ALGONQUIN COLLEGE

BUSINESS PROCESSES

Professor : Rejaul Chowdhury
Email: chowdhr@algonquincollege.com
Office: T323

Objectives

- Define Business Process.
- Understand why it is important to integrate Information Technology with business.
- Describe Information System Components.
- Integration of Information Technology with business can be categorized as e-commerce and e-business.
- Define e-commerce, understand how e-commerce differs from e-business, identify the primary technological building blocks underlying e-commerce, and recognize major current themes in e-commerce.

Business Process

- A **process** is a series of tasks that are completed in order to accomplish a goal.
- A **business process**, therefore, is a process that is focused on achieving a goal for a business.
- Processes are something that businesses go through every day in order to accomplish their mission.
- The better the processes, the more effective the business. Some businesses see their processes as a strategy for achieving competitive advantage.

Business Process

- A process that achieves its goal in a unique way can set a company apart.
- A process that eliminates costs can allow a company to lower its prices (or retain more profit).
- Anything from making a sandwich to building a space shuttle utilizes one or more business processes.
- In the context of information systems, a business process is a set of business activities performed by human actors and/or the information system to accomplish a specific outcome.

Business Process Management

- An intentional effort to plan, document, implement, and distribute an organization's business processes with the support of information technology.

Business Process Management Benefits

Importance of Information on Business

- Companies use information as a
  - weapon in the battle to increase productivity, deliver quality products and services, maintain customer loyalty, and make sound decisions
- Information technology can
  - mean the difference between success and failure

What Is Information Technology?

- **Information Technology (IT)**
  - Combination of hardware and software products and services that companies use to manage, access, communicate, and share information
- **Welcome to the 21st Century: The IT Journey Continues**
  - Changes in the world
  - Changes in technology
  - Changes in client demand

Coming to work in 1953

© ClassicStock / Alamy

... and in 2013

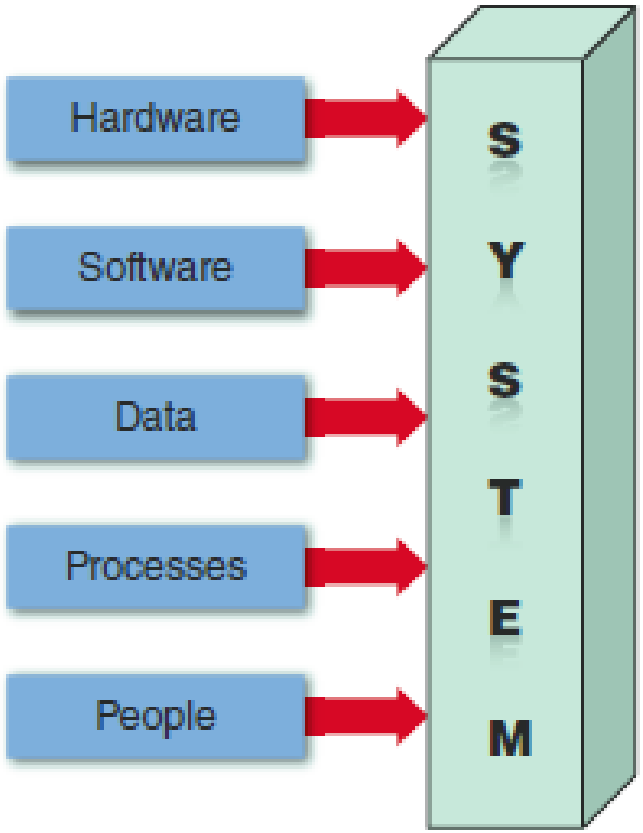
© Cusp / SuperStock

What Is Information Technology? (Cont.)

- **Systems Analysis and Design**
  - Step-by-step process for developing high-quality information systems
  - **What Does a Systems Analyst Do?**
    - Plan, develop, and maintain information systems
    - Also manages IT projects, including tasks, resources, schedules, and costs
    - Conducts meetings, delivers presentations, and writes memos, reports, and documentation

Information System Components

- A system is a set of related components that produces specific results
- Mission-critical systems are vital to a company's operations
- Information systems have five key components: hardware, software, data, processes, and people



Information System Components (Cont.)

- Hardware
  - Is the physical layer of the information system
  - Moore's Law
- Software
  - System software
  - Application software
    - Horizontal system
    - Vertical system
    - Legacy systems

FIGURE Server farms provide the enormous power and speed that modern IT systems need.

Application software

- Application software
  - Horizontal system
    - General-purpose application software that is not made for one specific industry, but can be used in many different businesses or fields.
    - Microsoft Word, Email apps, Accounting software, Project management tools (e.g. JIRA)
  - Vertical system
    - designed for a specific industry or type of business, to handle specialized tasks.
    - Hospital/Clinic software, Banking software
  - Legacy systems
    - old computer system, software, or technology that is still being used, even though newer and better systems exist.
    - CRA tax system running on mainframes

Information System Components (Cont.)

- **Data**
  - Tables store data
  - Linked tables work together to supply data
- **Processes**
  - Describe the tasks and business functions that users, managers, and IT staff members perform to achieve specific results
- **People**
  - Stakeholders
  - Users or end users

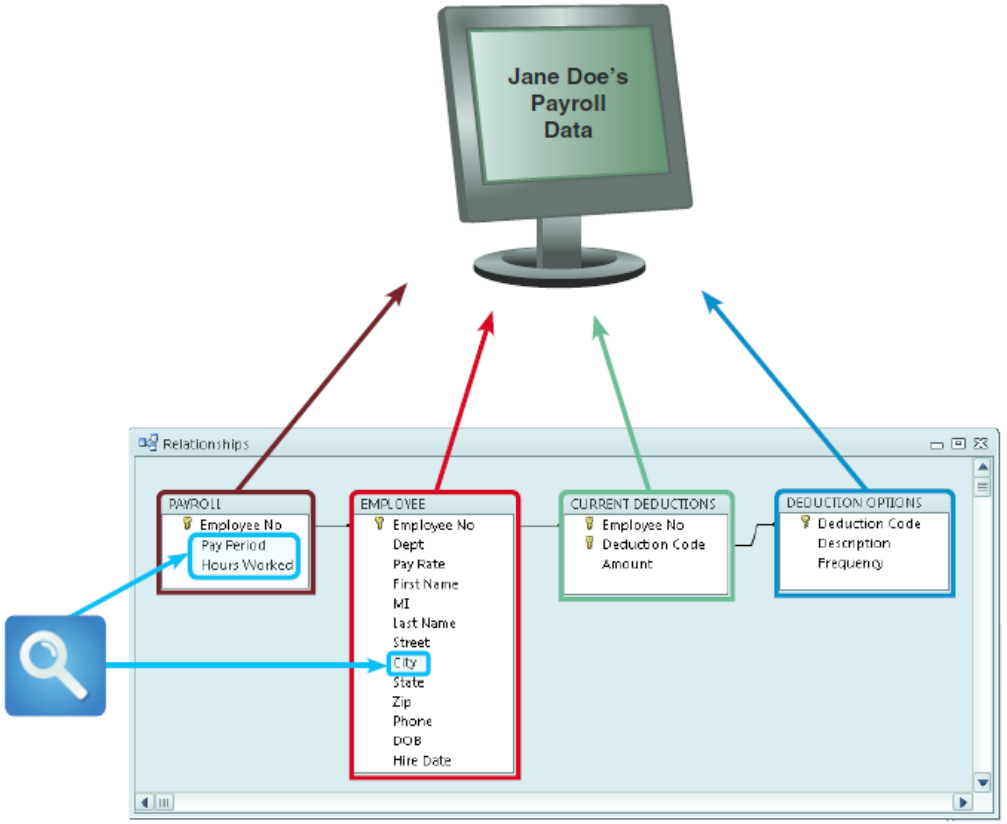


FIGURE In a typical payroll system, data is stored in separate tables that are linked to form an overall database.

Impact of Integrating Information Technology with business

- Improve organizational performance
- Increase profitability
- Gain market share
- Improve customer service
- Deliver products faster
- Expand Markets
- Increase Availability
- Reduce Cost
- Improve Efficiency

Business in the 21st Century

- Three major trends:
  - Rapidly increasing globalization
  - Technology integration for seamless information access
  - Rapid growth of cloud-based computing and services
- All trends are Internet-centric and driven by the immense power of the Web

Business in the 21st Century (Cont.)

- E-commerce or I-commerce
- B2C (Business-to-Consumer)
- B2B (Business-to-Business)
  - EDI
  - Supply chain management (SCM)
  - Supplier relationship management (SRM)
- **What's Next?**
  - Traditionally, IT companies were product-oriented or service-oriented
  - Today's IT companies offer a mix of products, services, and support

Business in the 21st Century (Cont.)

- Internet-dependent firms
  - Primary business depends on the Internet rather than a traditional business channel
- Brick-and-mortar firms
  - Have physical stores where customers can see and touch the products
  - Have expanded their Web-based marketing channels to increase sales and serve customers better
    - Combine convenience of online shopping and the alternative of hands-on purchasing
    - Lowe's, Costco, Target, and Wal-Mart are examples

Business in the 21st Century (Cont.)

- The Web-based business model leveled the playing field for small firms that now can reach a global marketplace
- Discount coupon business gets a new life
  - eBay and Groupon
  - Firms now using global positioning system (GPS) coordinates to tempt buyers with nearby deals

Business in the 21st Century (Cont.)

- **Business Profiles**
  - Overview of a company's mission, functions, organization, products, services, customers, suppliers, competitors, constraints, and future direction
- **Business Processes**
  - Specific set of transactions, events, and results that can be described and documented
  - A **business process model (BPM)** graphically displays one or more business processes

Business in the 21st Century (Cont.)

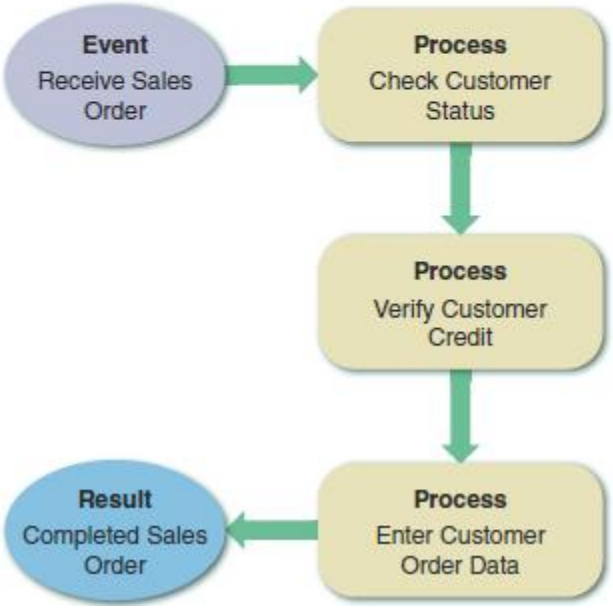


FIGURE A simple business model might consist of an event, three processes, and a result.

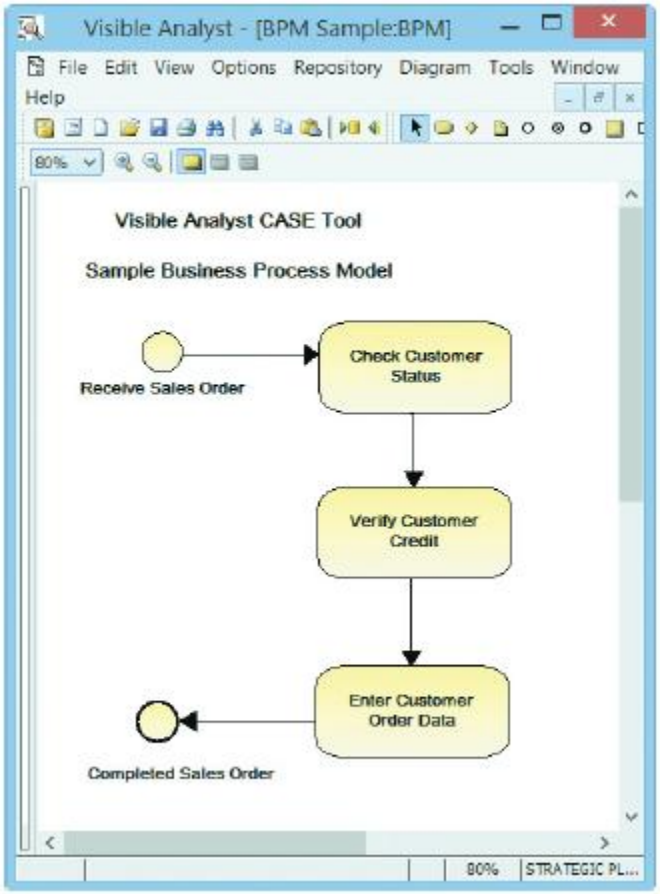


FIGURE This sample uses business process modeling notation (BPMN) to represent the same events, processes, and workflow

Business in the 21st Century (Cont.)

Business Information Systems

- The old way:
  - Administrative staff used office systems
  - Operational people used operational systems
  - Middle managers used decision support systems
  - Top managers used executive information systems
- The "now" way
  - All employees use office productivity systems
  - Operations users require decision support systems

Business in the 21st Century (Cont.)

- A new set of system definitions
  - Enterprise computing systems
  - Transaction processing systems
  - Business support systems
  - Knowledge management systems
  - User productivity systems

Business in the 21st Century (Cont.)

Enterprise Computing

- Information systems that support company-wide operations and data management requirements
- Examples:
  - Wal-Mart's inventory control system
  - Boeing's production control system
  - Hilton Hotels' reservation system
- Applications called enterprise resource planning (ERP) systems provide cost-effective support for users and managers throughout the company

Business in the 21st Century (Cont.)

Transaction Processing

- Transaction processing (TP) systems process data generated by day-to-day business operations Examples:
  - Customer order processing
  - Accounts receivable
  - Warranty claim processing
- A TP system verifies customer data, checks customer credit, checks stock status, posts to accounts receivable, adjusts inventory levels, and updates the sales file

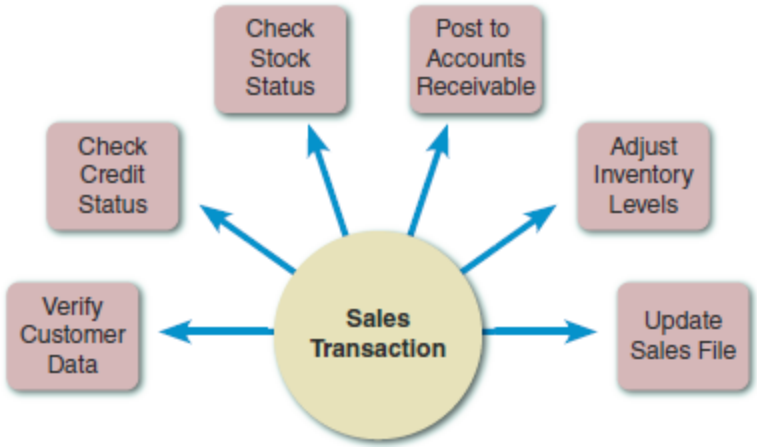


FIGURE A single sales transaction consists of six separate tasks, which the TP system processes as a group.

Business in the 21st Century (Cont.)

Business Support

- Provide job-related information support to users at all levels of a company
  - Can work hand-in-hand with a TP system
  - New development is RFID
- Radio frequency identification (RFID) technology uses high-frequency radio waves to track physical objects.

With an RFID tag, items can be tracked and monitored throughout the shipping process.

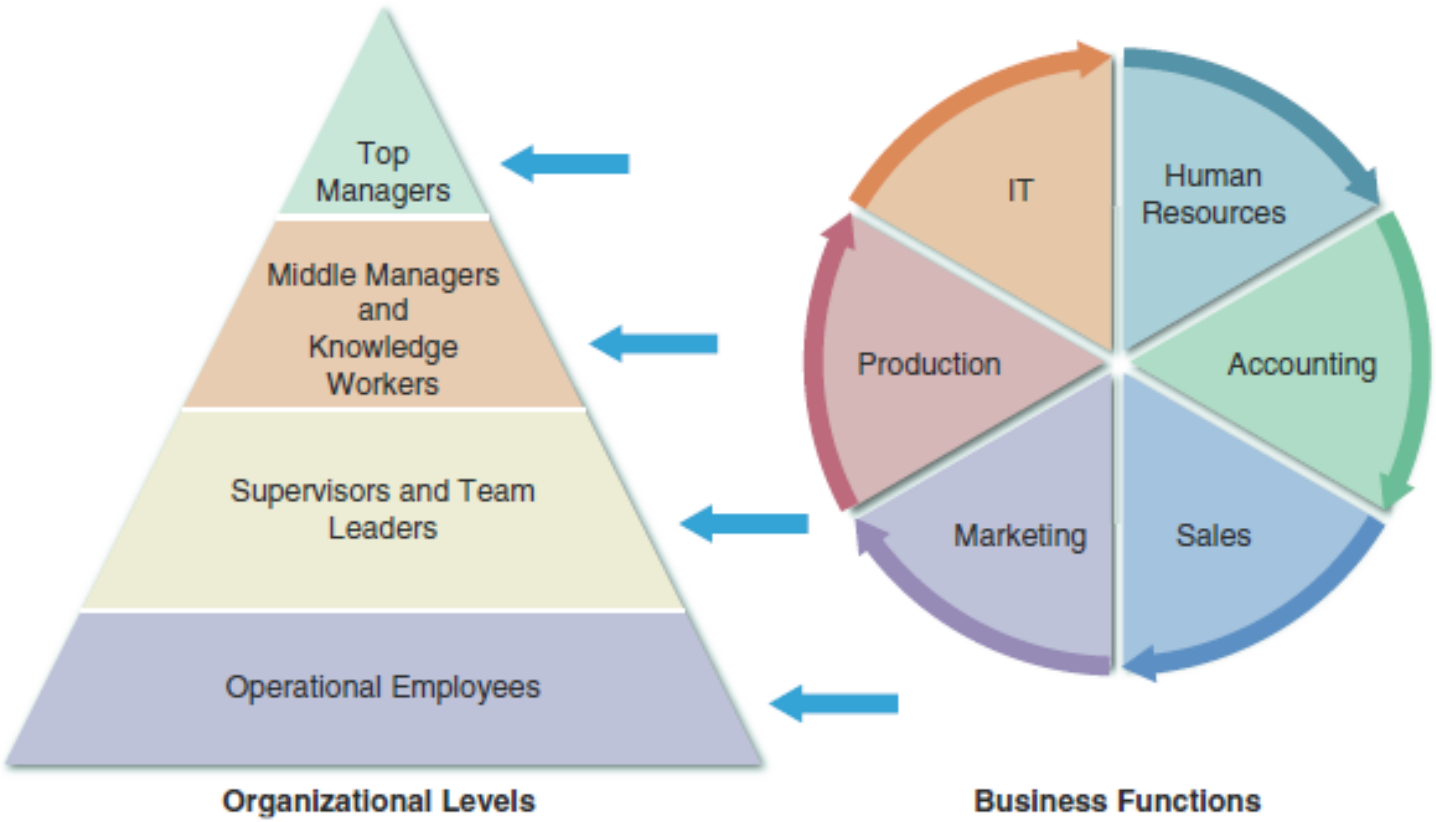
Business in the 21st Century (Cont.)

- **Knowledge Management**
  - Uses a large database called a knowledge base
  - Allows users to find information by entering keywords
  - Uses inference rules, which are logical rules that identify data patterns and relationships

Business in the 21st Century (Cont.)

- **User Productivity**
  - Technology that improves productivity
  - Groupware
- **Systems Integration**
  - Most large companies require systems that combine transaction processing, business support, knowledge management, and user productivity features

What Information Do Users Need?



A typical organizational model identifies business functions and organizational levels.

What Information Do Users Need? (Cont.)

- **Top Managers**
  - Develop long-range **strategic plans**, which define the company's overall mission and goals
  - Need information on *economic forecasts, technology trends, competitive threats, and governmental issue*
- **Middle Managers and Knowledge Workers**
  - Provide *direction, necessary resources, and performance feedback* to supervisors and team leaders
  - Need more detailed information than top managers

What Information Do Users Need? (Cont.)

- **Supervisors and Team Leaders**
  - Oversee operational employees and carry out day-to-day functions
  - Need decision support information, knowledge management systems, and user productivity systems
- **Operational Employees**
  - Rely on TP systems to enter and receive data they need to perform their jobs
  - Need information to handle tasks and make decisions previously made by supervisors

What Is E-commerce?

- Use of Internet to transact business
  - Includes Web, mobile browsers and apps
- More formally:
  - Digitally enabled commercial transactions between and among organizations and individuals

What is E-business?

- E-business
  - Digital enabling of transactions and processes within a firm, involving information systems under firm's control
  - Does not include commercial transactions involving an exchange of value across organizational boundaries

Technological Building Blocks Underlying E-commerce

- The Internet
  - Worldwide network of computer networks built on common standards
- The World Wide Web
  - Provides access to trillions of web pages created in HTML
  - “Surface” Web versus “deep” Web
- Mobile platform
  - Smartphones, tablets, ultra-lightweight laptops
  - Mobile apps

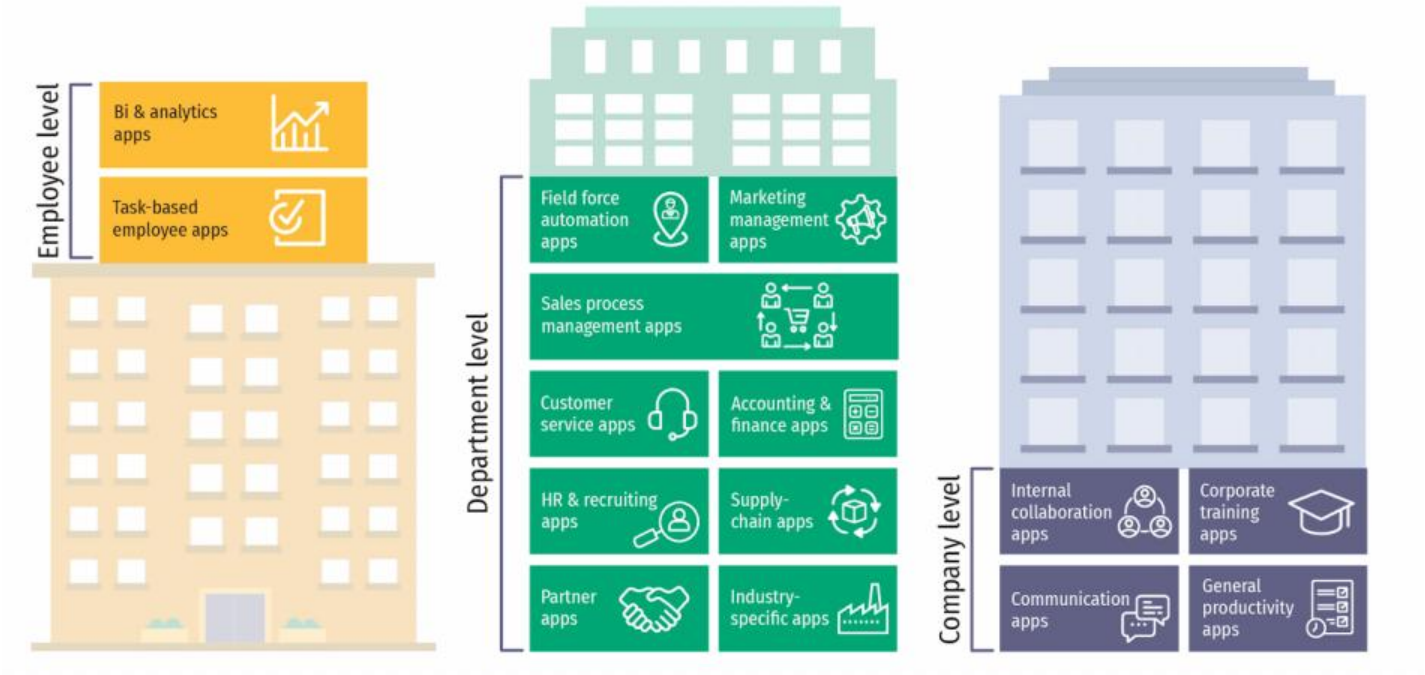
Develop a Mobile App for Your Business

- Gaining insights from similar apps.
- Solving user problems with unique features.
- Simplifying data input for customers.
- Enhancing brand visibility and recognition.
- Providing offline access to your business.
- Increasing brand visibility with regular updates.
- Improving customer ratings with user-friendly features.
- Enhancing customer retention with secure payments and loyalty programs.
- Offering personalization for better engagement and conversions.
- Strengthening digital marketing through social media and push notifications.

Consumer vs Enterprise Mobile Apps

Aspect	Consumer Mobile Apps	Enterprise Mobile Apps
Target Audience	General public	Business use by employees, partners, or clients
Functionality	Broad, generic functionalities for wide appeal	Tailored functionalities to meet specific business needs
	User-centric features	Focus on efficiency, data integration, and task completion
	Social sharing, in-app purchases, gamification	Features for data management, reporting, and integration with enterprise systems
Security	Important but less stringent	High-security requirements due to sensitive business data
	Standard encryption and user authentication methods	Advanced security measures like MFA, secure access controls
	Focus on protecting personal data and transactions	Regular security audits and compliance with industry standards
Development Considerations	Driven by trends, user feedback, and rapid iteration	Driven by business requirements and long-term planning
	Shorter development cycles and frequent updates	Longer development cycles with thorough testing and validation
	Heavy focus on UI and UX design	Focus on functionality, performance, and integration with business systems
Distribution and Deployment	Distributed through public app stores (Google Play, Apple)	Distributed through private app stores, direct downloads, or MDM solutions
	Marketing and user acquisition are critical	Deployment managed internally with IT support
	Monetization through ads, in-app purchases, or subscriptions	Monetization typically not a concern (internal use)

Types of Enterprise Mobile Apps



Source: https://idapgroup.com/blog/enterprise-mobile-app-development/

Development Platform of Mobile Apps

- Web App
  - a web application
- Native App
  - specifically for iOS or Android platforms.
- Hybrid App
  - a web application with a lightweight native app "container" attached to it.
- Cross-platform App
  - run on multiple platforms, including Window's, iOS, Android, and web browsers.

Source: https://www.geeksforgeeks.org/blogs/native-vs-hybrid-vs-cross-platform-app-development/

Classification of Mobile Apps

Native vs Hybrid vs Cross-Platform : Difference Table

Aspect	Native App Development	Hybrid App Development	Cross-Platform App Development
Development Language	uses languages particular to a given platform (e.g., Java/Kotlin for Android, Swift for iOS)	usually makes use of web technology(HTML, CSS, Javascript)	It utilises framework that allows development in a single language (e.g., React Native, Xamarin)
Performance	It generally offers that performance as apps are optimised for specific platform.	May have slightly slower performance due to web view rendering.	Performance can vary but often optimises for decent performance across multiple platforms.
User Experience	It can provide the best native user experience tailored to each platforms.	It may lack some native look and feel, but can achieve a native user experience.	It strives to provide consistant user experience across platforms, may not fully match native experience.
Development Time	Longer development time because each platforms requires a different codebase.	Faster development time because a single codebase may be used on several platforms.	Faster development time in compared to native programming, but may require plateform specific tweak.
Maintenance	Requires different codebases	Easier maintenance as changes can be made to the single codebase	Requires maintaining a single codebase, but may still need adjustments for platform-specific updates

Application Type	Advantages	Disadvantages
Web Apps	✓ No download required ✓ Cost-effective ✓ Responsive and easy to set up ✓ Infinite cloud storage ✓ Easy interface changes	× Requires online access × Slower speed compared to local server × Dependent on website stability × Compatibility issues across browsers × No quality control system
Native Apps	✓ Fast and responsive ✓ Supports push notifications ✓ High user value with app icons ✓ Utilizes device features (camera, compass, etc.) ✓ Superior UI/UX	× Requires separate development for iOS and Android × Longer development time × Higher cost due to building two separate apps
Cross-Platform Apps	✓ Single codebase for multiple platforms ✓ Reduces development time and cost ✓ Simultaneous multi-platform launch	× Integration challenges × May appear slow due to non-native components × Delayed access to platform updates × Limited use of native-only features
Hybrid Apps	✓ Single app for both platforms ✓ Requires fewer developers ✓ Easier to scale to other platforms ✓ Access to device features	× Performance issues due to reliance on web view × May not fully satisfy platform-specific expectations × Customization can increase costs

Enterprise mobile apps Examples

- Browsing products via mobile devices
- Searching for specific products via mobile
- Reading product reviews or comparisons via mobile
- Purchasing app services (food delivery apps or car sharing apps)
- Purchasing digital content (paid apps, music, videos, etc.) via mobile
- Interacting with branded apps (like the Amazon Shopping app) via mobile
- Mobile banking
- Mobile retail payments (Apple Pay or Samsung Pay)
- Mobile person-to-person payments (Venmo or Cash App)

Source: Mobile App Development for Businesses: Create a Product Roadmap and Digitize Your Operations. By: Maja Dakić. Publisher: Apress © 2023

Scenario: Developing a Mobile App for a Retail Business

Objective:

- To explore the development of a mobile app for a retail business that aims to enhance customer engagement and streamline operations.

Features of the Mobile App:

- Product Catalog
- Inventory Management
- Customer Reviews and Ratings
- Shopping Cart and Checkout
- Push Notifications for Offers and Discounts
- User Accounts and Preferences
- Analytics Dashboard for Business Owners

Image Source: https://www.scnsoft.com/blog/mobile-retail-store-app-5-features-that-will-step-up-your-business

Insight on Technology: Will Apps Make the Web Irrelevant?

- Class Discussion
  - What are the advantages and disadvantages of apps, compared with websites, for mobile users?
  - What are the benefits of apps for content owners and creators?
  - What are progressive web apps and how do they differ from native apps?
  - Will apps eventually make the Web irrelevant? Why or why not?

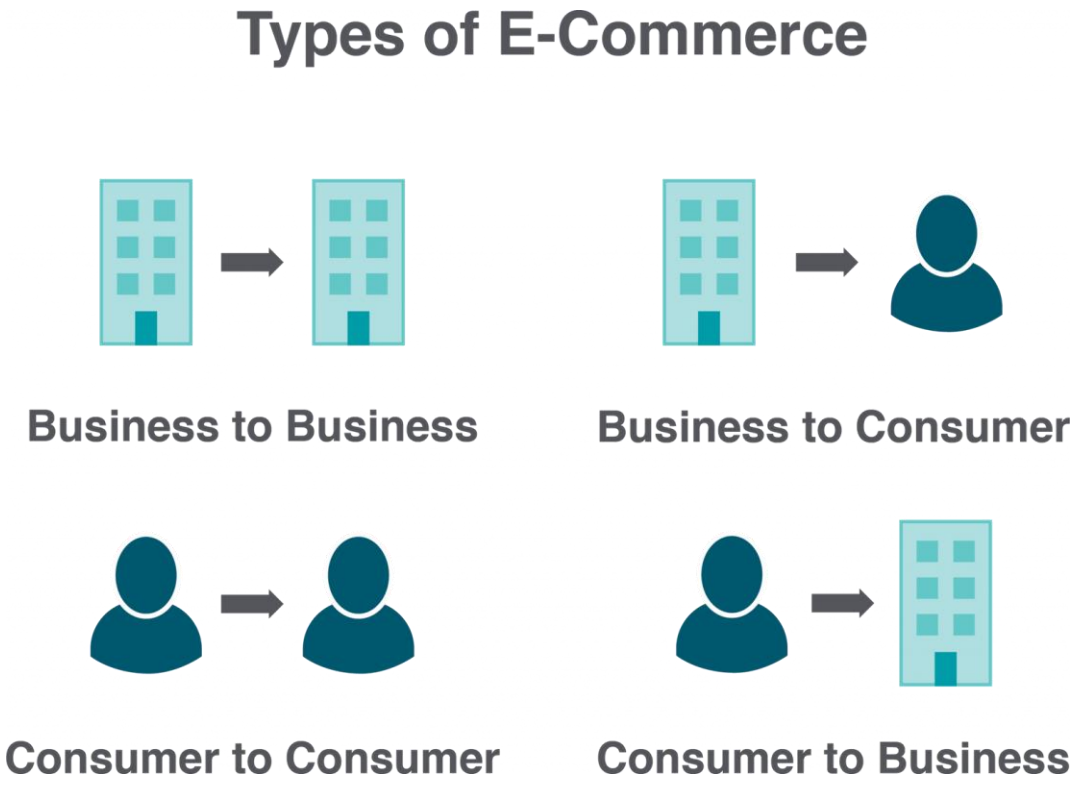
Major Trends in E-commerce (1 of 2)

- Technology trends include:
  - Mobile platform
  - Cloud computing
  - Internet of Things
  - Big data
  - Artificial intelligence technologies
  - Blockchain
  - Web3
  - Metaverse

Major Trends in E-commerce (2 of 2)

- Societal trends include:
  - User-generated content
  - Commercial and governmental invasion of privacy
  - Concerns about increasing market dominance of Amazon, Google, Meta (Big Tech)
  - Online security issues

Types Of E-Commerce



Types Of E-Commerce

- Business to Business (B2B)
  When a business sells a good or service to another business. For example, a business that sells software-as-a-service for other businesses to use, or Staples selling office supplies. This is the largest form of e-commerce
- Business to Consumer (B2C)
  When a business sells a good or service to an individual consumer. For example, when you buy a pair of shoes from an online retailer like Nike.
- Consumer to Consumer (C2C)
  When a consumer sells a good or service to another onsumer. The most well known C2C is eBay, but there are many other online market providers as well, like Kijiji or Craigslist. Peer-to-peer (P2P) are also a form of consumer to consumer. See more about P2P below.
- Consumer to Business (C2B)
  When a consumer sells their own products or services to a business or organization. For example, an influencer offers exposure to their online audience in exchange for a fee, or a photographer licenses their photo for a business to use.

Types Of E-Commerce

- Business to Government (B2G)

  Defined as e-commerce transactions with the government. The internet is used for procurement, filing taxes, licensing procedures, business registrations, and other government-related operations. This is an insignificant segment of e-commerce in terms of volume, but it is growing.
- Consumer to Government (C2G)

  Defined as e-commerce transactions between the government and individuals. This would involve licenses and registrations, and paying taxes.

Mobile e-commerce (M-commerce)

- Mobile e-commerce (M-commerce) refers to the purchase of goods and services through wireless technology, such as cell phones and handheld devices.
- M-commerce is growing fast with an estimated 73% of all e-commerce sales being done via a mobile device.

E-Commerce Models

An e-commerce business model is the method that a business uses to generate revenue online. E-commerce can take on a variety of forms involving different transactional relationships between businesses and consumers.

E-Commerce Models cont.

The Business to Consumer Cycle

E-Commerce Technology

An e-commerce platform is a way to build and create an online experience that allows a company to make sales and fulfill orders. While most people think an e-commerce platform is just a tool that provides a list of products and accepts payments online, a true e-commerce platform is much more than that.

Blockchain And Bitcoin

Bitcoin is a form of digital currency sometimes referred to as a cryptocurrency which is a new form of money that is tradable throughout the world. It operates without the involvement of central banks or a clearinghouse and runs as a P2P network

Trends

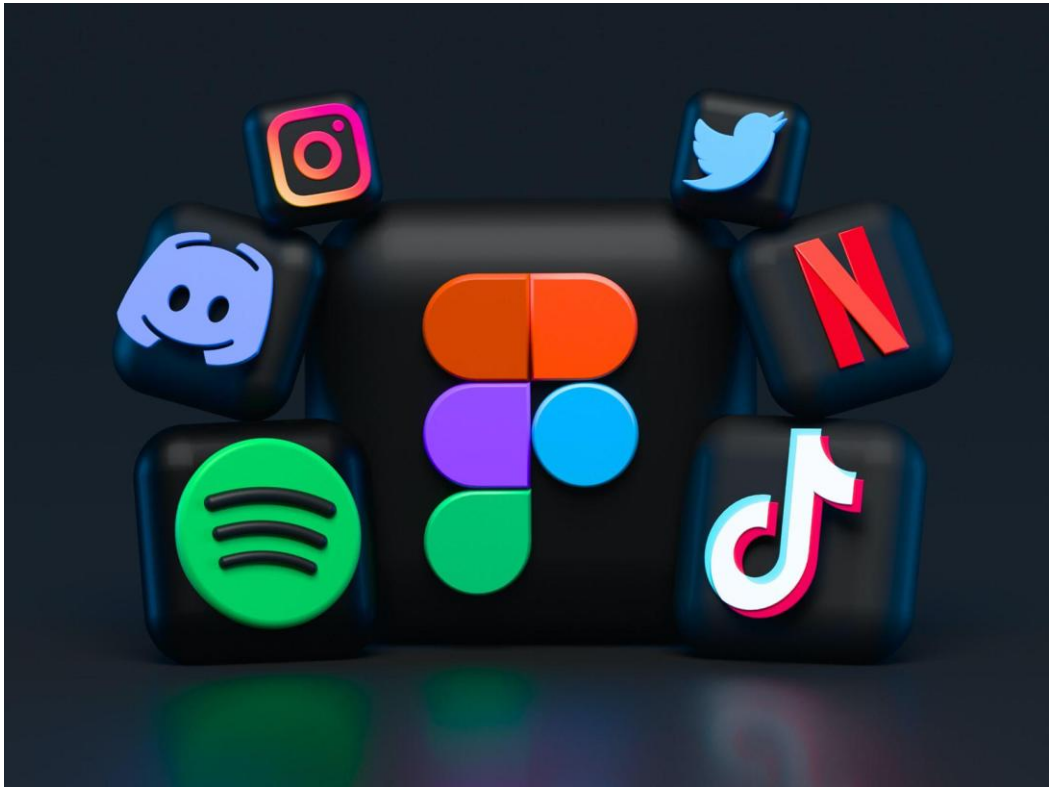
Social Commerce

Social factors—our attitudes, values, ethics, and lifestyles—influence what, how, where, and when people purchase products or services. However, they can be difficult to predict, define, and measure making the job of marketing more challenging

Trends cont.

Social Media Marketing

As more and more people around the planet become connected through social media, the influence of these channels continues to grow.



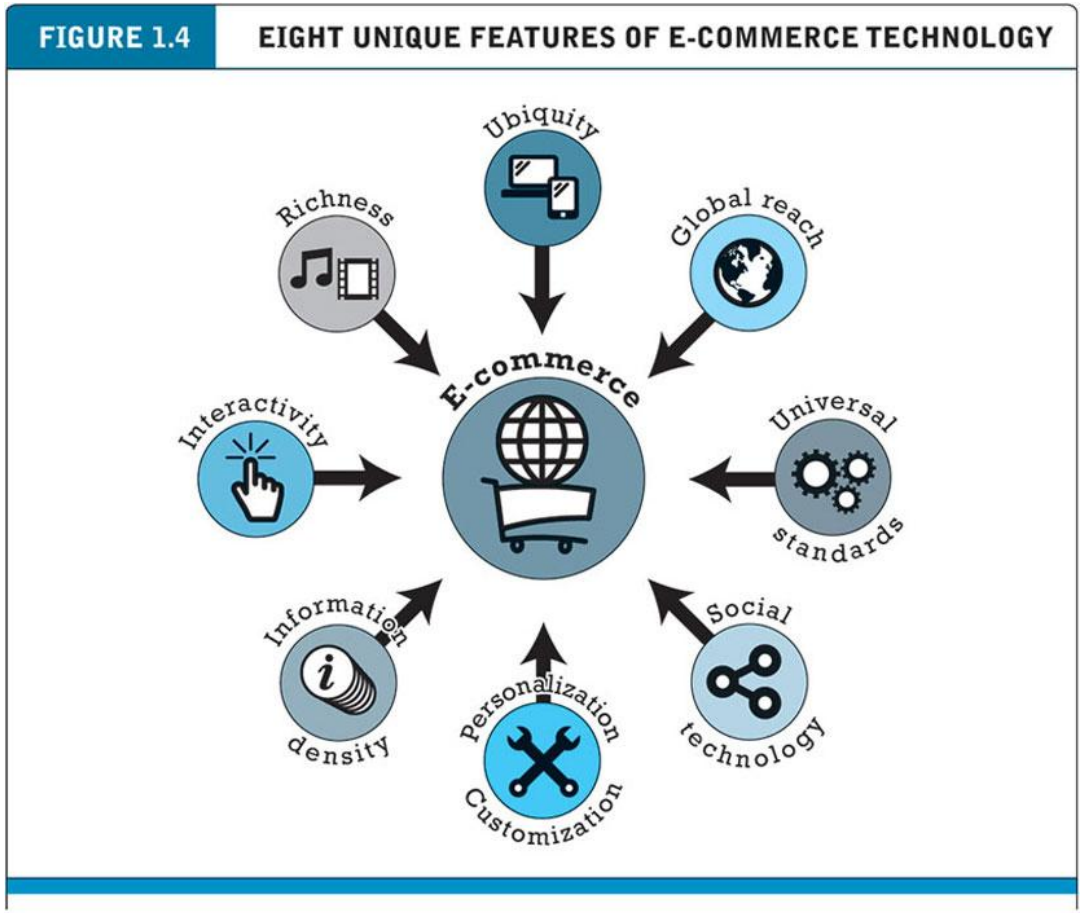
Unique Features of E-commerce Technology (1 of 2)

1. Ubiquity
2. Global reach
3. Universal standards
4. Information richness

Unique Features of E-commerce Technology (2 of 2)

5. Interactivity
6. Information density
7. Personalization/customization
8. Social technology

Eight Unique Features of E-commerce Technology



E-commerce: A Brief History (1 of 4)

- Precursors
  - Baxter Healthcare modem-based system (1970s)
  - Order entry systems (1980s)
  - Electronic Data Interchange (E D I) standards (1980s)
  - French Minitel (1981)

E-commerce: A Brief History (2 of 4)

- 1995–2000: Invention
  - Sale of simple retail goods
  - Limited bandwidth and media
  - Euphoric visions of:
    - Friction-free commerce
    - First-mover advantages
  - Dot-com crash of 2000

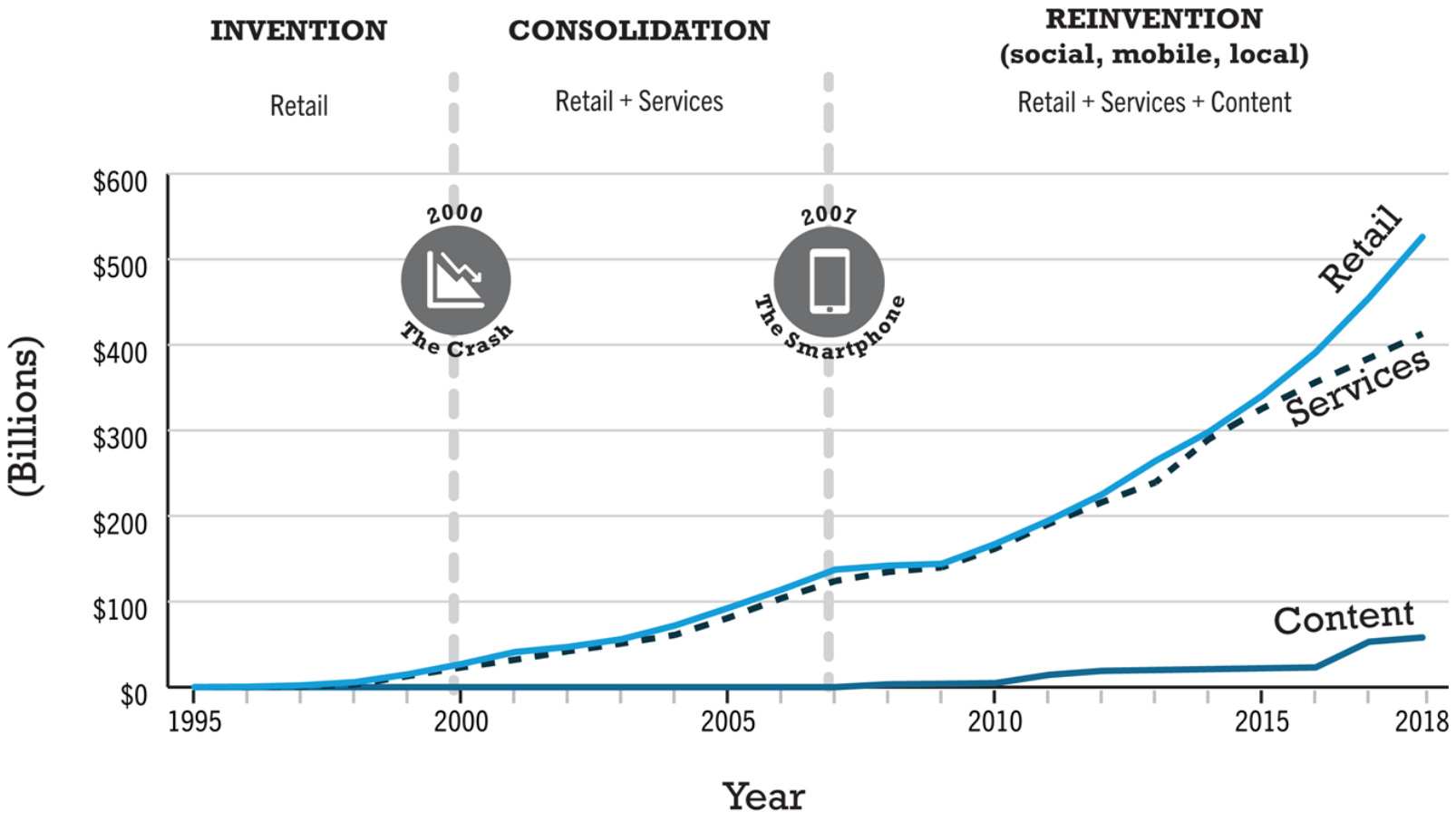
E-commerce: A Brief History (3 of 4)

- 2001–2006: Consolidation
  - Emphasis on business-driven approach
  - Traditional large firms expand presence
  - Start-up financing shrinks
  - More complex products and services sold
  - Growth of search engine advertising
  - Business web presences expand

E-commerce: A Brief History (4 of 4)

- 2007–Present: Reinvention
  - Rapid growth of:
    - Web 2.0, including online social networks
    - Mobile platform
    - Local commerce
    - On-demand service economy
  - Entertainment content develops as source of revenues
  - Transformation of marketing

Figure Periods in the Development of E-commerce



Understanding E-commerce: Organizing Themes

- Technology
  - Development and mastery of digital computing and communications technology
- Business
  - New technologies present businesses with new ways of organizing production and transacting business
- Society
  - Intellectual property, individual privacy, public welfare policy

Key Takeaways

- E-business and e-commerce are not synonymous terms. E-business consists of several major components, one of which is e-commerce.
- Every Internet business is either pure-play (an Internet presence only) or brick-and-click (having both a physical and an online presence).
- The seven major types of e-commerce are B2B, B2C, C2C, B2G, C2B, m-commerce, and P2P.
- An e-commerce business model is the method that a business uses to generate revenue online. Some models are very simple; others are more complicated. New business models are being introduced all the time.

Key Takeaways

- Different technologies can be used for e-commerce including all-in-one e-commerce platforms, and digital payments systems.
- Blockchain which is a digital distributed record of transactions is being leveraged for bitcoin which is a cryptocurrency that can be used for digital payment.
- Social media platforms are popular tools for marketers to promote products and services and glean valuable customer data.
- New Retail blurs the line between off-line and on-line commerce to improve the customer experience.

References

- **E-Commerce 2023: Business, Technology, Society, 17th edition**
  - **Kenneth C. Laudon**
- **Business Essentials, 14th edition**
  - **Ronald J. Ebert**