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The Intersection of E-commerce and Sustainable Packaging

Designing with a Sustainable Mindset

An Adept Packaging White Paper

The Intersection of E-commerce and Sustainable Packaging

Designing with a Sustainable Mindset

With the continuous and exponential increase in E-commerce sales within the last several years, it is apparent that any business that wishes to perform globally, needs to be optimized for it. In order to do so, brands need to ask; what is E-commerce, why is it important, and how are companies preparing for such a shift in distribution?

What is E-commerce?

E-commerce refers to any commercial transaction that is facilitated through the internet[1], specifically referring to goods and services.

E-commerce allows the buying and selling of products on a global scale, 24 hours a day, without the consequent overhead costs that are related to traditional commerce[2]. E-commerce not only includes the well know B2C sales model (business to consumers) but B2B (business to business), C2B (consumer to business) and C2C (consumer to consumer) models as well.

Why is E-commerce developing so rapidly?

There are multiple reasons for the exponential and explosive growth of E-commerce such as:

- **Mobile adaptivity**: with the overwhelming penetration of mobile devices; people spend more time on their phones than ever, especially millennials and Generation Z. E-commerce allows for mobile purchasing through internet sales whenever the drive to shop strikes.
- **Omnichannel:** is related to the multiple channels through which a business interacts with their customers. Websites, email, social media, physical stores etc. allow for a more integrated purchasing experience.
- **Greater Range of Offerings**: E-commerce allows brands to offer many more products without incrementing overheads, giving to the consumer the capability to buy anything, at any time,

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[1] https://www.shopify.com/encyclopedia/what-is-E-commerce

[2] https://E-commerce-platforms.com/glossary/E-commerce

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from anywhere. Most companies outsource backend operations to specialist support services providers that can be located virtually anywhere in the world[3].

- **Individualized Products and services:** Increasing advancement in algorithms enable companies more customized recommendations, not only based on their habitual purchasing, but on consumers' particular preferences.

Worldwide Facts and Figures of E-commerce

Global online retail sales are growing at a tremendous speed. The graphic below shows that E-commerce is expected to grow from 14.1% in 2019 of total sales worldwide to 22% by 2023.
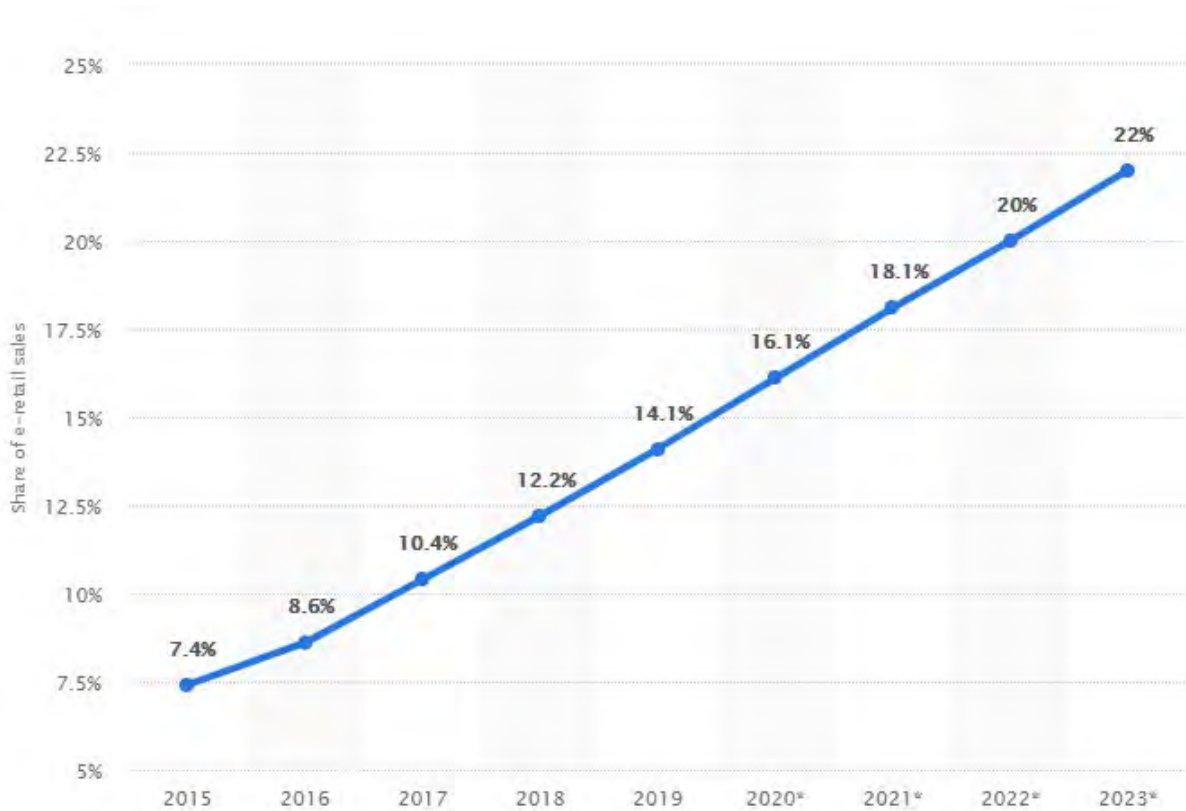
Source: https://www.statista.com/statistics/534123/E-commerce-share-of-retail-sales-worldwide/

Other interesting statistics that provide an overview of E-commerce health are:

- **Cross border E-commerce**[4]: It is predicted that, in 2020, cross border E-commerce will be growing 25% per year, twice as fast as domestic E-commerce

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[3] https://ideasunlimitedonline.com/five-reasons-why-E-commerce-is-growing/
[4] https://www.ipc.be/services/markets-and-regulations/E-commerce-market-insights/E-commerce-articles/global-E-commerce-figures-2017

- **Mobile strategy**[5]: Results of Q2 2018 showed that 62% of E-commerce is mobile generated. This indicates that, in order to grow in E-commerce, mobile friendly shopping platforms for these types of purchases are indispensable.

While the growth of E-commerce is undeniable, there are certain disadvantages to it that are becoming apparent. Damage of goods, delays in delivery, and potential fraud, are among the issues that companies are looking for solutions for. Minimization of these problems will be the differentiator between successful and unsuccessful E-commerce competitors.

Packaging and E-commerce

As E-commerce expands and growth expounds, the need to understand and address the different supply chain and packaging requirements magnifies.

There is still no clear data of the total increase of packaging waste due to E-commerce, but there are some figures out there to consider. Publications such as "China Daily" and "South China Morning post"[6] relate a 48% increase of parcels sold online since 2014. This implies an additional 7.5 million additional plastic bags and 10 million additional cardboard boxes.

As most companies have not optimized packaging for E-commerce, overpacking is common when shipping products from a warehouse to consumer. This not only causes additional waste, but energy consumption and pollution due to the increasing complexity of this new retail chain.

Traditional retail and E-commerce delivery channels differ in several attributes. Through exploring the differences between traditional and E-commerce distribution environments, the need for packaging redesign becomes apparent.

An example of a traditional retail environment:

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[5] https://www.nationmaster.com/E-commerce
[6] https://www.larazon.es/atusalud/medioambiente/el-comercio-electronico-dispara-el-consumo-de-carton-JI12384591

Figure 1: Traditional Commerce Distribution Environment
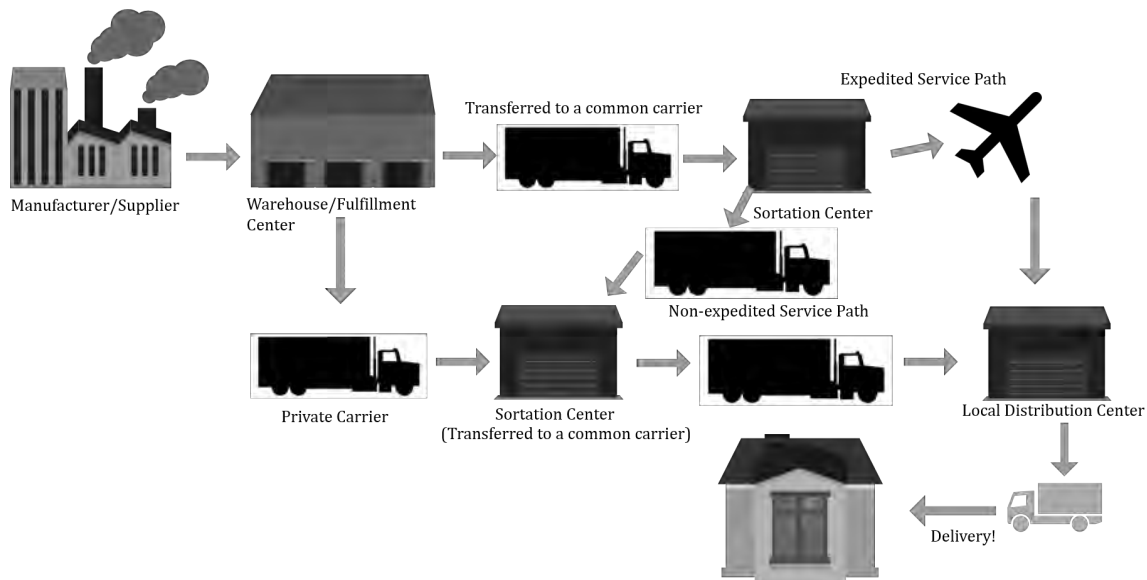

Supplier → Warehouse → Store/Retail → Shelf

As we can see, traditional retail follows a direct and linear flow. In this distribution environment, transportation is concentrated between supplier, warehhouse and retailer. With this model, and limited touch points, the standard primary, secondary and tertiary packaging is enough to transport and deliver a given product in a safe and effcient way to be displayed in stores.

However, with the new framework of E-commerce, packaging requirements differ. The E-commerce distribution environment has up to as many as 20 touch points, compared to 5-6 in a traditional packaging distribution environment, which reinforces the need for more robust packaging. In addition to protection, primary packaging can be less promotional and more functional. Secondary packaging can play the role of protection and tertiary can be non-existent.

Though this is true for E-commerce, Omnichannel which integrate both systems, makes distribution and packaging design even more challenging.

Figure 2: E-commerce Distribution Environment

Manufacturer/Supplier → Warehouse/Fulfillment Center → Transferred to a common carrier → Sortation Center → Expedited Service Path

Warehouse/Fulfillment Center → Private Carrier → Sortation Center (Transferred to a common carrier) → Non-expedited Service Path → Local Distribution Center → Delivery!

In the next matrix, we can see the main differences between the two systems compared to omni-channel.

	Traditional Retail Logistics System	E-commerce Logistics System	Omni-Channel Logistics System
Retail Types	"Brick and mortar" storefront	Retailer is anyone who can set up an online storefront. May be a manufacturer, retailer or a third-party facilitator/ aggregator	Both "brick and mortar" storefronts and online. Storefronts may also serve as fulfillment centers
Transportation Package End Point	Secondary and tertiary packaging is collected for disposal or recovery at retail level. Consumer responsible for transport of primary package	Direct to consumer. Consumer must handle disposal or recovery for all primary and secondary packaging	Responsible for secondary and tertiary as required by bricks and mortar storefront. If shipping direct to consumer, additional transport packaging is required and will be the consumer's end responsibility
Purposes of Primary Packaging	Containment protection, shelf impact, communication vehicle, merchandising	Containment product protection	Can be both, depending on the final distribution channel
Consumer Engagement with Packaging	Engagement occurs at point of purchase. Packaging plays a role of finalizing sale	Engagement occurs after point of purchase. Packaging plays a role in purchase reinforcement.	Engagement may occur at a variety of points
Transportation Format	Primary high density freight carriers, forklifts and pallets.	A wide range of transportation methods, from freight carriers to UBER drivers, and potentially drones. More touchpoints, handlers, and manual interactions to deliver direct to the consumer	Depending on the final distribution channel it may include all formats
Return Rate	9%	20-30% Requires investment into more complex reverse logistics and reusable packaging	Unknown

Source: https://cdn.ymaws.com/www.ameripen.org/resource/resmgr/PDFs/White-Paper-Optimizing-Packa.pdf

These new channels have contributed to a rise in expectations from consumers such as:[7]

- Rapid delivery
- Ease of return
- Packaging that protects
- Ease of disposal and recovery
- No damage
- Food safety

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[7] https://cdn.ymaws.com/www.ameripen.org/resource/resmgr/PDFs/White-Paper-Optimizing-Packa.pdf

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These attributes have a direct impact on packaging design[8]:

- The need for very fast deliveries and multiple channels can make it difficult to optimize packaging or aggregate deliveries, because the same products are being shipped from multiple facilities to meet the expected delivery speed of the consumer.
- Companies often increase or change packaging materials in order to protect the product, which can lead to less recyclability.
- Sometimes the cost of a damaged delivery is higher than over packing it to avoid returns, reimbursements, or brand integrity damage.
- Due to high rate of devolutions, companies have started including devolution labels in the parcels.
- Food delivery requires special materials and package designs to ensure freshness and quality from manufacturer to consumer.

As companies start to consider packaging design for E-commerce, sustainability plays a significant role and is in more demand than ever.

Design Ideas for Sustainable E-commerce Packaging

More and more consumers are demanding products that are environmentally friendly.

There is an international study performed by Unilever[1] that reveals that one out of 3 consumers feel that sustainability and positive social impact are drivers for their purchase decisions, noting that these consumers would pay a little bit more for their preferred products if they are recyclable.

This is not only a matter of taste and trends; a sustainable approach to packaging is becoming increasingly regulated. Stakeholders, such as consumers, institutions, municipalities, and NGO's, are pushing to develop a circular economy, examining sustainability throughout the packaging lifecycle, which has a significant impact on E-commerce.

For example, these guidelines from the Sustainable Packaging Coalition were established to cover all phases of a life cycle analysis, setting standards for packaging:

1. Is beneficial, safe, and healthy for individuals and communities throughout its life cycle
2. Meets market criteria for performance and cost
3. Is sourced, manufactured, transported, and recycled using renewable energy
4. Optimizes the use of renewable or recycled source materials
5. Is manufactured using clean production technologies and best practices
6. Is made from materials that retain quality of health throughout the life cycle
7. Is physically designed to optimize materials and energy
8. Is effectively recovered and utilized in biological and/or industrial closed loop cycles

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[8] https://cdn.ymaws.com/www.ameripen.org/resource/resmgr/PDFs/White-Paper-Optimizing-Packa.pdf

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For more detailed information on designing packaging for the E-commerce market, check out our white paper: Evolving Packaging for the E-commerce Market.

Designing E-commerce Packaging for Sustainability

When designing E-commerce packaging for a more sustainable result consider these tips:[9]

- Align your sustainable strategy with your stakeholders (suppliers etc.) and align priorities and actions.
- Avoid over designing with special inks, coats, or laminations that can reduce the recyclability and sustainability of the packaging.
- Try to not over-pack. Minimize the amount of material included in your packaging. Not only does it reduce material waste, but it reduces material cost, inventory, transportation weight and storage cost.
- Explore shipping options outside of the standard cardboard box. Understand your product needs, to determine if your packaging must be water resistant/flexible/soft etc. and redesign with a sustainable mindset.
- Remove foam peanuts, shredded paper etc. and utilize inserts instead if necessary.
- Avoid paper-out, poly bubble lined mailer envelopes. The mixed material composition makes it difficult to separate and prevent them from being recyclable.
- Choose sustainable materials when possible.
- Inform your customers on how to recycle, reuse or return packaging (can be helpful as a marketing opportunity)[10] One of the biggest issues in waste reduction are consumers. Educating and communicating the end of life options for your packaging is necessary so consumers understand how to close the loop.

Some companies have successfully made the transition between traditional and E-commerce packaging. Below are a few examples.

Successful Examples

There are several companies that are playing a big role introducing a sustainable mindset in their E-commerce activities.

Here some examples

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[9] https://www.environmentalleader.com/2019/04/6-tips-for-eco-friendly-dtc-E-commerce-packaging/

[10] https://www.zaproo.com/sustainable-E-commerce-packaging/

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Sealed Air: StealthWrap

This is a solution that avoids the common use of a box within a box. They utilize a thin film to conceal and protect the product which can be labeled with the proper shipment information and allows a large reduction of space and a significant reduction of material waste. The process of wrapping is almost 20 times faster so there is a cost reduction in productivity and labor.

Source: https://sustainablepackaging.org/sealed-air-stealthwraptm/

Frustration Free Packaging (FFP)

Amazon has launched a very successful initiative aimed at reducing waste and increasing recyclability. This year, they've taken it a step further and mandated that, for people to tell through Amazon, they had to be a member of the Amazon Support and Supplier network. Their requirements are outlined below:

This initiative was enacted in 2008 and has expanded to an impressive figure of around 750,000 products included in the FFP program.

To obtain this certification Amazon works closely with sellers to achieve an optimal packaging and helps them with proper testing.

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This new packaging ensures several benefits to customers such as an improved customer experience, reduced waste, increased recyclability, reduced damage, and increased safety.

Recommendations

As discussed, E-commerce needs a new packaging approach to withstand the rigors of a more complex distribution environment. This approach should include sustainability as a consideration.

To maximize value, partnering with a company with expertise in packaging development, distribution qualification, E-commerce and sustainable packaging design is an excellent way to reduce cost, increase sustainability and reduce risk of damage throughout the product's journey to the consumer.

Adept Packaging, a member of the Amazon Support and Supplier Network, is Loop certified and employs a wide array of expertise. We work with 70% of the top iconic brands in the Food, Beverage and CPG industries and 80% of the top iconic brands in the Life Sciences industries. When preparing to redesign your packaging for the E-commerce market, contact our experts to increase your speed to market and reduce your costs today.

www.adeptpackaging.com

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