E-commerce, Social Media and Mobile Analytics

Module 6

Electronic data interchange

o Automation of Business Documents: EDI, or electronic data interchange, facilitates the exchange of business documents like invoices and purchase orders in a standardized electronic format, replacing traditional paper-based methods.

o Efficient Information Flow: Through EDI, data moves directly between computer applications in different organizations, enabling swift and accurate transmission of information without the delays inherent in paper-based systems.

o Standardized Format: EDI standards dictate the structure and sequence of data in documents, ensuring consistency and allowing seamless communication between various systems, which can be highly beneficial in handling large volumes of data in analytics processes.

Types of EDI

Point-to-Point Connections:

01. Direct System Interaction

In this type of EDI, two systems establish a direct connection without any intermediary involvement. It's akin to a direct phone call between two parties.

02. Secure Protocols

Communication occurs over the internet, often utilizing secure protocols to ensure the confidentiality and integrity of the exchanged data

03. Example

Consider a large retailer directly connecting with a major supplier for automated order processing. The systems communicate directly without involving any third-party network

Value-Added Network (VAN):

01. Third-Party Intermediary

A VAN serves as an intermediary managing the data transmission between the sender and receiver. It operates like a post office for electronic documents.

02. Mailboxing Paradigm

Documents are sent to a centralized mailbox from where the VAN collects and forwards them to the recipient's mailbox, enhancing security and reliability.

03. Example

Imagine multiple suppliers sending invoices to a central VAN. The VAN then efficiently transmits these documents to the respective buyers, streamlining the process and providing a centralized point for managing EDI transactions. This concept of a centralized hub can be related to the aggregation and management of vast amounts of data in big data analytics

Business Benefits of EDI

Positive Customer Experiences

o Efficient Transactions: EDI automation ensures the swift execution of transactions, contributing to positive customer experiences.

o Reliable Delivery: Prompt and reliable product and service delivery, facilitated by EDI, adds to the overall customer satisfaction.

Time and Cost Savings:

o Automation of Manual Processes: EDI replaces time-consuming manual handling of paper documents, leading to significant time and cost savings.

o Financial Efficiency: The automation of previously manual processes translates into reduced operational costs and faster transaction processing, contributing to financial savings

Enhanced Efficiency and Productivity:

o Swift Document Processing: More business documents can be shared and processed in less time, boosting overall efficiency and productivity.

o Accuracy Improvement: The streamlined electronic process results in greater accuracy, reducing the likelihood of errors and subsequent corrective actions.

Error Reduction through Standardization

o Rigid Standardization: EDI's adherence to rigid standards ensures that information is correctly formatted before entering business processes, reducing errors.

o Data Quality Assurance: Standardization contributes to higher data quality, enhancing the reliability of information used in critical business processes or applications.

Improved Traceability and Reporting

o Integration Capabilities: Electronic documents from EDI can seamlessly integrate with various IT systems, facilitating data collection, enhancing visibility, and supporting comprehensive analysis.

o Enhanced Decision-Making: The integrated data allows for better traceability and reporting, empowering businesses with valuable insights for informed decision-making..

Grid Computing

Grid computing is an integrated computing infrastructure that unites resources from diverse geographic locations to collectively accomplish shared objectives.

o **Pooling Unused Resources**: Grid computing leverages unused resources from multiple computers, collaborating them to work together for a common goal.

o **Optimizing Resource Utilization**: By combining geographically dispersed resources, grid computing enhances resource utilization, ensuring efficient use of computing power

o **Handling Large Tasks**: Organizations employ grid computing to tackle large tasks or solve complex problems that go beyond the capacity of a single computer.

o **Complex Problem Solving**: Examples like weather modeling showcase grid computing's ability to handle computation-intensive tasks that involve intricate data management and analysis.

o **Weather Modeling Efficiency**: Meteorologists utilize grid computing to address the inefficiency of processing massive weather data on a single computer.

o **Geographically Dispersed Analysis**: The geographically dispersed nature of grid computing infrastructure allows meteorologists to distribute the analysis, significantly improving the speed and effectiveness of weather modeling.

Advantages of Grid Computing

o **Efficiency Boost**: By dividing complex tasks into smaller subtasks, grid computing enables simultaneous processing on multiple computers, significantly enhancing computational efficiency.

o **Cost Savings**: Utilizing existing hardware and accessing cloud resources economically, grid computing offers a cost-effective solution, making computational power more accessible.

o **Flexibility and Collaboration**: Unrestricted by physical boundaries, grid computing allows the establishment of networks across regions, fostering collaborative research among individuals or teams from different countries.

Components In Grid Computing

Nodes in Grid Computing:

Definition: Computers or servers in a grid computing network are referred to as nodes, contributing unused computing resources like CPU, memory, and storage.

Functionality: Nodes not only offer resources to the grid network but can also perform unrelated tasks independently. The network can scale without a specified limit on the number of nodes.

Types of Nodes: Three main types exist: control nodes, provider nodes, and user nodes.

Grid Middleware:

Role: Grid middleware is specialized software that connects computing resources in grid operations to high-level applications, managing tasks like processing power requests.

Resource Management: It regulates the user sharing of available resources, ensuring a balanced load to prevent overwhelming the grid computers.

Security Measures: Grid middleware also implements security measures to prevent the misuse of resources within the grid computing environment.

Grid Architecture Layers

High-Level Applications: The top layer encompasses high-level applications, like predictive modeling applications, that operate on the grid computing network.

Middleware

The second layer, known as middleware, efficiently manages and allocates resources as requested by applications.
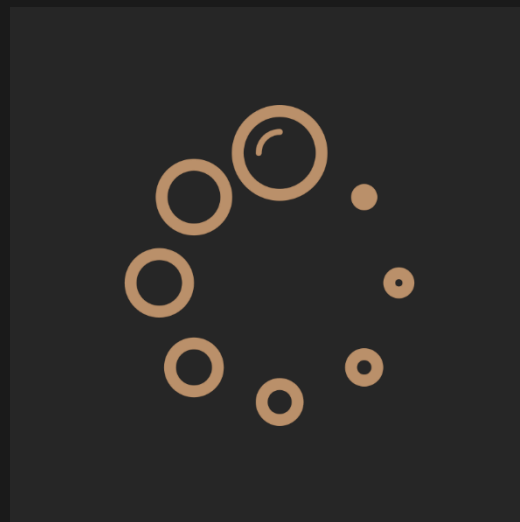
Computer Resources

The third layer consists of available computer resources such as CPU, memory, and storage.

Network Connection

The bottom layer facilitates the connection of the computer to the grid computing network.

Grid Computing Architecture

User Node:

A user node, representing a requesting computer, seeks additional resources from other computers in the grid computing network through middleware.

When additional resources are required, the user node's request is processed by the middleware and forwarded to other nodes in the grid system.

Provider Node:

Nodes in grid computing can switch between user and provider roles. A provider node shares its resources for grid computing tasks.

Provider nodes execute subtasks for user nodes, such as forecasting stock prices for various markets. The middleware collects and compiles results to create a global forecast.
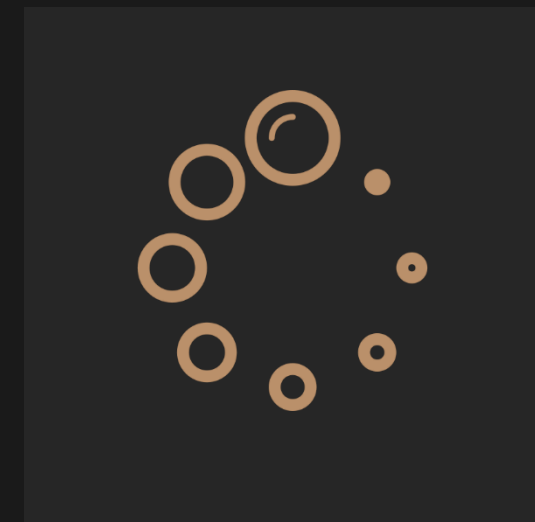
Control Node:

The control node administers the grid network, managing the allocation of computing resources. The middleware operates on the control node.

When a user node requests a resource, the middleware, running on the control node, checks for available resources and assigns the task to a specific provider node.

E-commerce

E-commerce, short for electronic commerce, involves the purchase and sale of goods, services, or the exchange of funds or data through electronic networks, primarily the internet.

E-commerce transactions encompass various models, including business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer, and consumer-to-business.

Primary Medium: E-commerce transactions primarily leverage electronic networks, with the internet serving as the key medium for conducting buying, selling, or data transmissions.

Versatility: E-commerce's electronic nature enhances accessibility and facilitates a wide range of transactions, fostering global business interactions.

Types of E-Commerce

B2B E-commerce:

Definition: Electronic exchange of products, services, or information exclusively between businesses.

Examples: Online directories, product exchanges, and e-procurement interfaces.
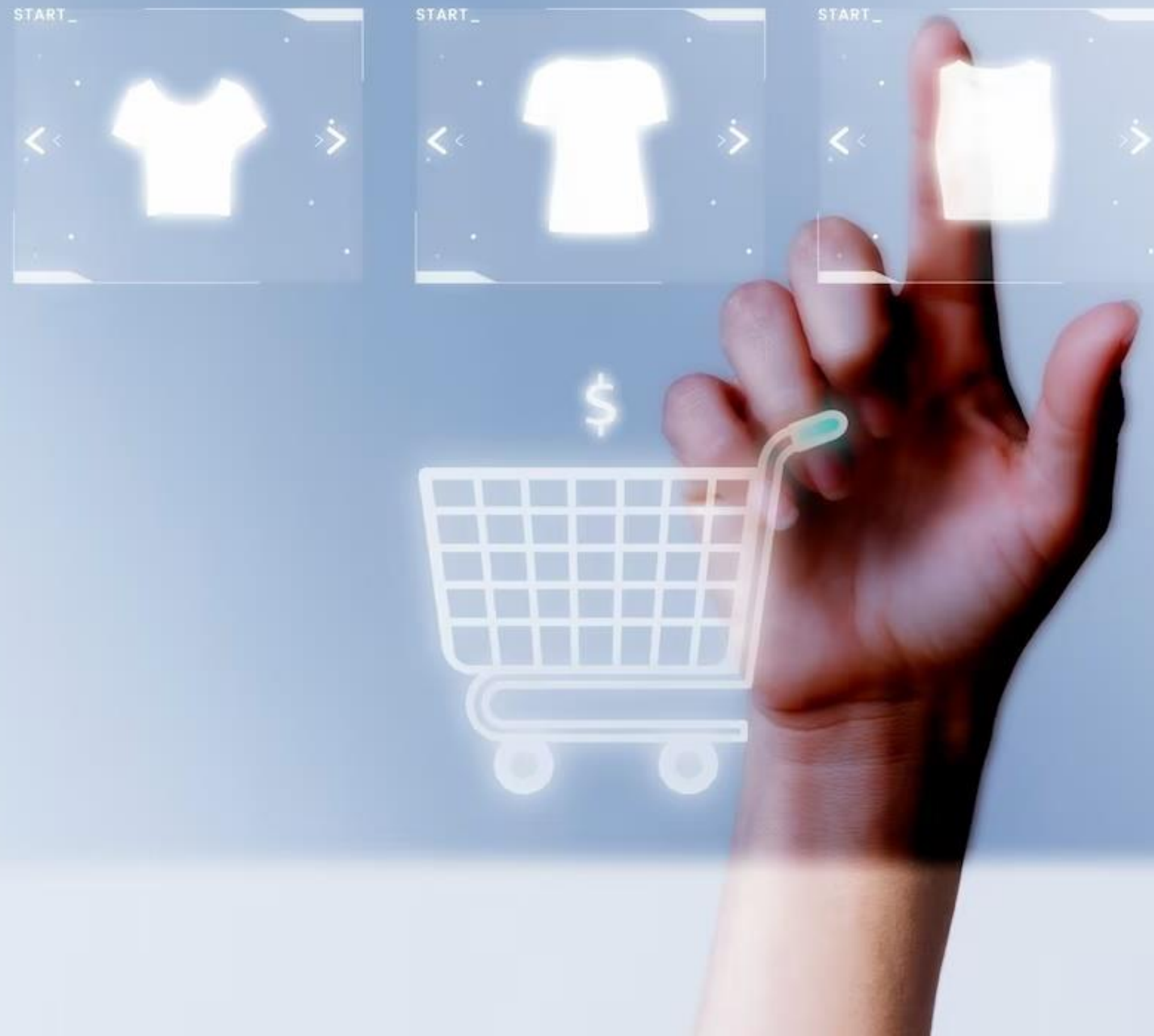
Projection: Predicted to reach $1.8 trillion, constituting 17% of U.S. B2B sales by 2023.

B2C E-commerce:

Retail Focus: Involves businesses selling products, services, or information directly to consumers

Dot-Com Boom: Emerged prominently during the late 1990s dot-com boom.

Market Dominance: Amazon exemplifies dominance in the B2C market.

Types of E-Commerce

C2B E-commerce:

o Consumer Offerings: Consumers make products or services available online for companies to bid on and purchase.

o Examples: Platforms like iStock for media or design elements, and job boards.

B2A E-commerce:

o Government Interaction: Involves online transactions between businesses and public administration or government bodies.

o Service Range: Encompasses legal documents, social security, fiscal data, and employment services.
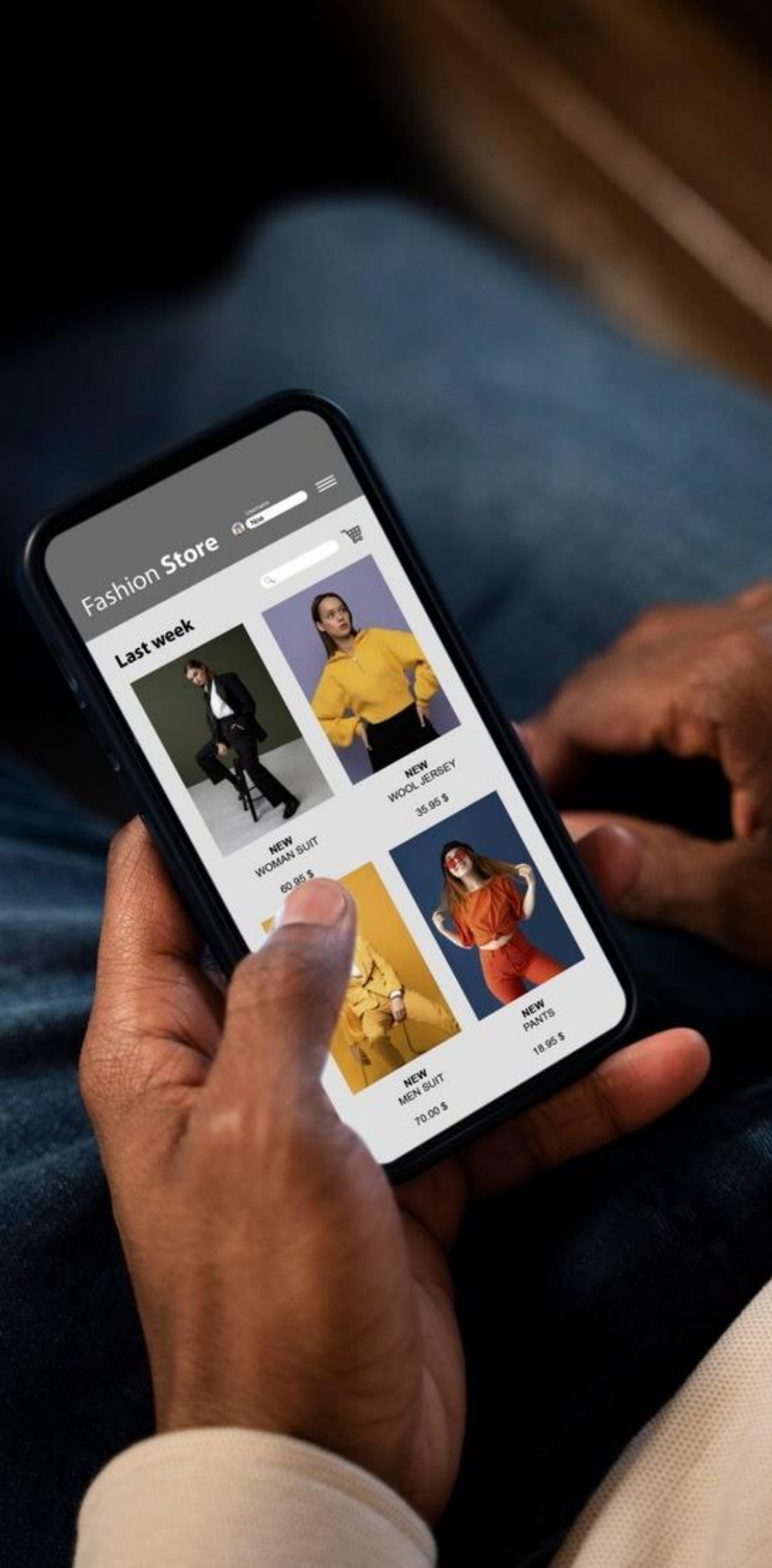
C2C E-commerce:

o Consumer Trading: Consumers engage in online trading of products, services, and information with each other.

o Platforms: Examples include online auctions (e.g., eBay) and classified advertisements (e.g., Craigslist).

M-commerce:

o Mobile Transactions: Online sales transactions conducted through mobile devices like smartphones and tablets.

o Activities: Includes mobile shopping, banking, payments, facilitated by mobile chatbots.

C2A E-commerce:

o Consumer-Government Transactions: Involves online transactions between consumers and public administration or government bodies.

o Areas: Encompasses social security, taxes, health-related services through electronic means.

Mobile Commerce

Mobile commerce, also known as m-commerce, involves using wireless handheld devices like cell phones and tablets to conduct commercial transactions online, including the purchase and sale of products, online banking, and paying bills.

Mobile Shopping:
- a. *Example:* Buying clothing items through a retail app.
- b. *Definition:* Involves purchasing goods and services through mobile applications.

Mobile Payments:
- a. *Example:* Using digital wallets like Apple Pay or Android Pay.
- b. *Definition:* Transactional activities where payments are made through mobile devices.

Mobile Banking:
- a. *Example:* Conducting banking transactions through a mobile app.
- b. *Definition:* Engaging in banking services through mobile devices.

Virtual Marketplace Apps:
- a. *Example:* Utilizing apps like Amazon for online shopping.
- b. *Definition:* Platforms providing a digital space for various sellers and buyers to interact.

Digital Wallets:
- a. *Example:* Leveraging services like Samsung Pay for transactions.
- b. *Definition:* Secure electronic systems for making online transactions via mobile devices.

Mobile Ticketing:
- a. *Example:* Purchasing tickets through mobile apps.
- b. *Definition:* Involves buying tickets or accessing event passes through mobile devices.

Key M-Commerce Areas

Browsing and Buying:
- Flow: Similar to desktop e-commerce, users browse and make purchases through dedicated apps or 'social commerce' options on platforms like TikTok or Instagram.
- Enhancement: Enables seamless shopping experiences on mobile devices.

Mobile App Payments and Wallet Payments:
- Process: Users load digital wallets, enabling quick purchases with a single click or thumbprint authentication.
- Advantage: Streamlines payment processes across various apps

Convenience Purchases:
- Examples: Ordering food, groceries, booking taxis or ride-sharing.
- Scope: Extends beyond traditional retail, focusing on daily-life conveniences.

Digital Content (Purchasing and Renting:
- Popular Types: Subscriptions for music and video (e.g., Netflix, Spotify).
- Model: Users pay a subscription fee for access to a library of content via mobile apps

Mobile Computing

Mobile computing is a cutting-edge technology that revolutionizes data transmission by facilitating seamless communication between devices without the constraints of physical cables.

At its core, mobile computing empowers devices, such as mobiles and laptops, to engage in wireless transmission, allowing for the fluid exchange of data, voice, and video, liberating users from traditional connectivity limitations.

Types of Mobile Communication

Fixed and Wired: This type encompasses traditional communication methods, relying on established wired infrastructure

Fixed and Wireless

Combining the reliability of fixed infrastructure with the flexibility of wireless connectivity, this type offers a versatile communication approach.

Mobile and Wired

In this scenario, mobile devices are connected through wired means, allowing for enhanced stability and data transfer.

Mobile and Wireless

This type represents the epitome of modern connectivity, emphasizing wireless communication between mobile devices, providing unparalleled flexibility and convenience

Mobile Hardware v/s Software

Mobile Hardware:

Examples: Smartphones, laptops, tablets, PDAs.

Function: Enables mobility by accessing services wirelessly.

Mobile Software:

Definition: Programs running on mobile hardware.

Importance: Tailored for mobile applications, serving as the operating system.

Key Component: Essential for the functionality of mobile devices.

Application of Mobile Computing

Web or Internet Access: Mobile computing facilitates instant access to the web and internet services through smartphones, tablets, and other wireless devices. Users can browse websites, check emails, and engage in various online activities on the go.

Emergency Services: Mobile computing plays a crucial role in emergency situations. Users can quickly call emergency services, share their location, and access critical information during emergencies, improving response times and overall safety

Global Positioning System (GPS): Mobile devices leverage GPS technology for location-based services. This application is widely used for navigation, location tracking, and mapping, providing real-time information on the user's geographical position

Entertainment Services: Mobile devices offer a plethora of entertainment services, including streaming videos, music, gaming, and social media applications. Users can enjoy a wide range of entertainment options anytime and anywhere.

Mobile app analytics is the systematic collection and analysis of user data within mobile applications. It provides valuable insights into user behavior, interaction patterns, and app performance.

The primary goal of mobile app analytics is to help product managers and developers understand how users engage with their apps. By gathering and interpreting data, analytics platforms offer actionable insights to enhance user experience and optimize app performance.

Key Components of Mobile App Analytics

Key Components:

a. User Behavior Analysis: Mobile app analytics tracks user interactions, highlighting which screens are most engaging and where users spend the majority of their time within the app.

b. User Flow Evaluation: It assists in evaluating if users navigate through the app as intended or encounter friction points. Understanding the user flow helps identify areas for improvement.

c. Performance Metrics: Analytics platforms monitor app performance, identifying screens with high crash rates. This data is crucial for developers to prioritize bug fixes and enhance stability.

d. Gesture Analysis: By examining common interactions (gestures), mobile app analytics reveals how users interact with different features. This insight aids in refining user interfaces for a seamless experience.

e. Feature Evaluation: Product managers can identify features that may confuse users through analytics. This includes assessing which features are underutilized or lead to user frustration.

Advantages of App Analytics

Data-Driven Insights:

o App analytics provide data-driven insights, fostering better user engagement and higher retention rates.

o Enables mobile teams to focus on delivering user-focused product updates, leading to increased customers and revenue.

Accurate Data Collection:

o Analytics platforms offer detailed and reliable data, uncovering the "why" behind user behavior without relying solely on feedback or interviews.

o Facilitates a comprehensive understanding of user interactions and experiences within the app.

Customization and Issue Identification:

o Data-driven insights aid in identifying issues through features like session replay and heatmaps.

o Allows product managers to customize apps for a seamless user experience, addressing obstacles in the user journey effectively.

Cross-Functional Alignment:

o Enables cross-functional teams to align by sharing session recordings, customizable dashboards, and crash reports.

o Enhances collaboration between customer support, product management, and engineering teams, streamlining issue resolution.

Social Media Analytics

Social media analytics involves acquiring and evaluating data from diverse platforms like Facebook, Twitter, Reddit, YouTube, and Instagram.
Without a robust social media analytics system, tracking, monitoring, and understanding information dispersed across comments, posts, shares, and promotions becomes challenging.

Data Acquisition: Social media analytics collects information from various platforms, enabling comprehensive data coverage.

Monitoring and Tracking: The system continuously monitors user interactions, post engagements, and overall social media activity.

Sense-Making: Analyzing and interpreting the gathered data to derive meaningful insights, trends, and patterns.

Benefits & Importance of Social Media Analytics

Performance Assessment
Social media analytics aids in evaluating the performance of posts, campaigns, and overall online presence.

Informed Decision-Making
Provides valuable insights for strategic decision-making, content optimization, and campaign refinement

Audience Engagement
Understanding user interactions and sentiments helps tailor content for improved audience engagement.

Targeted Marketing
Facilitates personalized and targeted marketing strategies based on user preferences and behaviors

Competitor Analysis
Enables benchmarking against competitors, identifying industry trends, and staying ahead in the digital landscape

Crisis Management
Swiftly identifies and addresses potential issues or negative sentiments to manage online reputation effectively

Leveraging Social Media Analytics: A Strategic Approach

Market Trends Identification

Uncover customer behavior patterns to illustrate and adapt to industry trends

Demographic Insights

Utilize social media statistics to understand and target specific customer demographics

Measuring ROI

Showcase agency value by providing tangible ROI analyses for social media campaigns

Customer Engagement Assessment

Analyze user interactions with marketing material to optimize campaign effectiveness.

Product Enhancement Opportunities

Monitor customer opinions on products and services to identify areas for improvement

Leveraging Social Media Analytics: A Strategic Approach

Refining Strategy:

o Use analytics to discern effective marketing strategies and allocate resources wisely.

o Continuously refine and optimize social media approaches for maximum impact.

Audience Understanding:

o Leverage digital footprints to gain real-time insights into audience needs and preferences.

o Tailor marketing efforts to align with audience expectations and enhance engagement.

Competitive Benchmarking:

o Employ social media analytics to identify competitors' strengths and weaknesses.

o Align campaigns strategically to gain a competitive advantage in the market.

Thanks for Watching!

Look at you taking the effort to read
this but not taking your degree
seriously, fucktard!