



Lecture 3: E-Commerce and Electronic Banking Services

Course Title: Computer (AI Applications)

Asst. lec. Abdullah Qays Hashim

Department: Biomedical Engineering

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Agenda

01

E-Commerce Foundations

Definition, models, and key components

03

E-Commerce & E-Banking Intersection

How digital commerce and finance converge

02

Electronic Banking

Evolution, core services, and ATMs

04

Security, AI & Future Trends

Safeguarding transactions and what lies ahead

Understanding E-Commerce

E-Commerce is the buying and selling of goods or services using the internet, including the transfer of money and data to execute transactions.

Evolution

From simple online storefronts to global marketplaces

Impact

Eliminates geographical boundaries; enables 24/7 operations



Main E-Commerce Business Models

B2B — Business to Business

Wholesale suppliers to retailers

B2C — Business to Consumer

Amazon, retail websites

C2C — Consumer to Consumer

eBay, Craigslist

C2B — Consumer to Business

Freelancers offering services to companies

B2G — Business to Government

Corporate tax payments, IT services for governments

G2C — Government to Consumer

Online utility payments, digital public services



Essential Elements of an E-Commerce System

01

Storefront / Platform

Website or app (Shopify, WooCommerce)

02

Product Catalog & Cart

Browse and select items

03

Payment Gateway

Processes digital payments

04

Fulfillment & Logistics

Inventory management and shipping

05

Database Systems

Stores customer and product information

06

CRM

Manages customer relationships and interactions

07

Cybersecurity Infrastructure

Protects transactions and customer data

Why E-Commerce is Growing Rapidly

For Businesses

Lower operational costs, wider reach, targeted marketing

For Consumers

Convenience, wider selection, price comparison, 24/7 availability

Economic Impact

Drives global trade and creates new job sectors





CHAPTER 2

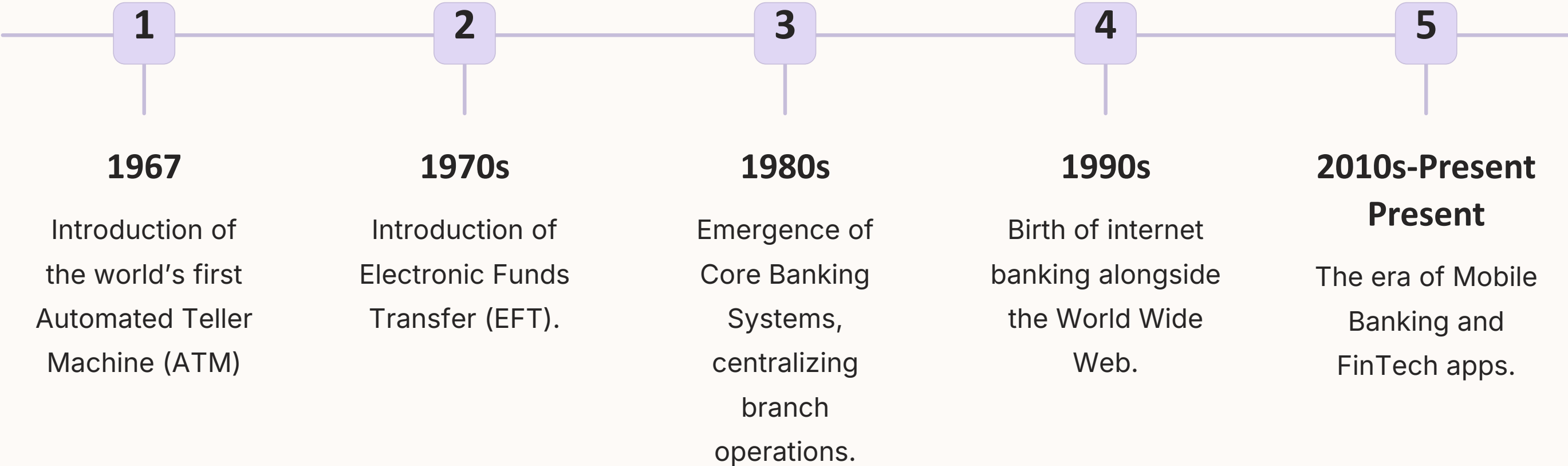
E-BANKING

Introduction to Electronic Banking

E-Banking is the delivery of a bank's information and services to customers via electronic platforms — reducing reliance on physical branches.

- 📄 Enables customers to manage accounts, pay bills, and transfer money **anytime, anywhere.**

From Branch Banking to Digital Banking



Key Services in Modern E-Banking



ATMs



Mobile Banking



Online Banking



EFT & Wire Transfers



Digital Wallets



ATMs: The First Step in Self-Service Banking

Functionality

Cash withdrawal, deposits, balance inquiry, bill payments

Network

Interbank networks enable cross-bank usage

Technology

Magnetic stripe or EMV chip cards with PIN authentication

ATMs bridged the gap between physical cash and electronic account balances.

Banking in Your Pocket

Definition

Financial transactions via smartphone or tablet apps.

Key Features

Instant account checks, mobile check deposits, P2P transfers.

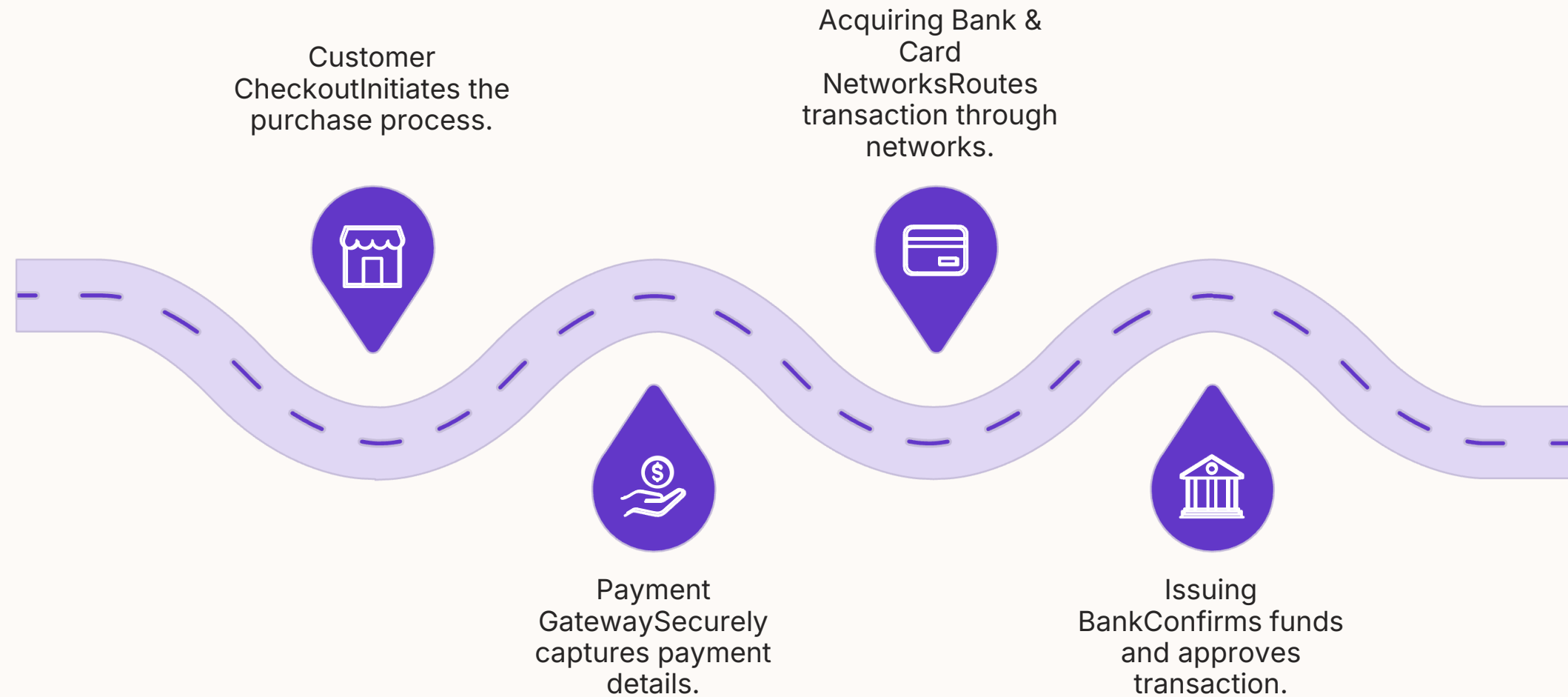
Push Notifications

Real-time alerts for transactions and fraud prevention.

Biometric Security

Fingerprint and facial recognition integration.

How Digital Payments Work



This diagram illustrates the four-step digital payment flow. Payment Gateways, such as PayPal, Stripe, and Square, securely capture your payment details. Modern Encryption, utilizing TLS (Transport Layer Security) protocols, ensures credit card data remains secure during transit. This entire process is incredibly fast, with authorizations happening in milliseconds globally.

The Symbiotic Relationship

Mutual Dependence

E-commerce relies on e-banking for immediate payment clearance.

Consumer Trust

Secure banking APIs give consumers confidence to shop online.

Data Sharing

Transaction data helps both sectors detect fraud and understand behavior.



Protecting Digital Assets & Cyber Threats

Network Threats:

Distributed Denial of Service (DDoS) Attacks.

Application Threats:

SQL Injection targeting e-commerce databases.

Malware & Social Engineering:

Ransomware, Phishing, Man-in-the-Middle attacks.

Regulatory Standards:

PCI-DSS (Payment Card Industry Data Security Standard).

Core Goal:

Ensuring Confidentiality, Integrity, and Availability (CIA Triad) of financial data.

How Banks and Stores Keep You Safe



Two-Factor Authentication

Password + SMS code or app token required.



End-to-End Encryption

Making data unreadable to hackers.



Tokenization

Replacing sensitive card details with unique digital tokens.



Fraud Monitoring

Algorithms automatically flagging unusual transactions.

Artificial Intelligence in E-Commerce

1

Personalized Recommendations

Algorithms analyzing past behavior (e.g., Amazon).

2

Chatbots & Virtual Assistants

24/7 customer service automation.

3

Dynamic Pricing

AI adjusting prices in real-time based on demand.

4

Inventory Management

Predictive analytics forecasting stock needs.



Artificial Intelligence in Finance

Fraud Detection

AI spotting anomalies faster than humans.

Credit Scoring Challenges

Using machine learning to assess loan risks, while addressing AI Bias and ethical concerns.

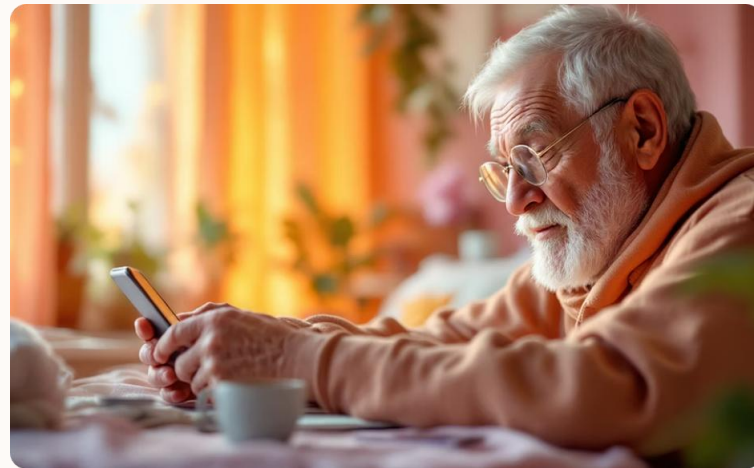
Explainable AI (XAI)

Ensuring AI-driven financial decisions are transparent and understandable to humans.

Robo-Advisors

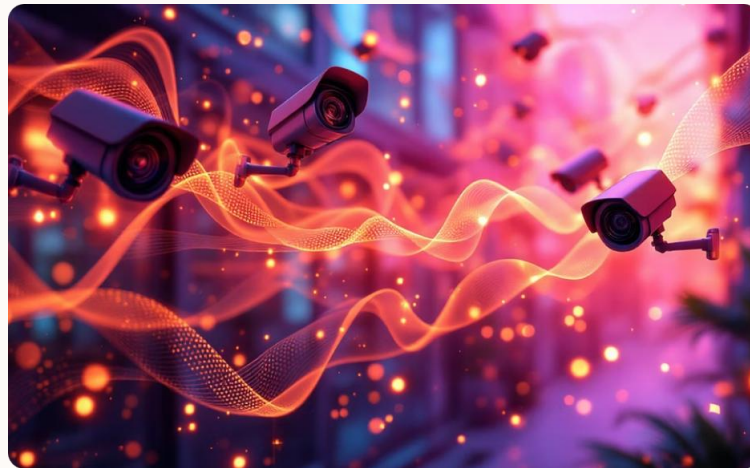
Automated, algorithm-driven financial planning services.

Challenges of a Cashless Society



Digital Divide

Unbanked populations or those without internet access are left behind.



Data Privacy

Massive collection of consumer spending habits raises concerns.



Job Displacement

Automation reducing the need for bank tellers and retail cashiers.



What's Next for E-Commerce and E-Banking?



Blockchain & DeFi

Decentralized Finance alternatives (facing ongoing Legal and Regulatory Challenges).



Voice Commerce

Shopping through smart speakers (e.g., Alexa).



Open Banking

Third-party developers building apps and services around financial institutions using Open APIs.



AR/VR Shopping

Experiencing products in the Metaverse before buying.

Conclusion

Summary: E-commerce and E-banking have fundamentally changed global trade and personal finance.



Key Takeaway: Security, technological innovation (like AI), and user experience remain the pillars of success in this sector.



Thank You!

Any Questions?