



Blockchain and the **Future of Retail**

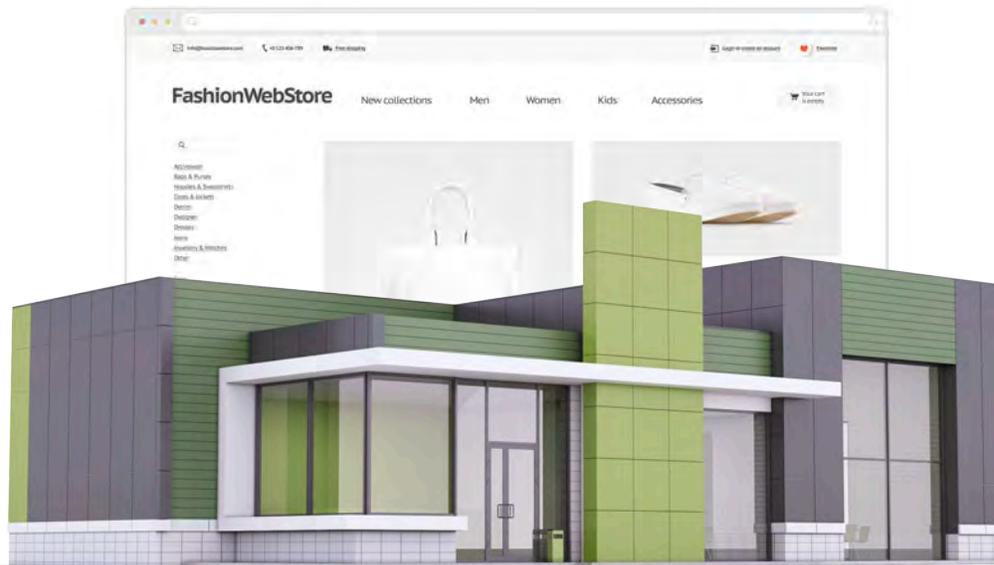
Bridging the Online and Offline Divide



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The battle between online and offline retail



Almost every day, there are headlines lamenting the death of brick-and-mortar retail, as big names like Macy's, Victoria's Secret and Sears continue to shutter dozens of stores. Notably and unfortunately, Toys“R”Us just completed the process of closing all of its locations nationwide. A lot of industry experts and journalists are labeling this tidal wave of store closures as the retail apocalypse.

Many point their finger to the rising dominance of e-commerce, as a growing number of consumers gravitate towards online stores, like Amazon, Thrive Market, Zappos and Net-a-Porter, for their convenience and product variety. Some experts paint an ugly picture that online and offline retail channels are at constant odds with one another – which could not be further from the truth.

Take for example, Warby Parker. Its founders launched the brand in 2010 with a disruptive online model centered on direct-to-consumer eyewear, subverting Milan-based Luxottica, which has long held a monopoly over the global eyeglasses industry. While seeing tremendous growth online, the brand made a move – that some saw as a step backwards – to open its first brick-and-mortar store in 2013. It successfully integrated its online and offline channels, with many customers browsing their glasses online first before entering an actual store to try on options. Fast forward to 2018, and Warby Parker now has 64 storefronts – with the goal of 100 by year's end – that account for 50 percent of its total sales.

Then, there is online goliath Amazon. For the past two years, the company, often credited with the decline of physical bookstores, has been almost uncharacteristically opening Amazon Books outposts all around the United States. These physical stores allow Prime members to go to a brick-and-mortar location and purchase books for the same discounted price listed on Amazon's site. And in a time when more people are buying groceries online, Amazon acquired the Whole Foods chain in 2017. Prime members now benefit from local Whole Foods deliveries, Amazon Locker pickup and exclusive in-store deals. The acquisition and new retail model led to \$1.3 billion in revenue according to an initial earnings report.

What Warby Parker and Amazon demonstrate is that the future of retail does not lie on one side of the coin or the other. Instead, the future of retail is omnichannel, where online and offline channels converge and work in tandem. It is a future that many consumer packaged goods (CPG) brands and retailers see on the horizon, which is why they maintain both online and physical presences.

The omnichannel or “bricks and clicks” experience

In an omnichannel experience, CPG companies can operate their direct-to-consumer online channels, owned brick-and-mortar stores and business-to-business (B2B) retail partners as one connected supply chain. They can forecast and respond to sales demand at all consumer levels, regardless of if they are buying online or offline. Perhaps most importantly, a customer can virtually always get what they want, meaning companies can always capture the sale.

For instance, an online item may be out of stock in the warehouse but available in a nearby store. With an omnichannel, single retail – or bricks-and-clicks – strategy, the company can still take that order by pointing to the closest store with stock in the supply chain to fulfill and ship the item to the customer. Plus, since the store is located nearby, customers can enjoy even faster deliveries. If they are unsatisfied, they can bring the package to any brick-and-mortar location for a return, or exchange it for something else in store.

The bricks-and-clicks experience is possible through connected, interwoven systems in the background — unbeknownst to the consumer who just enjoys the positive, seamless experience. This perfect balance between the online and offline presents a promising future, albeit one that few are capitalizing on due to barriers in their current supply chains.





Barriers to omnichannel retailing

What holds the greater majority back from delivering an omnichannel approach is that they still manage their online and offline channels as two largely separate entities with unique – and often siloed – systems. This creates a ripple of challenges across the supply chain, from manufacturing planning and demand forecasting, to inventory management and order fulfillment.

Fragmented management systems

Many CPG brands and retailers use internal enterprise resource planning (ERP) and point-of-sale (POS) systems to manage existing stock and capture sales at the store level. These systems are tied into a core, global system that can see inventory within every store. This enables companies, such as footwear retailers, to route different sizes, models and colorways between locations if a customer wants an out-of-stock shoe that is available elsewhere. At the same time, their e-commerce sites are connected to separate ERPs and warehouse management systems that capture inbound orders, manage inventory and direct order fulfillment within distribution centers.

By using distinct management systems between the two channels, it becomes nearly impossible to deliver the aforementioned bricks-and-clicks strategy, as there is an inherent disconnect between in-store and online stock. Only certain distribution centers can fulfill online orders, and physical locations operate more like islands rather than a singular, interconnected retail experience.

Reactive production and replenishment

Due in part to fragmented online and offline channels – but largely because of today’s hyper-complex supply chains – most CPG brands and retailers operate under a reactive manufacturing and replenishment model. Demand rises, so they increase production and output. Items run out of stock, so they send more to stock fulfillment centers and store shelves. Unfortunately, this type of model leaves most companies constantly one step behind the curve. [According to a study by Bane & Company published in March 2018](#), 51 percent of the supply chain executives surveyed stated their supply chains are reactive and lack end-to-end visibility and flexibility.

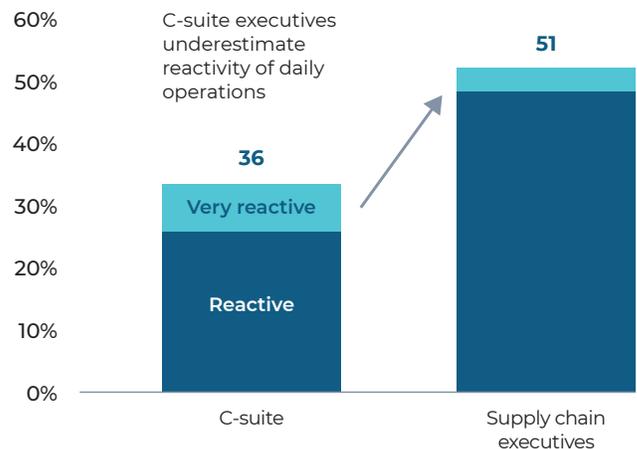
A reactive approach invariably leads to supply and demand imbalances, as businesses struggle to not only gauge online and offline demand, but also aggregate forecasts to adjust production levels upstream in the supply chain. They end up with excess inventory and slow turnover due to heightened output on items that were in demand at the time – but no longer are. This creates additional problems with what to do with the extra product, as well as expensive carrying costs. On the other hand, a company may under-project demand and fail to deliver adequate replenishment on popular products, resulting in out-of-stocks and therefore lost sales across all channels.

Executives say their supply chains are highly reactive and lack end-to-end visibility and flexibility

Reactivity and inflexibility can lead to higher operating costs and missed revenue opportunities; they also reduce time to think and act strategically.

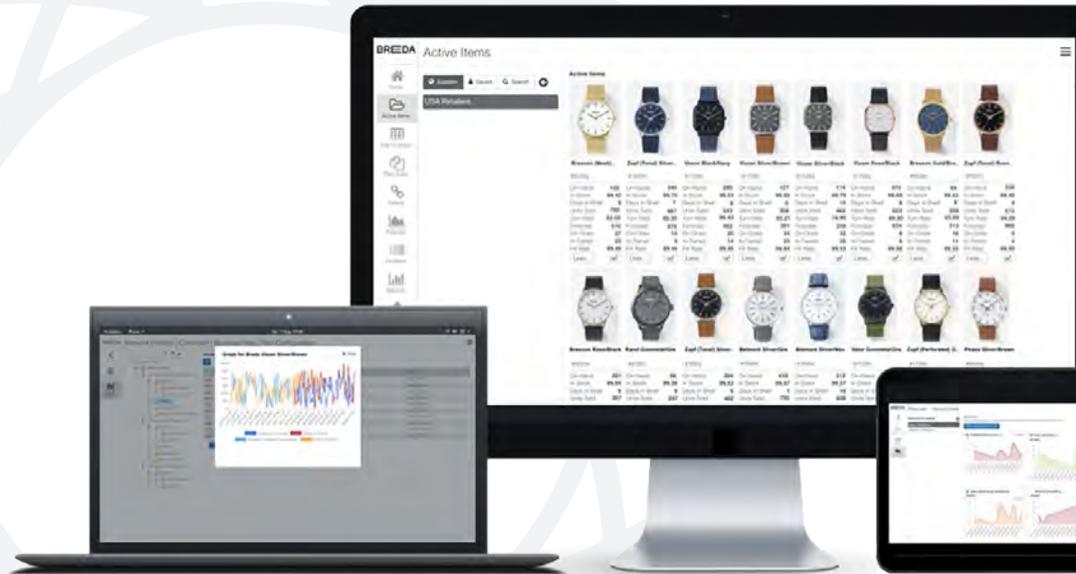
Source: www.bain.com/insights/build-a-digital-supply-chain-that-is-fit-for-the-future

Approximately what percentage of your supply chain focus is reactive?



These barriers all link back to disparities in the current supply chain, with each tier – from production and warehousing, to distribution and retail – relying on its own individual systems, databases, metrics and rules. It creates challenges when balancing online and offline demand, as well as in supply chain management and driving business growth. Fortunately, there is a radical new way to tie everything together and one that is picking up steam in several industry circles – **Blockchain**.

What is Blockchain?



Blockchain was developed in 2009 by Bitcoin inventor and cryptocurrency pioneer, Satoshi Nakamoto. Nakamoto came up with the concept of Blockchain as a public, digital ledger to track the exchange of Bitcoins among those within its network. These transactions are saved in cryptographic blocks—hence, where the technology derives its name. All records are immutable as no one can alter any transaction without changing all of the subsequent blocks. Further, any alteration would require consensus from the rest of the network, thereby driving greater trust and accountability among all connected parties.

Naturally, the financial and transactional history of the technology has lent itself to applications in banking. However, its secure and transparent design has peaked interest from industries that have been plagued by data silos, disconnects among disparate individuals and organizations, and the numerous movements of commodities between them.

For instance, the healthcare industry has for long struggled with challenges posed by the improper sharing and storage of medical data and records. With countless patients, doctors' offices, hospitals and insurance providers located around the globe, there is high potential for error, fraud and lost records, breeding distrust among patients and healthcare providers. Blockchain technology can help rebuild that trust by storing medical records in a secure network that can only be accessed by connected patients and authorized healthcare providers.

Within the entertainment industry, a movie studio can use Blockchain to monitor the distribution and rights over its owned content, which is especially critical in the internet age where video content is widely shared and at risk of piracy. Content owners can register ownership on the Blockchain for proof of authenticity and prevent infringement with a complete record of sold rights. They can thereby track and manage licensing deals and sales data, ensuring fair compensation and the legal use of studio films.

Likewise, through a permanent record of all transactions and movements for any given product, Blockchain technology can help CPG brands and retailers connect every link in their supply chain network. Everyone can work together in a holistic value chain with the transparency needed to deliver the modern omnichannel experience.

Blockchain's impact on the supply chain

Blockchain is able to tap into all of the disparate systems and transactions that stretch across the supply chain. The data flows securely in real time and is decentralized for full visibility at every tier – from source to shelf, and back. Blockchain implementations can deliver immediate, transformative results for brands and retailers, including:



Distributed order management

With both online and offline channels integrated in a common Blockchain network, companies can realize a true bricks-and-clicks retail strategy. As a demand signal comes in, such as an online order, it is known to all respective parties, including the warehouse and store. So rather than relying only on warehouse inventory, a company can use the customer's geolocation or shipping destination to find the closest available node in the supply chain to fulfill that order – with the cheapest rate and fastest delivery. That transaction is logged on the Blockchain, making it visible at the manufacturing level to support demand planning.



Proactive demand planning

Since data is shared in real time across the Blockchain network, brands and retailers can get instant visibility into what consumers are currently buying. They can get immediate demand signals upstream in the supply chain so that they can be more proactive with their manufacturing planning and replenishment, rather than just reacting to inventory stockouts. Therefore, they can ensure that they always have enough stock in the warehouse and on store shelves to satisfy demand – and with limited excess. In this perfect equilibrium of supply and demand, carrying costs on excess channel inventory and lost sales due to stockouts are things of the past.



Improved channel allocation

Using data on orders, sales and geolocation, companies can properly allocate forecasts to their online and offline channels. They know what to manufacture for online customers and what to manufacture for retail customers, as well as where to send products based on regional demand. For instance, a shoe model may be more popular in New York City rather than Los Angeles. By making sure the right type and amount of product is available in the right area, companies can minimize time spent transferring inventory cross country for order fulfillment, streamline cycle time in their supply chains and drive significant business growth with goods available where they are wanted most.

The future of retail

The brands and retailers that will survive this so-called retail apocalypse will be the ones that recognize that they cannot sustain their online and offline channels as separate entities. The companies that will not only survive, but also thrive, will be the ones that can realize an omnichannel, singular retail strategy. As such, they must be able to bridge the gaps that exist across their supply chains, including in their e-commerce sites and brick-and-mortar outposts. Blockchain presents a viable solution to do just that. By leveraging such a digital, distributed ledger that taps into every corner of the supply chain, companies can align their online and offline customer experiences, proactively drive growth and savings with consumer demand, and make sure every tier is working seamlessly together as one modern enterprise.



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