LOCUS

The Role of AI-powered Logistics in E-commerce 4.0

This white paper covers:

E-commerce 4.0 is setting in. Are you ready?

The journey of E-commerce from being an online marketplace to becoming an industry worth $3.5 trillion in 2019 has been one of its kind. To begin with, let's look back at how it all started. The beginning of E-commerce dates back to the late 90s when Pizza Hut first offered online ordering on their website. Soon afterward, Amazon made its first online sale, and then, there was no looking back.

Today, E-commerce has entirely revolutionized retail. It has significantly influenced the buying behavior of customers across the globe and pushed retailers to sell online owing to the tremendously rising competition. According to Statista, 21.8% of the World's population buys online, and in 2021, the number is expected to rise to over 2.14 billion.

Logistics is an indispensable part of E-commerce and plays a major role in the way the industry operates. One of the key catalysts for this rapid growth of E-commerce is the use of Artificial Intelligence in logistics.

This white paper will offer you some key insights about how the E-commerce market has transformed over time, the trends that are shaping up the industry, the role of AI-driven logistics in optimizing the E-commerce supply chain, and what E-commerce 4.0 brings with it.

E-commerce 1.0: The beginning of an era
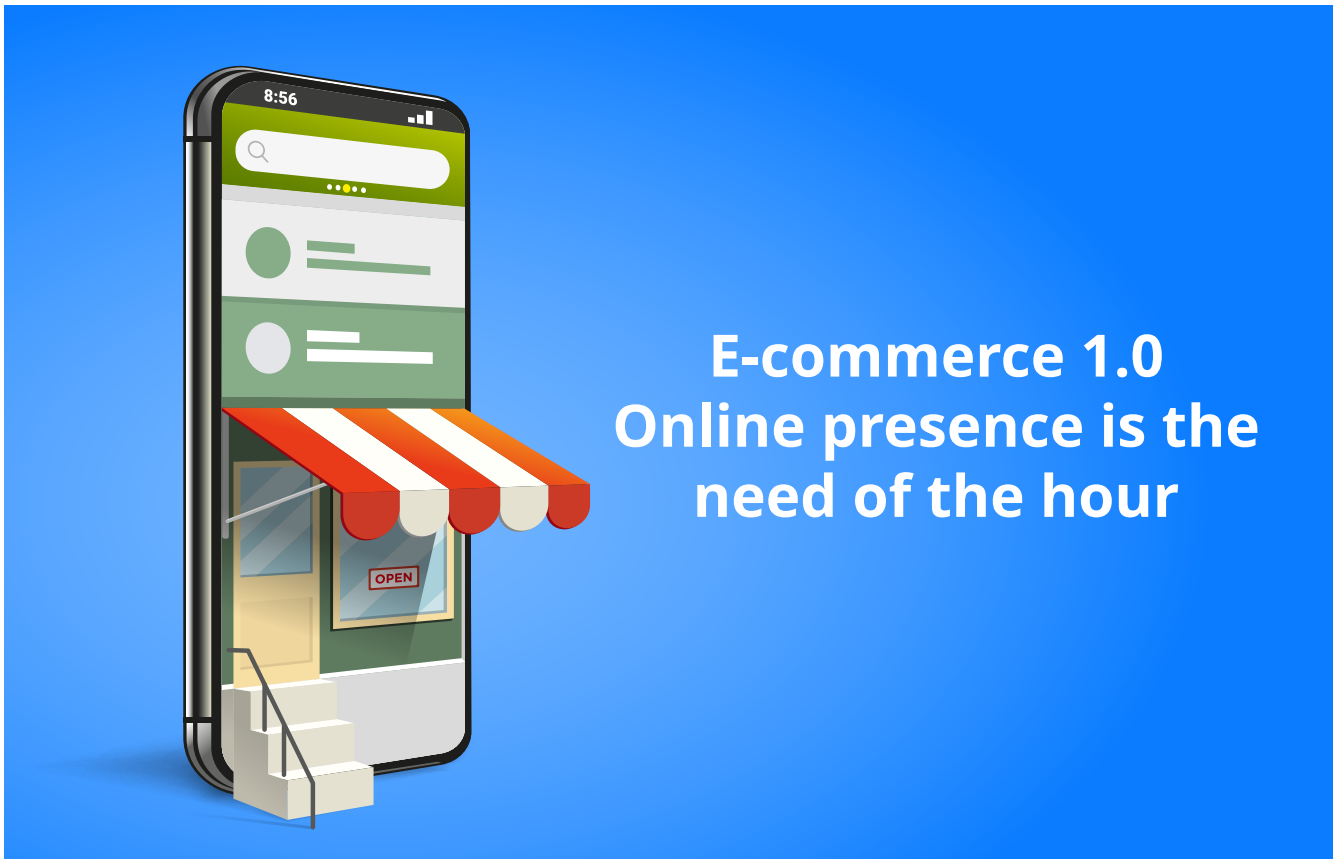
**E-commerce 1.0
Online presence is the
need of the hour**

1995 was an iconic year in the history of E-commerce. Jeff Bezos launched Amazon and Pierre Omidyar launched eBay, two of the world's most influential E-commerce giants. Soon, PayPal launched the first electronic payment system for online transactions in 1998. This led to the establishment of E-commerce as a successful business model.

At first, E-commerce meant execution of commercial transactions electronically. However, with its rising popularity among the masses, people began to define E-commerce as the buying and selling of goods and services over the internet using electronic payment services.

This first generation of E-commerce offered simplistic websites that allowed placing orders and accepting payments online. At this point, online availability was the need of the hour.

"Businesses started realizing that in order to be more profitable, having an online presence was important. To remain competitive and maintain customer loyalty, many companies took their brick-and-mortar stores a step ahead by setting up online web stores.

It was just the beginning of an era. By then, the role of logistics in E-commerce was limited to ensuring products reached warehouses in bulk from where wholesalers could collect and distribute them to retailers," says Arnav Pandey, Director, Solutions at Locus.

However, the larger chunk of customers still preferred offline shopping, mainly because online delivery of goods took several days while visiting a store was more convenient.

**E-commerce 2.0
Convenience over availability**
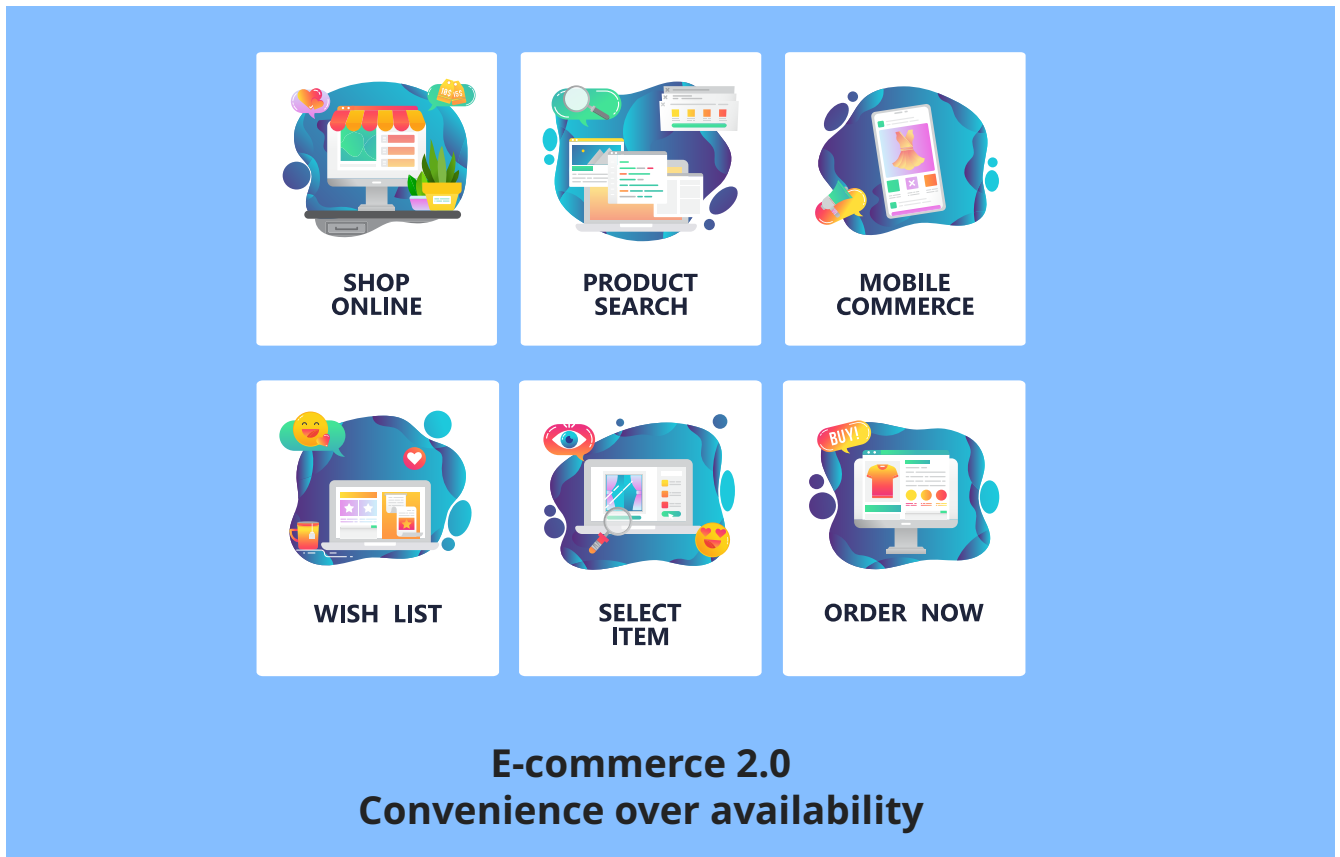
While E-commerce was growing at a steady pace, the customer wanted something more than just the ability to place orders online. Companies started realizing that in order to be more profitable and attract wider markets, their online stores must offer more features resembling a real store; the ability to check out product options, view transaction histories and invoices, easier payment systems and more importantly faster deliveries.

At the same time, the emergence of Cloud servers, online security and database solutions led to the emergence of E-Commerce platforms that allow businesses to launch websites using ready-to-use pages, design options, forms, and product catalog templates. These platforms also offer end-to-end data privacy, integration options with secure payment gateways and more.

"The big out-of-the-box services like Shopify made it incredibly easy for even someone with zero programming experience to build a good E-commerce website with their templates. Fulfillment companies increased in number, and many of them just charged a monthly minimum. This widened the potential of E-Commerce businesses to scale rapidly and offered customers wide-ranging features that they expected from an online 'store'." says Calloway Cook
Founder, Illuminate Labs

Within no time, a large number of online stores sprung up offering all kinds of products and services at competitive prices. From electronics to clothing and accessories, furniture, healthcare products, pet care products, food and beverages, anything and everything could now be sold online. The low prices

and convenience became the driving forces catering to every kind of product in the world. Today, there are between 12-24 million E-commerce stores in the world.

However, efficient and timely deliveries still remained a major challenge for E-commerce players. Companies started partnering with 3PLs for efficient and end-to-end logistics solutions in E-commerce, such as packaging, warehousing, distribution, and fulfillment to the end customer.

It allowed them to offer day-defined deliveries, adding a sense of transparency and certainty in the E-commerce supply chain. [Adopting third-party logistics](#) was also a cost-effective solution for enterprises to improve last-mile efficiencies.

In 2005, Amazon introduced Prime memberships offering free two-day shipping at an annual fee, another major revolution in the world of E-commerce. This pushed enterprises to step up to the rising competition and deliver goods faster than they were doing before. Speed and convenience took over online availability.

E-commerce 3.0: All about customer experience

49% of consumers worldwide use mobile phones for shopping today.

Mobile sales are expected to account for **54%** of total E-commerce sales by 2021.

Nearly **66%** of customers switch brands online because they've experienced poor customer service.

56% of consumers say they would prefer to purchase from online stores that offer a personalized experience.

48% of online shoppers consider guaranteed delivery dates as a value addition factor while checking out from cart.

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**E-commerce 3.0
Trends that are shaping up the E-commerce industry**

This rising demand for speed, convenience, and a complete fulfillment experience pushed E-commerce enterprises to step up and ensure faster loading websites, easy mobile accessibility, personalized offers, quicker deliveries, and more efficient customer support services. Technology like Artificial Intelligence, Machine Learning, IoT, and data science are now streamlining all key areas of E-commerce operations.

49% of consumers worldwide use mobile phones for shopping today. Omni-channel presence is not just good-to-have for retailers anymore, it is a growing necessity to survive the fierce competition and grow in the market.

Mobile sales accounted for 34.5% of total E-commerce sales in 2017 and are expected to account for 54% of total E-commerce sales by 2021.

Nearly 66% of customers switch brands online because they've experienced poor customer service. Enterprises have started using voice and chatbots to resolve consumer grievances and offer end-to-end customer support 24x7.

56% of consumers say they would be more inclined to purchase from online stores that offer a personalized experience. Businesses are using the power of data analytics to offer product recommendations based on purchase histories, preferences and buying behaviors.

Efficient logistics is becoming a major differentiator in terms of customer service and satisfaction. Around 48% of online shoppers consider guaranteed delivery dates as a value addition factor while checking out from cart.

With rapid order intakes and [omnichannel order fulfillment](#) growing as a market trend, companies are leveraging intelligent warehousing, [network optimization](#), smart shipment, and route optimization solutions to ensure timely and consistent deliveries.

Keeping the customer satisfied in an environment of cut-throat competition is not an easy task especially when you have to offer wide-ranging products and online shopping features at competitive prices. However, advancements in technology are helping businesses gain greater efficiencies and cut operation costs significantly.

The E-commerce landscape keeps evolving with time and we can expect to see more revolutionary changes over the next few years.

E-commerce 4.0: The present and future of E-commerce

E-commerce 4.0
A complete buying experience

The future is on the horizon. Over the years, the E-commerce industry has captured the world market and brought about a revolution in the way people buy and sell. According to a Statista report, E-commerce sales accounted for nearly 14.1% of the total retail sales globally in 2019.

Today, we're battling through tough times. The COVID-19 pandemic has taken a toll on daily lives, the global economy as well as the business world altogether. As nations have declared complete lockdowns and social distancing is being embraced across the globe to control the spread of the disease, people are turning to E-commerce even more as they cannot visit brick-and-mortar stores like before.

There has been a massive surge in the demand for essential supplies such as groceries, milk, fresh fruits and vegetables, medicines, FMCG products including pet care supplies and home and healthcare supplies. Interestingly, toilet paper has seen more growth than baby care products, and cured meats have seen more growth than water. The demand for disposable gloves, cough and cold medicines, and packaged foods went up by 670%, 535%, and 377% respectively during the initial panic buying stages in March.

At the same time, there has been a sudden dip in the sales of non-essential and luxury goods such as electronics, apparels, fashion and personal care products.The online sales of luggage and suitcases, cameras, bridal wear and formal wear declined rapidly by 77%, 64%, 63%, and62% in the month of March, 2020 soon after the outbreak intensified.

Some countries have in fact banned the selling and delivering of non-essential goods by E-commerce companies.

However, this will be a short-lived restraint. As the pandemic fades away and things come back to normalcy, billions around the world will rush to E-commerce stores to fulfil their piled up demands. Big days for E-commerce companies are around the corner.

While today, the rush is to deliver essentials fast, the future looks even busier for E-commerce enterprises striving hard to fulfill the requirements of their customers with lightning fast deliveries and excellent customer service.

There's tremendous scope for growth in E-commerce sales in the days to come. The ability to scale up in these tough times and afterwards to meet customer demands effectively will be the true differentiator for E-commerce players.

"Just like any other industry, Artificial Intelligence (AI) will play a dominant role in E-commerce, forming the basis of what's now known as E-commerce 4.0. The vendors who have successfully implemented tech in E-commerce 3.0 will have no hurdles moving towards 4.0. They will be able to scale up their offerings seamlessly to meet the need of the hour and manage to stand strong in the face of adversity.

Technology will offer customers what they want before they even know that they want it. AI-driven chatbots will be answering customer queries and filling orders at amazing speed. Some merchants will offer Virtual and Augmented Reality for customers to customize their products," says Damien Martin from Shufti Pro, an AI-based Identity Verification Service.

The Role of AI-Driven Logistics in E-commerce 4.0

Logistics is a key enabler of growth in the E-commerce retail industry and is increasingly emerging as a differentiator in terms of customer service and satisfaction. AI-backed logistics solutions in E-commerce retail are evolving with growing business requirements and are acting as an important lever for business growth. Let's look at some of the most innovative solutions in logistics fulfillment that are reshaping the future of the E-commerce supply chain.

AI-based Geocoding: Geocoding is the technology of converting physical address descriptions into precise geographical coordinates on a map that can be easily identified. Advanced geocoding solutions combine machine learning, natural language processing, and rule-based improvements to gather complete address information and convert even the fuzziest addresses correctly, precise to door number, lane, and locality. Implementing a geocoder can help E-commerce companies improve First Attempt Delivery Rates (FADR) as well as cut down on delivery costs and time significantly.

Route Planning Solutions: In a world of one-day, two-day and same-day fulfillment, delivery agents are loaded with hundreds of parcels to be delivered in a day. Finding the most effective, time-saving route is not possible with human intelligence anymore. A route planner or journey planner is a search engine that automatically plans and optimizes deliveries, taking into consideration various business parameters, like SLAs, geographical, and traffic constraints. Route planning software not only helps businesses plan deliveries smartly but also assists in effective decision making.

Logistics Tracking and Analysis: Logistics management involves several phases, including transportation, packaging, warehousing, materials handling, and condition management. Any deviance at any stage could cause a delay in last-mile fulfillment, increasing logistics costs and impacting customer satisfaction.

The future of E-commerce logistics lies in tracking, tracing, and predicting. Logistics tracking and analytics solutions allow businesses to track products, material, or on-ground resources in real-time, send notifications to logistics managers in case of any divergence or delay, and offer critical insights using the power of analytics.

Intelligent Shipment Sorting and Fleet Allocation: E-commerce logistics hubs have to deal with a wide-ranging category of products to be delivered in different locations on a daily basis. Sorting packages based on Zip codes and areas manually is time-taking and error-prone. Intelligent shipment sorting is an automated sorting solution that helps businesses sort bulk delivery orders based on multiple factors, saving time and effort significantly, thereby improving operational efficiencies.

Some AI-logistics solutions also offer intelligent fleet allocation, assisting companies in allocating specific goods in specific vehicles as well as offering the most optimal mix of owned and rental fleet to drive cost efficiencies.

Smart Reverse Logistics and On-Demand Routing: A key element of E-commerce logistics is reverse shipment, which includes all the processes associated with product returns, repairs, maintenance, etc. New-age logistics solutions have introduced smart reverse logistics solutions, helping on-ground agents plan reverse logistics systematically along with forward logistics. Nowadays, companies also offer AI-assisted on-demand routing and re-routing solutions along with scheduled orders, enhancing customer satisfaction.

E-commerce 4.0 will be a comprehensive mix of accessibility, speed, convenience, pricing, quality of service and complete fulfillment experience. Any business that fails to offer all the essential elements of a complete fulfillment experience will lose customers to competitors and will have to struggle to thrive.

It is therefore essential for E-commerce merchants and service providers to redefine business strategies and implement next-gen technology across key areas of operations, especially logistics, in order to cut costs, optimize processes, and ensure maximum customer satisfaction.

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