

Retail and Consumer Packaged Goods

Better service with connected inventory

It is not just the customer experience that manufacturers and retailers enhance by extending their reach to the entirety of stocks in the market.

by Ashutosh Dekhne, Tim Lange, Karl-Hendrik Magnus, Isabell Scheringer, and Simon Vincken



Consumers are very familiar with the scenario: the T-shirt they have set their heart on is no longer available in their local store or their preferred online shop. Or it can't be delivered on time. The customer could of course go to another retailer, brand store, or online shop. But that is often a time-consuming option or at least inconvenient. In the end the customer buys another product—or none at all.

That's unquestionably a frustrating outcome for all parties. At best, the customer experience is tarnished, and in the worst case, the customer is lost. Wouldn't it be great to have direct access to all inventories available in the market—regardless of what company is stocking them? In fact, available stock levels are typically perfectly sufficient, but they are distributed among a growing number of network nodes: at retailers, at vertically integrated companies with direct-to-consumer business, at e-tailers and wholesalers, in stores, in warehouses, or in transit (Exhibit 1).

In response, some companies are beginning to connect their inventory. This rarely leads to mutual assistance between direct competitors. Therefore it is unlikely to soon see a store of a sports goods retailer providing FC Barcelona soccer jerseys to a neighboring department store with sold-out stock. But why shouldn't the department store place orders directly with an outlet or warehouse of the respective sports article manufacturer? After all, it is in its interest to offer an outstanding customer experience, irrespective of the sales channel.

Everybody benefits

When two or more companies systematically share their inventory, they essentially construct a network of fulfillment nodes and form a pool of stocks that is larger than what each individual partner had previously. As a result, customers get a better buying experience, but the companies involved also benefit directly.

Not only do connected inventories increase the availability of individual products, they also broaden the product range. Delivery times decrease, too, as goods can be dispatched from multiple points close to customers. Ideally, transport costs thus decrease as well. There are also further benefits for consumers. Any outlet or boutique operated by the partner companies directly or by franchisees can serve as a potential pickup point. That gives more options to buyers, who can lower their environmental impact by picking up their goods at the nearest store rather than having them sent home.

The two greatest benefits for companies are self-evident. First: by connecting their stocks, companies can interlink customer journeys in online and off-line channels and thereby increase their chances of winning new customers and holding on to existing ones. Second: the improved availability of products, the faster delivery, and the better consumer experience enhance the overall likelihood of making a sale.

Other merits: Thanks to the linked customer journeys, the partners can now also collect more information about their customers. Participating companies can offer faster delivery times without having to increase the volume of stocks in the market. In addition, the optimization of inventory levels across the entire network avoids excess stocks. That results in a higher sell-through at full price, which means less discounts and inventory markdowns at the end of the season. In turn, working capital is kept low and the overall costs across the supply chain decrease.

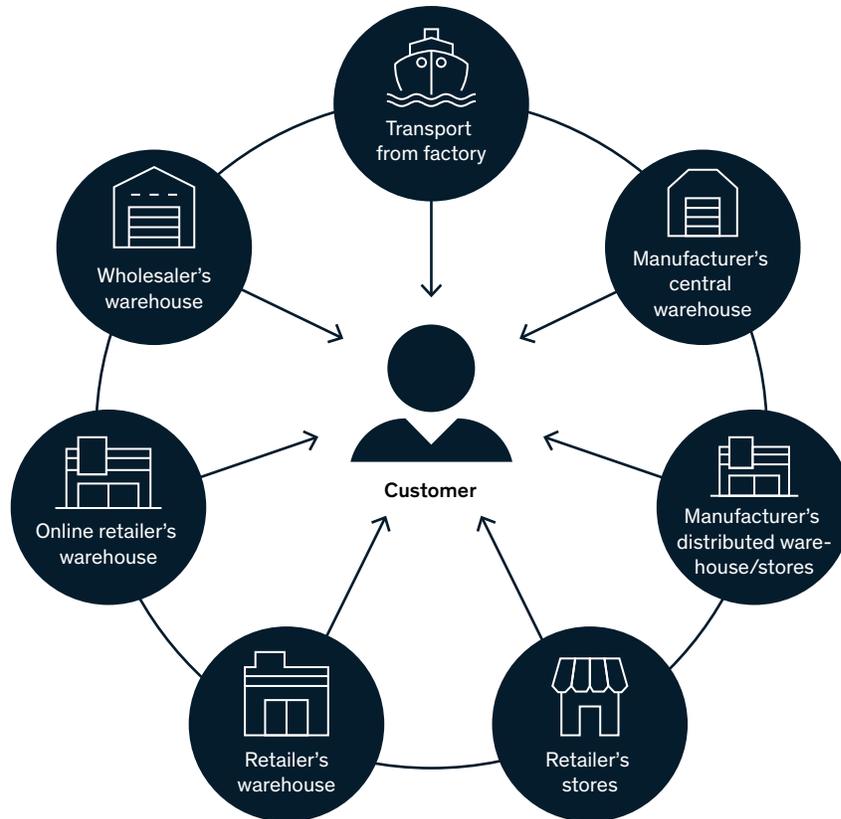
Five networking models

But just how complex is cooperation? Who owns the goods? Who gets what commission when? Or in short: how does connected inventory work in practice?

Exhibit 1

Goods are distributed to end customers over a growing number of network nodes.

Inventory nodes of retailers and manufacturers



Inventories can in fact be linked up in a variety of ways. The simplest model involves shedding transparency on intracompany inventories, assuming they are not transparent already. With transparency in place, the mildest form of connected inventory between two companies is a unilateral partnership: the manufacturer assists retailers faced with out-of-stock articles by delivering the items ordered. Such partnership arrangements can

be extended to provide retailers access to products that they do not normally stock (along the lines of an "endless aisle" concept). More complex, but also more advantageous, are bilateral partnership arrangements in which both partners get access to their respective inventory. Ideally, what results is a virtual inventory pooling several retailers and manufacturers. Such a pooling model allows, for instance, a retailer in Frankfurt to transact a jeans

order by a customer in Cologne through a partner retailer that delivers the jeans from the inventory it holds in its Cologne warehouse (Exhibit 2).

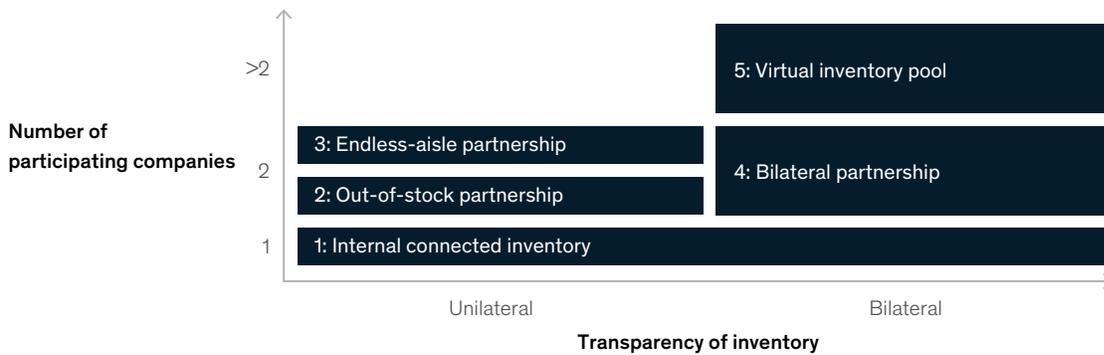
Underpinning the commercial basis of these models are several sales concepts. These concepts are marked by specific ownership structures.

- **Commission model.** The stocks are owned by the company that manages them and that can handle fulfillment. This company processes the order and pays commission to the partner company that concludes the business, whether online or in a brick-and-mortar store.
- **Repurchase model.** Ownership of the inventory is transferred from the party that manages it when it is sold to the party that transacts the sale to the customer. Commission is paid as compensation to the party that originally managed the inventory.
- **Joint venture model.** The stock is owned by a joint venture founded by the partners seeking to network inventory. In this model, the partners jointly bear the risks and share the benefits, which makes the model particularly appealing.

Exhibit 2

Inventory can be interlinked in a variety of ways.

Connected inventory models



1: Internal connected inventory

A company connects the inventory in its central warehouse together with its local distribution centers and stores. When a customer orders a product online, the most efficient dispatch point measured by time and cost is selected or a store is suggested for personal pickup by the customer. Sales clerks in stores can also check at a click if a sold-out product is available elsewhere.

2: Out-of-stock partnership

Manufacturers and retailers reciprocally disclose their respective stocks of products that the retailer regularly sources from the manufacturer. If the product is out of stock at the retailer, the customer can still complete the purchase because the manufacturer can send the article directly.

4: Bilateral partnership

Manufacturers and retailers reciprocally make their inventory transparent so that they can take care of each other's fulfillment as needed. When a customer places an order in a partner's online shop, the product is sent from the best possible distribution point.

3: Endless-aisle partnership

In the endless aisle model, the manufacturer provides the retailer virtual access to its entire inventory, including products that the retailer does not have in its product range. The retailer can thus offer an extended product range in its online shop that is then directly handled by the manufacturer.

5: Virtual inventory pool

Several retailers and manufacturers connect their inventories. The pooled inventory is held by a neutral entity (eg, a joint venture) to which every partner has access. A customer order is always fulfilled from the best possible distribution point.

Determinants of success: From incentive systems to delivery slips

Regardless of the model that the partners choose: building a connected inventory concept inevitably requires new solutions in sales, the supply chain, and IT that are by no means simple. Furthermore, it is important that all parties have sufficient incentives to keep goods in stock. Otherwise, the natural tendency is to keep one's own inventory as low as possible in a bid to lower the risk of excess stocks. In addition, it has to be clear who owns the stocks in the pool—specifically, who owns the stocks in which phase of the fulfillment process and at what points ownership—and the associated risk—is transferred to another partner.

Transparency is also key to success. It has to be clear at all times which product is where and in what quantity. This requires a distributed order management system capable of interlinking the various nodes in the network and instantly determining the optimal dispatch point. Furthermore, to have the right quantity of the right product in the right place, integrated planning that factors in the inventory levels and forecasts of all partners is also needed.

The location of inventory in the market can also have legal and tax implications (e.g., import duties). Consequently, an advanced assessment should be conducted to determine the extent to which a specific networking model might be restricted by antitrust law in one or several jurisdictions. In addition, the partners should enter into clear agreements in order to offer customers a seamless consumer experience—regardless of which company executes the order. The partners need to align an array of details, such as their delivery and gift packaging, delivery slips, or conditions for returning goods.

Success stories in other sectors

The associated complexity of requirements is most certainly one reason why the concept of connected inventory is only just beginning to take root—although there are already some high-profile initiatives (Exhibit 3). Other sectors have made far more progress in this regard.

Take the aerospace industry, for example, where one supplier of replacement parts has set up a program for sharing inventory. Aircrafts have expensive

Exhibit 3

Connected inventory is still the exception in retail—although there are prominent early adopters.

Amazon, Procter & Gamble

As early as 2013, Amazon and Procter & Gamble (P&G) joined forces to sell products, such as diapers and toilet paper directly from P&G's warehouses, where Amazon set up on-site distribution centers to deliver goods directly to customers.

Zalando, adidas

In 2015, Zalando and adidas launched a pilot project in which one of adidas' distribution centers was linked up to Zalando's inventory system. As a result, not only do Zalando's customers have access to a larger offering of adidas products, but adidas can fulfill orders of products that Zalando no longer has in stock.

L'Oréal

The cosmetics company L'Oréal offers its customers the option of checking whether a product is available at an online retailer. If so, customers are directed to the corresponding web shop to make their purchase directly.

YOOX NET-A-PORTER, Valentino

In 2017, online fashion retailer YOOX NET-A-PORTER (YNAP) and the luxury label Valentino unveiled their Next Era program, which provides customers access to both Valentino and YNAP products on a shared platform. The program is also intended to allow both companies to reciprocally use each other's logistics infrastructure spanning central warehouses, fulfillment centers, and boutiques.

Source: Fox; L'Oréal; The Street; YOOX NET-A-PORTER; Zalando

replacements parts that nevertheless have to be available everywhere and at all times to enable fast repairs. The planning system ensures the best-possible warehousing of parts by drawing on linked forecasts of requirements. Everybody benefits from the program: The replacement parts supplier can hold on to its inventory and also gain access to the stocks of participating airlines. The latter can then source replacement parts directly from the supplier but also generate revenue from their own inventory by selling it to partner airlines. In addition, the cooperation arrangement allows the airlines to adjust their inventory programs to ensure the local availability of parts while avoiding excess inventory.

Similar initiatives in retail seem only a matter of time—particularly as the same-day or even hourly delivery pervasive in online retail is setting a pace that can likely only be maintained with the backing of powerful partnerships. Against this backdrop, connected inventory can make a substantial

contribution toward improving product availability and the customer experience while reining in costs and capital intensity.

Key statements

- The first retailers and vertically integrated players with direct-to-consumer business are beginning to intelligently connect their inventories in the marketplace
- Everybody involved, including consumers, benefits from the advantages of connected inventory: greater availability and faster delivery of goods, greater delivery convenience, and lower environmental impact.
- Retailers and vertically integrated players that enter into corresponding partnership arrangements attract more customers, secure higher conversion rates, and benefit from an array of additional advantages.

Ashutosh Dekhne is a partner in McKinsey's Dallas office, **Karl-Hendrik Magnus** is a partner in the Frankfurt office, where **Isabell Scheringer** is a consultant, **Tim Lange** is a partner in the Cologne office, and **Simon Vincken** is a consultant in the Brussels office.

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