



# E-COMMERCE

ACMA4022- Supply Chain Informatics

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## SESSION OVERVIEW

- Concepts & definitions of E-business vs E-commerce & related trends
- Types of e-commerce business models
- Features of e-commerce
- Benefits & challenges for implementing e-commerce
- Supply chain management & IT applications for E-commerce
  - B2C e-commerce (E-tailing)
  - B2B e-commerce

**E - for everywhere, every day, everyone!**

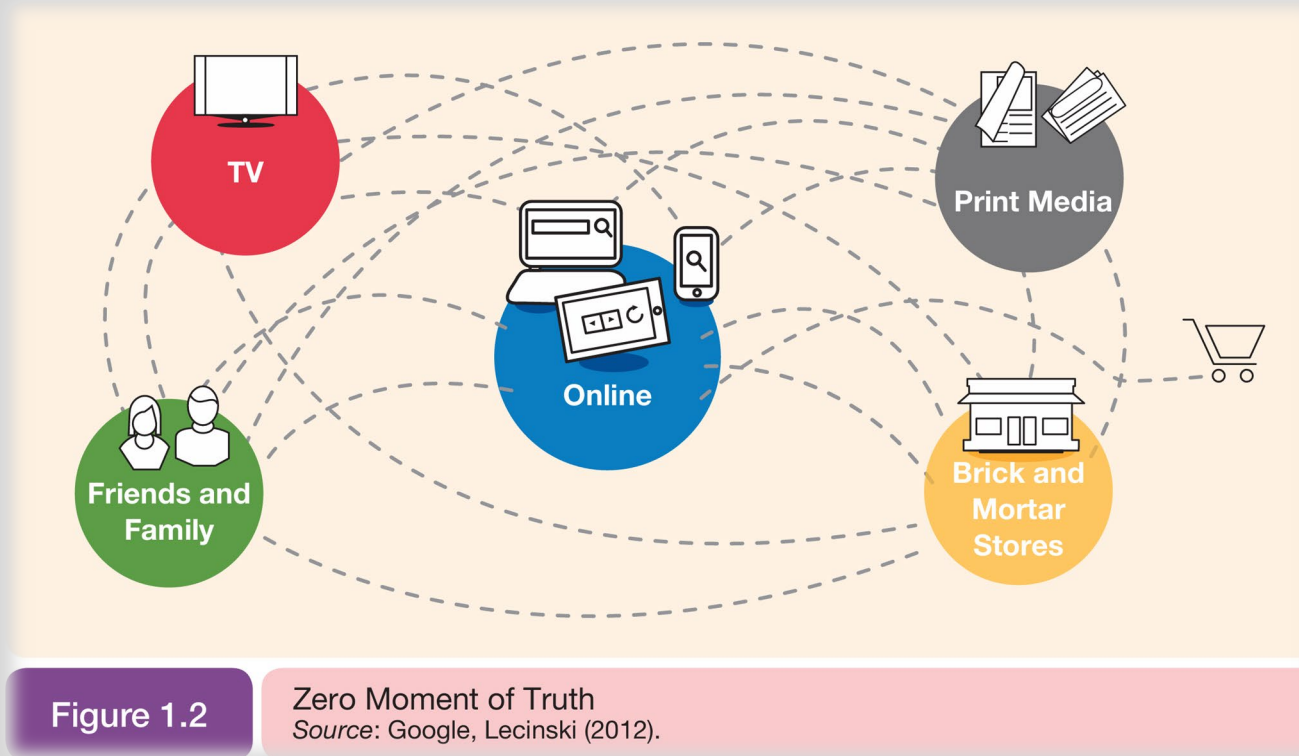
Using Technology for  
Online Shopping

# What is E-Business?

- **E-business** is the way of conducting key business processes electronically by using the Internet and online communication technologies in increasing value to the customer by selling the products through digital platforms.
- E-business involves several major components including E-commerce and other online activities for conducting online transactions within the firm and collaborative activities among business partners and customers.
- E-business aims for improve productivity & efficiency, cost reduction, improve integration & relationship, and generate profitability to businesses.

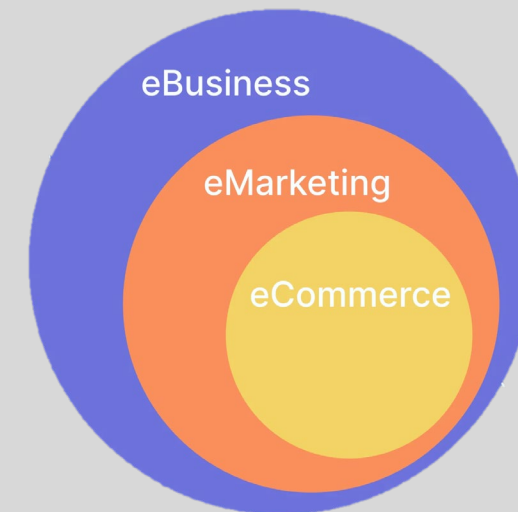


# Driving forces toward e-Business



## Zero Moment of Truth (ZMOT)

A summary of today's multichannel consumer decision-making for product purchase where they search, review ratings, styles, prices and comments on social media before visiting a retailer.



Businesses use *search marketing, content marketing and social media marketing* to target prospects, increasing brand's presence and encourage positive engagement.

# What is E-Commerce?



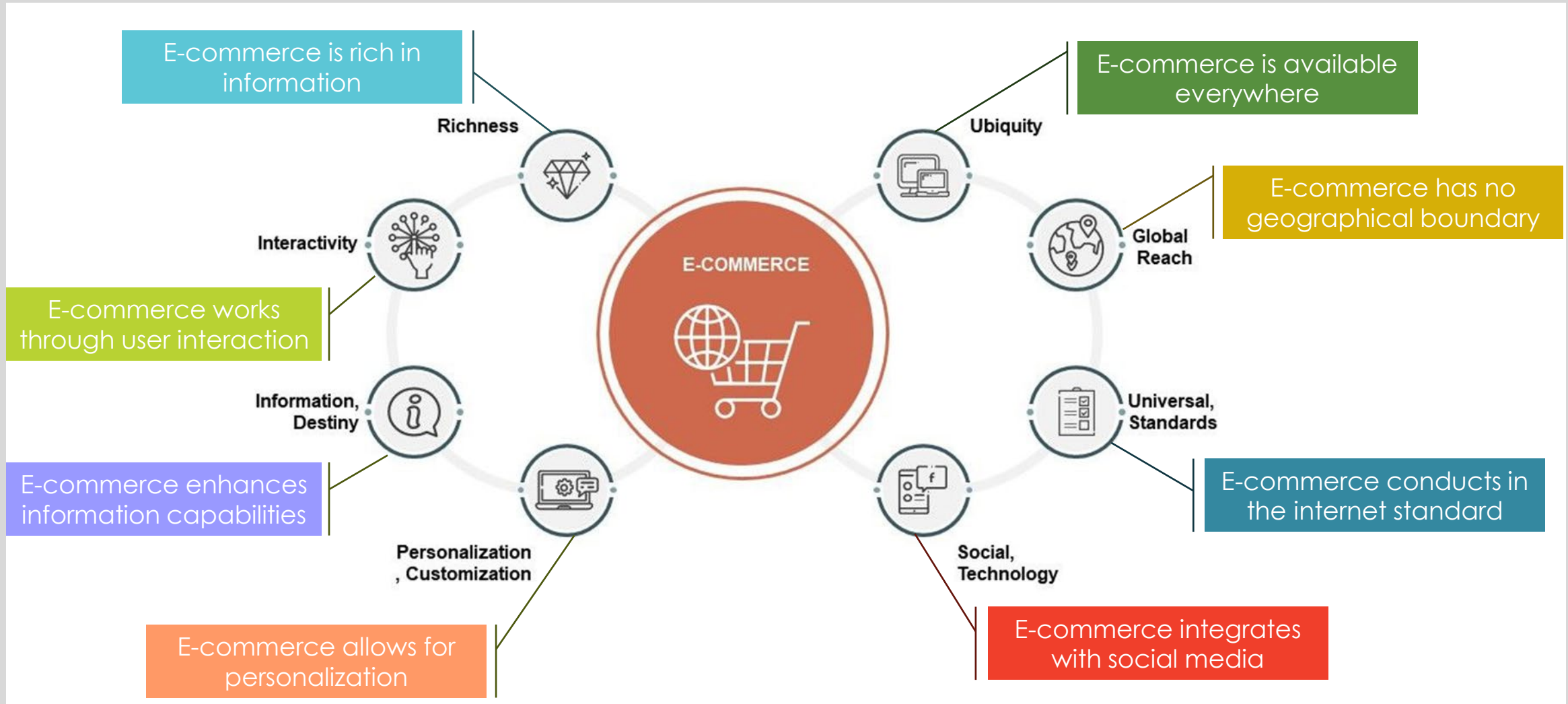
**E-Commerce** – Any sort of business transaction that involves information exchanges electronically through the internet between an individual, or organisation and its external stakeholders.

- E-commerce is not solely restricted to the actual buying and selling of products but also includes pre-sale and post-sale activities across the supply chain.
- An organization can have both buy-side and sell-side e-commerce transactions.

**M-Commerce** – Electronic transactions & communications wirelessly using mobile devices such as smartphones or tablets.

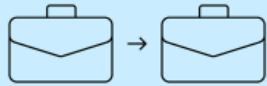
**E-Marketplace (EM)** – A business model that connects buyers and sellers via an online platform, allowing third-party sellers to market and sell their products on the platform and invoice the customer for a purchase directly.

# Unique features of e-commerce technology



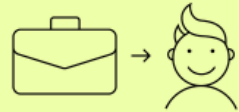
# Types of E-commerce

**B2B** : companies sell products or services to other companies  
*Examples; EC21.com, IBM, 3PL/4PL.*



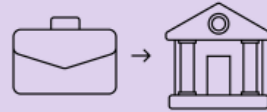
Business  
to Business

**B2C** : companies sell products or services directly to the end-customers  
*Examples; Amazon, Alibaba, ASOS.*

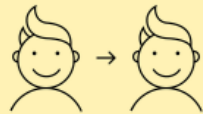


Business  
to Consumer

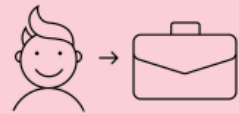
**B2G** : businesses sell products or services to public sectors or government organizations  
*Examples; Okta, Amey.*



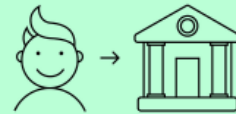
Business  
to Government



Consumer  
to Consumer



Consumer  
to Business



Consumer  
to Government

**C2C** : consumers sell products or services to other consumers  
*Examples; eBay, Taobao, Facebook marketplace*

**C2B** : consumers sell products or services to companies or businesses  
*Examples; Shutterstock, Upwork*

**C2G** : consumers interact with governments for the transaction of obligation  
*Examples; taxation, utility billings.*

- The categorization of e-commerce is now not straightforward
- Some companies involve in many types of e-commerce such as Amazon, Alibaba or Facebook that act as marketplace for both B2B, B2C & C2C.
- B2B can be done through EDI to exchange automate transaction between authorized companies including data of purchase orders, shipping data, payment data or inventory data.
- B2C can refer to e-tailings and online shopping which businesses can sell via own website/application or via open platforms.

# Benefits of E-Commerce : Organization

| Tangible benefits                                                                                                                                                                       | Intangible benefits                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Expand the marketplace quickly & worldwide.                                                                                                                                             | Easier, wider corporate image communication                                   |
| Increased sales leads giving rise to increased revenue from: <ul style="list-style-type: none"><li>– new customers, new markets</li><li>– existing customers (cross- selling)</li></ul> | Enhancement of brand recognition                                              |
| Reductions in Marketing cost                                                                                                                                                            | Improved customer service & expectations toward the company                   |
| Supply chain cost reductions from pulled supply chain                                                                                                                                   | Faster product development lifecycle enabling faster response to market needs |
| Shorten or even eliminate some distribution channels, reduce cost of goods                                                                                                              | Identifying new partners, supporting existing partners better                 |
| Administrative & operating cost reductions from more efficient routine business processes such as reducing overheads of paper-based processing & automated payment transactions.        | Better management of marketing information and customer information           |
| No need of physical office set-ups, setting up and maintaining a website or use marketplace websites can be less expensive                                                              |                                                                               |

# Benefits of E-Commerce (continue)

## For Consumers

24/7 availability

No geographical boundary

Increase products/services choices

Facilitate information researches and price comparison

Reduce commuting time & costs

Benefit to competitive price



# Challenges of E-commerce

| Technological challenges                                           | Non-technological challenges           |
|--------------------------------------------------------------------|----------------------------------------|
| Lack of universal standard of security and communication protocols | Customer resistance in shopping online |
| System breakdown disrupting the process                            | Infringement of patents and copyright  |
| Increase in competition                                            | Limited product demonstration          |
| Cost of internet presence                                          | Personal information is compromised    |
| Lack of technical knowledge                                        | Taxation difficulties                  |
|                                                                    | Easy access but limited scalability    |





# E-TAILING

# Types of retail business model



## **BRICKS-AND-MORTAR**

HAVE PHYSICAL SHOPS PRESENCE



## **CLICK-AND-BRICK (OMNI-CHANNEL)**

COMBINES ONLINE SHOPPING WITH  
EXISTING PHYSICAL SHOPS

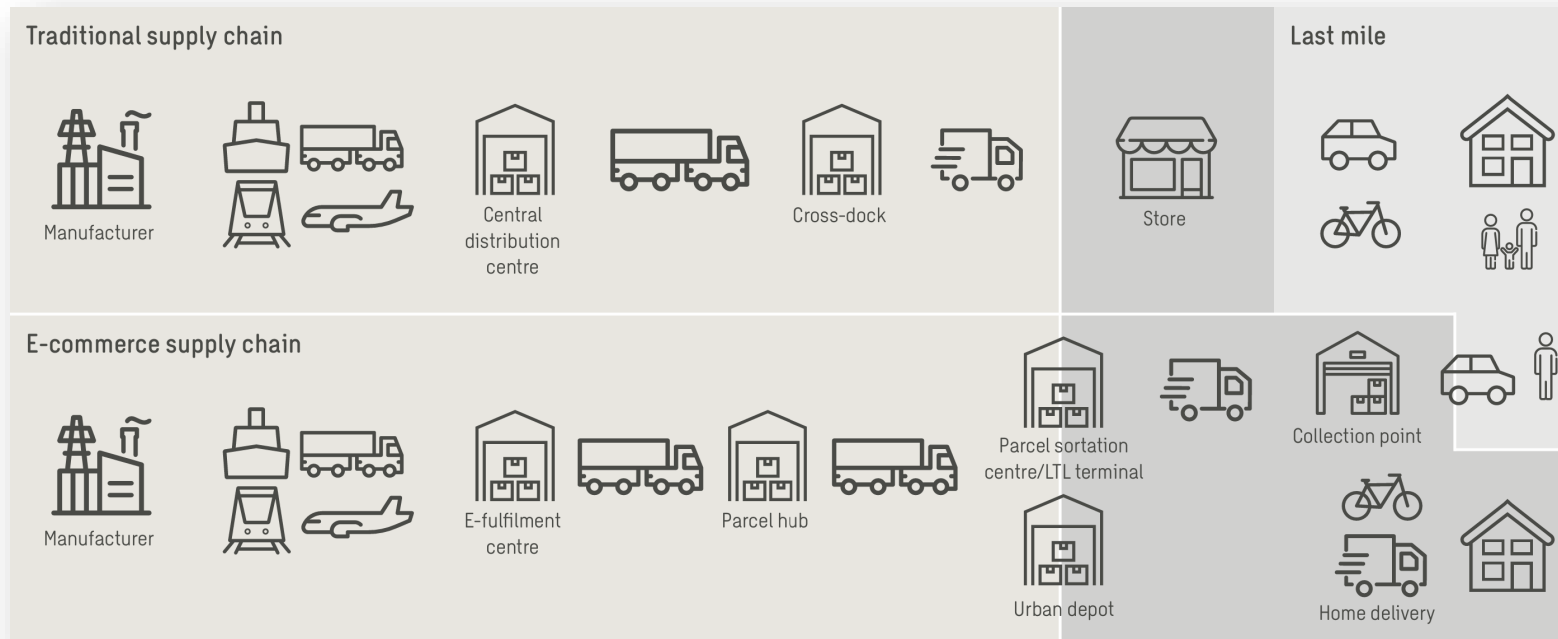
E.G. CLICK & COLLECT SERVICE



## **PURE PLAY**

DO ALL SALE ACTIVITIES ONLINE WITHOUT  
PHYSICAL SHOP E.G. AMAZON, TEMU

# E-tailing supply chain



E-commerce supply chain also covers activities of traditional supply chain processes.

With e-commerce supply chain, we see more complexity in fulfilment operations. Last mile deliveries also has more complexity when relating to e-commerce process.

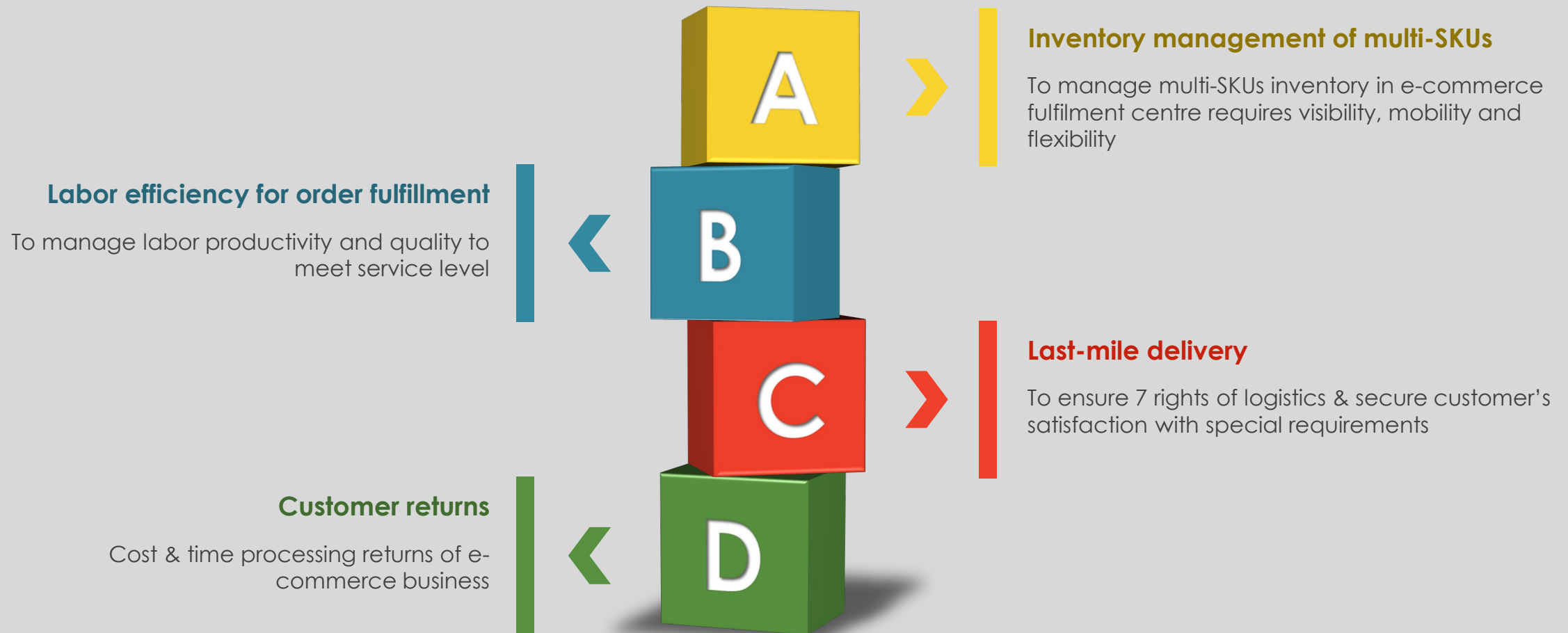
This derives from the special characteristics of e-commerce order pattern & size of order.

- The success of e-tailing is rely on customer's satisfaction for overall services since simple ordering process until hassle-free returns.
- Effective supply chain management is crucial in ensuring that e-tailing businesses can meet customer's expectation in cost-effective manner while also improving profitability.
- Returns are an added e-commerce flow as an unavoidable offers, thus reverse logistics is also required to be managed as well as the treatments of those returns.

# Keep up with the click!

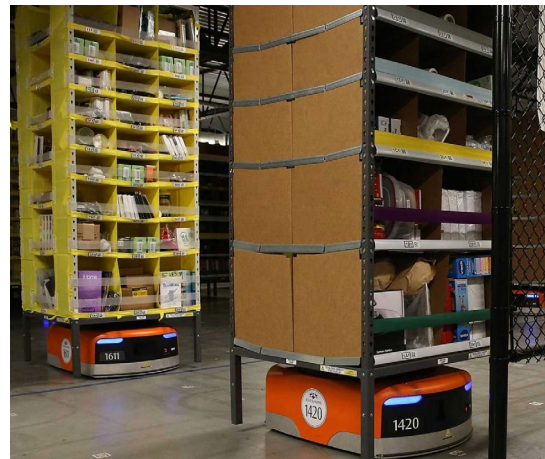


# Supply chain operation challenges in e-tailing



*IT solutions can be applied for e-commerce business to keep up with the fast-paced operations.*

# Today's fulfilment technology



- **Barcodes, RFID and sensors** are used for monitoring on-going processes throughout the fulfilment journey.
- **Robots** are used to move and store items, to pick and pack orders for shipment. Shelves of goods are brought to human for assembling orders, supporting workers' ergonomic & efficiency.
- **AI** is used with intelligent conveyor belts: smart warehouses use advanced conveyor belts that are equipped with sensors and machine learning algorithms to sort and route packages to their destination.
- **Hand-free AR devices & visualizations** increase human productivity & operation accuracy.

# Last mile delivery

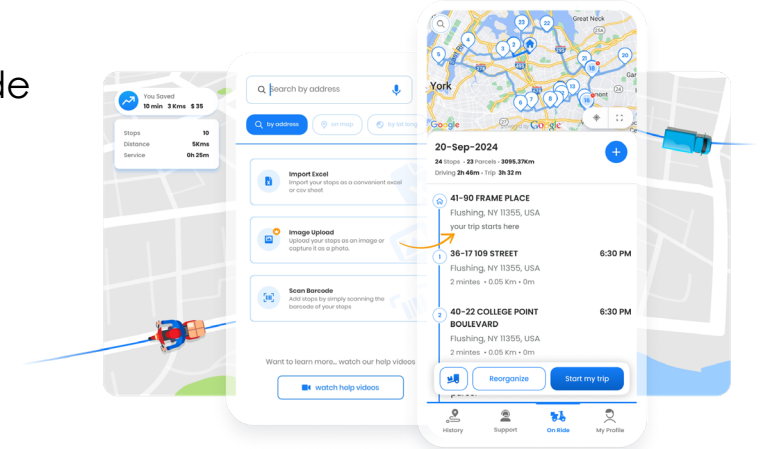
- Last mile logistics is generally considered the most expensive, least efficient and most polluting part of the supply chain. Last mile can accounts for 50% of the total costs of overall shipments in some cases.



| Last mile solution                           | Description                                     | Pros                                                                                               | Cons                                                      | Sub solutions                                              |
|----------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Home delivery                                | Delivery to front door                          | Convenience for consumer<br>Bulky items possible                                                   | Consumer needs to be present at delivery<br>Low fill rate | Delivery Pass                                              |
| Not at home / car delivery                   | Delivery inside front door or wherever you are  | Convenience for consumer<br>Bulky items possible<br>No need for consumer to be present at delivery | Trust                                                     | In-car delivery<br>Smart locks<br>Leave outside front door |
| Letter box                                   | Delivery as normal mail                         | No need to be present at delivery                                                                  | Size limitation                                           |                                                            |
| Collection point / pick-up & drop-off (PUDO) | Delivery to collection point, consumer picks up | No need to be present at delivery<br>Generally long opening hours                                  | Bulky items not possible<br>Capacity limitations          |                                                            |
| Parcel locker                                | Delivery to parcel locker, consumer picks up    | No need to be present at delivery<br>No restriction on pick-up time                                | Bulky items not possible                                  | Personal / residential parcel boxes                        |
| Click and Collect                            | Consumer collects at store                      | Included in normal logistics solution<br>Avoid in-store crowds                                     | Requires trip to store                                    | Click and Drive                                            |

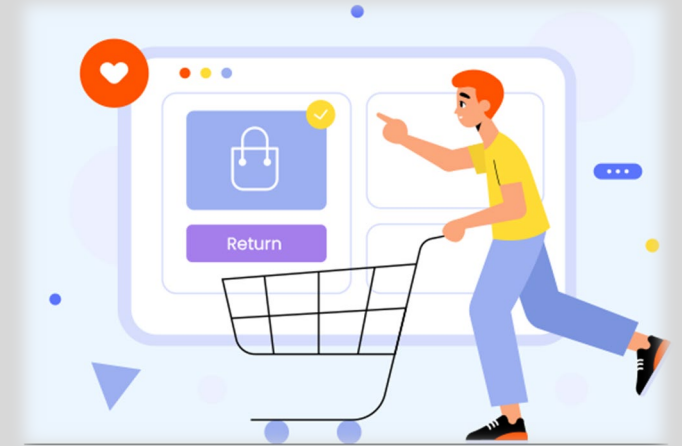
# Technology for last mile delivery

- **Delivery Optimization Applications:** using advanced algorithms to optimize delivery routes, depending on the needs using geographical distance, traffic conditions, delivery time windows, and no. of drops to provide cost-effective solutions.
- **Vehicle telematics systems and GPS tracking** equipped in vehicles provide valuable track & trace ability for customer as well as the insight data for fleet management over **cloud** servers.
- **Social network applications** used in advertising, customer services & shipment notification, reducing relationship gap between business & consumers.
- **Robots/Drone delivery** can cover urgent delivery in hard-to-reach or disaster-stricken areas e.g. medical supplies in quarantine areas.



# Reverse logistics for e-tailing

- **Reverse logistics** : the process of planning, implementing and controlling the flow of goods & related information from the point of destination with cost effectiveness.
- 20 - 50% of online orders result in a customer return, for various reasons.
- Return policy is the 2<sup>nd</sup> most factor for customers to consider buying online.
- 10% of online returns were fraudulent. Meanwhile, 1/3 of returned items are thrown away as landfill waste.
- The cost of return deliveries relate to;
  - Lost of revenue for refunding the customer (cashback, product exchange, or in-store credit)
  - The cost of the initial delivery, the reserve logistics processes, and the re-delivery (if required)
  - The cost of additional resources for sorting out returns, Verify return conditions, and treatments/reconditions/disposals of returns.
  - Additional cost of return inventory management.
- **Objective for e-tailing returns** : minimize the cost of customer returns, hassle-free policy and positive post-purchase customer experience. Also return rate should be able to minimize or prevented in the first place.
- There are a variety of choices to make returns painless for customers, thus encourage repeated buying e.g. return without original packages, postal service, home pick-up service, return drop-off points, self-service lockers.



# Technological solutions handling e-tailing returns

- **RFID or Scan-based return labels & Internet of Things (IoT)** for return track & traceability.
- **Cloud-computing** for real-time return visibility, track returns & refunds process enable status tracking & build trust with customer.
- **Data analytical tools with AI or machine learning software** for returns validation, analysis and fraudulent activities detection.
  - What can be done with returns (Amazon examples)
    - Re-stock & resell as new
    - Re-stock & resell as graded or used in separated section
    - Return to seller (For refurbish, re-condition, re-pack etc.)
    - Liquidity services
    - Donations
    - Disposal

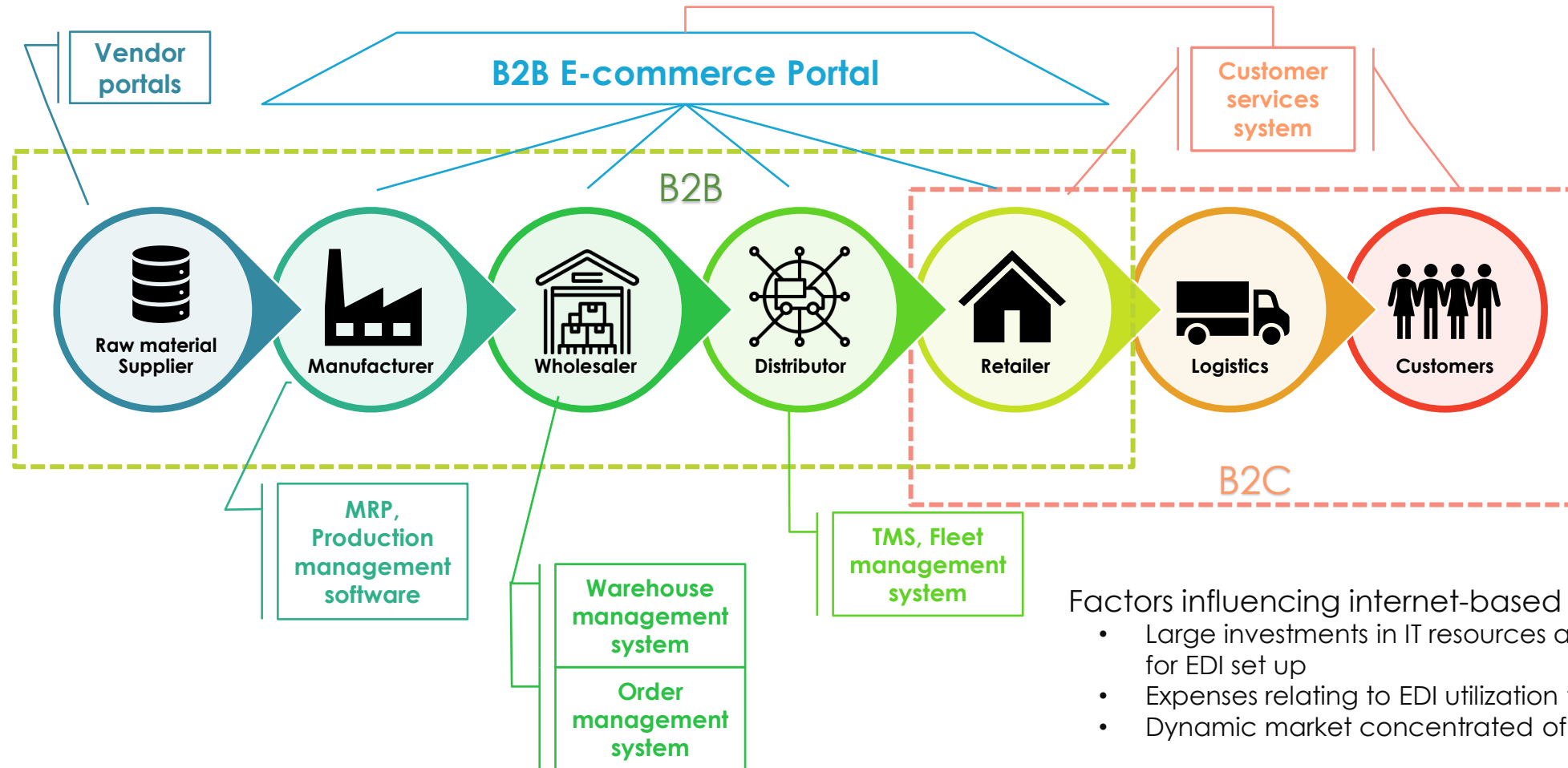




# B2B E-COMMERCE

# Understand B2B E-commerce supply chain

B2B e-commerce involves online marketplace & internet transactions, that streamlining processes since raw material procurement and sales at any step within the supply chain.



# Challenges for B2B E-commerce Supply Chain

- **Data Security and Privacy** : ensuring the security and privacy of sensitive information becomes a critical concern, requiring robust cyber security measures and compliance protocols.
- **Adaptation to Change**: ability to adapt in the same pace with rapid technological advancements and market dynamics trends.
- **Product proliferation**: ability to capture the right customization and develop a range of product varieties for different countries.



- **Infringement of patents and copyrights** : counterfeit products can create issues for managing trade secrets and brand reputations.
- **Shipping delays**: high expectations of delivery quality as any delay could break the rest of the process flow within the supply chain.
- **Multi-systems integration**: difficulties of building effective linkages & relationships among SC members using different systems.

# Role of Technology in B2B E-commerce

- **Online systems integration:** **Internet** have an impact on B2B interaction, especially supply chain integration. Integration of multiple systems enable supply chain flexibility and agility to dynamic changes.
- **Digital Transformation:** Technology such as **3D printing, Robotics, RFID and IoT devices** has streamlined B2B supply chain operations, offering advanced tools for inventory tracking, demand forecasting, order management and optimize resources utilization enhancing efficiency and accuracy of order fulfilment.
- **Supply Chain Visibility:** **Cloud-based platforms** provide easy access to real-time visibility for inventory levels, production schedules, and shipment tracking. **Big data analytic tools** enabling businesses to make data-driven decisions to mitigate risks of supply chain disruptions, enable accurate demand planning and gain valuable customer insights.
- **Collaborative Platforms:** **Data exchange technology and EDI** facilitates the exchange of information and resources between B2B partners, fostering collaboration and transparency throughout the supply chain network.
- **Enhanced supply chain security:** **Blockchain** enable secure transactions, improving procurement process transparency as well as building trust among B2B partners.
- **Seamless experience:** B2B E-Commerce technology allows businesses to provide a seamless and personalized customer experience through features like 24/7 **Online Chat app, social networks and virtual meeting applications** increasing speed to respond to customer and improve interactions.

SESSION  
OVERVIEW

THANK YOU