

The Present and Future of Nanostore Retailing Worldwide

Christopher Mejía Argueta

Research Scientist, MIT Center for Transportation & Logistics
Founder and Director, MIT Food and Retail Operations Lab

Cesar Becerra

Executive Manager, Center for Latin-American Logistics Innovation

Cesar Rios

Supply Chain and Logistics Director,
Tiendas de Ara at Jerónimo Martins

Conan Wu

Head of Strategic Cooperation and Partnership Development,
Ningbo China Institute for Supply Chain Innovation

Lihan Zhao

Vice President of Supply Chain and Commercial
Development, Shanghai Laiyifen

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NANOSTORES are a vital part of the global retail industry but face many challenges, like the need to meet increasing consumer demand for digital retail services and sustainable business practices. In addition, they operate with limited shelf space, typically no storage room, scarce budget, and inadequate information to make their decisions.

The [MIT Global Supply Chain and Logistics Excellence \(SCALE\) Network](#) hosted a webinar on December 12, 2023, to explore these issues. Faculty members from three SCALE Network centers, the [MIT Center for Transportation & Logistics \(MIT CTL\)](#), the [Center for Latin-American Logistics Innovation \(CLI\)](#), and the [Ningbo China Institute for Supply Chain Innovation \(NISCI\)](#) participated in the event. Two retailers, [Shanghai Laiyifen](#) in China and Tiendas Ara from [Jerónimo Martins](#) in Colombia, also shared their views of nanostores' role and small organized retailing in the industry and the communities they serve.

A global force

Dr. Chris Mejía-Argueta, Founder and Director of the [MIT Food and Retail Operations Lab](#) at MIT CTL, defined nanostores as small, family-owned retailers that operate formally or informally and provide convenience and affordability. Different types of nanostores, such as convenience and cash-and-carry outlets, vary in size and format. He estimated that there are 50 million nanostores globally based on the book he co-authored, [Reaching 50 Million Nanostores: Retail Distribution in Emerging Megacities](#).

Nanostores are part of the global retail industry, said Mejía. Worldwide, retail sales reached \$25 trillion in 2021, representing about one-third of global GDP. The industry is expected to grow by \$3 trillion annually between 2020 and 2025, with the small retailer segment growing even faster at an annual rate of \$4.4 trillion. The adoption and diffusion of technological innovation will be a primary driver of this growth.

While nanostores are small-scale businesses, they are hugely influential nationally and globally, Mejía said.

Nanostores typically command about half the retail market share in emerging economies but are even more dominant in some countries. In India, for example, nanostores' market share is 90% to 95%. The strong market presence of these outlets gives food product suppliers—including large consumer-packaged goods companies—access to local retail markets worldwide.

In addition to functioning as points of sale, Mejía pointed out that these small, family-owned stores are the most important part of their domestic economies because they also serve as community hubs, especially in low-income areas and underserved communities. For example, they are a critically important source

of credit for customers. Globally, nanostores serve approximately 60% of people who live on \$5 per day or less.

Mejía described the challenges that nanostores face, such as the struggle to keep pace with technological change and the need to be risk-averse as sellers of perishable products. An increasingly urgent issue is how to enable nanostores to offer nutritious food products in low-income markets while remaining profitable.

China's need for speed

In China, community stores, or small organized retailers, represent a large part of the retail market, explained Conan Wu, Head of Strategic Cooperation & Partnership Development at NISCI.

The retail industry is migrating to an online environment. Wu said that about 20% of the retail market in China is currently online, which is expected to increase to around 45% by 2025.

A key driver of sales in Chinese online retailing is the speed of service. For example, in one of the largest markets, the supermarket-to-home sector, customers use apps to place grocery orders and expect delivery within an hour. Wu said that in another instant retail sector, customers expect their orders to arrive within 30 minutes. As more consumers shift to online channels, the need for speed becomes more urgent.

There are many brands in the online world, and they procure products such as groceries from small, organized retail outlets that include mom-and-pop businesses. These nanostores must maintain lean operations to support fast deliveries, requiring them to operate with relatively few SKUs compared to traditional retailers.

Retailers in China face three main challenges, according to Wu. They must shift from price competition based on government incentives, which tend to encourage monopolies, to models based on operation-driven competition. The lack of cold chain options in China and high levels of waste represents another challenge. Thirdly, supply and demand uncertainties create the bullwhip effect in retailing, which is particularly problematic for small retailers in China, Wu said.

However, there are opportunities for small stores to grow their businesses. Millennials in China, who like

to order online from community stores, are expected to drive growth in this sector. Also, investments in logistics infrastructure and AI tools are creating opportunities for market growth, said Wu.

Zhao Lihan, Vice President of Supply Chain and Commercial Development at China's largest snack company, Shangai Laiyifen, described the evolution of retailing in China from his company's perspective. From its beginnings as a small business, Shangai Laiyifen's retail operations now comprise 3,700 chain stores that cover 31 provinces in China.

Lihan said the need to control manufacturing costs and support more research and development are challenges the company faces. It introduces one new product every two days. However, there is much potential for growth through innovation. For example, the company is looking to adopt AI tools to improve the customer experience, lower costs, and speed up the packaging design process. The company continuously seeks certifications and fosters the connection between its products and end consumers through different distribution channels.

Latin Americans shop traditionally

An estimated 90% of consumers in Latin America look for traditional retail channels, including small retailers and nanostores, when buying products, said Cesar Becerra, Director of CLI. This emphasis on shopping at traditional outlets distinguishes retail markets in the region. In Colombia, approximately 35% of consumers use nanostores to buy goods.

However, small retailers in Latin America face some severe challenges. Logistics costs are relatively high, representing 10% to 20% of product sales. In Colombia, logistics costs account for about 18% of sales, a significant problem since these costs eat into store profitability. At the same time, consumer demand for digital retailing is increasing. Given these issues and preferences, store owners must improve last-mile logistics and develop omnichannel supply chains.

To reconcile these various objectives, the retail sector in Latin America must develop better information systems and address knowledge gaps through training and education, suggested Becerra. The industry must improve supply chain resiliency, adopt new technology, and respond to consumer demand for sustainable business



A Coca-Cola delivery at a nanostore in Monterrey, Mexico

practices by plotting a pathway to decarbonization. Becerra noted that transportation is responsible for some 46% of the region's carbon emissions. Much of this emitted carbon comes from subutilized trucks transporting goods to nanostores. Key to achieving improvement goals is cross-industry collaboration, he said.

Cesar Rios, Supply Chain and Logistics Director at Tiendas Ara from Jerónimo Martins, explained his company's evolution as a long-established retailer in the region.

Founded in 1792, the family business operates today in Portugal, Poland, and Colombia, with over 5,000 stores. In Colombia, it operates under the Tiendas ARA brand with over 1,300 stores, 14 distribution centers, and more than 15,000 employees. The retailer plans to open five distribution centers in Colombia in 2025.

The company's evolution over the next few years is based on three strategic pillars, Rios explained.

Using lean logistics to keep costs low is one pillar, and it recently started a pilot project to use AI to predict demand. Sustainability is the second pillar, and the company supports various projects in this area. For example, it aims to replace cardboard containers with reusable packaging for 40% to 50% of its meat, bread, and milk products. The third pillar, collaboration, involves an extensive project with suppliers to improve transportation efficiency and reduce costs while delivering products to its hundreds of stores nationally.

As regards challenges, these include high rates of inflation in Latin America, which is driving increased competition from hard discounters in the retail business. The company is also grappling with escalating fuel prices, high unemployment, and poor infrastructure in Colombia.

Rios agreed that collaboration is critically important to future growth in the industry. For example, a project with suppliers to reorganize order management processes yields efficiencies and lower

transportation emissions. Technology is another vital element of its development strategy. The retailer uses a new telemetric system to track truck and forklift operations and improve performance. These systems capture idle time, rpm, abrupt braking instances, vehicle acceleration, and other data that allow monitoring of fuel consumption, driving behavior, and other workforce behavior patterns.

An enriching Q&A session

The dramatic growth of convenience stores and hard discounters was discussed during the webinar's Q&A session. Mejía said that this growth will not substantially affect the future of nanostores, considering their role at the neighborhood level, their resilience, and low barriers to market entry. He added that nanostores will continue to exist due to high urbanization rates, low and medium income levels, and their connection to the community.

Wu and Zhao mentioned interesting integrations between farmers and retailers with apps like PinDuoDuo. The concept of nanostores was new to them, but many small retailers in China are as fragmented as the nanostores.

Regarding taxes, Mejía mentioned that shopkeepers are hesitant to become formal businesses due to rising taxes and do not like to attract attention. Still, he emphasized interesting proposals to pay taxes more fairly. For example, in China shopkeepers pay taxes based on the number of square meters occupied by their stores, increasing the likelihood that these businesses will become formal.

Rios highlighted that while packaging is important to move cargo efficiently, excessive packaging creates complexity, pollution, and less lean operations. Mejía highlighted that customizing packaging design and size is essential to optimize distribution channels. Some products may require cardboard, while others can be transported in plastic bins, trays, etc. There is no one-size-fits-all approach, and there is a need for a deeper understanding of the diverse logistics costs involved.

Becerra discussed a collaborative transportation project that CLI is developing with Tiendas Ara. He mentioned that they support the company in transporting products with a few other companies to reduce emissions and costs. Becerra emphasized that a similar strategy may be pursued among CPG

manufacturers to serve nanostores. Mejía added that these companies are continuously pushing B2B models to serve nanostores in India, and other retailers such as JIO and Flipkart have found profitable businesses to replenish them.

Mejía explained that nanostores are becoming more critical to e-commerce companies, which use them as drop-off points and to achieve market penetration given their higher convenience, curated assortment, high customer service, and familiarity among households. The latter develops trust and loyalty among consumers who usually shop at these stores. However, the affordability and accessibility of edible products remain significant issues. Problems that need to be addressed include the large number of intermediaries in nanostore markets, shopkeepers' reluctance to sell relatively risky, perishable products, and a lack of buyer awareness of these products.

Wrapping up the webinar, Mejía said that nanostores are a force to reckon with. Advances in strategy, technology, and supply chain management drive the evolution of these family-owned businesses. Wu advised small retailers to focus on their communities and leveraging technology as they pursue growth. Lihan said his company's growth from nanostore to large retailer over the last decade underscores how retailing is evolving rapidly. He cautioned that growth brings risks and more product complexity. Addressing these issues requires retailers to adjust their business models and strategies to meet their specific operational needs. Becerra and Rios reiterated the critical importance of collaboration, which can benefit retailers in improved service levels and profitability.

