

Introduction to E-commerce

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Quick-read, outline-style notes for students or beginners

1. What is E-commerce?

Definition	Key Idea
Electronic commerce – buying and selling of goods, services, or information over electronic networks (primarily the Internet).	Transactions are conducted digitally, without a physical storefront.
Scope – includes B2C, B2B, C2C, C2B, and government-to-consumer (G2C) models.	Different participants define the market segment.

2. Core Components of an E-commerce System

1. Web Site / Marketplace Platform

- Front-end (catalog, product pages, checkout).
- Back-end (inventory, order management, CRM).

2. Payment Gateway

- Secure processing of credit cards, digital wallets, ACH, etc.
- Must comply with PCI-DSS standards.

3. Logistics & Fulfilment

- Warehousing, pick-pack, shipping, returns handling.
- Integration with carriers (UPS, FedEx, local couriers).

4. Security & Trust

- SSL/TLS encryption, two-factor authentication, fraud detection.
- Trust seals, privacy policies, clear return terms.

Introduction to E-commerce

5. Customer Service

- Live chat, email, phone support, self-service FAQs.
- Post-purchase engagement (order tracking, reviews).

3. E-commerce Business Models

Model	Participants	Typical Example
B2C (Business ? Consumer)	Retailer ? End-user	Amazon, Zara online store
B2B (Business ? Business)	Manufacturer/wholesaler ? retailer	Alibaba, Grainger
C2C (Consumer ? Consumer)	Individual ? Individual	eBay, Craigslist
C2B (Consumer ? Business)	User-generated content, freelancers	Upwork, Shutterstock
Marketplace	Platform hosts multiple sellers	Etsy, App Store
Subscription	Service provider ? subscriber	Netflix, Dollar Shave Club

4. Technology Stack Overview

Layer	Common Technologies
Presentation	HTML5, CSS3, JavaScript (React, Vue, Angular)
Application	PHP, Node.js, Python (Django/Flask), Ruby on Rails, Java (Spring)
Database	MySQL, PostgreSQL, MongoDB, DynamoDB
Payment	Stripe, PayPal, Square, Adyen APIs
Hosting / Cloud	AWS (EC2, S3, RDS), Azure, Google Cloud, CDN (CloudFront)
Analytics	Google Analytics, Mixpanel, Adobe Analytics
Search	Elasticsearch, Algolia, Solr
Security	OAuth 2.0, JWT, reCAPTCHA, WAF (Web Application Firewall)

5. Key Processes (End-to-End Flow)

1. Product Management

Introduction to E-commerce

- Add / update catalog ? SKU, description, images, pricing.

2. Customer Journey

- **Discovery** ? Search / browsing ? Filters ? Product page.
- **Selection** ? Add to cart ? Cart review.

3. Checkout

- Guest or account login ? Shipping address ? Payment method ? Order review ? Confirmation.

4. Order Fulfilment

- Inventory check ? Picking ? Packing ? Shipping label generation ? Dispatch.

5.