandise, but if the retailers are responsible for the design, development, and manufacturing of private-label merchandise, no national brand exists to shield them from responsibility for sourcing problems. For example, consumers largely attributed Mattel's lead paint problem to Mattel rather than to the retailers selling the products. Thus, the sourcing decision adversely affected Mattel's brand image but not that of retailers that sold the affected toys (see Klein and Dawar 2004). This discussion suggests the following proposition:

$P_9$: The negative impact of sourcing problems on a retailer's brand image may be greater for private-label merchandise than for national brands sold by a retailer.

*Multichannel decisions and retailer relationships*

Along with the increase in the number of suppliers and their greater geographical dispersion, a fundamental change in retailing pertains to the expansion in the number of channels that connect suppliers, retailers, and consumers. Most firms now connect to consumers through multiple channels (Kabadayi, Eyuboglu, and Thomas 2007). In an environment marked by a proliferation of channel choices, both retail managers and researchers suggest that effective multichannel strategies and practices are absolutely critical for sustaining profitable growth (Venkatesan, Kumar, and Ravishanker 2007).

Conventional wisdom also suggests that multichannel consumers are more profitable (Kumar and Venkatesan 2005), so retailers should proactively promote multichannel behavior. Both cross-sectional and longitudinal research indicates that multichannel experiences enhance sales growth, because they encourage cross-selling of additional products and services and increase retention due to improved customer loyalty and satisfaction (Kumar and Venkatesan 2005; Venkatesan et al. 2007; Wallace, Giese, and Johnson 2004). However, most extant research evaluates the impact of multiple channels (online, catalog, brick-and-mortar) across a single seller–consumer dyad (e.g., retailer–consumer), even though in actuality, *both* suppliers and retailers add channels to access their consumers. For example, Bose and Apple have their own storefronts, catalogs, and online channels and simultaneously sell their products through independent retailers that provide their own multichannel offerings. Similarly, direct selling manufacturers (e.g., Dell) are adding retailers to their channel mix. Thus, consumers typically have a breadth of direct and indirect channel choices.

We refer to the situation in which supply chain partners (vertical) have multiple channels for accessing consumers (horizontal) as hierarchical multichannel relationships. Specifically, vertical channel partners align sequentially, such that the upstream supplier supports its downstream partner's interface with the end consumer, whereas horizontal channels operate at the same level and often compete for the same end customer. Thus, hierarchical multichannel relationships represent unique situations in which supply chain partners have simultaneous vertical and horizontal relationships. Retailers' decisions and performance depend on both their own multichannel strategies (e.g., online, catalog) and their strategic responses to their supply chain partners' direct channels for reaching the same consumers (e.g., online, storefront).

This section outlines some key ramifications of a shift to hierarchical multichannel relationships, including the potential channel conflict that may ensue if suppliers and retailers both have access to consumers through multiple channels. However, such relationships also may provide an opportunity to add value synergistically for the end user.

*Shift in balance of power and increase in conflict*

As suppliers and retailers expand their channels to consumers, their boundary-spanning interfaces become similar, which increases competition among supply channel partners for the same end consumer (Agatz, Fleischmann, and van Nunen 2008), because a consumer's search for a product often involves both the supplier's and its retail partner's offerings. Concurrent channels (i.e., direct and indirect channels that transact in the same geography and sell the same products) create intrabrand competition, which increases conflict but decreases performance in the channel system (Vinhas and Anderson 2005). Conflict among channel members can ruin cooperative relationships, leading to lower profits overall (Yan 2008). The shift from mostly vertical supply relationships to hierarchical multichannel relationships reduces the power of the retailer, all else being equal, because the supplier now has direct consumer access. As suppliers leverage their intimate product knowledge, lower costs, and centralized inventory, they can not only appropriate sales and profits from their retail partners but also develop alternative avenues for consumer insights, all of which reduces the supplier's dependence on its retail partners and increases supplier–retailer conflict. Projecting this trend into the future, in the best case, the retailer's margins will erode, and in the worst case, retailers become disintermediated by either existing suppliers or new market entrants. The result of these effects is heightened conflict and reduced trust and cooperation between vertical supply chain partners; in the long term, these results likely further undermine the effectiveness of the supply chain, because vertical partners stop sharing information and reduce their joint value-creating efforts. Overall, when suppliers and retailers act more like competitors, their vertical supply relationship becomes degraded.

Greater access to consumers through the supplier's direct online channels also affects supply chain management decisions. For example, many supply chain decisions require seam-

less information transfer among supply chain partners, which degrades if vertical partners compete and stop sharing critical information. In addition, when products become scare (e.g., new product launch, unexpected or seasonal demand fluctuations), suppliers with an interest in increasing sales and loyalty through their direct channels may be less likely to grant retailers access to their limited inventory; these suppliers might even partition the inventory in ways that are suboptimal for the supply chain overall. Supply chain partners should be especially vigilant if they transition to hierarchical multichannel structures to prevent them from undermining the overall competitiveness of supply chains. For example, suppliers that use offshore manufacturing may be less willing to ship products directly to retailers, because doing so causes them to lose the ability to tap this inventory for use in their own direct channels.

When suppliers add direct channels, retailers adopt one of two broad strategies: They respond to these multichannel activities, or they proactively look for alternative ways to service end customers. For example, retailers might refuse to sell products that the supplier sells directly, though this response likely is effective only if the retailer is powerful. For example, Home Depot has threatened to remove a supplier's product from all its shelves if the supplier sells that product directly through its online channels (Schoenbachler and Gordan 2002). Similarly destructive behaviors might include refusing to refer leads, hiding information and customer data, or withholding assistance to channel partners (Vinhas and Anderson 2005).

Instead of displaying such destructive behaviors though, some retailers attempt to shift the balance of the strategic dependence in the relationship by expanding their private labeling, developing their own brands, and shifting more resources to services and experiential offerings. That is, the greater number of retailers that have added and invested heavily in private-label brands may reflect their attempts to balance their dependence on suppliers.

Changes in supplier–retailer relationships due to the increasing prevalence of hierarchical multichannels have various implications for research and practice. How can suppliers and retailers manage increased levels of conflict and maintain trust to support their vertical supply chain partnerships, while simultaneously acting as horizontal competitors? Suppliers might consider using separate internal organizational structures to cooperate or compete with retailers, partition products across channels, communicate multichannel strategies and objectives clearly, or provide mechanisms for conflict resolution to address perceived inequities. Few studies investigate these various strategies, though researchers have suggested that offering different product lines in different channels and establishing some rules and systems to identify the ownership of any order can help reduce conflict (Vinhas and Anderson 2005). Retailers likely view these rules as manifestations of the supplier's genuine interest in their well-being, which could lead to improved trust and cooperation. Mukhopadhyay, Yao, and Yue (2008) also suggest that in certain conditions, retailers may be willing to share information, which benefits the whole supply chain. Another potential strategy introduces an incentive structure (Neslin et al. 2006) and profit sharing. Whereas Tsay and Agarwal (2000) and Frazier (1999) suggest channel structures and incentive designs that can enhance performance, Yan (2008) notes that both manufacturers and retailers benefit from a profit-sharing strategy in dual or multiple channels, because the incremental profits increase for all channel members. Regardless of how they do so, suppliers and retailers must adapt their "relational infrastructure" to address hierarchical multichannel landscapes. On the basis of this discussion, we offer the following:

$P_{10}$: Supplier–retailer relationships may weaken as suppliers add direct consumer channels, as reflected in (a) lower trust, (b) reduced cooperation, (c) less information sharing, and (d) higher conflict.

$P_{11}$: The number of supply chain partners that have direct channel access to consumers should relate negatively to a retailer's (a) power and (b) performance.

$P_{12}$: The number of supply chain partners that have direct channel access to consumers should relate positively to a retailer's use of dependence-balancing actions, including (a) private labeling, (b) service and experiential offerings, and (c) use of multiple channels.

### *Disaggregation and innovation in the supply chain*

Disaggregation in the supplier–retailer value chain describes the phenomenon by which specific supply chain functionality gets redistributed between the supplier and retailer. For example, consumer information search often occurs on the supplier's Internet site (because of its greater product expertise, investment levels, and brand strength), whereas physical examinations (e.g., viewing, touching, experiencing, and comparing products) typically occur at retail stores, and the actual appropriation of the sale and profit may occur through either location, depending on the consumer's preferences (e.g., convenience, return policy, pricing, loyalty). This redistribution of value generation and appropriation has prompted retailers to innovate and redirect their efforts toward the service and experiential aspects of shopping. For example, some brick-and-mortar retailers attempt to enhance their value proposition and differentiate themselves, separate from the superior control and convenience of online and catalog offerings, by giving consumers a "total experience," including fashion shows, makeovers, product lessons, and expert dialogue (Mathwick, Malhotra, and Rigdon 2001). Mukhopadhyay et al. (2008) also suggest that to alleviate potential channel conflict, manufacturers could sell a basic version of the product and give retailers the opportunity to add value. Such retailer strategies may have a greater influence on performance when retailers engage in many hierarchical multichannel supply chain partnerships, because in these situations, "experiential shopping" should provide a critical differential advantage (Fang, Palmatier, and Steenkamp 2008). Thus, we offer the following proposition:

$P_{13}$: Retailers' experiential and innovative shopping initiatives should have a larger positive influence on performance when the retailer's supply chain partners have more direct consumer access.

In addition to increasing experiential shopping, retailers can add value by offering the convenience of picking up items (ordered through another channel) from the retail store. Montoya-Weiss, Voss, and Grewal (2003) note that well-integrated channels encourage desirable customer behaviors and thus benefit both suppliers and retailers. However, if retailers provide supply chain services (e.g., visual and physical product evaluations, store pick-up) but do not ultimately capture the consumer's sale, suppliers should institute mechanisms to reward the retailers. If suppliers take advantage by free riding on retailer-provided services, the retailers will be forced to cut back on these services, which eventually will undermine the customer's product experience, while the retailers refocus their efforts toward encouraging in-store customers to consider alternative products (e.g., private-label brands, more exclusively distributed brands).

The disaggregation of functionality in the supplier–retailer supply chain prompts a question about how to ensure the "equitable" compensation of supply chain members to minimize free riding, promote efficient supply chain behaviors, and generate consumer loyalty. First, increased transparency and visibility should allow for better tracking, assessment, and quantification of the inputs, efforts, and value-added processes that the various members of the supply chain each supply. In turn, both vendors and customers can engage in greater scrutiny and hold other members of the supply chain accountable. If the evaluations of suppliers and retailers focus on more than just total sales volume, compensation may be based on "pay for performance" of the services actually delivered.

Second, maintaining consistency, capturing information, and understanding actual transaction costs across multiple and potentially competitive contacts can be extremely difficult. In addition to satisfying consumers at each contact point, boundary spanners with different objectives and brand messages may attempt to capture their loyalty and ultimate purchases. Goal incongruencies may prevent information from moving to subsequent contact points, which undermines the effectiveness of the overall supply chain. Research might investigate how to provide an optimal consumer experience, based on the efficacy of each channel or contact point, while still balancing each channel member's goal to appropriate sales and profits. Consumer loyalty similarly may appear divided across multiple channels (Ansari, Mela, and Neslin 2008; Palmatier, Scheer, and Steenkamp 2007). For example, if a consumer buys a product from a mix of supplier and retailer channels over time, who really owns this customer's loyalty? To provide direction and further understanding of these issues, we offer the following proposition:

$P_{14}$: Supplier–retailer joint performance may increase as suppliers (a) track and assess the impact of specific value-added processes supplied by retailers, (b) institute programs to maintain consistency across supplier–retailer contact points, and (c) reward retailers for providing uncompensated services to consumers.

## Supply chain relationships and retailer innovation

Innovation at both the retail level and the vendor level remains a complex, multiorganizational, multidisciplinary activity that requires collaboration and interactions across various entities within the supply chain network (Nonaka and Takeuchi 1995; von Hippel 1994). Scholars agree that a substantial portion of the innovation process and resulting outcomes occur at the buyer–seller interface. Thus, firms turn to suppliers and other partners to develop, access, and implement product or process innovations. Recent literature specifically examines the role of suppliers in new product development (e.g., Cannon and Homburg 2001; Ragatz, Handfield, and Scannell 1997; Sethi 2000) and indicates that greater supplier involvement benefits innovation (Afuah 2000) and the manufacturer's financial performance (Carr and Pearson 1999).

### *Retail innovation*

Innovations in a retailing context tend to involve changes in products and processes, which either reduce costs or improve efficiency. In addition, product and process innovations can enhance customer value through improved market offerings (e.g., enhanced benefits from the goods and services mix) and lower prices through efficient business processes (e.g., Wal-Mart passes savings from its logistical efficiency to customers). Product innovations rely on know-how composed of product technology or ideas embodied in the product, whereas process innovations relate to the set of ideas involved in the manufacture or delivery of a product or the steps necessary to combine new materials to produce a finished product (Abernathy and Utterback 1978; Capon and Glazer 1987).

A recent catalyst for both process and product innovations in the retailing industry comes from sustainability initiatives and efforts to improve the environment, healthcare, diversity, and sourcing. For example, Wal-Mart has committed to three main sustainability goals: to be supplied by 100 percent renewable energy, to create zero waste, and to sell products that sustain the natural resources and the environment. In the past two years, Wal-Mart has worked with vendors to reduce packaging waste and increase the use of locally grown, organic produce. In addition, it has incorporated sustainable and energy-efficient practices into its business, including high-efficiency retail stores, employee-driven recycling programs, and the use of alternative sources of clean energy, such as wind, to power stores and facilities.

Retailing process innovations include category management, which focuses on turnover in the total category, not just sales of individual products, and vendor-managed inventory. Although these process innovations are not new concepts per se, retailers have begun adopting and refining them to reduce their inventory turnover and improve operating efficiencies. Moreover, national brand suppliers usually take the roles of category captains, but in recent times, this role often has been taken by private-label brand suppliers. Along with sales data, retailers integrate logistics data to maximize product availability on retail shelves. Another pro-

cess innovation, voluntary interindustry commerce solutions, helps facilitate the widespread usage and cross-docking of cartons sent by vendors to retailer distribution centers.

A key product innovation for retailing is the use of radio frequency identification (RFID) technology, which can identify an object or person at a distance using radio waves. Using devices or tags inserted into shipping containers and behind merchandise labels, RFID provides data about the objects in which they are embedded (Levy and Weitz 2009), thus enabling accurate, real-time tracking of every single product, from the manufacturer to checkout in stores. This functionality can significantly reduce warehouse, distribution, and inventory costs, increase margins, and provide better in-stock positions (Levy and Weitz 2009). Although RFID technology did not originate in the retail industry, for the purposes of this article, we consider it a good example of a retailing innovation.

Previous literature classifies innovations as either radical or incremental (e.g., Dewar and Dutton 1986; Sorescu and Spanjol 2008). Radical innovations involve a fundamental change in the configuration of an existing product or process. They differ from other new products because they are riskier, require more resources and substantially different technology, and offer the potential for substantially greater benefits (Chandy and Tellis 1998; Sorescu, Chandy, and Prabhu 2003). Such radical innovations also might involve processes.

*Strength of relational ties and retailer innovation*

Several studies indicate that the characteristics of relational ties determine the acquisition of knowledge content from knowledge providers (Ganesan, Malter, and Rindfleisch 2005; Rindfleisch and Moorman 2001). We also suggest that the acquisition of knowledge from supply chain partners could enhance both radical and incremental innovations.

Strong ties between retailers and their supply chain partners may enhance radical innovations, in line with strength-of-ties literature that indicates that valuable and important knowledge is much more likely to be transmitted through strong ties than through weak ones (Rindfleisch and Moorman 2001). Knowledge about radical innovations tends to be more complex (i.e., tacit, interdependent) and hence harder to communicate (Zander and Kogut 1995; Zucker, Darby, and Armstrong 2002), which renders it more amenable to communication when the ties are stronger. Stronger ties also afford the opportunity to explain highly detailed specifications, monitor a recipient's understanding, or clarify misunderstandings in real time. However, stronger relational ties could play an even more important role for radical process innovations than for product innovations. Process innovations often entail greater knowledge complexity and tacitness, which therefore may require greater levels of trust and coordination than do product innovations. Conversely, knowledge related to incremental innovation tends to be relatively simple and straightforward, so this type of knowledge transfer should occur even when the relational ties are not very strong. For example, Wal-Mart works with its jewelry suppliers to promote more sustainable practices throughout jewelry supply chain (e.g., mining, refining, polishing, cutting, manufacturing). Such radical process innovations require strong ties between the retailer and the entire network of supply chain partners.

$P_{15}$: Relational tie strength between retailer and supply chain partners should relate positively to radical product and process innovations.

$P_{16}$: Relational tie strength between the retailer and supply chain partners should relate more positively to radical process innovation than to radical product innovation.

*Diversity of relational ties and retailer innovation*

A diverse flow of information can affect innovation because it enables novel associations (Cohen and Levinthal 1990) and stimulates broader perspectives and syntheses (Dewar and Dutton 1986). We expect that the diversity of relational ties (i.e., multiple supply chain partners with complementary but not overlapping or identical capabilities and resources) affects both radical and incremental innovation, because the type of information and knowledge acquired from these diverse supply chain partners differs. Specifically, the diversity of supply partners reflects greater a heterogeneity of knowledge among the supply chain partners. Radical innovations (e.g., ultra-high efficiency stores developed by Wal-Mart) rely on new technologies that differ substantially from existing technologies and the integration of different technologies (Iansiti and West 1997). High-efficiency stores, for example, use recycled building materials and energy-saving lighting methods, such as LED lights and advanced daylight harvesting systems. When retailers have a diverse portfolio of supply chain partners, they may gain easier access to new and nonredundant knowledge bases, which should help them track new advances and applications. In contrast, retailers with a limited set of supply chain partners may have access only to redundant knowledge bases, which may lessen their awareness of promising new technologies or process improvements. The often restrictive focus on technologies and processes offered by incumbent suppliers can make it very difficult to detect and engage in new or promising innovations (Leonard-Barton 1992), which in turn can significantly hamper radical innovations, especially in markets and product categories characterized by rapid technological changes (Tushman and Anderson 1986). Thus, we suggest that diverse relational ties increase radical innovation and that greater diversity in supply chain partners leads to the exchange and transfer of novel information and nonredundant knowledge, which should enhance radical innovation.

$P_{17}$: Greater diversity of relational ties between retailer and supply chain partners should relate positively to radical process and product innovations.

*Asymmetric dependence and retailer innovation*

Previous literature indicates that asymmetrical dependence negatively affects joint problem solving, because the weaker party guards against exploitation, while the stronger party tends to identify exploitation opportunities, often without worrying

about negative partner perceptions (e.g., Ganesan 1993). This combination of pressures makes it difficult for parties in an asymmetrically dependent relationship to coordinate and cooperate. In contrast, symmetrical partnerships tend to build a cooperative culture and desire to work together to solve problems. Because knowledge about radical innovations tends to be more complex and tacit, it again is harder to communicate, but symmetrical ties can ease such communication. Thus, radical innovations, which require idea screening, concept testing, and development, might be easier in symmetrical relationships. However, parties with greater power also may be able to implement radical innovations more quickly than dyads with equal power after the innovations have been developed. For example, Wal-Mart demanded that its top 100 suppliers put RFID tags on all pallets, cases, cartons, and high-margin items. To meet these requirements, vendors invested significantly in technology and equipment, despite the high costs and low returns on this investment. Retailers such as Wal-Mart can leverage their power to implement such radical innovations. Corsten and Kumar (2005) argue that technological innovations, such as efficient responses, can have positive effects on supplier performance but generate perceptions of negative inequity among the suppliers.

$P_{18}$: Greater asymmetrical dependence between the retailer and its supply chain partners should relate negatively to the development of radical product and process innovations.

$P_{19}$: Greater asymmetrical dependence in favor of retailers should relate positively to the implementation of radical and incremental innovations.

*Barriers to retail performance through innovations*

Until recently, the involvement of supply chain partners and the procurement departments of organizations to create process and product innovations were limited, at best. In most organizations, supply chain partners earn rewards for cost savings, and buying departments use metrics that reward price reductions and revenue generation. Only recently have purchasing executives begun to recognize the importance of their role as value enhancers and thus contribute to top-line growth. This problem becomes compounded because of the silo mentality that still pervades most organizations, which organize innovation around R&D departments, with some support from marketing departments. Thus, the shift from R&D-centric innovation programs to open innovation platforms that include purchasing departments and supply chain vendors has been rather slow. Finally, the typical purchasing organization remains too preoccupied with managing suppliers and offers few incentives to participate in innovative or value-enhancing activities. In general, these barriers impede innovation in supply chain involvement.

## Conclusion

Retailers must revise their supply chain structures, strategies, and management practices to adapt to the changing environment. We address three notable trends that affect retail supply chains and practices today, as well as their impact on retailers' brands, relationships, and innovations.

The widespread shift to global sourcing can have adverse effects on a retailer's brand image, especially as retailers shift to more private-label brands. In response, retailers are implementing programs and processes that may minimize various adverse effects and increase brand linkages to positive social responsibility practices. The increased prevalence of multichannel paths to consumers, from both suppliers and retailers, appears to affect supplier–retailer relationships negatively by increasing conflict, reducing cooperation, and changing the value chain. Many retailers respond by increasing their use of private-label products, offering more experience-based services, and generally evaluating ways to offset their dependence on suppliers. Both suppliers and retailers are investigating ways to reward retailers for uncompensated services and maintain consistency as consumers move across multichannel contact points. Retailers also recognize the need to use their overall supply chain in their innovation efforts. In many cases, technology advances (e.g., RFID) have enabled them to collect new information about consumers, which can combine with supply chain partners' capabilities to lead to radical and incremental innovations. The need to connect with partners to innovate increases the importance of strong and diverse relational ties with supply chain partners.

In aggregate, effectively managing supply chains takes on increasing importance for the financial performance of retailers. However, the complexity and interconnected nature of modern supply chains, which remain embedded in rapidly changing environments, make managers' and researchers' jobs difficult, because the ultimate impact of a change in a retailer's supply chain on performance in that supply chain is difficult to predict. One critical intermediate step is to isolate how supply chain decisions influence the key marketing functions of brands, relationships, and innovation, which mediate the effects of supply chain decisions on overall retailer performance.

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