

DHL White Paper

THE ENVIRONMENTAL SUSTAINABILITY OF E-COMMERCE

WILL LATIN AMERICA JOIN THE REVOLUTION?

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THE E-COMMERCE REVOLUTION TAKES CENTER STAGE

The coronavirus pandemic has changed life in many ways. One was to supercharge e-commerce.

2020 will be remembered as the year of the coronavirus pandemic, and in many parts of the world, the negative effects will be felt long after vaccinations bring COVID-19 under control. But amid the health and economic crises that have battered the globe there have been a few silver linings that we need to hold onto and use to move forward. One of the more striking changes was the dramatic increase in e-commerce, as people and businesses shifted massively from in-person to on-line purchases. Before the pandemic, demand for last-mile delivery was expected to grow by 78% by 2030.¹ By some accounts, the pandemic accelerated the move to e-commerce² by that much in the space of just twelve months.

ENowhere was this change more noticeable than in Latin America. As in the rest of the world, e-commerce was well under way, but at reduced volumes compared to many other regions. Although statistics continue to be partial, the region consistently underperforms in terms of the penetration of e-commerce relative to its population: The UN Conference on Trade and Development (UNCTAD) estimated in 2020 that 21% of Latin American and Caribbean residents shopped on-line the previous year, with rates ranging from less than 2% (Honduras) to 46% (Uruguay).³

Moreover, e-commerce in the region has been concentrated in a few countries: the top five markets – Brazil, Mexico, Argentina, Chile, and Colombia – accounted for 92% of on-line shoppers and 97% of total B2C e-commerce sales in 2019, even though they represent 72% of the region's population.⁴ Despite double-digit growth in some of these markets, e-commerce was growing at a much slower pace than elsewhere⁵ for reasons of infrastructure (physical and financial), access, habit, and consumer preference. In 2019, B2C e-commerce still accounted for less than 2% of GDP in the top five markets, compared to 5% globally.⁶

The early months of the pandemic, however, saw the same dramatic change in Latin America as elsewhere as first-time on-line shopping increased dramatically;⁷ e-commerce giant Mercado Libre, for one, saw demand skyrocket, reporting increases of 40% to 125% in its major markets and over 5 million new or recovered buyers in the first few months of 2020 alone and a 100% increase in transaction volume over the full year.^{8, 9, 10} Although no country in the region was prepared for the pandemic growth in e-commerce, and volumes will almost certainly drop again as conditions allow for safe in-person shopping, there is no reason to believe they will return to pre-pandemic levels.

As the pandemic super-charged e-commerce, it also seemed to put another major trend – environmental sustainability – on a second tier. While the reduction in passenger air travel across the world had a positive (albeit temporary) impact on global emissions in 2020, the question of investments in the environment, in both the public and private sectors was replaced by more immediate priorities related to the COVID-19 response. Much of Latin America is still battling the immediate effects of the pandemic. But with a new administration on its northern borders putting climate change at the center of its policy agenda, there is renewed impetus behind the issue and the 2015 Paris Climate Agreement. Seven Latin American heads of state attended U.S. President Biden's Leaders Summit on Climate in April 2021, with Brazil's President Bolsonaro, for example, announcing his country's commitment to achieve carbon neutrality by 2050.

This underscores the importance, as we contemplate a future where e-commerce is a dominant force in both consumer and business purchasing, of ensuring that e-commerce will be environmentally sustainable. As e-commerce increases, so too will the need to address its environmental impacts, particularly as consumers become more concerned about the effect their purchasing and lifestyle habits are having on the environment both locally and globally.

With a growing number of packages being delivered to their doors, consumers have become increasingly aware that, while the electronic nature of their purchases has streamlined many aspects of their purchases, it has not changed the fundamental nature of commerce. While some products (books and compact discs, for example) are being replaced by on-line versions, in most instances, physical goods still must be manufactured and moved from one place to another, with the need for packaging, transportation and delivery that such movement entails.



Latin America is in many respects at an earlier stage of the journey than other regions of the world in both e-commerce and sustainability. Even as the region, with some of the most populous cities in the world, is positioned to spur further dynamic growth in e-commerce, it is also home to the “lungs of the world,” the Amazon rainforest, and to the richest biodiversity in the planet. For this reason, the growth of e-commerce and environmental sustainability are going to be heavily intertwined. And the region has a unique opportunity to write its own script in both areas.

THE SUSTAINABILITY QUESTION



How does e-commerce impact the environment?

One of the narratives to come out of the e-commerce revolution is that e-commerce is somehow inherently less environmentally friendly. As people everywhere watched multiple delivery vans pass by every hour, leaving boxes often over-stuffed with packing materials, the pandemic on-line purchasing trend seemed to reinforce these perceptions. If studies have shown that cargo vehicles contribute to pollution in outsized proportions¹¹, then it seemed to follow that more packages and more deliveries would create more pollution. Exacerbating these apparent problems are longstanding concerns about failed deliveries, increased returns, “free” shipping that encourages multiple orders, and high-volume periods such as holidays and special sales, all of which may generate even higher needs for transportation and packaging.¹² Add to this consumer skepticism that businesses are engaging in anything more than what one expert has called “sustainability theater” or “greenwashing” – visible but relatively low-impact activities designed to placate activists and the media¹³ – and the stage is set for growing concern over what e-commerce means for our planet.

In Latin America, environmental awareness and concern and enforcement of environmental standards and safeguards are lower than in other regions of the world. But specific examples also suggest that e-commerce might be a particular problem. No country in the region makes the top 25% in the World Bank's survey of logistics performance¹⁴, suggesting that inefficiencies in the transport of goods are substantial. And in the region's densest cities, such as São Paulo and Lima, traffic congestion may cost as much as 10% of GDP, much higher than in other regions.¹⁵ E-commerce, if not managed well, could exacerbate this problem.

Moreover, the problems associated with e-commerce in Latin America could be even greater. Urbanization rates of 80% on average mean that the region faces all the challenges of more developed economies along with its own peculiar challenges as businesses seek to solve logistics problems in a way that will make e-commerce more sustainable. Megacities with poor urban planning and transportation infrastructure; dense urban centers; high rates of informality in transportation and retail distribution; lack of effective regulations and enforcement; and high rates of insecurity and theft are all issues that make efficient and sustainable e-commerce more difficult.¹⁶

Despite these concerns, it is not clear that e-commerce carries a net-negative effect for environmental sustainability.

The United Nations working group on sustainable transport has noted that, "E-commerce solutions...can reduce the number of individual trips, thereby reducing overall congestion and emissions while improving road safety."

The report cites U.S. Government data showing that from 2007 to 2013, e-commerce in the United States doubled with no net increase on urban truck traffic.¹⁷ Jeff Bezos, founder of U.S. e-commerce giant Amazon wrote in his 2020 letter to shareholders that one delivery van can take approximately 100 roundtrip car journeys off the road on average.¹⁸ And a recent study by the MIT Real Estate Innovation Lab found that online shopping generates 36% fewer emissions vs. in-store shopping, even after factoring in higher returns and packaging, with the bulk of those emissions savings coming from transportation.¹⁹ Still, with the easing of the pandemic and a renewed focus on climate change and sustainability, the pressure to demonstrate that e-commerce can be carried out in environmentally sustainable ways is likely to grow.



For an activity to be environmentally sustainable it must be carried out so as not to deplete natural resources and in a way that supports long-term ecological balance. For any business, sustainability also involves economic viability and profitability. The sweet spot between these two types of sustainability, and one which businesses are increasingly identifying, is where sustainability and efficiency gains go hand in hand.

- Traffic congestion may cost as much as 10% of GDP.
- Latin America has urbanization rates of 80% on average.
- Online shopping generates 36% fewer emissions vs. in-store shopping.

THE REVOLUTION BEHIND THE E-COMMERCE REVOLUTION

While you've been shopping on your smart phone, a quiet revolution has been taking place...in logistics.



Success in e-commerce is attributed, correctly, to digital entrepreneurs who have identified and fulfilled a need that consumers and businesses have for products delivered to them where they are, for greater choice in vendors, and for greater flexibility in when and how to make purchases.

These innovations proved to be a lifeline during the coronavirus pandemic. But the success of e-commerce is equally dependent on the supply chain infrastructure necessary to fulfill thousands of orders and to do so quickly. In this sense, e-commerce is benefitting from and driving a much broader revolution in logistics, one that can improve environmental sustainability as it drives efficiency.

Just as with the e-commerce revolution, new technologies, including digital technologies such as big data, predictive analytics, artificial intelligence and robotics, are driving a revolution in the efficiency and sustainability of the logistics behind e-commerce.

These are part of a broader digitalization going on in global and domestic trade that will also impact e-commerce. Trade-facilitating developments such as digital signatures and documentation, digital payments and digital platforms are being enhanced by the Internet of things, digital services and 5G technology. Many of these will have positive impacts on sustainability as they improve efficiency of logistical operations.²⁰ Beyond these broad trends, specific elements of logistics central to e-commerce are undergoing enormous changes.

DELIVERY AND LAST-MILE SOLUTIONS

An increase in the need for deliveries is one of the most obvious effects of the dramatic increase in e-commerce across the globe.

Delivery is undergoing something of a revolution. As companies experiment with ways to make the delivery process more efficient both in terms of time and cost, with important implications for environmental sustainability, myriad last-mile solutions are being tested or in development. These include human- and electric-powered bicycles, droids, combinations of drones and trucks, and load-pooling.²¹

DHL offers an example of how companies are working through the challenges. As part of its accelerated roadmap to decarbonization²², the company is testing out replacement of conventional delivery vans with cleaner options, including plug-in hybrids for short trips, fuel cell vehicles and vehicles powered by sustainable liquid fuels such as biodiesel. In Latin America, DHL already has over 200 hybrid and electric vehicles in service,²³ and the company has more than 15,000 self-developed, electrified “StreetScooter” vans already in service worldwide.²⁴ In Mexico, DHL is growing its fleet of electric bicycles, each of which can save up to 8 tons of CO2 per year over conventional delivery vans. In combination with the 20 electric vehicles that the company has already deployed, this will allow it to establish a more sustainable delivery platform for customers in one

of the fastest-growing e-commerce markets in the region, as well as to respond to proactive measures taken by the government authorities. In a highly ambitious and progressive move, Mexico City was one of four capital cities (with Athens, Madrid and Paris) to commit in 2016 to a complete ban on diesel vehicles by 2025. In Brazil’s biggest cities the company is delivering more on foot and using human-powered bikes, which are not only more sustainable but allow the company to avoid severe traffic congestion. DHL also uses a fleet of 25 electric delivery vehicles in greater São Paulo and greater Rio de Janeiro.²⁵

Each solution brings with it new challenges. Along with the more limited capacity that comes with some of these solutions – a van might hold 150-180 packages, whereas a cargo bike might hold only 20 and is more limited in speed and range – security looms large as an issue that needs to be addressed when replacing more secure vans within the Latin American region.



Resolving such problems might require a combination of methods – for example, an electric or hybrid van, redesigned to hold more packages, might have both a driver and a rider who can deliver on foot or by bike, helping minimize the effects of traffic congestion, while ensuring security and sufficient capacity. While no delivery method will be appropriate for every city or every customer, the enormous range of alternatives to traditional vans being tested will help companies meet the goal of making the delivery process run more smoothly and with less impact on urban environments.

Efficiency also has a role to play. As purchasing has moved on-line, more retailers and e-commerce providers are smoothing the delivery process by creating apps that help consumers track packages and offer options such as on-demand delivery, waiting for delivery, or pick-up at a nearby secure locker or multi-brand parcel shop. These reduce the environmental impact of e-commerce by lowering the number of failed deliveries and repeat attempts, while also lessening the congestion caused by lack of parking options for delivery vehicles. Especially in places where a signature is required for delivery, on-demand deliveries can reduce failed delivery attempts by half. Similarly, selling products on continuity programs that automatically ship products on planned schedules can reduce delivery costs by providing consolidation opportunities and allow for easy return of used containers as well as use of recyclable packaging for replenished items.

Beyond customer-facing apps, technology is offering additional solutions that are helping make delivery more efficient and therefore more environmentally sustainable. The United Nations reports that, through digital solutions and on a global basis, delivery companies are “using real time shipment status information and a portal for recipients to manage the day, time window, and location for delivery to reduce likelihood for missed deliveries²⁶.” DHL is among those companies that have created and implemented an algorithmic solution to provide almost total visibility on where any given package is in the delivery process, to minimize stops per mile by allowing for better distribution of packages among couriers, and to

perform dynamic routing and re-routing. These algorithms can calculate the most efficient routes based on packages to be delivered or retrieved and constraints such as traffic flows and delivery windows.²⁷

In Latin America, as with much of the developing world, geocodes used to determine delivery are at present less reliable, meaning that companies are having to build their own delivery maps through datamining of their delivery histories. Because of these and other difficulties, more basic solutions to avoiding congestion and delays are often better for Latin cities. These include nighttime delivery – a solution DHL is using in Mexico City – and, with appropriate support from municipalities, such infrastructure adjustments as delivery parking zones, real-time traffic lights, and express lanes.²⁸



PACKAGING

Another of the most noticeable by-products of the sudden increase in e-commerce has been boxes and the packaging that comes with them. This proliferation of packaging has been compounded by the increased number of returns. E-commerce retailers and their delivery partners are well aware of both the optics and the real environmental impact of e-commerce sales as a result of packaging. Even before the pandemic, businesses were increasingly focused on reducing use of plastic packaging, using recyclable and renewable packaging products made from materials like sustainably sourced paper, cornstarch, cane and seaweed, and reducing the amount of packaging required.

Latin America's online retail giant Mercado Libre, for example, uses only packaging that is recyclable, reusable or compostable.

Many companies now work both internally and with their clients to re-design packaging in ways that reduce the need for re-packaging and that allow for more orders to fit into delivery trucks. 3M, for example, has developed a sustainability roadmap that designs packaging that is protective, efficient and circular, so that it optimally protects each product from point of manufacture to point of use; uses the minimum amount of materials necessary; and is designed to be reusable, recyclable, or made with renewable resources.²⁹ DHL, likewise, has worked with customers to redesign packaging, resulting not only in less packaging material, but also in less need for repackaging and in more efficient transport, resulting in a need for 10-12% fewer trucks. Mercado Libre achieved a 40% reduction in transported air in 2020 in a pilot program in Argentina simply by transporting products in their original packaging. This type of approach hits the “sweet spot” of reducing emissions and waste, while also providing cost benefits.



Before the pandemic, companies such as DHL, 3M and Mercado Libre, were already working on packaging options and efficient packaging with the environment.

CIRCULAR ECONOMY AND REVERSE LOGISTICS

Another element of the e-commerce revolution that has received a lot of attention in the pandemic is returns. The fact that many more products are being returned, and that returned products cannot be easily repackaged and resold, has generated concerns about waste that are causing a greater focus on so-called “reverse logistics,” circular economy, and end-of-life management.

Once again, e-commerce is benefitting from general trends as more manufacturers are finding ways to turn their by-products and waste products into new products through down-cycling or partnerships with other companies.

More companies are designing multi-use, concentrated products or are bundling products, which reduces the number of items customers need to purchase, the amount of packaging, and the number of deliveries made. Technology is also allowing for new ways of selling, sharing, renting and re-using products. Subscription services are one example of a new system that allows for products to be easily returned and recycled.³⁰ And there is greater recognition that the public and private sectors need to work together to manage waste ecosystems to encourage recycling, make these ecosystems sustainable, and allow for conversion of post-consumer materials into new products.³¹

The growing volume of e-commerce deliveries is creating new opportunities for reverse logistics, as returns, used goods and end-of-life products can be more easily collected.³² The returns process is fast becoming one of the key strategic and operational trends for logistics in the region, with more and more customers taking advantage of services such as reverse logistics, sharing, recovery, re-packaging, reshipment and resale offered by a growing number of logistics companies. And with the growing returns come additional efficiencies in routing delivery vehicles. The same applies to packaging, as companies can either take back materials or provide reusable packaging, such as totes and refrigerated coolers.³³ E-commerce vendors are also implementing new policies that aim to cut down on returns.

For example, by ensuring that product description and sizing information is clear, customers can be more certain of what they are getting, and changing return policies can discourage wasteful practices such as buying multiple sizes of an item at the same

time. In Latin America, where many e-commerce retailers are serving their customers cross-border from regional distribution centers, the complexity of recovering taxes and duties for returns also creates an additional incentive to manage this issue effectively.

With circular economy efforts still in their infancy in Latin America, government policy will play an important role. In its 2020 report on the circular economy in Latin America and the Caribbean³⁴, Chatham House indicated that countries in the region are putting into place or planning new policies, public initiatives and roadmaps related to the circular economy. The report stressed that the success of circular economy initiatives will depend to a great extent on the adoption of policies to promote investment in the “Industry 4.0” revolution, making full use of digital technologies. In February 2021, Latin American and Caribbean countries created the Regional Coalition for the Circular Economy with eight strategic partners: the Climate Technology Center and Network (CTCN), the Ellen MacArthur Foundation, the Inter-American Development Bank (IDB), the Konrad Adenauer Foundation (KAS), the Platform to Accelerate the Circular Economy (PACE), the United Nations Industrial Development Organization (UNIDO), the World Economic Forum (WEF) and the United Nations Environmental Program (UNEP).³⁵ This partnership aims at spurring circular economy policies and initiatives while sharing best practices.



FREIGHT TRANSPORT

Many aspects of the e-commerce revolution are hidden from most customers and these, too, are undergoing significant changes that promise greater efficiency and sustainability.

Freight transport over the first and middle mile is an important component of e-commerce, and in Latin America, as in much of the world, this means trucks and aviation. Trucking has faced a number of historic challenges in becoming greener.

While the tide appears to be turning with regard to electric vehicle production of smaller commercial vehicles, battery technology is still holding back the mass deployment of heavy-duty electric trucks for long-haul operations.

There has also been an issue with efficiency, as the largely manual and relationship-based system of placing orders, as well as cabotage rules between markets, have meant that many trucks are empty when returning from deliveries. Brazilian digital freight platform CargoX estimates, for example, that trucks run empty in the country 40% of the time.

Other changes now being implemented in trucking promise to reduce the industry's impact on the environment. A broad move to digital technologies is allowing companies to manage traditional transport more efficiently.

Sensors that allow tracking of freight via apps, along intelligent network and route planning software, are changing the way that shipments are managed. In Latin America, trucking costs are relatively high, shipments are often slow because of poor infrastructure and congestion, and there are enormous inefficiencies.

As a result, there is enormous scope for efficiency gains and the region is seeing significant changes as a result of technology. Route-optimization apps are now used by tens of thousands of truckers in Brazil, Argentina, and Paraguay, for example, and digital platforms are helping connect trucks and cargo so that smaller fleets spend more time hauling and less time empty. The traditional trade routes shaped by industrial demand and retail distribution are now being subverted by the more direct, on-demand supply chains. This can create additional challenges – particularly in serving remote locations with lower volumes efficiently. But it is also creating new opportunities to match orders to capacity on backhaul routes.

The move to electric vehicles for long-haul trucking still faces significant technological barriers. For example, electric semis require a higher amperage than smaller vehicles, meaning that standard electric charging infrastructure won't work for them.

And the gap in cost for electric vehicles, along with delays in fleet production of electric vehicles by major vehicle manufacturers, remain disincentives to moving to electric fleets. Nonetheless, companies continue to experiment with alternatives to traditional fuels, including through hybrid solutions and by installing their own re-charging infrastructure.

Additionally, given the advanced age of many transportation fleets in Latin America, there are significant short-term gains to be made simply by replacing mature trucks with more modern vehicles that produce fewer emissions.

Much e-commerce freight moves by airplane as well as truck. Although fuel use and CO₂ emissions have dropped by 50% globally since 1990 through advances in efficiency,³⁶ air transport still makes up a substantial portion of emissions related to e-commerce – for some global companies as much as 80% of total CO₂ emissions – meaning that it is critical to load planes efficiently and take other measures to reduce fuel consumption. Again, new technologies are allowing companies to better distribute loads and achieve better aerodynamics. As an example of more ambitious measures that companies are looking to take in this area over the long-term, DHL has recently announced a commitment to have 30% of its long-haul transport – including aviation – operated with sustainable fuels by 2030.



WAREHOUSING

Warehousing is another element in the e-commerce logistics system undergoing radical changes.

As e-commerce has gained ground, with people moving from trips to brick-and-mortar retailers to on-line purchase with an expectation of next-day delivery, traditional methods of restocking and warehousing are having to be rethought.

In many cities, and particularly in Latin America's largest cities, delivery costs are high, and long delivery times as a result of congestion may also lead to waste when perishable items are thrown away without being delivered to an end user, creating an incentive for retailers to position their inventory, where possible, closer to the end customer. This is increasingly becoming an imperative for retailers that are generating sufficient demand to establish domestic fulfilment networks in their target markets, and particularly in larger Latin American cities that experience high levels of congestion. In many cases, warehouses are being re-thought as micro-hubs or micro-fulfillment centers that are under 600 square meters as opposed to the traditional large warehouses that might measure 10,000 square meters.³⁷ While this approach creates the risk of inefficiencies – both in terms of generating more aggregate energy consumption across multiple sites and in carrying higher overall inventory levels than may be needed, companies are finding creative ways of minimizing any potential impact.

Software is helping improve inventory management, ensuring that the right product in the right amounts is at the right place for delivery to customers. Companies that specialize in fulfillment are allowing smaller vendors to enjoy greater flexibility and achieve more rapid delivery through warehousing facilities closer to end-points, which also makes e-commerce more sustainable as it cuts down on the distance that delivery vans must travel.³⁸

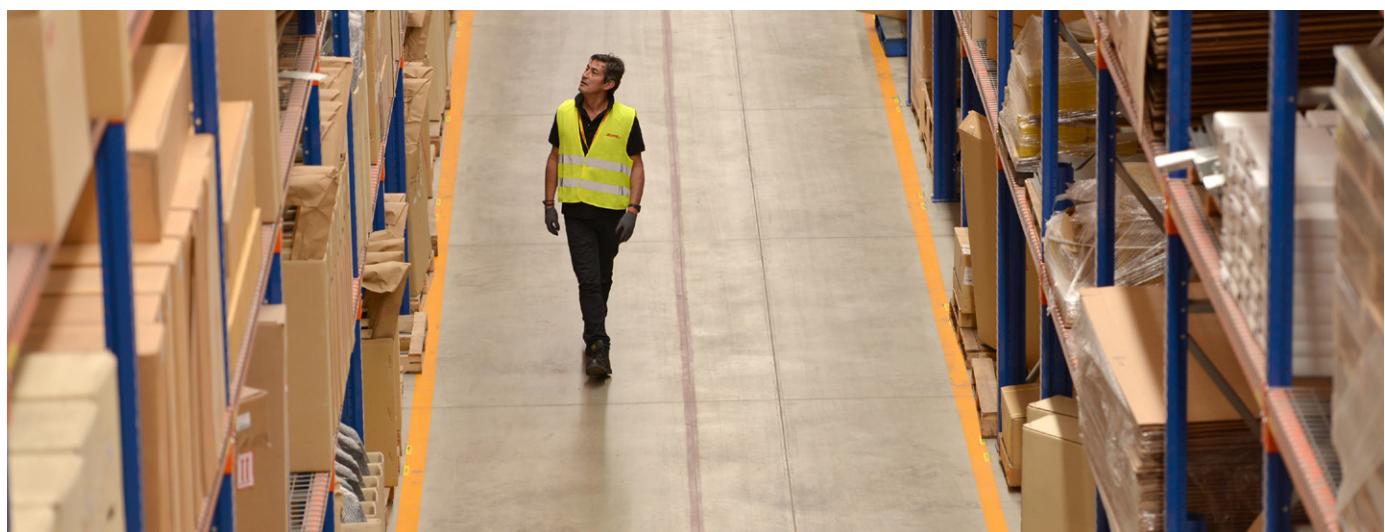
Cross-docking, in which materials from an incoming truck or railroad car are loaded directly into outbound trucks with little or no storage in between, is being used to reduce the need for warehousing and speed delivery. Retailers are either reducing their retail infrastructure or using it (more optimally) to also support fulfilment and distribution activities for their online sales.

Brazilian retailer Magazine Luiza, for example, uses its network of more than 1,000 stores to support e-commerce distribution and to provide pick-up points for online orders. Increased automation within warehouses – while being implemented at a slower rate than in developed markets with higher labor costs – is contributing to better efficiency as higher volumes can be processed without increasing infrastructure.

Warehouses themselves are going greener, with energy saving designs that include features such as solar panels, in some cases earning Leadership in Energy and Environmental Design (LEED) certification.³⁹ LEED warehouse and distribution facilities, for example, help increase operational efficiency and lower energy costs. Such LEED buildings average 45% energy savings over a five-year period compared to market base.⁴⁰ A DHL Supply Chain warehouse in Brazil was awarded a LEED Platinum certification, meeting the highest level of green building criteria, in 2020.

SUPPLY CHAINS

Finally, supply chains are another hidden key to reducing the impact of e-commerce because most carbon emissions for most companies come through their broader supply chains. A 2016 report from the Inter-American Development Bank found that roughly three quarters of the environmental impact of broad-line retailers was already generated by their value chain. Clothing company Patagonia has more recently found that, taking into consideration suppliers, manufacturing, and shipping, 97% of company emissions are from its supply chain.⁴¹ Concern to look past a company's own emissions and practices to those along its entire supply chain has led to the development of green supply-chain management systems at many companies that encompass every level of the supply chain and include the full range of strategies from ethical sourcing and closed-loop manufacturing to energy efficiency and reduction of fuel emissions to waste disposal practices and recycling.⁴² Companies such as CMPC, a multilateral manufacturer of paper products, are helping ensure greener supply chains through sustainable forestry practices, conservation, energy efficiency, and responsible waste management, along with recycled and recyclable packaging materials.⁴³



WHO WILL DRIVE E-COMMERCE SUSTAINABILITY IN LATIN AMERICA?

The truth is, everyone has a role to play.



MIT reports in its “State of Supply Chains 2020”⁴⁴ that only about half of businesses responding to its survey, including many in Latin America, reported feeling pressure to improve supply chain sustainability, and that this pressure was often both minimal and diffuse. And yet, the report notes, “For those looking to drive more corporate commitment to supply sustainability, pressure is the key.”⁴⁵ Pressure from stakeholders is mounting, based on concerns about climate change and pollution, leading a growing number of companies to focus on reducing carbon emissions, using less energy, and better managing waste. Which of these stakeholders will drive a move toward greater sustainability for e-commerce in Latin America?



CONSUMERS

Consumers are by all accounts the key to encouraging sustainability. Although surveys consistently show that a majority of consumers say they are willing to change their consumption habits to help the environment, consumers in Latin America have rarely thought much about the way that their deliveries happen.⁴⁶

As consumers, we must recognize that even when we say we care, there is a real “say-do” gap when it comes to targeting our purchases to line up with our stated environmental goals.⁴⁷ Even among those who say that the environment is a priority, a majority admit that they don’t currently live up to their own expectations. Truly “green” shopping requires quite a bit of effort to identify vendors, materials, and methods that are sustainable. And in the end, only a small number of consumers anywhere – generally less than 10% -- are willing to pay for sustainability.⁴⁸

This may be changing. Companies both globally and in Latin America have noted that younger generations are more likely to act on their concerns about the environment, which is leading many businesses to make a bigger effort to take actions to enhance their environmental sustainability credentials and to brand themselves as sustainable. Millennials (born from 1981 to 1996) are more than twice as likely as Baby Boomers (1946–1964) to say they are actively changing their habits, and so-called “Gen Z” (born after 1996) are expressing not only greater concern about the environment, but also even greater willingness to act on it.^{49, 50}

Moreover, the pandemic appears to be changing consumer attitudes as most of us deal with many boxes and a large amount of packaging that e-commerce purchases have brought to our doorsteps, making us more aware of and concerned about the waste our purchasing habits seem to generate. Even before the pandemic, the 2018 E-Pack Summit estimated that there were over 60 million videos on unboxing in social media channels, and while many were simply people opening packages, others contained complaints about unsuitable packaging, putting pressure on companies for change.⁵¹ In Latin America, Mercado Libre found that searches for sustainable products doubled in the first six months of the pandemic.⁵²

COMPANIES

At its most fundamental level, sustainability for a business means staying in business. But there is growing agreement among business leaders that responsible corporate citizenship requires more. And multinationals are likely to play a leading role in shaping change across all regions.

The Business Roundtable “Statement on the Purpose of a Corporation,” signed by CEOs of over 180 multinationals, recognizes that corporations need to work for a wide spectrum of stakeholders beyond shareholders, and that a healthy environment must be one of the goals of a market economy.⁵³ Greater focus on the environmental impacts of business, including work on circular supply chains and other similar efforts, are being driven at many companies by employees and mission-driven leaders, as well as customer demands and regulations.⁵⁴

In fact, multinational companies are actively driving more sustainable business practices, including in e-commerce. A 2018 study found that nearly three-quarters of large companies, and more than 90% of the 250 largest companies in the world, report on sustainability, an enormous increase from a generation earlier when just over 10% of companies reported on sustainability.⁵⁵

DHL offers one example of how global companies are implementing sustainability programs across their operations in a way that will have a direct impact on Latin America. With the goal of reaching zero emissions from logistics activities by 2050, DHL’s “GoGreen” program seeks to implement an ambitious set of changes by 2030.

Among the company’s objectives with a 7 billion euro investment in green solutions, DHL plans to deploy 80,000 e-vehicles for last-mile deliveries world-wide, resulting in 60% electrification of the fleet by 2030.⁵⁶

DHL is also working to reduce aircraft emissions from its fleet and working with groups like the Aviation Initiative for Renewable Energy in Germany and sustainable aviation fuel producers like Neste to improve the viability of alternative aviation fuels and to incorporate more SAFs into its international aviation operations.⁵⁷ And it is putting into place global minimum standards for heavy transport vehicles, while also looking into use of biofuels for long-haul road transportation.⁵⁸

Beyond targets for its own operations, DHL offers sustainable solutions to its customers in Latin America and is finding both interest and increased demand for these solutions. More large domestic companies and multilatinas are including sustainability metrics for their operations, including those involved in e-commerce. Multilatina Mercado Libre is also, for example, moving toward renewable energy use and a zero-emission fleet for its distribution network. And as examples at the national level, Brazilian e-commerce company B2W has created Companhia Verde to advance its green credentials⁵⁹, while Magazine Luiza (Magalu), a traditional Brazilian retailer that is also moving actively to digitalize its business, is reporting annually on its environmental efforts.⁶⁰ This greater transparency on environmental performance represents an important step in addressing the challenge.

More generally, these and other companies are also banding together to advance sustainability. The Program for Green Logistics Brazil (PLVB, by its Portuguese acronym), created in 2016, is an example of a cooperative effort that has brought together logistics companies to create a “Reference Guide on Sustainability,” “Application Handbook,” and “Excellence Guide on Sustainability” for freight transport to promote “green freight” and energy efficiency.⁶¹

Small companies have traditionally been more concerned with reaching consumers than with sustainability issues. But just as younger consumers are raising the stakes, a new generation of small companies built and branded on environmental sustainability may also be changing the equation for smaller companies. As their products enter the e-commerce supply chain, these companies pay attention to how their products are perceived and seek ways to demonstrate their eco-credentials, leading other companies to do the same.

DHL plans to roll out 80,000 electric vehicles for last-mile deliveries worldwide, resulting in the electrification of 60% of the fleet by 2030.



ESG INVESTORS

In addition to sustainability efforts driven by consumers and by companies themselves, the growing number of publicly traded companies in the region is also driving a focus on sustainability, including for e-commerce, as investors put more weight on environmental and other factors that are not strictly financial. So-called ESG (Environmental, Social, and Governance) investing⁶² has led to a growing trend of including analysis of these factors by investment firms to identify material risks and growth opportunities. Numerous institutions, such as the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), and the Task Force on Climate-related Financial Disclosures (TCFD), as well as many investment managers,⁶³ are working to form standards and define materiality to facilitate incorporation of these factors into the investment process.

According to the CFA Institute, “The coronavirus pandemic, in particular, has intensified discussions about the interconnectedness of sustainability and the financial system.⁶⁴” As more companies in the region and in the global e-commerce value chain go public, pressure to demonstrate eco-credentials to investors as well as customers and consumers will grow. The ability of a major Latin American e-commerce player to raise funds for sustainability efforts was demonstrated in January 2021 when Mercado Libre announced the successful issuance of \$400 million in “Sustainability Notes,” in part to be used to reduce “its environmental footprint through a greater implementation of renewable energies, energy efficiency projects, the acquisition of sustainable packaging materials and the expansion of the scope of zero-emission mobility to promote the vehicular transformation of its logistics network.”⁶⁵





GOVERNMENTS

In North America and Europe, governments at both national and sub-national levels have taken an active interest in promoting sustainable transportation and business, working directly with business to craft policies, develop infrastructure and put in place incentives to promote key elements of sustainable e-commerce such as electric vehicles and alternative delivery methods. In the United States, for example, the Environmental Protection Agency developed its SmartWay initiative to help companies select sustainable carriers, track emissions and use fuel-saving technology as goods are moved.⁶⁶

Governments in Latin America, however, have been slower than in many other regions to recognize the possibilities of e-commerce and promote it, and to the extent that e-commerce has received attention, it has been devoted to how governments can better facilitate it.⁶⁷

Even as they focus more on environmental protection and sustainability, most governments have yet to link their environmental concerns to e-commerce in a way that is visible to the public and businesses.

Yet many of the very same policies that will help facilitate e-commerce will also help ensure it is environmentally sustainable. Regulations such as bans on single-use plastics can make companies and consumers aware of the issue and give incentives to use more sustainable practices.

Considering the needs of e-commerce may lead cities to different decisions about how best to regulate certain technologies, such as drones and electric scooters. And providing tax incentives for the use of electric or alternative fuel vehicles will help promote sustainable delivery methods. As already noted, Mexico City has taken a proactive stance, for example, in declaring that it will be diesel-free by 2025.

Municipalities can play a key role in making e-commerce more sustainable by integrating the issues it raises into urban planning. With the rise of e-commerce, many regulations currently in place need to be reviewed, and with the ability to track more data on traffic flow and volumes, emissions and pollution, and other key items, city administrators can monitor and adjust regulations to ensure they are having the desired effect.⁶⁸

More effective regulations at the municipal level on a host of issues such as circulation and parking for trucks and delivery vehicles, restrictions on vehicle traffic, nighttime or off-hour delivery, pedestrian-only districts (which often include end-points for e-commerce delivery), and placement and use of bike lanes are important to making sure that e-commerce can be conducted without generating extra pollution, congestion, and waste.

Longer term, urban planners need to consider how to incorporate changes that will facilitate e-commerce, such as charging stations for electric vehicles and allowing for hubs, warehouses, secure lockers and other logistical platforms in areas not traditionally zoned for them.

In Latin America, this will often mean moving from a posture of regulating, restricting and taxing to one of collaborating with the private sector to facilitate the necessary regulatory system and infrastructure for e-commerce to be conducted efficiently, safely and sustainably.⁶⁹

In Latin America, the governments of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay and Uruguay issued the “Bogota Declaration on Sustainable Transport Objectives”⁷¹ in 2011, seeking to promote sustainability in all forms of transportation, including freight. And the influence of leaders in environmental stability, principally from OECD countries, will be important to moving Latin American governments to make greater efforts.

Other examples of international efforts include the World Economic Forum’s “Clean Skies for Tomorrow Coalition” to work toward sustainable aviation fuels;⁷² WEF’s “Road Freight Zero” initiative working toward zero-emission fleets;⁷³ and Calstart’s “Drive to Zero” initiative, with partners in Canada and Chile, which seeks to enable and accelerate the growth of global zero- and near-zero-emission commercial vehicles.⁷⁴

More remains to be done. Regional development banks such as the IDB and CAF have focused their efforts on helping promote e-commerce, with scant attention to the environmental implications, while their efforts on environmental sustainability have focused on other industries. With the important role that e-commerce will play in the economies of the future, it will be important for development banks to help equip both governments and businesses to reduce its environmental impact.

MULTILATERAL ORGANIZATIONS AND INTERNATIONAL COOPERATION

Multilateral organizations and international, multi-stakeholder cooperation can play an important role as drivers of sustainability in e-commerce by building regional and global momentum. The United Nations has created a global working group to promote sustainable transport using an “Avoid-Shift-Improve” approach that advocates a range of measures to make transport of both people and goods more efficient and environmentally friendly.⁷⁰



WILL LATIN AMERICA JOIN THE SUSTAINABLE E-COMMERCE REVOLUTION?

Emerging from the pandemic, Latin America has an opportunity to do e-commerce right.

Latin America has the opportunity to move forward in ways that were previously difficult to imagine as more companies take advantage of the supercharged e-commerce ecosystem that the coronavirus pandemic has powered. In some ways, the relatively early stage of maturity that the region finds itself at in both e-commerce and environmental sustainability could be seen as a disadvantage.

In actual fact, it is highly advantageous in offering the region an opportunity to approach development in both areas in an integrated way, as well as to learn from the experiences and best practices that have been seen in other regions. The tools – from technology to software to processes to regulatory frameworks – already exist to make e-commerce in the region not just a major driver of economic growth, but also a sustainable one.

There is no silver bullet in terms of focus areas, and there is no single organization or entity that can effectively drive change on this topic. It will be up to companies, governments, and above all consumers in Latin America to work in sync to ensure that this unique opportunity builds environmental sustainability into the future of e-commerce.



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