E-BUSINESS

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Edition: First

Year: October, 2023

ISBN: 978-81-19419-03-6

Publisher

(International Publisher)
Kanyakumari,Tamilnadu,India.
Phone: +91 6384730258
E-Mail: editor@multispectrum.org
www.multispectrum.org

E-BUSINESS
SYLLABUS

COURSE OBJECTIVE:

To recognize the impact of Information and Communication technologies, especially of the Internet in business operations in the role of Management with the context of e- Business and e- Commerce.

UNIT I: INTRODUCTION TO E-BUSINESS

Overview of E-Business; Fundamentals; E-Business framework; E-Business application; Major requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

UNIT II: TECHNOLOGY INFRASTRUCTURE

Internet and World Wide Web; internet protocols; FTP; intranet and extranet; information publishing technology; basics of web server hardware and software.

UNIT III: BUSINESS APPLICATIONS

Consumer oriented e-business: e-tailing and models: Marketing on web: advertising: e-mail marketing: affiliated programs: e-CRM; online services, Business oriented e-business: e-governance: EDI on the internet.

UNIT IV: E-BUSINESS PAYMENTS AND SECURITY

E-payments; Characteristics of payment of systems; protocols; e-cash; e-cheque; Micro payment systems; internet security; cryptography; security protocols; network security.

UNIT V: LEGAL AND PRIVACY ISSUES

Legal, Ethics and privacy issues: Protection needs and methodology; consumer protection, cyber laws; contracts and warranties, Taxation and encryption policies.

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO - 1 : Recognize the impact of Information and Communication technologies

CO - 2 : Distinguish the role of Management in the context of e- Business and e- Commerce

CO - 3 : Employ tools and services of the internet in the development of a virtual e- commerce.

CO - 4 : Describe the various characteristics of electronic payment systems.

CO - 5 : Discuss various legal and ethical issues specific to E-Business.

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2. ParagKulkarni, SunitaJahirabadkao, PradeepChande, e business, Oxford University Press, 2012.
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2. https://examupdates.in/e-commerce-book/
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5. http://www.vssut.ac.in/lecture_notes/lecture1428551057.pdf

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E-BUSINESS

UNIT I: INTRODUCTION TO E-BUSINESS

Overview of E-Business; Fundamentals, E-Business framework; E-Business application; Major requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

1.1 INTRODUCTION

- Organizations have now been applying technologies based on the Internet, World Wide Web and wireless communications to transform their businesses for over 15 years since the creation of the first web site (http://info.cern.ch) by Sir Tim Berners-Lee in 1991.
- Deploying these technologies has offered many opportunities for innovative e-businesses to be created based on new approaches to business.

1.1.1 What is e-business?

- E-business (electronic business) is the conducting of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners.
- The processes and tools that allow an organization to use Internet- based technologies and infrastructure, both internally and externally, to conduct day to day business process operations.
- Stands for electronic business and refers to any kind of sales, services, purchasing or commerce on the Internet.
- A new-tech jargon word used more for marketing than for technical description. Most commonly it broadly refers to conducting business over the Internet (email and web) by communicating and perhaps transacting (buying and selling) with customers, suppliers, and business partners.

1.1.2 An overview of key aspects of e-business:

- **E-commerce:** E-commerce is a major component of e-business, involving online buying and selling of products and services. This includes online marketplaces like Amazon and eBay, as well as individual e-commerce websites owned by businesses.
- **Online Marketing:** E-businesses use digital marketing strategies such as search engine optimization (SEO), social media marketing, email marketing, and pay-per-click advertising to reach their target audience and promote their products or services.
- **Electronic Payment Systems:** Online transactions rely on electronic payment systems, which include credit card payments, digital wallets (e.g., PayPal), and cryptocurrencies (e.g., Bitcoin).

- **Supply Chain Management:** E-businesses use digital tools to optimize their supply chains, from procurement and inventory management to order fulfillment and distribution.
- **Customer Relationship Management (CRM):** CRM software helps businesses manage and analyze customer interactions and data, enabling better customer service and personalized marketing efforts.
- **Data Analytics:** E-businesses collect vast amounts of data, and data analytics tools and techniques help them make informed decisions, track performance, and identify trends.
- **Mobile E-business:** With the increasing use of smartphones and tablets, mobile e-business has become crucial. This includes mobile apps, responsive websites, and mobile payment solutions.
- **Security and Privacy:** E-businesses must prioritize security to protect sensitive customer and business data. This involves encryption, secure authentication methods, and compliance with data protection regulations like GDPR.
- **Legal and Regulatory Compliance:** E-businesses must adhere to various laws and regulations related to online transactions, consumer protection, taxation, and more, which can vary by region.
- **Global Reach:** E-businesses can easily reach a global customer base, transcending geographical boundaries. This opens up opportunities for growth but also requires addressing international legal and logistical challenges.

1.1.3 Evolution of e-business:

The evolution of e-business can be traced back to the early days of the internet. In the 1970s, businesses began using electronic data interchange (EDI) to exchange documents with each other

electronically. In the 1980s, online shopping carts and payment processors were developed, making it possible for consumers to purchase goods and services online.

In the 1990s, the internet became more widely adopted and e-business began to boom. The dot-com bubble of the late 1990s led to a bust in the early 2000s, but e-business recovered and continued to grow.

Today, e-business is an essential part of the global economy. Businesses of all sizes use e-business to reach customers, sell products and services, and manage their operations.

Here is a timeline of some of the key milestones in the evolution of e-business:

- 1969: The internet is created.
- 1971: The first email is sent.
- 1972: The first online sale is made.
- 1979: The first online shopping cart is developed.
- 1983: The first online payment processor is launched.
- 1991: The World Wide Web is launched.
- 1994: The first secure online transaction is made.
- 1995: Amazon.com is founded.
- 1996: eBay is founded.
- 1997: PayPal is founded.
- 1999: The dot-com bubble bursts.
- 2005: E-commerce sales surpass $100 billion in the United States.
- 2010: E-commerce sales surpass $1 trillion worldwide.
- 2016: Amazon becomes the first company to reach a market capitalization of $500 billion.
- 2020: E-commerce sales surpass $4.2 trillion worldwide.

Year company / site category of innovation and business model founded:

- 1994: Amazon Retailer.
- 1995: (March) Yahoo! (yahoo.com) Directory and portal, (Sept) eBay Online auction, (Dec) AltaVista (altavista.com) Search engine.
- 1996: Hotmail (hotmail.com) Web-based e-mail, Viral marketing (using e-mail signatures to promote service), Purchased by Microsoft in 1997.
- 1998: Google (google.com) Search engine, GoTo.com (goto.com) Pay-per-click search marketing.
- Overture (2001) Purchased by Yahoo! in 2003,
- 1999: Blogger (blogger.com) Blog publishing platform Purchased by Google in 2003, Alibaba (alibaba.com) B2B marketplace with $1.7 billion IPO on Hong Kong stock exchange in 2007. See case in Chapter 2, MySpace (myspace.com) Social network.
- Formerly eUniverse Purchased by News Corp in 2005.
- 2001 Wikipedia (wikipedia.com) Open encyclopaedia.
- 2002 Last.fm A UK-based Internet radio and music community web site, founded in 2002. On 30 May 2007, CBS Interactive acquired Last.fm for £140m (US$280m).
- 2003 Skype (skype.com) Peer-to-peer Internet telephony VoIP – Voice over Internet protocol.
- Purchased by eBay in 2005, 2003.
- Second Life (secondlife.com) Immersive virtual world.
- 2004 Facebook (facebook.com) Social network applications and groups.
- 2005 YouTube (youtube.com) Video sharing and rating
- 2007 Joost (joost.com) Quality video broadcast service.
- IPTV – Internet Protocol TV.

1.1.4 Definition: electronic business (U.S. CENSUS BUREAU)

- A process that an organization conducts over a computer-mediated network
  - Production - procurement, ordering, stock replenishment, payment processing, production control, etc.
  - Customer-focused - marketing, selling, customer order processing, etc.
  - Internal or management-focused - employee service, training, recruiting, information sharing, etc.

1.1.7 Definition: electronic commerce

- Any transaction completed over a computer-mediated network that involves the transfer of ownership or rights to use goods or services.
- Completed transactions may have a zero price.

1.1.8 Definition: electronic-business infrastructure

- The share of total economic infrastructure used to support e-business processes and conduct e-commerce transactions.
  - Hardware
  - Software
  - Telecommunication networks
  - Support services
  - Human resources

1.1.9 Definition: computer-mediated networks

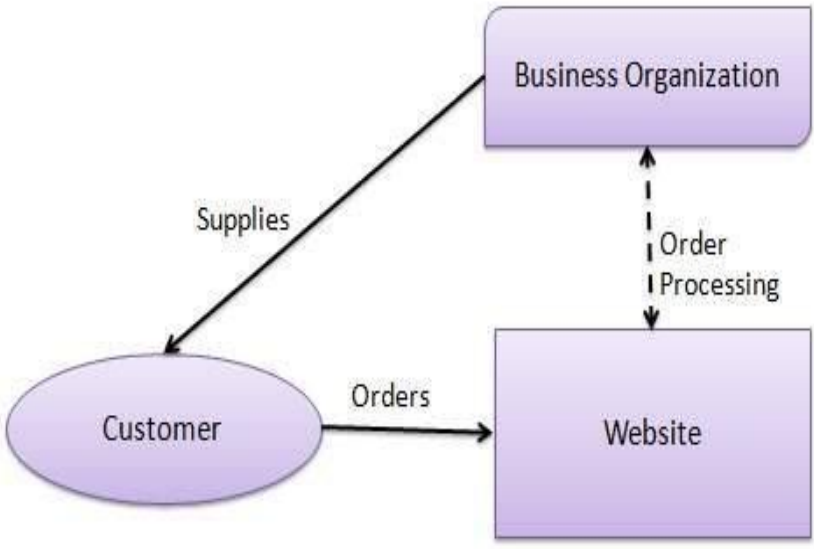
- Electronically-linked devices that communicate interactively over network channels.
  - Computers, personal digital assistants, web TV
  - Internet-enabled cellular phones, interactive telephone systems
  - Internet, intranets, extranets, telecommunication networks, EDI

1.2 E-BUSINESS MODELS

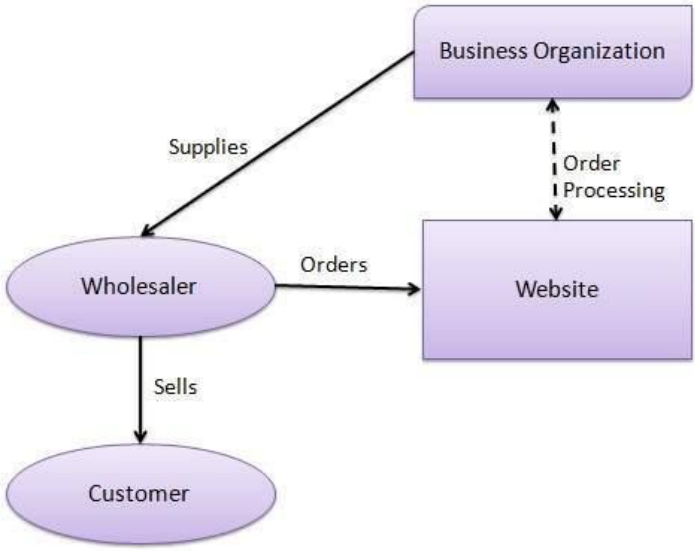
E-business models refer to the different approaches and strategies that businesses employ to conduct electronic commerce (e-commerce) and generate revenue online. These models can vary significantly based on the nature of the products or services offered, the target audience, and the industry.

1.2.1 Common e-business models:

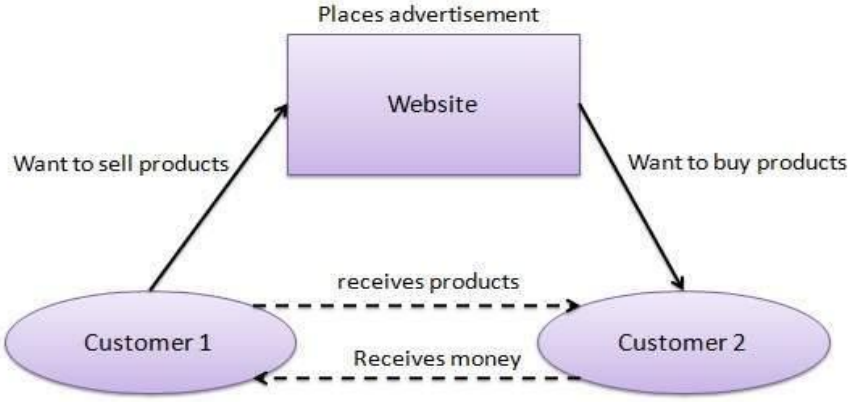
- **Business-to-Consumer (B2C):** This type of e-business involves selling goods and services directly to consumers. Examples of B2C e-businesses include online retailers, such as Amazon and eBay, and streaming services, such as Netflix and Spotify.



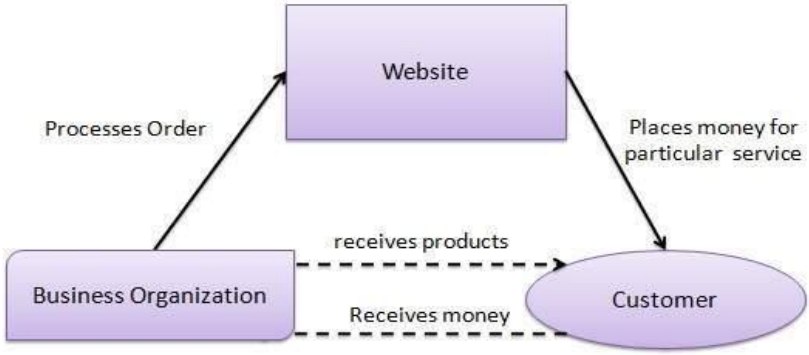
- **Business-to-Business (B2B):** This type of e-business involves selling goods and services to other businesses. Examples of B2B e-businesses include online marketplaces, such as Alibaba and Faire, and software companies, such as Sales force and Hub Spot.



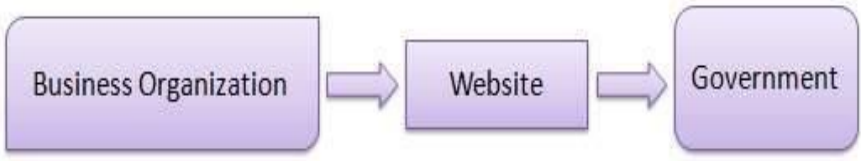
- **Consumer-to-Consumer (C2C):** This type of e-business involves selling goods and services to other consumers. Examples of C2C e-businesses include online auction sites, such as eBay, and classifieds websites, such as Craigslist.



- **Consumer-to-Business (C2B):** This type of e-business involves consumers selling goods and services to businesses. Examples of C2B e-businesses include freelance marketplaces, such as Upwork and Fiverr, and stock photo websites, such as Shutterstock and iStock.



- **Business-to-Government (B2G):** This type of e-business involves selling goods and services to government agencies and institutions. Examples of B2G e-businesses include companies that provide IT services to the government and companies that sell office supplies to government agencies.

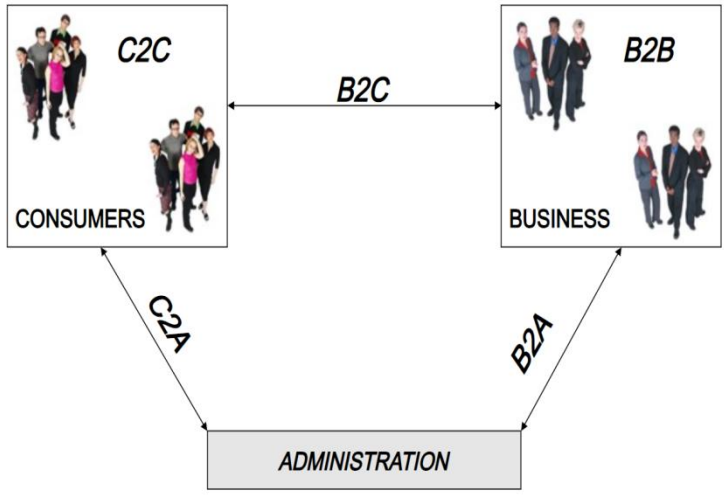


1.2.2 Examples of how e-business models are being used by businesses today:

- Amazon uses a B2C e-business model to sell a wide variety of products to consumers. Amazon's business model is based on providing a wide selection of products at competitive prices, as well as a convenient and easy-to-use shopping experience.
- eBay uses a C2C e-business model to allow consumers to buy and sell a wide variety of products. eBay's business model is based on taking a small commission on each transaction that takes place on its platform.
- SAP uses a B2B e-business model to sell enterprise resource planning (ERP) software to businesses. SAP's

business model is based on selling its software licenses to businesses and then providing ongoing support and maintenance services.

- Salesforce uses a B2B e-business model to sell customer relationship management (CRM) software to businesses. Salesforce's business model is based on selling its CRM software licenses to businesses and then providing ongoing support and maintenance services.



1.3 E-BUSINESS CATEGORY

- E-bank
- E-trade
- E-consulting
- E-learning
- E-mail
- E-marketing
- E-transactions

1.3.1 E-bank:

E-banks in India are banks that provide their services electronically, either through the internet or through mobile devices. E-banks offer a wide range of services, including internet banking, mobile banking, debit and credit cards, and ATMs.

Some of the most popular e-banks in India include:

- ICICI Bank
- HDFC Bank
- Axis Bank
- State Bank of India
- Paytm Payments Bank
- Airtel Payments Bank
- Amazon Pay
- Google Pay
- PhonePe

E-banks offer a number of advantages over traditional banks. For example, e-banks are typically more convenient and accessible, as customers can access their accounts and services from anywhere in the world at any time of day or night. E-banks are also often more affordable, as they have lower overhead costs than traditional banks.

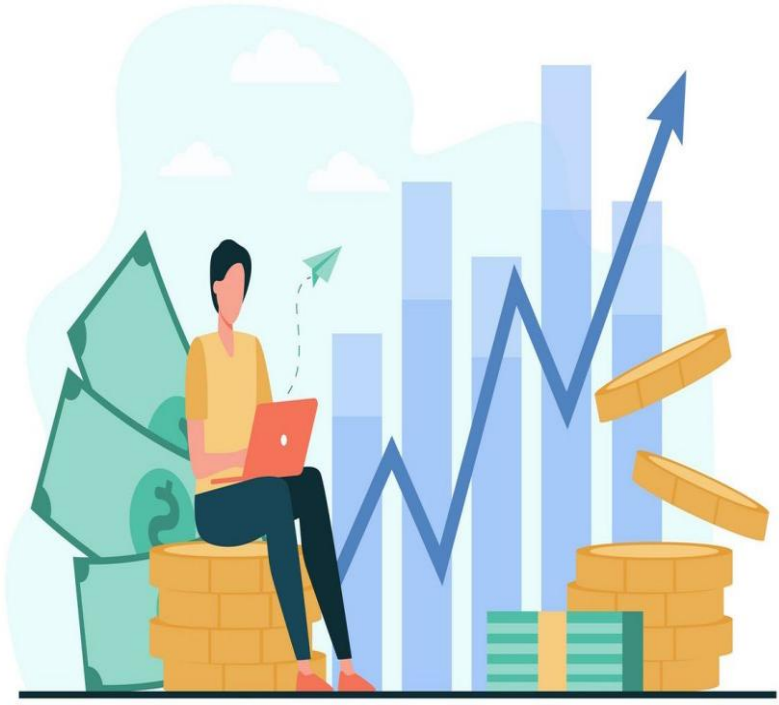
However, there are also some disadvantages to e-banks. For example, e-banks can be more vulnerable to fraud and cyber-attacks. Additionally, some customers may prefer the personal touch of dealing with a human teller at a traditional bank branch.

1.3.2 E-trade:

E-Trade is a popular online trading platform that offers investors access to a wide range of securities, including stocks, bonds, mutual funds, and options. E-Trade also offers a variety of trading tools and resources to help investors make informed investment decisions.

E-Trade is a good option for investors of all experience levels. The platform is easy to use and offers a variety of features and tools to help investors of all skill levels make informed investment

decisions. E-Trade also offers a variety of educational resources to help investors learn more about investing.



Some of the benefits of using E-Trade include:

- Convenience: E-Trade allows investors to trade securities from anywhere in the world with an internet connection.
- Affordability: E-Trade charges competitive commission fees.
- Variety: E-Trade offers a wide range of securities, including stocks, bonds, mutual funds, and options.
- Features and tools: E-Trade offers a variety of trading tools and resources to help investors make informed investment decisions.

- Educational resources: E-Trade offers a variety of educational resources to help investors learn more about investing.

Some of the challenges of using E-Trade include:

- Internet connectivity: E-Trade requires a reliable internet connection. If an investor's internet connection goes down, they may not be able to access their account or execute trades.
- Cyber security: E-Trade is vulnerable to cyber-attacks. Investors need to take steps to protect their accounts from fraud, such as using strong passwords and enabling two-factor authentication.
- Market volatility: The stock market can be volatile, which means that prices can fluctuate rapidly. Investors need to be prepared for the risk of losses when trading securities.

Overall, E-Trade is a good option for investors of all experience levels. The platform is easy to use and offers a variety of features and tools to help investors make informed investment decisions. E-Trade also offers a variety of educational resources to help investors learn more about investing.

However, investors should be aware of the challenges and risks involved before using E-Trade. Investors should also choose a reputable e-trade platform and take steps to protect their accounts from fraud.

1.3.3 E-consulting:

E-consulting is a term that typically refers to consulting services provided electronically or online. It involves offering professional advice, expertise, and guidance to individuals or businesses through digital communication channels rather than traditional in-person consultations. E-consulting has become more prevalent with the growth of the internet and digital technologies.

E-consulting offers a number of advantages over traditional consulting services, including:

- Convenience: E-consulting allows clients to access consulting services from anywhere in the world, at any time of day or night.
- Affordability: E-consulting services are often more affordable than traditional consulting services, as e-consultants do not have to travel to meet with their clients.
- Flexibility: E-consulting services can be tailored to meet the specific needs of each client. For example, e-consultants can provide one-time consultations, ongoing consulting services, or a combination of both.
- Access to a wider range of expertise: E-consulting allows clients to access the expertise of consultants from all over the world. This is especially beneficial for clients who need to access expertise in a specialized area.

However, there are also some challenges associated with e-consulting, including:

- Lack of personal interaction: E-consulting services do not provide the same level of personal interaction as traditional consulting services. This can make it more difficult for e-consultants to build trust with their clients and to understand their needs.
- Technical challenges: E-consulting services can be disrupted by technical challenges, such as internet outages or power failures.
- Time zone differences: E-consulting services can be more challenging to provide if the consultant and client are in different time zones.

Overall, e-consulting offers a number of advantages over traditional consulting services. However, it is important to be

aware of the challenges associated with e-consulting before choosing to engage with an e-consultant.

Here are some examples of e-consulting services:

- Business consulting
- IT consulting
- Marketing consulting
- Financial consulting
- Legal consulting
- Human resources consulting
- Healthcare consulting
- Educational consulting
- Personal development consulting

1.3.4 E-learning:

E-learning, also known as electronic learning, is the delivery of learning and training through digital resources. This can include online courses, tutorials, simulations, and other interactive learning experiences. It has become increasingly popular and accessible in recent years, offering a wide range of benefits for both students and educators. E-learning can be delivered through a variety of devices, including computers, tablets, and smartphones.

E-learning has become increasingly popular in recent years, due to a number of advantages, including:

- Convenience: E-learning can be accessed from anywhere in the world, at any time of day or night.
- Affordability: E-learning courses and programs are often more affordable than traditional classroom-based courses.
- Flexibility: E-learners can learn at their own pace and on their own schedule.
- Variety: There is a wide range of e-learning courses and programs available, covering a wide range of topics.
- Accessibility: E-learning can make education and training more accessible to people with disabilities.

However, there are also some challenges associated with e-learning, including:

- Lack of personal interaction: E-learning courses do not provide the same level of personal interaction as traditional classroom-based courses. This can make it more difficult for e-learners to stay motivated and engaged.
- Technical challenges: E-learning courses can be disrupted by technical challenges, such as internet outages or power failures.
- Self-discipline: E-learners need to be self-disciplined in order to stay on track and complete their courses.

Here are some examples of e-learning platforms:

- Coursera
- Udemy
- edX
- Skillshare
- LinkedIn Learning
- MasterClass

- Khan Academy
- Duolingo
- Rosetta Stone
- Babbel
- Codecademy
- Udacity

1.3.5 E-mail:

E-mail, or electronic mail, is a method of exchanging digital messages between people. E-mail messages are typically sent and received through an e-mail client, which is a software application that allows users to create, send, and receive e-mail messages.

E-mail is one of the most popular forms of communication in the world today. It is used by people of all ages and for a variety of purposes, including personal communication, business communication, and education.

To send an e-mail message, you must have an e-mail address. An e-mail address is a unique identifier that is assigned to you by your e-mail provider. E-mail addresses are typically made up of two parts: a local name and a domain name. The local name is the part of the e-mail address that comes before the @ symbol. The domain name is the part of the e-mail address that comes after the @ symbol.

To send an e-mail message, you will need to know the recipient's e-mail address. You will also need to compose the message body, which is the text of the message. You can also attach files to e-mail messages.

Once you have composed and addressed the e-mail message, you can send it by clicking the "Send" button in your e-mail client. The e-mail message will then be sent to the recipient's e-mail server. The recipient will be able to read the message by logging into their e-mail account.

E-mail is a convenient and efficient way to communicate with people from all over the world. It is also a relatively inexpensive way to communicate, as most e-mail providers offer free e-mail accounts.

Here are some of the benefits of using e-mail:

- Convenience: E-mail can be accessed from anywhere in the world with an internet connection.
- Affordability: E-mail is a relatively inexpensive way to communicate.
- Speed: E-mail messages are typically delivered very quickly.
- Efficiency: E-mail can be used to send messages to multiple people at once.
- Storage: E-mail messages can be stored for a long time.
- Organization: E-mail messages can be organized into folders and labels.
- Security: E-mail messages can be encrypted to protect them from unauthorized access.

However, there are also some challenges associated with using e-mail, including:

- Spam: Spam is unwanted e-mail that is often used to distribute malware or phishing attacks.
- Viruses and malware: E-mail messages can be used to spread viruses and other malware.
- Privacy concerns: E-mail messages can be intercepted by unauthorized individuals.
- Addiction: Some people can become addicted to checking their e-mail too often.

1.3.6 E-marketing:

E-marketing, also known as online marketing or digital marketing, is the use of digital technologies to promote or market products or services over the internet. E-marketing can be used to reach a global audience and to target specific demographics with tailored marketing messages.

Here are some of the benefits of e-marketing

- Wide Reach: E-marketing allows businesses to reach a global audience. It's not limited by geographical boundaries, making it accessible to a vast and diverse customer base.
- Cost-Effective: E-marketing is often more cost-effective than traditional marketing methods. Digital campaigns, such as email marketing or social media advertising, can be less expensive than print or TV ads.
- Targeted Advertising: E-marketing enables precise targeting of specific demographics, interests, and

behaviours. This results in more efficient ad spend and higher conversion rates.

- Real-Time Analytics: Digital marketing provides instant access to analytics and data. Marketers can measure the performance of campaigns in real time, allowing for quick adjustments and optimizations.

However, there are also some challenges associated with e-marketing, including:

- Information Overload: The digital landscape is saturated with marketing messages. Consumers are bombarded with ads and emails, leading to information overload and ad fatigue.
- Privacy Concerns: E-marketing often involves collecting user data, which has raised privacy concerns. Misuse of data can lead to breaches and damage a company's reputation.
- Ad Blocking: Many users employ ad-blocking software, which can prevent ads from reaching their intended audience. This reduces the effectiveness of display ads.
- Technical Challenges: E-marketing requires technical expertise to set up and manage campaigns effectively. Keeping up with ever-changing digital platforms and algorithms can be a challenge.

Some examples of e-marketing strategies:

- Search engine optimization (SEO): SEO is the process of optimizing a website and its content so that it ranks higher in search engine results pages (SERPs). This can be done by using relevant keywords throughout the website and content, and by building backlinks from other websites.
- Social media marketing: Social media marketing involves using social media platforms, such as Facebook, Twitter, and Instagram, to connect with and engage potential

customers. Businesses can use social media to share content, promote their products or services, and run contests and giveaways.

- Email marketing: Email marketing involves sending email messages to a list of subscribers. Businesses can use email marketing to promote their products or services, send out special offers, and build relationships with their customers.
- Content marketing: Content marketing involves creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience and drive profitable customer action. Businesses can use content marketing to educate potential customers about their products or services, and to build trust and credibility with their target audience.
- Pay-per-click (PPC) advertising: PPC advertising is a type of online advertising where businesses pay a fee each time someone clicks on their ad. PPC ads are typically displayed at the top of SERPs and on other websites.

1.3.7 E-trasactions:

E-transactions, or electronic transactions, are the buying and selling of goods and services online. This can include a wide range of activities, such as shopping online, paying bills online, and transferring money online.

E-transactions have become increasingly popular in recent years, due to a number of advantages:

- Accessibility: E-transactions are accessible 24/7, allowing users to perform transactions at any time, including weekends and holidays.
- Recordkeeping: E-transactions generate digital records that are easy to store, search, and retrieve. This simplifies recordkeeping and auditing processes for businesses.
- Convenience: E-transactions can be conducted from anywhere with an internet connection, eliminating the need for physical presence at a bank or retail location. This convenience is especially beneficial for online shopping, bill payments, and remote business transactions.
- Speed: E-transactions are typically processed much faster than traditional paper-based transactions. Funds transfer, for example, can occur within seconds or minutes, enhancing efficiency and liquidity.

However, there are also some challenges associated with e-transactions:

- Security Risks: E-transactions can be vulnerable to cyberattacks, data breaches, and identity theft if not adequately protected. Security breaches can lead to financial losses and compromised personal information.
- Lack of Privacy: E-transactions often require the sharing of personal and financial data, raising concerns about privacy and the potential for data misuse.
- Technical Issues: Technical glitches, system outages, and connectivity problems can disrupt e-transactions, causing frustration and delays.
- Fraud and Scams: E-transactions are susceptible to various online scams and fraudulent activities, including phishing, online fraud, and payment disputes.

Here are some examples of e-transactions:

- Online banking
- Online shopping
- Online bill payments
- Online travel bookings
- Online gaming
- Online education
- Online gambling
- Online healthcare

Advantages of E-Business:

- **Global Reach:** E-business can reach a global audience, breaking down geographical barriers and enabling businesses to expand their customer base internationally.
- **Lower Operating Costs:** E-business often has lower operating costs compared to traditional brick-and-mortar businesses. There are reduced expenses related to physical space, utilities, and staffing.
- **24/7 Accessibility:** E-businesses can operate around the clock, allowing customers to access products or services at any time, increasing convenience.
- **Reduced Marketing Costs:** Digital marketing can be more cost-effective than traditional advertising methods. Online ads, social media marketing, and email campaigns can reach a wide audience at a lower cost.
- **Efficient Inventory Management:** E-businesses can use technology to manage inventory more efficiently, reducing the risk of overstocking or understocking products.
- **Personalization:** E-businesses can collect and analyze customer data to personalize marketing efforts and offer tailored product recommendations, improving customer satisfaction.

- **Streamlined Processes:** Automation and digital tools can streamline business processes, leading to improved efficiency and productivity.
- **Data Analytics:** E-businesses can leverage data analytics to gain insights into customer behavior, market trends, and performance metrics, enabling data-driven decision-making.
- **Scalability:** E-businesses can scale their operations more easily compared to physical businesses. They can expand product lines or reach new markets without significant physical infrastructure investments.
- **Environmental Sustainability:** E-businesses can reduce their environmental impact by minimizing the use of physical resources like paper and energy, contributing to sustainability efforts

Disadvantages of E-Business:

- **Security Risks:** E-businesses are vulnerable to cybersecurity threats, including data breaches, hacking, and phishing attacks. Protecting customer and business data is a significant challenge.
- **Dependency on Technology:** E-businesses rely heavily on technology, making them susceptible to technical failures, system outages, and software glitches.
- **Privacy Concerns:** Collecting and storing customer data raises privacy concerns. Mishandling or data breaches can damage a company's reputation.
- **Competitive Landscape:** The online marketplace is highly competitive, with many businesses vying for the same customers. Standing out and gaining market share can be challenging.
- **Digital Divide:** Not everyone has equal access to digital technology and the internet. E-business may exclude individuals who lack access or digital literacy.

- **Regulatory Compliance:** E-businesses must navigate complex and evolving regulatory requirements related to online transactions, data protection, and taxation.
- **Customer Trust:** Building and maintaining customer trust can be more challenging in an online environment, where face-to-face interactions are limited.
- **Shipping and Logistics**: E-businesses that involve physical product delivery must contend with shipping and logistics challenges, including delays, damages, and returns.
- **Evolving Technology:** E-businesses need to continuously adapt to evolving technology trends and customer preferences, which can be resource-intensive.

1.4 BUY-SIDE E-COMMERCE AND SELL-SIDE E-COMMERCE:

1.4.1 Buy-side e-commerce

- E-commerce transactions between a purchasing organization and its suppliers.

1.4.2 Sell-side e-commerce

- E-commerce transactions between a supplier organization and its customers.

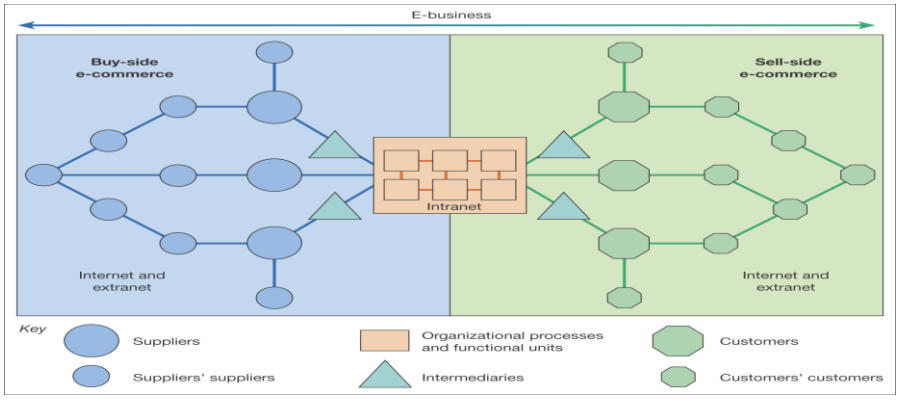


Figure:1.4.1 The distinction between buy-side and sell-side e-commerce.

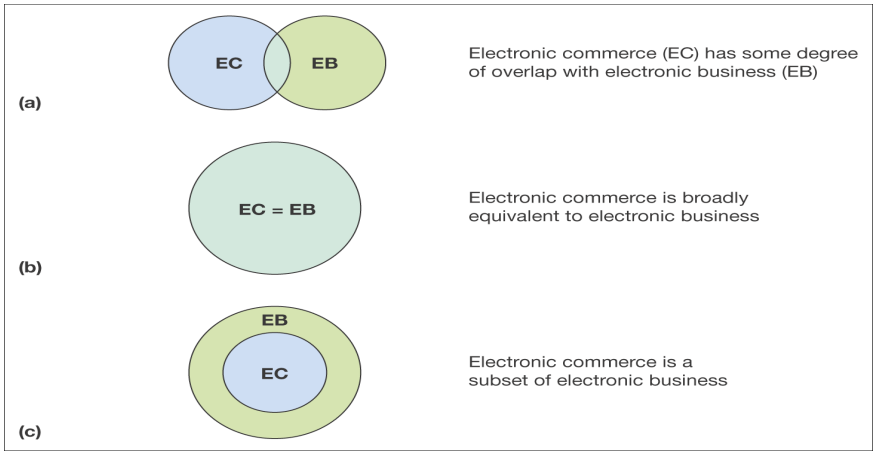


Figure: 1.4.2 Three definitions of the relationship between e-commerce and e-business.

1.4.3 A simple stage model for buy-side and sell-side e-commerce

An example of a basic stage model reviewing capabilities for sell-side and buy-side e-commerce is shown in (Figure 1.13). This shows how companies will introduce more complex technologies and extend the range of processes which are e-business-enabled.

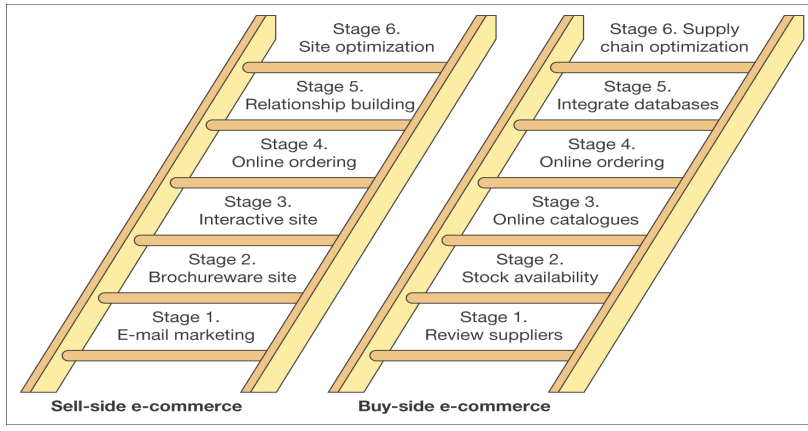


Figure: 1.4.3 A simple stage model for buy-side and sell-side e-commerce

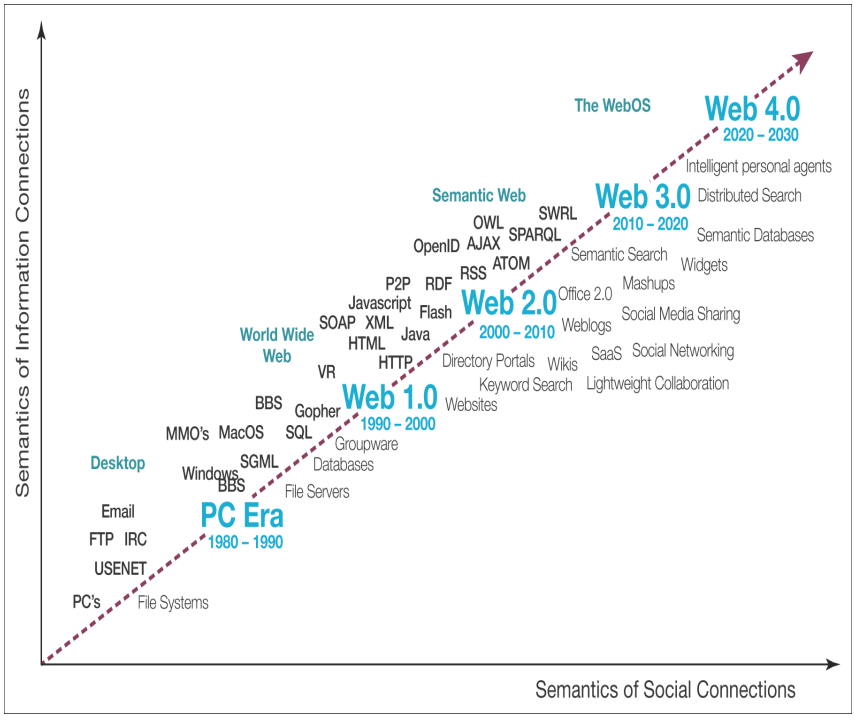


Figure: 1.4.4 Evolution of web technologies
Source: Adapted from Spivack (2007)

From: Supplier of content/service

To: Consumer of content/service

	Consumer or citizen	*Business (organization)*	*Government*
Consumer or citizen	**Consumer-to-Consumer (C2C)** • eBay • Peer-to-Peer (Skype) • Blogs and communities • Product recommendations • Social networks: MySpace, Bebo	**Business-to-Consumer (B2C)** • Transactional: Amazon • Relationship-building: BP • Brand-building: Unilever • Media owner – News Corp • Comparison intermediary: Kelkoo, Pricerunner	**Government-to-Consumer (G2C)** • National government transactional: Tax – inland revenue • National government information • Local government services
Business (organization)	**Consumer-to-Business (C2B)** • Priceline • Consumer-feedback, communities or campaigns	**Business-to-Business (B2B)** • Transactional: Euroffice • Relationship-building: BP • Media Owned: Emap business publications • B2B marketplaces: EC21	**Government-to-Business (G2B)** • Government services and transactions: tax • Legal regulations
Government	**Consumer-to-Government (C2G)** • Feedback to government through pressure group or individual sites	**Business-to-Government (B2G)** • Feedback to government businesses and non-governmental organizations	**Government-to-Government (G2G)** • Inter-government services • Exchange of information

Figure: 1.4.5 Summary and examples of transaction alternatives between businesses, consumers and governmental organizations

1.5 Difference between E-Business vs Traditional business

Characteristic	E-Business	Traditional business
Definition	The use of ICTs to conduct business transactions	The traditional way of conducting business, such as through physical stores and face-to-face interactions
Scope	Global	Local
Reach	Can reach a global audience	Can only reach a local audience
Costs	Lower costs, as there is no need to maintain physical stores or process paper transactions	Higher costs, as there is a need to maintain physical stores and process paper transactions
Convenience	More convenient for customers, as they can shop from anywhere in the world at any time of day or night	Less convenient for customers, as they need to visit a physical store to shop
Personalization	More personalized, as businesses can collect data on customer behavior and preferences and use that data to target customers with personalized offers	Less personalized, as it is more difficult to collect data on customer behavior and preferences in a traditional business setting
Security	More vulnerable to fraud and security breaches	Less vulnerable to fraud and security breaches

1.6 Difference between E-Business vs E-Commerce

Aspect	E-Business	E-Commerce
Scope	Broader, encompassing all online business activities	Specific, focusing on online buying and selling
Activities	Involves customer relationships, supply chain management, marketing, and more	Primarily centers on online sales and transactions
Interactions	Engages with customers, suppliers, partners, and employees through digital channels	Mainly involves interactions related to buying and selling
Examples	Examples include implementing CRM software, optimizing supply chain logistics, conducting online marketing campaigns, and using digital collaboration tools.	Examples include online retail stores (e.g., Amazon), digital marketplaces (e.g., Etsy), and digital payment services (e.g., PayPal).
Purpose	Aims at efficient business operations, digital transformation, and overall business management	Focused on facilitating online transactions, generating revenue, and customer satisfaction
Scale	Can encompass both business-to-business (B2B) and business-to-consumer (B2C) interactions, catering to a broader spectrum of stakeholders.	Primarily focuses on business-to-consumer (B2C) interactions, facilitating direct sales to end consumers.
Strategic Role	Often seen as a strategic approach to modernizing and transforming traditional businesses into digitally-driven enterprises.	Typically plays a central role in the business model, serving as the core revenue-generating activity.

1.7 Requirements for an E-Business

1. Trust

- The biggest requirement for running a successful e-business is trust. In this age of Facebook and MySpace, online merchants may think that privacy of a customer's information isn't important, but just the opposite is true. Eighty percent of Internet users polled in a recent survey said that the privacy of their personal information was either important or very important to them
- That's for good reason, with identity theft at an all-time high. In 2009, the number of victims of identity theft rose 12 percent, and the total these people lost—$54 billion—is also more than a 12 percent increase from the year before.
- Thus, businesses must be trustworthy to operate online. Consumers will not simply give their financial information to just anyone, so a site will lose business if consumers do not feel comfortable that it is a reliable, upstanding company. Companies must have comprehensive privacy policies and stick with them.
- Another good idea is to get digital certificates and TRUSTe seals, which are awarded by third-party organizations after they research the legitimacy of an online website. Such awards put consumers' minds at ease. Finally, even if an e-business does all this, it must also be trustworthy in the sense of fulfilling its promises: be up front with consumers about pricing and delivery times.

2. Strategy

E-commerce merchants must also have a strategy to succeed in the online marketplace. Many people start websites because they think it is a quick and easy way to make cash, but in fact it takes a much greater investment than most people expect.

Therefore, before launching a site, businesses must have strategies to handle issues large and small:

- How consumers will place orders,
- How deliveries will be made,
- How customer service issues will be handled?
- More broadly, how much do owners expect to earn over a certain period,
- How will consumers find the site, and how will success be judged.

Online merchants without strategies will soon be overwhelmed by such issues.

3. Suitability

Finally, merchants must decide if their products are suitable for the web.

Requirements for successful e-businesses concern the goods and services themselves (Can they be delivered quickly and cheaply?

Do they appeal to people outside a small geographic area?) as well as the logistics (Will going online save money? Will the benefits outweigh the costs?)

1.8 Why start an online business?

- In this digital era, buyers expect fast turnaround, 24/7 customer service and instant access to products and services.
- Approximately 35 percent of customers aged 18 to 29 and 35 percent of those aged 30 to 39 go shopping online at least once a week.
- Experts predict that global retail e-commerce sales will generate over $3.3 billion in 2019 and over $4.4 billion by 2021.

- Considering these facts, it's no surprise that a growing number of companies are moving their operations online. This allows them to reach a global audience and increase brand awareness at a fraction of the cost compared to traditional methods.
- Setting up a website, displaying your products and advertising online require less time and money than running a brick-and-mortar store. Digital technologies, such as e-commerce and retail apps, deep learning algorithms, chatbots and marketing automation tools, can streamline your business operations and help you deliver superior customer experiences.
- The advantages of online selling go beyond time and cost savings. If you choose this path, you'll find it easier to compete with larger businesses and put your products in front of a global audience. Furthermore, you can improve your offerings and marketing efforts by using customer data. Facebook Ads, Google AdWords and other advertising channels provide detailed insights into customer behavior, preferences, purchasing power and more.
- Reduce your operational costs
- When you start a physical store, you must rent or purchase space and pay for things like property insurance, zoning permits, signage permits, decorations, utilities and so on. These costs are out of reach for many entrepreneurs. An online shop, by comparison, requires less money.
- After you register your business and plan, you can set up your website within hours. All you need is a domain name and hosting. Next, you can either download a ready-made website template or hire a web designer. If you're planning to sell goods or services online, you can purchase an e-commerce theme. These templates provide everything you

need to get started, including a digital storefront, built-in payment systems, contact forms and more.

- With an online business, you don’t have to worry about rent, utilities or building permits. Plus, there's no need to hire shop assistants and department managers. Customers will have access to your products around the clock. Once an order is placed, the system will take care of the rest.
- Offer a personalized online experience
- One of the main advantages of online selling is website personalization. Sure, you can personalize a physical store, but it could never offer the same features like an online shop.
- A website allows you to collect customer data and then segment your email lists based on buyers' location, purchase history, product preferences and other criteria. Plus, you can launch online ads targeting customers who visited your store and abandoned their shopping cart.
- Furthermore, you can display your bestsellers, as well as products related to those that a customer has already bought. For example, if a buyer is looking at high heel sandals, you can set your website to display similar products. This can lead to more page views, higher traffic and increased sales.
- Scale your business easily
- If you have a physical store that performs well, you may need to rent more space to accommodate more customers and products. A larger facility will involve higher costs. The ability to scale your business easily is one of the key benefits of online selling. As your e-commerce store grows, you can upgrade your hosting plan to get more space and keep up with the increase in traffic.
- Most hosting providers sell different plans, from basic to premium packages. Depending on your needs and budget,

you can start with a basic plan and upgrade later on. This process takes just a few minutes and costs next to nothing compared to a physical store.

- Like everything else, e-commerce has its drawbacks. The fierce competition, for example, can make it difficult to grow and promote your business. Additionally, customers cannot try your products before placing an order, which may lead to a high return rate. Define your goals, weigh the pros and cons of online selling and then decide accordingly. Consider starting out with a small number of products to mitigate the risks and gain a better understanding of this business model.

1.9 Important Questions:

5 marks:

1. What is E-business?
2. What do you know about e-commerce
3. Compare e-business and e-commerce
4. Summarise the advantage and disadvantages of e-business
5. Annotate on evaluation of web technology
6. Differentiate between e-business and traditional business
7. Paraphrase on the impact of e-business
8. Explain the application of the Internet in the field of supply chain
9. Explain the advantages of E-commerce
10. Compare the B 2 B and B to C
11. Discuss the importance of e-business
12. What are the challenges faced by e-business?
13. Discuss the challenges of e-commerce
14. Discuss the importance of e-commerce
15. What are the requirements for online business.

10 marks:

1. Briefly explain the evaluation of e-business
2. Discuss the e-business model with a suitable example
3. Illustrate the category of e-business in detail
4. Describe the verse e-business application in the current scenario
5. Assess Emerging technology in E-business
6. Elaborate on the reason behind starting an e-business
7. Discuss the framework of e-business
8. Discuss the overview of e-business
9. Discuss the requirements of e-commerce
10. Elaborate the emergence and technology in e-business

UNIT II: TECHNOLOGY INFRASTRUCTURE

Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.

2.1 E-BUSINESS TECHNOLOGY INFRASTRUCTURE

E-business technology infrastructure is the foundation of any successful online business. It includes the hardware, software, telecommunications, and support services that enable an organization to conduct business electronically.

2.1.1 Key components of e-business technology infrastructure:

- **Hardware:**
  - The physical components of an e-business infrastructure, such as servers, routers, and switches.
  - The hardware components of an e-business infrastructure can vary depending on the size and complexity of the organization.
  - However, some common hardware components include servers, routers, switches, and firewalls.
  - Servers are the computers that store and process data for an e-business. Routers and switches are used to connect the organization's hardware together and to the internet.
  - Firewalls are used to protect the organization's network from unauthorized access.
- **Software:**
  - The programs that run on the hardware and enable the organization to conduct business electronically. This

includes operating systems, web servers, and e-commerce applications

- The software components of an e-business infrastructure can also vary depending on the size and complexity of the organization.
- However, some common software components include operating systems, web servers, and e-commerce applications.
- Operating systems are the programs that control the hardware on a computer.
- Web servers are used to deliver web pages to users.
- E-commerce applications are used to process online transactions.

- **Telecommunications:**
  - The network that connects the organization's hardware and software. This can be a private network, a public network, or a combination of both.
  - The telecommunications component of an e-business infrastructure is the network that connects the organization's hardware and software. This can be a private network, a public network, or a combination of both.
  - Private networks are owned and operated by the organization. Public networks are owned and operated by third-party providers.
  - A combination of private and public networks can be used to create a hybrid network.
- **Support services:**
  - The personnel and processes that are responsible for maintaining and managing the e-business infrastructure. This includes tasks such as network security, data backup, and user support.

- The support services component of an e-business infrastructure includes the personnel and processes that are responsible for maintaining and managing the e-business infrastructure.
- This includes tasks such as network security, data backup, and user support.
- Network security is important for protecting the organization's network from unauthorized access.
- Data backup is important for protecting the organization's data in case of a disaster.
- User support is important for providing help to users who have problems with the e-business infrastructure.

2.2 THE INTERNET AND THE WORLD WIDE WEB (WWW)

The internet and the World Wide Web (WWW) are often used interchangeably, but they are actually two different things. The internet is a global network of computers, while the World Wide Web is a way of accessing information on that network.

2.2.1 The internet

The internet was created in the 1960s by the United States Department of Defence as a way to connect computers at different universities and research institutions. It was originally called the ARPANET, and it was used for exchanging research data and email.

2.2.2 key points to understand about the internet:

- **Network of Networks:** The internet is a massive collection of interconnected networks that spans the globe. It allows computers, servers, and other devices to communicate and exchange data seamlessly.
- **Decentralized Structure:** Unlike traditional communication systems, the internet is decentralized, meaning there is no single central point of control. Instead, it's a collaborative effort involving multiple organizations, governments, and entities.
- **Protocols:** The internet relies on a set of standardized protocols (rules and conventions) to ensure consistent communication between devices. The most important protocol is TCP/IP (Transmission Control Protocol/Internet Protocol).
- **Data Transmission:** The internet enables the transmission of various types of data, including text, images, videos, audio, and more. Data is broken down into packets, which are small units of information sent over the network.
- **Access Methods:** People access the internet through various means, including wired connections (such as Ethernet), wireless connections (like Wi-Fi and cellular networks), and satellite connections.
- **Devices:** The internet connects a wide range of devices, including computers, smartphones, tablets, smart TVs, IoT (Internet of Things) devices, and more.
- **Web Browsing:** The World Wide Web (WWW) is a major application of the internet. Users access web pages using web browsers (like Chrome, Firefox, and Safari) to view content, follow hyperlinks, and interact with websites.

- **Email:** Email (electronic mail) is another significant application of the internet. It allows users to send and receive messages and attachments quickly and globally.
- **E-Commerce:** The internet has revolutionized commerce through online shopping and e-commerce platforms, enabling businesses to reach customers worldwide.
- **Social Media:** Social media platforms like Facebook, Twitter, Instagram, and LinkedIn allow users to connect, share content, and interact online.
- **Search Engines:** Search engines like Google, Bing, and Yahoo index and organize vast amounts of web content, making it easier for users to find information.
- **Cloud Computing:** The internet supports cloud computing, where resources such as storage, computing power, and applications are provided over the internet on demand.
- **Security Concerns:** With the growth of the internet, cybersecurity has become crucial. Measures like encryption, firewalls, and security protocols help protect data and prevent unauthorized access.

2.2.3 The World Wide Web

- The World Wide Web was invented in the 1980s by Tim Berners-Lee, a British scientist.
- He developed a way to use the internet to access information that was stored on different computers around the world.
- He called this system the World Wide Web, and it quickly became the most popular way to use the internet.
- The World Wide Web is made up of websites.
- Websites are collections of web pages that are stored on a computer called a web server. Web pages are made up of text, images, and other multimedia content.

- They are linked together using hyperlinks. Hyperlinks allow users to click on a word or image on one web page and be taken to another web page.

Some key features of the World Wide Web include:

- **Hypertext:** The Web is built on the concept of hypertext, which allows users to navigate between interconnected documents using hyperlinks. A hyperlink is a reference that points to another document or resource, often indicated by underlined text or clickable buttons.
- **Web Pages:** Web pages are documents written in languages like HTML (Hypertext Markup Language) that can contain text, images, videos, links, and other multimedia elements.
- **URLs:** Uniform Resource Locators (URLs) are addresses that uniquely identify resources on the Web, such as web pages, images, and videos. They enable users to access specific content by entering the URL in a web browser.

- **Browsers:** Web browsers (e.g., Chrome, Firefox, Safari) are software applications that allow users to access and interact with web content. They render HTML and other web technologies to display web pages.
- **Search Engines:** Search engines like Google, Bing, and Yahoo enable users to search for specific information on the Web by entering keywords. Search engines index and organize vast amounts of web content to provide relevant search results.
- **Online Services:** The Web hosts various online services, including email, social media platforms, online shopping, news websites, video sharing platforms, and more.

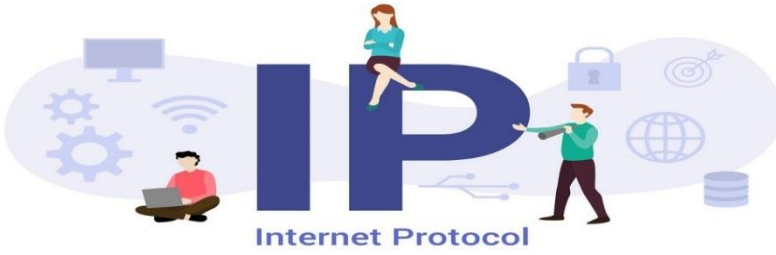
2.2.4 Differences between the internet and the World Wide Web

Aspect	Internet	World Wide Web (WWW)
Definition	A global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide.	A specific system within the Internet that consists of interlinked hypertext documents and multimedia content.
Origin	1960s	1980s
Creator	United States Department of Defense	Tim Berners-Lee
Scope	Encompasses the entire global network, including all devices, servers, routers, and networks connected together.	A virtual space within the Internet where web pages, websites, and web applications are hosted.
Function	Serves as a communication medium, facilitating various services like email, file	Provides a platform for publishing, accessing, and interacting with

	transfer, VoIP, and online gaming.	multimedia content and information through web browsers.
Protocols	Relies on standardized protocols such as TCP/IP for data transmission and communication between devices.	Utilizes specific protocols like HTTP for the transfer of web pages and resources between web servers and clients (e.g., web browsers).
Primary application	To support a wide range of applications and services.	To display web pages to users.
Examples	Sending emails, online gaming, accessing remote servers, and more.	Browsing websites, watching online videos, interacting with social media platforms, and using web-based applications.

2.3 INTERNET PROTOCOLS:

Internet protocols are the rules that govern how computers communicate with each other on the internet. They are essential for ensuring that data is exchanged accurately and reliably.



2.3.1 Fundamental internet protocols:

- **Internet Protocol (IP):** IP is a network layer protocol that provides the addressing and routing mechanism for data packets to travel across the internet. There are two main versions: IPv4 (32-bit addresses) and IPv6 (128-bit addresses).
- **Transmission Control Protocol (TCP):** TCP operates at the transport layer and ensures reliable, connection-oriented data transmission. It breaks data into packets, numbers them for reordering, and manages acknowledgments to guarantee proper delivery.
- **User Datagram Protocol (UDP):** UDP is also a transport layer protocol but is connectionless and provides minimal error checking. It's suitable for applications where speed is more critical than data integrity, like streaming and real-time communication.
- **Hypertext Transfer Protocol (HTTP):** HTTP is the protocol used to transfer hypertext documents, such as web pages.
- **Hypertext Transfer Protocol (HTTP):** HTTP is an application layer protocol used for transmitting hypertext (text with hyperlinks) over the internet. It forms the foundation of the World Wide Web, facilitating the transfer of web pages and resources between clients (web browsers) and servers.
- **Hypertext Transfer Protocol Secure (HTTPS):** HTTPS is a secure version of HTTP that uses encryption, typically provided by SSL/TLS certificates, to ensure the confidentiality and integrity of data exchanged between the client and the server.
- **File Transfer Protocol (FTP):** FTP is an application layer protocol used for transferring files between a client and a server. It allows users to upload and download files to and from remote servers.

- **Simple Mail Transfer Protocol (SMTP):** SMTP is an application layer protocol for sending and relaying email messages between email servers. It defines how mail servers communicate and deliver emails.
- **Post Office Protocol (POP) and Internet Message Access Protocol (IMAP):** These protocols are used by email clients to retrieve emails from servers. POP downloads emails to the client, while IMAP allows users to manage emails directly on the server.
- **Domain Name System (DNS):** DNS translates human-readable domain names (like www.example.com) into IP addresses that computers use to locate each other on the internet. It plays a crucial role in browsing the web and sending emails.
- **Dynamic Host Configuration Protocol (DHCP):** DHCP is responsible for assigning IP addresses automatically to devices on a network, eliminating the need for manual configuration.
- **Internet Control Message Protocol (ICMP):** ICMP is used for diagnostic and error-reporting purposes. It's often associated with the "ping" command that tests network connectivity.
- **Simple Network Management Protocol (SNMP):** SNMP facilitates the management and monitoring of network devices, collecting information and allowing for remote configuration and management.
- **Network Time Protocol (NTP):** NTP ensures accurate timekeeping across devices and networks by synchronizing their clocks with reliable time sources.

These protocols work together to enable seamless communication, data exchange, and services on the internet, forming the backbone of modern digital interactions.

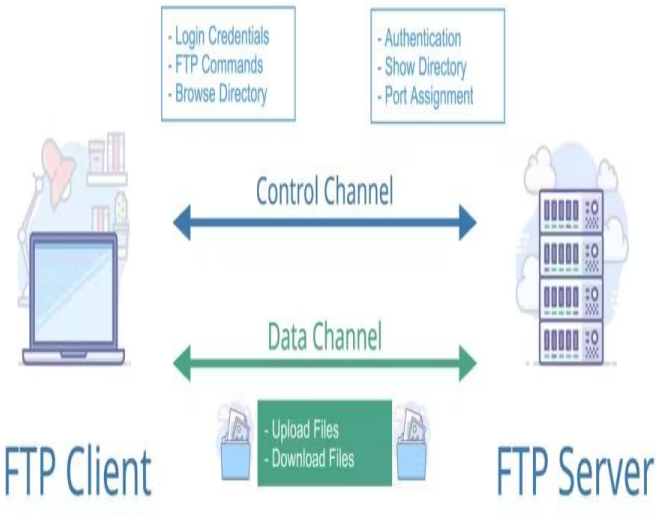
2.3.2 Key features of some of the most common internet protocols:

Protocol	Purpose	Features
Internet Protocol (IP)	Addressing and routing datagrams across networks	Provides a unique address for each device on the internet, and it is responsible for routing datagrams from source to destination.
Transmission Control Protocol (TCP)	Reliable data transfer	Guarantees that data is delivered in the correct order and without errors.
User Datagram Protocol (UDP)	Fast data transfer	Does not guarantee delivery of data, but it is faster than TCP.
Hypertext Transfer Protocol (HTTP)	Transfer of hypertext documents	Used to transfer web pages, images, and other multimedia content.
File Transfer Protocol (FTP)	Transfer of files between computers	Used to transfer files between computers, such as documents, images, and software.
Simple Mail Transfer Protocol (SMTP)	Sending email messages	Used to send email messages from one user to another.

2.3.3 FTE - File Transfer Protocol

- FTP stands for File Transfer Protocol.
- It is a standard network protocol used to transfer computer files from a server to a client on a computer network.

- FTP is built on a client–server model architecture using separate control and data connections between the client and the server.
- FTP users may authenticate themselves with a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it.
- FTP is a reliable protocol that ensures that data is delivered in the correct order and without errors.
- It is also a secure protocol, as it uses encryption to protect data from unauthorized access.



FTP is commonly used for:

Transferring files between websites and web servers: Websites need to store their files on web servers. FTP can be used to transfer these files from a computer to the web server.

Transferring files between computers: FTP can be used to transfer files between two computers, such as transferring files from a personal computer to a work computer.

Downloading files from the internet: Many websites offer files for download, such as software, music, and movies. FTP can be used to download these files from the internet.

There are many FTP clients available for different operating systems, such as FileZilla, WinSCP, and CyberDuck.

2.3.4 Key points about FTP:

Client-Server Architecture: FTP operates on a client-server architecture. The client is a software application that initiates file transfers, and the server is the computer running FTP server software that stores and manages the files.

Two Modes: FTP supports two modes of operation: active mode and passive mode. In active mode, the client opens a port for data transfer, while in passive mode, the server opens a port for data transfer. Passive mode is often used when the client is behind a firewall or NAT.

Commands: FTP uses a set of commands to perform actions such as listing directories, uploading files, downloading files, creating directories, and deleting files. Common commands include:

- USER and PASS: Authenticate the user with a username and password.
- LIST or DIR: List the contents of a directory.
- RETR: Retrieve a file from the server to the client.
- STOR: Store a file from the client to the server.

- MKD: Create a directory on the server.
- DELE: Delete a file on the server.

Data Transfer: FTP uses two separate channels for communication:

- Command Channel: Used for sending commands from the client to the server.
- Data Channel: Used for transferring actual file data. Depending on the mode (active/passive), the data channel is established differently.

Security Concerns: FTP transfers data and authentication credentials in plain text, making it vulnerable to eavesdropping. For more secure file transfers, FTPS (FTP Secure) and SFTP (SSH File Transfer Protocol) are used, which encrypt the data and provide better security.

FTP Clients: FTP clients are software applications used by users to connect to FTP servers and manage file transfers. Examples include FileZilla, WinSCP, and Cyberduck.

Use Cases: FTP is commonly used for website maintenance, updating web content, transferring large files, sharing files within organizations, and more.

Port Numbers: FTP uses port 21 for the control channel (command channel) and additional ports for data transfer. In passive mode, the server opens a range of ports for data transfer.

Anonymous FTP: Some servers offer anonymous FTP access, allowing users to log in without providing a username and password. This is often used for public file sharing.

Advantages of using FTP:

- **Ease of Use:** FTP is relatively easy to set up and use, making it accessible to users with varying technical skills.

- **Efficient File Transfer:** It is designed for efficient and reliable file transfers, making it suitable for moving large files or large volumes of data quickly and accurately.
- **Cross-Platform Compatibility:** FTP is compatible with various operating systems, including Windows, macOS, Linux, and more.
- **Authentication and Security:** FTP can be configured to require authentication, ensuring that only authorized users can access and transfer files. FTPS and SFTP variants provide encryption and secure authentication for enhanced security.
- **Resume Capability:** FTP supports resuming interrupted file transfers, which is useful when transferring large files or in cases of network disruptions, helping save time and bandwidth
- **Batch Processing:** It allows for automated batch processing of file transfers, making it suitable for scenarios where regular and repetitive transfers are required.
- **Wide Industry Adoption:** FTP is well-established and widely supported by many software applications, servers, and network devices, making it easy to integrate into existing infrastructure.
- **Active and Passive Modes:** FTP offers both active and passive modes, allowing flexibility in dealing with firewalls and network configurations.
- **Anonymous FTP:** Anonymous FTP access can be enabled for public file sharing or distribution of non-sensitive data without requiring user authentication.
- **Standardized Protocol:** FTP is a standardized and well-documented protocol, ensuring compatibility and interoperability among different systems and software.

Disadvantages of Using FTP:

- **Lack of Encryption (FTP):** Standard FTP transmits data in plain text, making it vulnerable to eavesdropping and data interception, posing a significant security concern.
- **Complex Firewall Configuration:** FTP requires specific ports (20 and 21) to be open on firewalls, which can complicate network security configurations. Passive FTP mode can help mitigate this issue.
- **Limited Error Handling:** FTP's error handling capabilities are limited. When a transfer fails or encounters an issue, it may not provide detailed information about the problem, making troubleshooting challenging.
- **No Inherent Folder Structure:** FTP itself does not provide a hierarchical folder structure; it relies on the operating system's file system. This can result in compatibility issues when transferring files between different systems.
- **User Authentication Vulnerabilities:** While FTP supports user authentication, it can be susceptible to brute-force attacks if not properly configured with strong passwords and account lockout policies.
- **Limited Support for Modern Features:** FTP lacks some of the advanced features and capabilities found in more modern file transfer protocols, such as resumable uploads, bandwidth throttling, and folder synchronization.
- **Data Transfer Ports**: FTP requires two separate ports (one for commands and one for data) to function properly. In some network configurations, this may be problematic due to firewall restrictions.
- **Passive Mode Complexity:** Configuring passive mode FTP can be complex and may require additional port range configurations on the server-side firewall.

- **Data Integrity:** FTP does not include built-in mechanisms for ensuring data integrity during transfer. External checksums or cryptographic hashing may be required for this purpose.
- **Limited Scalability:** FTP may face challenges when scaling up for very large-scale file transfers, and managing a large number of users and connections can be challenging without additional management tools.

2.4 INTRANET AND EXTRANET:

Intranet and extranet are two types of private networks that are used by organizations to share information and collaborate with each other.

2.4.1 Intranet:

- An intranet is a private network that is only accessible to employees of an organization.
- It is typically used to share company information, such as employee directories, policies, and procedures.
- Intranets can also be used to provide employees with access to software applications, such as email and productivity tools.
- Typically, more secure than an extranet.

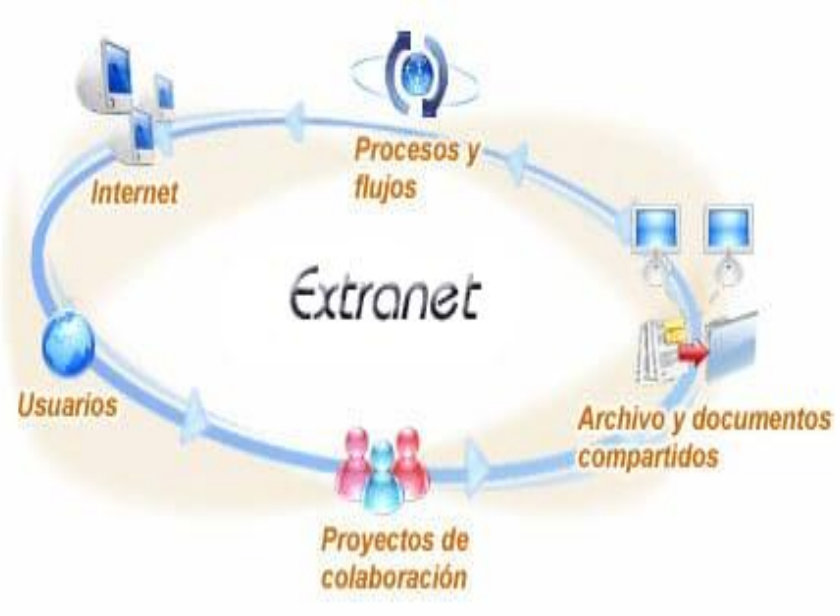
2.4.2 Key features and characteristics of an intranet:

- **Access Control:** Intranets are protected by security measures, such as user authentication and access permissions. Only employees or members with proper credentials can access the intranet.
- **Internal Communication:** Intranets facilitate communication among employees by providing tools like internal messaging, forums, announcements, and employee directories.
- **Document Sharing:** Intranets are used to store and share documents, presentations, and other files among team members. Version control and collaboration features often enhance productivity.
- **Knowledge Sharing:** Organizations use intranets to centralize knowledge repositories, such as wikis, FAQs, and training materials, making information easily accessible to employees.
- **Collaboration Tools:** Intranets offer tools for project management, task tracking, calendaring, and collaborative workspaces to improve team collaboration and coordination.
- **Corporate Policies and Procedures:** Important company policies, guidelines, and procedures can be made available on the intranet for employees to reference.
- **Employee Self-Service**: Intranets often include features that allow employees to update personal information, request time off, access pay stubs, and perform other self-service tasks.

2.4.3 An Extranet:

- An extranet is a private network that is accessible to authorized users outside of an organization.

- This can include customers, partners, and suppliers. Extranets are typically used to share information about products and services, or to collaborate on projects.
- Typically, less secure than an intranet



2.4.4 Key features and characteristics of an extranet:

- **Selective Access:** Extranets provide controlled access to specific external users, usually through secure login credentials. Access rights can be customized based on the user's role or relationship with the organization.
- **Collaboration with Partners:** Extranets enable collaboration and information sharing between an organization and its external partners, suppliers, or clients.
- **Shared Documents and Resources:** Similar to intranets, extranets offer document sharing, project management, and collaborative tools, but they are extended to external parties.

- **Customer Support:** Extranets can be used to provide customer support resources, such as FAQs, product documentation, and ticketing systems, to external clients.
- **Supply Chain Management:** Organizations can use extranets to streamline communication and data exchange with suppliers, managing inventory, orders, and shipments more effectively.
- **Secure Communication:** Extranets employ encryption and security measures to ensure that sensitive information shared with external partners remains protected.
- **B2B E-Commerce:** Some extranets are used for B2B e-commerce, allowing business partners to place orders, track shipments, and manage their accounts.

2.5 INFORMATION PUBLISHING TECHNOLOGY (IPT):

Information publishing technology (IPT) is a broad term that encompasses the tools and techniques used to create, manage, and distribute information in digital form.

It includes a wide range of technologies, from traditional print publishing to the latest in online publishing.

2.5.1 Common IPT technologies include:

- **Content Creation and Authoring Tools:** These tools enable content creators to generate text, images, videos, and other forms of media for publishing. Examples include word processors, graphic design software, video editing tools, and content management systems (CMS).
- **Content Management Systems (CMS):** A CMS is software that helps users create, manage, and organize digital content. It allows content creators to collaborate, edit, and publish content without needing advanced technical skills. Examples include WordPress, Joomla, and Drupal.
- **Digital Publishing Platforms:** These platforms provide a means to publish and distribute content in digital formats, including e-books, online magazines, and digital catalogs. They often include features for formatting, layout design, and interactive elements.
- **Web Publishing:** Web publishing involves creating and publishing content on the internet. It includes HTML coding, web design, and the use of web development tools to create websites and web applications.
- **Content Distribution Networks (CDNs):** CDNs optimize content delivery by storing copies of content on servers distributed across various geographic locations. This improves loading speed and reduces the strain on a single server.
- **Multimedia Integration:** Information can be presented through a combination of text, images, videos, audio, and interactive elements. Tools for multimedia integration help create engaging and interactive content.
- **Mobile Publishing:** With the rise of mobile devices, publishers must ensure their content is accessible and

optimized for various screen sizes. Mobile publishing involves responsive design and app development.

- **Data Visualization Tools:** These tools help present complex data in easily understandable formats, such as charts, graphs, infographics, and interactive dashboards.
- **Social Media and Content Sharing:** Platforms like social media networks enable content sharing and distribution to a wider audience, helping content creators reach their target readership.
- **Search Engine Optimization (SEO):** SEO techniques are used to optimize content for search engines, improving its visibility and discoverability by users searching for relevant information.
- **Analytics and Insights:** Data analytics tools provide insights into user engagement, traffic sources, and other metrics to help content creators refine their strategies and improve content quality.
- **Digital Rights Management (DRM):** For publishers dealing with digital content, DRM technologies help protect intellectual property rights and prevent unauthorized distribution.
- **Semantic Web and Linked Data:** These technologies aim to make web content more understandable by computers, facilitating the exchange and integration of information across different applications.
- **E-Publishing and Self-Publishing:** Digital platforms have made it easier for authors to self-publish their works, bypassing traditional publishing processes.

2.5.2 Advantages of using IPT:

- **Increased reach:** IPT allows businesses to reach a global audience with their products and services.

- **Reduced costs:** IPT can help businesses to reduce their costs by eliminating the need for physical printing and distribution.
- **Improved efficiency:** IPT can help businesses to improve their efficiency by automating many tasks, such as content creation, editing, and publishing.
- **Enhanced interactivity:** IPT allows businesses to create more interactive and engaging content for their customers.
- **Wider access to information:** IPT has made it easier for people to access information and resources from all over the world.
- **Improved education and learning:** IPT have revolutionized education and learning by providing students with access to a wealth of information and resources.
- **Enhanced communication and collaboration:** IPT have made it easier for people to communicate and collaborate with each other, regardless of distance.
- **Increased innovation and creativity:** IPT have enabled businesses and individuals to innovate and create new products and services.
- **Economic growth and development:** IPT have contributed to economic growth and development by enabling businesses to reach new markets and to improve their efficiency.
- **Improved quality of life:** IPT has improved the quality of life for people all over the world by providing them with access to information, education, and entertainment.

2.5.3 Disadvantages of using IPT:

- **Security risks:** IPT can pose security risks, such as data breaches and malware attacks.

- **Technical challenges:** IPT can be complex and challenging to implement, especially for businesses with limited resources.
- **Copyright infringement:** Businesses need to be careful to avoid copyright infringement when using IPT, especially when using images and other copyrighted content.
- **Lack of personal touch:** IPT can lack the personal touch of traditional publishing methods, such as face-to-face interactions with customers.
- **Digital divide:** IPT can widen the digital divide between those who have access to technology and those who do not.
- **Information overload:** IPT can lead to information overload, as people are bombarded with information from a variety of sources.
- **Addiction:** IPT can be addictive, as people spend more and more time using technology and accessing information online.
- **Cyberbullying and harassment:** IPT can facilitate cyberbullying and harassment.
- **Privacy concerns:** IPT can pose privacy concerns, as businesses and governments collect and use personal data.
- **Negative impact on mental health:** IPT can have a negative impact on mental health, as people spend more time online and less time interacting with others in person.

2.6 BASICS OF WEB SERVER HARDWARE AND SOFTWARE:

2.6.1 Basics of web server hardware:

A web server is a computer that is connected to the internet and hosts websites. It is responsible for storing and delivering web pages to users who request them.

Client	Servers
Hardware	Hardware
	
Software	Software
	

2.6.2 Basic hardware components of a web server include:

- **Processor:** The processor is the brain of the web server. It is responsible for executing the code that runs the web server software. The CPU is responsible for executing instructions and processing data. A powerful CPU is important for handling multiple requests simultaneously.
- **Memory:** Memory is used to store the code that runs the web server software, as well as the data that is being processed by the web server. RAM stores data that the server is currently using. It helps in quickly accessing and serving files and databases, which improves overall performance.

- **Storage:** Storage is used to store the web pages and other files that are hosted on the web server. This includes hard drives (HDDs) or solid-state drives (SSDs) where website files, databases, and other resources are stored. SSDs are faster and more efficient, making them a preferred choice for web servers.
- **Network adapter:** The network adapter is used to connect the web server to the internet
- **Network Interface Card (NIC):** This component connects the server to the internet, allowing it to send and receive data.
- **Redundancy and Load Balancing**: In larger setups, redundant hardware and load balancers are used to distribute incoming traffic across multiple servers, ensuring high availability and preventing server overload.

2.6.3 Basics of web server software:

Web server software refers to the applications and services that handle the processing and delivery of web content to users. Here are the basics:

2.6.4 Basic software components of a web server include:

- **Web Server Application:** The web server software, such as Apache, Nginx, or Microsoft IIS, receives incoming requests from users' browsers and responds by serving the appropriate web page or resource.
- **HTTP Protocol:** Hypertext Transfer Protocol (HTTP) is the foundation of data communication on the web. Web servers use this protocol to communicate with browsers and transmit web content.
- **DNS Server:** Domain Name System (DNS) servers translate human-readable domain names (like www.example.com) into IP addresses, which computers use to locate each other on the internet.

- **Database Software:** For dynamic websites and web applications, database systems like MySQL, PostgreSQL, or MongoDB are used to store and retrieve data.
- **Server-Side Scripting:** Programming languages like PHP, Python, Ruby, and Node.js are used to create dynamic web content by generating HTML and other resources on-the-fly based on user requests.
- **Security Software:** SSL/TLS certificates and security configurations are essential to encrypt data transmitted between users and the server, ensuring confidentiality and integrity.
- **Monitoring and Management Tools:** Various tools allow administrators to monitor server performance, track resource usage, and manage server configurations.

E-commerce platforms:

E-commerce platforms are used to create and manage online stores. They provide features for selling products, processing payments, and managing inventory.

Marketing automation platforms:

Marketing automation platforms are used to automate marketing tasks, such as sending emails, creating landing pages, and managing social media campaigns.

2.7 Important Questions:

5 marks:

1. Paraphrase on hardware.
2. Paraphrase on software.
3. Compare hardware and software.
4. Discuss the key components of e-business technology infrastructure.
5. Compare internet and www.

6. Infer the term telecommunication.
7. Compare private and public network.
8. What do you mean by cloud computing?
9. Annotate on internet protocol.
10. Compare intranet and extranet.
11. Summarize the E commerce platforms.
12. List out the advantages and disadvantages of FTP.
13. Infer the term information publishing technology.
14. Write a short note on search engine.
15. Compare SEO and SEM.

10 marks:

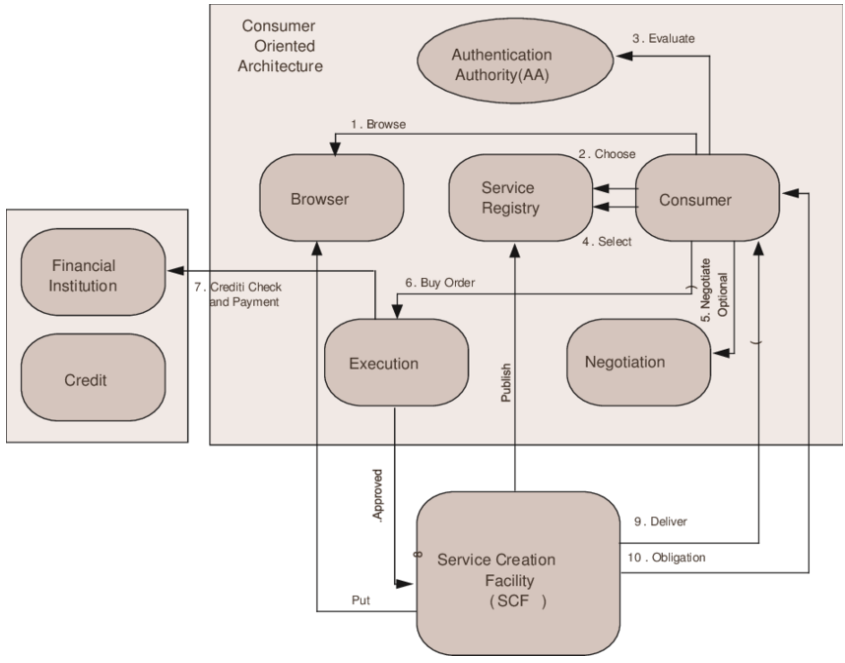
1. Discuss e-business technology infrastructure.
2. Integrate internet and WWW. With suitable examples.
3. Analyze the fundamentals of internet protocol.
4. Discuss file transfer protocol in detail.
5. Explain intranet with characteristics.
6. Explain extra-net characteristics.
7. Describe intranet and extra-net in detail.
8. Illustrate the information publishing technology (IPT) in details.
9. Assess the web server in hardware and software.
10. Explain the e commerce platform in detail.

UNIT III: BUSINESS APPLICATIONS

Consumer oriented e-business - e-tailing and models: Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet.

3.1 CONSUMER-ORIENTED E-BUSINESS

Consumer-oriented e-business, also known as customer-centric e-business or customer-focused e-business, is an approach to conducting online commerce that places the customer at the center of all business activities and decisions. It involves designing and operating digital business processes, services, and strategies with the primary goal of meeting the needs, preferences, and expectations of the customer.



Key aspects of consumer-oriented e-business:

- **Customer-Centric Approach**: The primary focus is on understanding and satisfying the needs and desires of customers. It involves creating a seamless and enjoyable customer experience at every touchpoint.
- **Personalization:** Consumer-oriented e-business often employs personalization techniques to tailor content, products, and services to individual customers based on their past behavior, preferences, and demographics.
- **User-Friendly Website and Apps:** The digital platforms used in consumer-oriented e-business are designed to be user-friendly, intuitive, and accessible. The goal is to make it easy for customers to browse, shop, and interact.
- **Customer Support:** Offering excellent customer support through various channels such as live chat, email, phone, and social media is a crucial component. Promptly addressing customer inquiries and issues is a priority.
- **Transparency:** Transparency in pricing, policies, product information, and terms and conditions are vital to building trust with customers. Clear and honest communication is encouraged.
- **Feedback and Improvement:** Companies actively seek feedback from customers and use it to improve products, services, and the overall customer experience. This can include customer surveys, reviews, and feedback forms.
- **Security and Privacy:** Protecting customer data and ensuring online security and privacy are paramount. Companies must take measures to safeguard customer information and maintain trust.
- **Customer Loyalty:** Building and maintaining customer loyalty is a key goal. This involves offering loyalty

programs, incentives, and rewards to encourage repeat business.

- **Data Analytics:** Analysing customer data and behavior is crucial for understanding customer preferences and making informed decisions. Data-driven insights help tailor offerings and marketing strategies.

Examples of consumer-oriented e-businesses from various industries:

3.1.1 Consumer oriented e-business - models:

- **E-Commerce Retailer:**
  - Business Description: These businesses sell products or services directly to consumers through online storefronts.
  - Example: Amazon, eBay, Walmart, and many smaller online shops.

- **Subscription Box:**
  - Business Description: Companies curate and deliver a selection of products to customers on a regular basis, typically monthly, based on their preferences or needs.
  - Example: Birchbox (beauty products), Blue Apron (meal kits).
- **Marketplace:**
  - Business Description: Platforms that connect multiple sellers with consumers, providing a wide range of products and services.
  - Example: Etsy (handmade goods), Airbnb (lodging), and Uber (ride-sharing).
- **Direct-to-Consumer (DTC):**
  - Business Description: Brands that sell their products directly to consumers, often bypassing traditional retail channels.
  - Example: Warby Parker (eyewear), Casper (mattresses), and Allbirds (footwear).
- **Online Travel Agency (OTA):**
  - Business Description: OTAs help consumers book travel-related services like flights, hotels, and car rentals online.
  - Example: Expedia, Booking.com, and Kayak.
- **Marketplace Aggregator:**
  - Business Description: Platforms that aggregate listings from multiple marketplaces or online retailers, simplifying product search for consumers.
  - Example: Google Shopping, Shopzilla.
- **Peer-to-Peer (P2P) Rental:**
  - Business Description: Facilitates the rental of products or services directly between individuals.
  - Example: Airbnb (short-term lodging), Turo (car sharing).

- **Online Food Delivery and Meal Kit Services:**
  - Business Description: These services deliver food and meal kits directly to consumers' homes, offering convenience and customization.
  - Example: DoorDash, Grubhub, Blue Apron, HelloFresh.
- **Digital Content Subscription:**
  - Business Description: Platforms that offer access to digital content (e.g., streaming services, e-books, news) for a recurring fee.
  - Example: Netflix, Spotify, The New York Times.
- **Online Learning and Education**:
  - Business Description: Platforms that offer online courses, tutorials, and educational materials directly to learners.
  - Example: Coursera, Udemy, edX.

3.1.2 Advantages of Consumer-Oriented E-Business:

- **Convenience:**
  - Advantage for Consumers: Shoppers can browse and purchase products or services 24/7 from the comfort of their homes or on-the-go, eliminating the need to visit physical stores.
  - Advantage for Businesses: E-commerce businesses can reach customers around the world without the limitations of physical store hours.
- **Wider Reach:**
  - Advantage for Consumers: Consumers have access to a broader selection of products and services from various geographic locations.
  - Advantage for Businesses: E-commerce allows businesses to expand their customer base globally, reaching markets they might not have accessed otherwise.

- **Personalization:**
  - Advantage for Consumers: Many e-commerce platforms use algorithms to offer personalized product recommendations and promotions based on user behavior and preferences.
  - Advantage for Businesses: Personalization can lead to increased sales and customer loyalty.
- **Comparative Shopping:**
  - Advantage for Consumers: Shoppers can easily compare prices, product features, and reviews across different online retailers, helping them make informed purchasing decisions.
  - Advantage for Businesses: Businesses can leverage competitive pricing strategies and differentiate themselves based on product quality and customer service.
- **Cost Savings:**
  - Advantage for Consumers: E-commerce often offers discounts and promotions, and consumers save on transportation costs associated with traditional shopping.
  - Advantage for Businesses: E-commerce businesses can save on overhead costs like rent and utilities for physical stores.
- **Access to Information:**
  - Advantage for Consumers: Shoppers can access detailed product information, customer reviews, and product specifications, leading to more confident purchasing decisions.
  - Advantage for Businesses: Detailed product information helps in showcasing product features and benefits.

3.1.3 Disadvantages of Consumer-Oriented E-Business:

- **Security Concerns:**
  - Disadvantage for Consumers: Online transactions may expose consumers to security risks, such as data breaches or fraudulent websites.
  - Disadvantage for Businesses: Businesses must invest in robust cybersecurity measures to protect customer data.
- **Lack of Physical Interaction:**
  - Disadvantage for Consumers: Consumers miss out on the in-person experience and the ability to physically inspect products.
  - Disadvantage for Businesses: Businesses must find ways to bridge the gap with features like detailed product descriptions, images, and virtual try-ons.
- **Delivery and Shipping Issues:**
  - Disadvantage for Consumers: Delayed or damaged deliveries can result in inconvenience for customers.
  - Disadvantage for Businesses: Managing logistics and shipping can be complex and costly.
- **Returns and Refunds:**
  - Disadvantage for Consumers: Returning items purchased online can be cumbersome, with potential shipping costs and return policies varying between retailers.
  - Disadvantage for Businesses: Managing returns can be costly and impact profit margins.
- **Digital Divide:**
  - Disadvantage for Consumers: Not everyone has equal access to the internet and digital devices, limiting e-commerce's reach.
  - Disadvantage for Businesses: Businesses may miss out on potential customers in areas with limited internet access.

3.1.4 Major players in consumer-oriented e-business:

- **Amazon:** Amazon is the world's largest online retailer, selling a wide range of products from books and electronics to groceries and home goods. It also offers a variety of services, such as Amazon Prime, Amazon Web Services, and Amazon Studios.
- **Alibaba:** Alibaba is China's largest e-commerce company. It operates a number of online platforms, including Taobao, Tmall, and AliExpress. Alibaba also owns a number of other businesses, such as Alipay, Ant Group, and Cainiao.
- **Walmart:** Walmart is the world's largest retailer. It has a large online presence, selling a wide range of products at competitive prices. Walmart also offers a number of services, such as free shipping on orders over $35 and grocery pickup.
- **eBay:** eBay is an online marketplace where buyers and sellers can connect to trade goods and services. eBay offers a wide range of products, from new and used merchandise to collectibles and antiques.
- **Home Depot:** Home Depot is the world's largest home improvement retailer. It has a large online presence, selling a wide range of products from tools and building materials to appliances and furniture. Home Depot also offers a number of services, such as delivery and installation.
- **Target:** Target is a major American retailer that sells a wide range of products, including apparel, home goods, groceries, and electronics. Target has a large online presence and offers a number of services, such as free shipping on orders over $35 and in-store pickup.

3.2 E-Tailing:

- E-Tailing stands for Electronic Retailing.
- Combination of E-Commerce and Retail.
- The sale of goods and services through the Internet.
- It can include business-to-business and business-to-consumer sales.
- E-tailing revenue can come from the sale of products and services, through subscriptions to website content, or through advertising.

Definition:

- E-tailing or Electronic retailing may be defined as use of internet to sell goods and services online.
- E-tailing is the practice of selling retail goods on the internet. It is the abbreviated version of "electronic retailing" which essentially constitutes business to consumer transaction.

3.2.1 Major E-tailing:

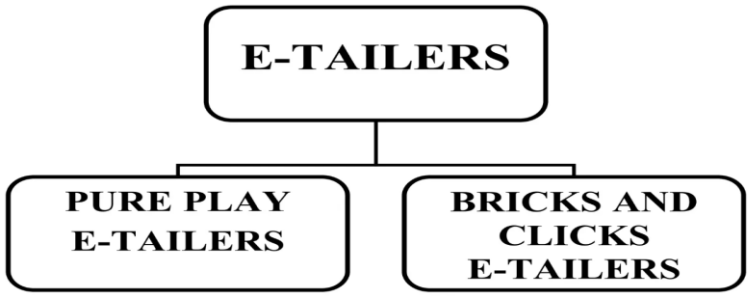
3.2.2 Sectors using E-tailing:

- **Retail:** Traditional brick-and-mortar retail businesses have expanded their online presence, allowing customers to browse and purchase products online. This sector encompasses a wide range of products, from clothing and electronics to home goods and groceries. Examples: Amazon, Walmart, Target, and many department stores have strong e-tailing operations.
- **Fashion and Apparel:** The fashion industry heavily relies on e-tailing for selling clothing, footwear, accessories, and beauty products. Consumers can explore the latest trends and make purchases without visiting physical stores. Examples: Zara, ASOS, and H&M have robust e-tailing platforms.
- **Electronics and Technology:** E-tailing is a dominant force in the electronics sector, offering a wide selection of gadgets, computers, smartphones, and accessories.

Examples: Best Buy, Newegg, and Apple are prominent e-tailers in this sector.

- **Grocery and Food Delivery:** E-tailing has revolutionized the grocery industry, allowing consumers to order groceries and have them delivered to their doorstep. Food delivery services also fall under this category. Examples: Instacart, Amazon Fresh, and Uber Eats provide e-tailing services for groceries and food.
- **Home and Furniture:** Consumers can shop for furniture, home decor, appliances, and even entire home improvement solutions online. Examples: Wayfair, IKEA, and Home Depot have well-established e-tailing platforms.
- **Health and Beauty:** E-tailing is prevalent in the health and beauty sector, offering a wide range of skincare, cosmetics, supplements, and personal care products. Examples: Sephora, Ulta Beauty, and CVS offer e-tailing options.

3.2.3 Types of E-tailers:



Pure play e-tailers:

A pure play e-tailer uses the Internet as its primary means of retailing. Some of the pure playe-tailers are Buy.com, Amazon.com, etc.

Bricks and clicks e-tailers:

A brick and click e-tailer uses the Internet to push its goods or service but also has the traditional physical storefront available to customers. Combining this new type of retail and the old of a general store is a new type of store which is part of the green economics movement, promoting ethical consumerism. The pioneer in this segment in India is offersforshoppers.com.

3.2.4 Triggers of e-tailing

- Saves time and efforts
- Convenience of shopping at home
- Wide variety / range of products are available
- Good discounts / lower prices
- Get detailed information of the product
- Able to compare various models / brands

3.2.5 Barriers of e-tailing:

- Not sure of product quality
- Cannot bargain/ Negotiate
- Not sure of security of transactions / Credit card misuse
- Need to touch and feel the product
- Significant discounts are not there
- Have to wait for delivery

E-tailing in India:

- Ishita partner Swarup, and 99Labels.com founder CEO of 99Labels.com
- 99labels is an innovative discount-oriented e-tailing website offering event based online sales for a limited time period on fashion-wear, accessories, lifestyle products, sportswear and gear, electronics and even furniture with members-only prices that are marked up to 70% off label prices.

Facts:

- In India, 1 in 3 online shopper 'buys' online! 80% of all regular online Indians ‘shop' online.

  (Source: JuxtConsult India Online, 2008)

- According to Economic Times, Online shopping is globally growing at around 8-10%, In India the growth rate is upwards of 30%.

  (Source: Economic Times, Dec. 17, 2009)

Internet Usage and Population Statistics:

Year	Users	Population	% Pen.	Usage Source
1998	1,400,000	1,094,870,677	0.1 %	ITU
1999	2,800,000	1,094,870,677	0.3 %	ITU
2000	5,500,000	1,094,870,677	0.5 %	ITU
2001	7,000,000	1,094,870,677	0.7 %	ITU
2002	16,500,000	1,094,870,677	1.6 %	ITU
2003	22,500,000	1,094,870,677	2.1 %	ITU
2004	39,200,000	1,094,870,677	3.6 %	C.I. Almanac
2005	50,600,000	1,112,225,812	4.5 %	C.I. Almanac
2006	40,000,000	1,112,225,812	3.6 %	IAMAI
2007	42,000,000	1,129,667,528	3.7 %	IWS
2009	81,000,000	1,156,897,766	7.0 %	ITU
2010	100,000,000	1,173,108,018	8.5 %	IWS
2012	137,000,000	1,205,073,612	11.4 %	IAMAI
2015	375,000,000	1,251,695,584	30.0 %	IAMAI
2016	462,124,989	1,266,883,598	36.5 %	IAMAI

LATEST UPDATE

India Getting Comfortable with Online Shopping

- Experian Hitwise' s research show that shopping is the 10th most popular online activity in India, ranking below social networking, news and travel, but picking up more visits than government, music or sports websites.
- By international standards, Indian e-commerce is immature - shopping ranks fifth in online activities in the US and fourth in the UK.

(Source: Hindustan Times, Nov. 23, 2010)

Process

- **Customer Visit:** The customer accesses the website of the e-tailer through his/her mobile, PC, or Laptop.
- **Choice of the Product**: After visiting the website, the customer chooses the product he/she wants.
- **Registration:** Customer may be asked to register within the website. He/she needs to login before ordering. Several websites allow as Guest.
- **Ordering:** The buyer can order items.

For ordering there are few steps:

  - Submit the order
  - Enter your name
  - Enter your phone/mobile no
  - Enter your Email ID
  - Enter your address with land mark
  - Delivery preferred time
  - Enter your order
  - Submit

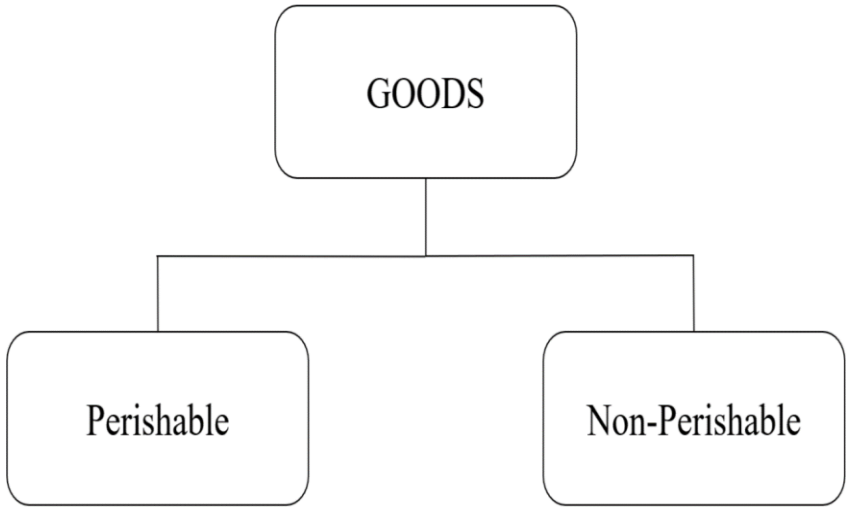
- Payment: Several methods of payment are possible:
  - **Credit/Debit Card:** The buyer will need a credit card or debit card for most sites. Allow the website to

save the payment details so the buyer do not have to provide a card number every time he/she shop.

- **Net Banking:** Majority of the website support a large number of banks. The security of transactions is ensured using secure gateways.
- **Cash on Delivery (COD):** If the customer chooses to pay when the product is delivered only basic details will be collected. Easiest and the most secure way.

- **Product Delivery:** It depends upon the nature and availability of the product.
  - The products are not delivered by the E-tailers.
  - It is done by Third party logistic providers like Bluedart, Aramex, Delhivery, IndiaOnTime, First Flight etc.
  - They would be given notice of the order placed.
  - After that the product is shipped.

3.2.6 Types of Goods handled in E-tailing:



Perishable Goods:

Perishable goods are foods or other items that have a short shelf life and can spoil quickly. They typically need to be refrigerated or frozen to keep them fresh. Perishable goods are a staple of our diet, and they provide us with essential nutrients and vitamins. However, it is important to handle perishable goods carefully to avoid foodborne illness. Example: Fresh fruits and vegetables, Meat, poultry, fish, Dairy products, Eggs, Cooked foods, Leftovers

Non-Perishable Goods:

Non-perishable goods are goods that can be stored for long periods of time without spoiling. They are typically shelf-stable and do not require refrigeration. Non-perishable goods are a good choice for people who want to have a stockpile of food and supplies on hand in case of an emergency, or for people who travel frequently and need to pack food that will not spoil. Example: canned goods, all pasta types, sugar, flour, curls, spices.

Advantages of E-tailing:

- **Wider Customer Reach:** E-tailing allows businesses to reach a global audience, breaking down geographical barriers and expanding their customer base.
- **Lower Operating Costs:** Online retailers often have lower overhead costs compared to brick-and-mortar stores. They can operate with smaller physical spaces, fewer employees, and reduced utility expenses.
- **Convenience for Customers:** Shoppers can browse and make purchases 24/7 from the comfort of their homes or on the go, offering unparalleled convenience.
- **Greater Product Variety:** E-tailers can showcase a wider range of products online without the constraints of

physical store space, allowing customers to choose from a more extensive selection.

- **Personalization:** E-commerce platforms can use data analytics to personalize product recommendations and shopping experiences, increasing the likelihood of conversions.
- **Cost Comparisons:** Shoppers can easily compare prices, features, and reviews of products across multiple online retailers, facilitating informed purchasing decisions.
- **Ease of Inventory Management:** E-tailers can efficiently manage inventory levels and quickly update product information and availability, reducing stockouts and overstock situations.
- **Targeted Marketing:** Online retailers can leverage customer data to run targeted marketing campaigns, improving the chances of reaching the right audience with relevant promotions.
- **Customer Insights:** E-tailers can gather valuable customer data and feedback to refine their offerings, improve customer service, and adapt to changing preferences.
- **Efficient Order Fulfilment:** Advanced logistics and fulfilment systems enable fast and accurate order processing and delivery, enhancing customer satisfaction.

Disadvantages of E-tailing:

- **Security Concerns:** Online shoppers may be concerned about the security of their personal and financial information, leading to hesitation or reluctance to make online purchases.
- **Lack of Tangibility:** Customers cannot physically touch, feel, or try products before buying, which can be a

drawback for certain items, especially clothing and electronics.

- **Shipping Costs:**
  Shipping fees can add to the overall cost of the purchase, potentially making products more expensive than in-store alternatives.
- **Delivery Delays:**
  Shipping delays due to various factors, including logistics issues or natural disasters, can frustrate customers and impact their satisfaction.
- **Returns and Refunds:**
  The return process for online purchases can be cumbersome, leading to customer dissatisfaction when products don't meet expectations.
- **Digital Divide:**
  Not all consumers have access to the internet or the necessary technology for online shopping, creating a digital divide that excludes certain demographics.
- **Customer Support Challenges:**
  Online retailers must provide robust customer support, including chat, email, and phone options, to address customer queries and issues effectively.
- **Competitive Market:**
  The online retail space is highly competitive, making it challenging for new entrants to gain visibility and market share.
- **Quality Assurance:**
  Ensuring the quality of products sold online can be difficult, and customers may receive items that differ from what they expected.
- **Dependence on Technology:** E-tailers are reliant on technology for their operations. Technical glitches,

outages, or cyberattacks can disrupt business operations and impact customer trust.

3.2.7 Top E-tailers:

Examples of e-tailing models:

- **Business-to-Consumer (B2C) E-Tailing:** Amazon - Amazon is one of the largest B2C e-tailers globally, offering a wide range of products and services directly to individual consumers.
- **Online Marketplaces:** eBay - eBay is a well-known online marketplace where individuals and businesses can buy and sell a variety of new and used products.

- **Brick-and-Click Retail:** Walmart - Walmart, a traditional brick-and-mortar retailer, also operates a robust e-commerce platform, allowing customers to shop online or in physical stores.
- **Direct-to-Consumer (DTC) E-Tailing:**Warby Parker - Warby Parker sells prescription eyeglasses and sunglasses directly to consumers through its website, cutting out intermediaries.
- **Flash Sales and Daily Deals**: Groupon - Groupon offers daily deals and discounts on various products and services, encouraging consumers to take advantage of limited-time offers.
- **Subscription E-Tailing:** Blue Apron - Blue Apron delivers meal kits with fresh ingredients and recipes to subscribers' doorsteps on a regular basis.
- **Niche E-Tailing:** ThinkGeek (now part of GameStop) - ThinkGeek specialized in selling unique and geek-themed products, catering to a niche market of pop culture enthusiasts.
- **Peer-to-Peer (P2P) E-Tailing:** Airbnb - Airbnb allows individuals to rent out their homes or accommodations to travellers, facilitating P2P transactions in the lodging industry.
- **Virtual E-Tailing:** Apple App Store - Apple's App Store provides a marketplace for digital applications and services, allowing users to download apps and content directly to their devices.

3.2.8 E-tailing and model's techniques:

- **User-Friendly Website Design:** Ensure a well-structured, intuitive, and responsive website or mobile app design that is easy to navigate. Implement clear calls to action

(CTAs), search functionality, and simple checkout processes to enhance the user experience.

- **Search Engine Optimization (SEO):** Optimize your website for search engines to improve visibility and organic traffic. Use relevant keywords, optimize meta tags, and create high-quality, search-friendly content.
- **Personalization:** Implement personalization algorithms to provide tailored product recommendations based on customer behavior, preferences, and past purchases. Use customer data to segment your audience and deliver customized content and offers.
- **Mobile Optimization:** Ensure your website is mobile-friendly, as an increasing number of consumers shop via smartphones and tablets. Create a seamless mobile shopping experience, including mobile payment options.
- **Product Descriptions and Imagery:** Provide detailed product descriptions, including specifications, features, benefits, and customer reviews. Include high-quality images and, when applicable, videos to showcase products from different angles.
- **Pricing Strategies:** Use dynamic pricing algorithms to adjust prices based on factors like demand, competitor pricing, and customer behavior. Offer discounts, promotions, and loyalty programs to incentivize purchases.
- **Customer Reviews and Ratings:** Encourage customers to leave reviews and ratings for products, as positive reviews can build trust and credibility. Respond to both positive and negative feedback to show that you value customer input.
- **Inventory Management**: Implement efficient inventory management systems to prevent overselling and stockouts. Notify customers of product availability and estimated delivery times.

- **Shipping and Delivery Strategies:** Offer flexible shipping options, including express and standard delivery, and provide transparent shipping costs. Use order tracking systems to keep customers informed about the status of their shipments.
- **Return and Refund Policies:** Clearly communicate your return and refund policies to manage customer expectations. Make the return process as hassle-free as possible, including providing return labels.

Conclusion:

The e-retail revolution has come up with huge opportunities and advantages both for the marketer as well as the consumer. The consumer can now shop 24x7 from his home and at his convenience. He can search for a product from a hoard of online shops and deals available. According to an IMRB study, it states that shopping convenience, time saving and the availability of a wide range of products were the three major triggers of the Indian e-tailing market.

3.3 MARKETING ON WEB:

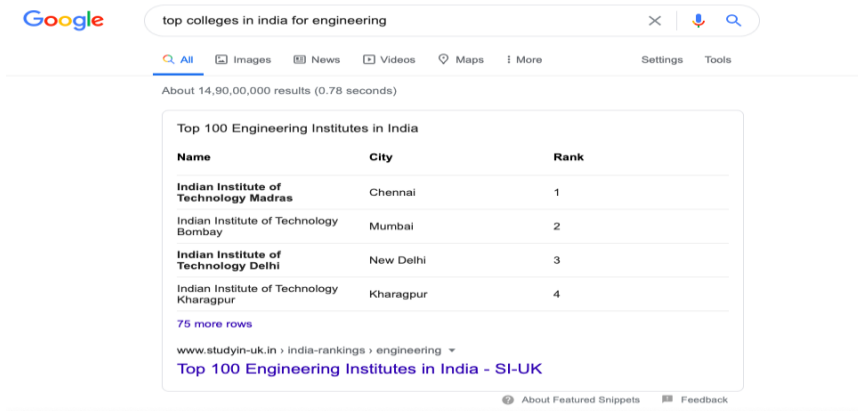
Digital Marketing Fundamentals:

- Search Engine Optimisation (SEO)
- Search Engine Marketing (SEM)

3.3.1 What is SEO?

SEO, or Search Engine Optimization, is a digital marketing strategy and practice focused on improving a website's visibility and ranking in search engine results pages (SERPs). The primary objective of SEO is to increase organic (non-paid) traffic to a website by optimizing various elements of the site and its content to align with the algorithms used by search engines like Google, Bing, and Yahoo.

3.3.2 Why SEO is Important? Example

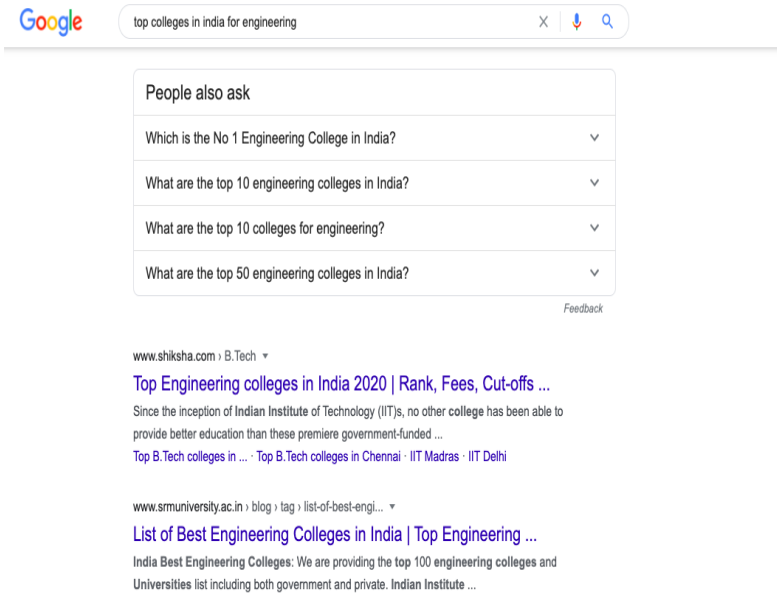


3.3.3 Why are Keywords important?

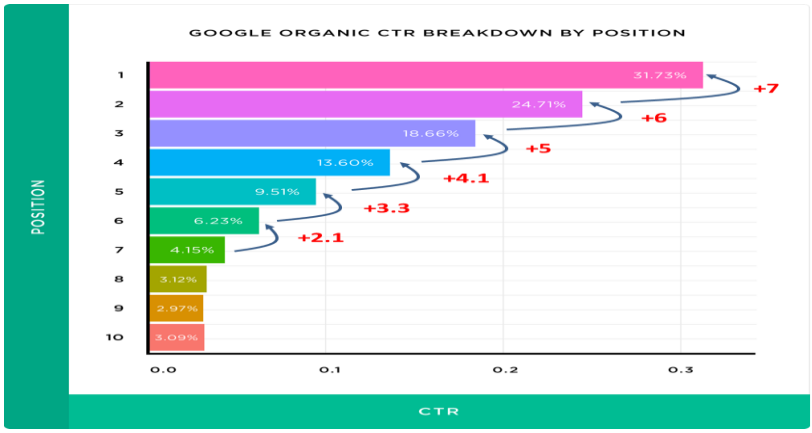
- Foundation for your website creation
- Helps search engines to understand the purpose of your website

- Helps you target specific interests of topics
- Helps to boost ranking
- Helps to drive massive traffic to your website

Why SEO is Important? Example

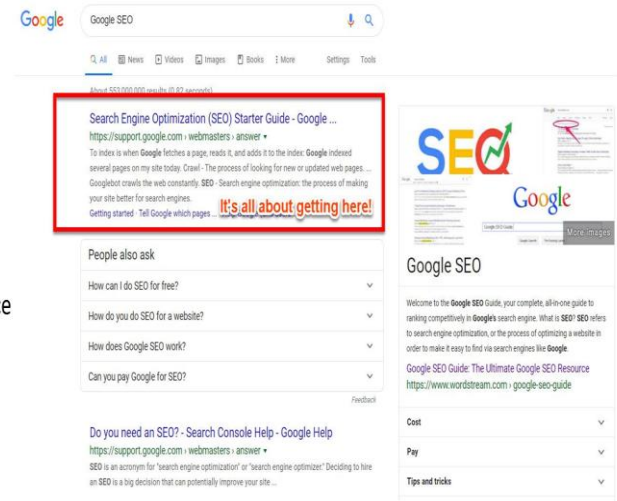


Why SEO is Important?



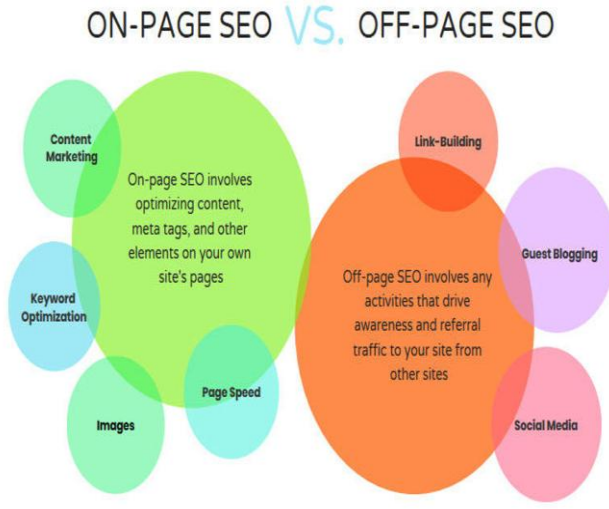
How does Google rank websites?

- Backlinks
- Content
- User Experience
- Site Structure



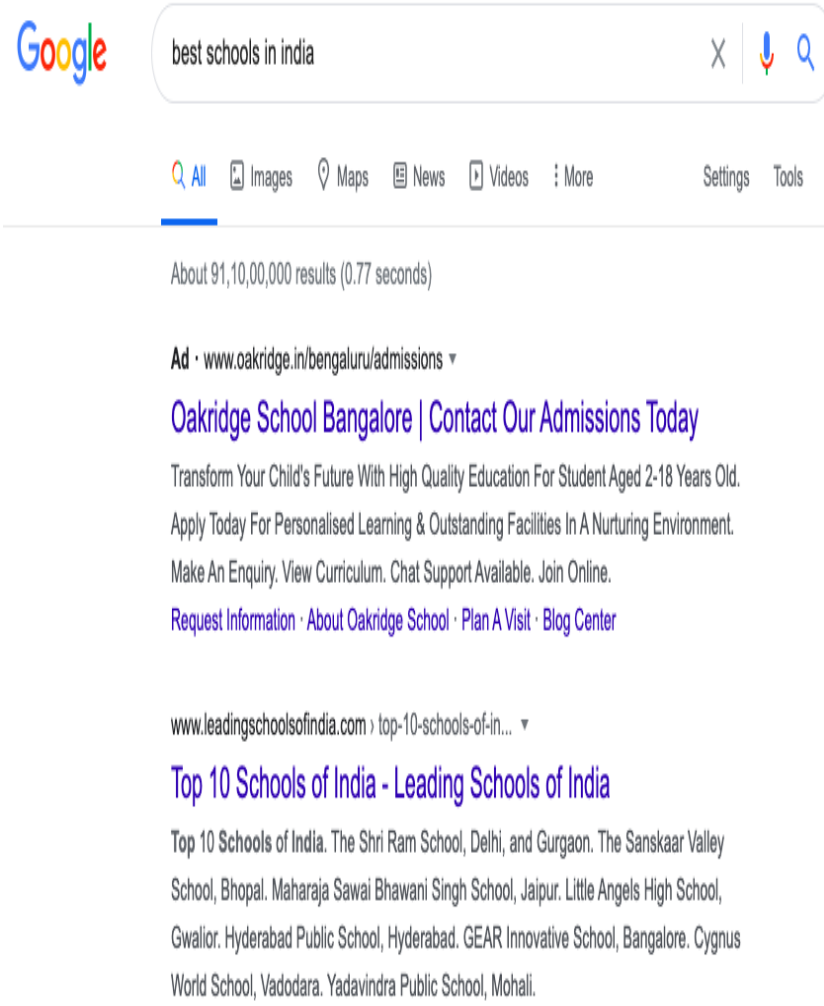
3.3.4 Types of SEO

- On Page SEO
- Off Page SEO

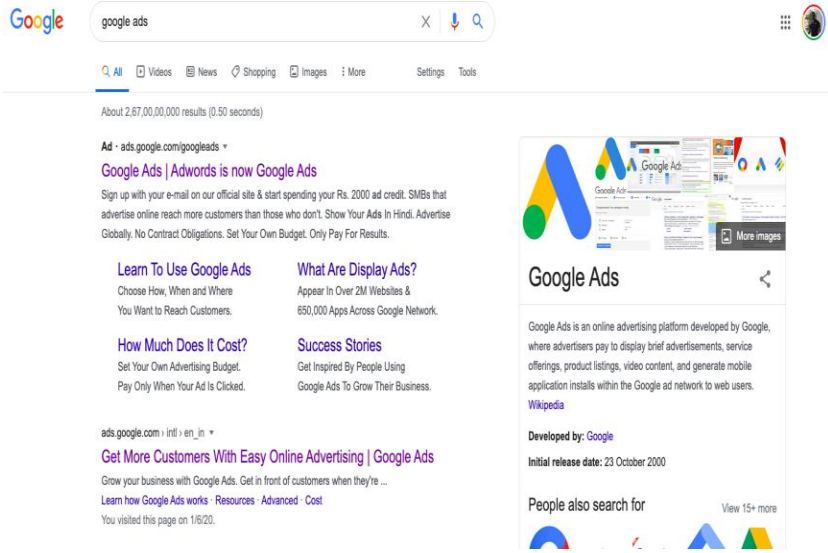


3.3.5 What is Keyword?

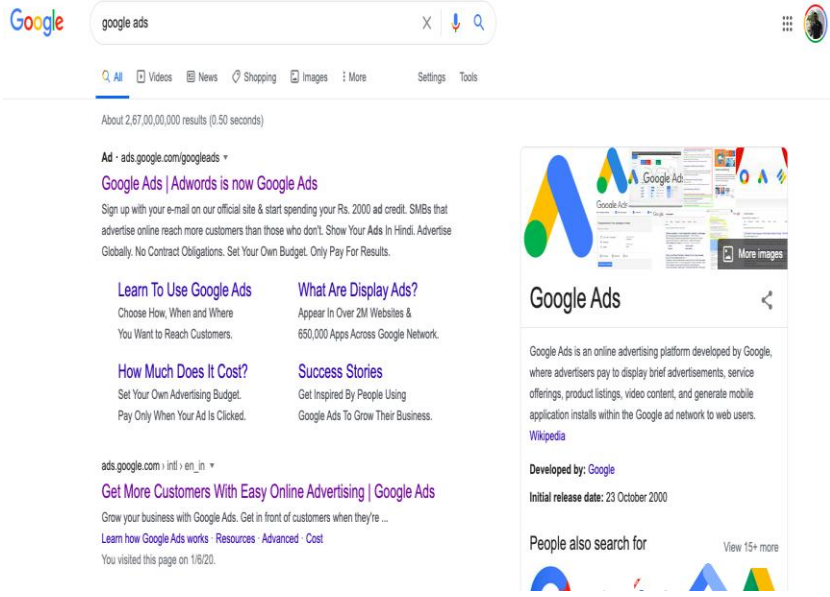
Keyword in the context of Search Engine Optimisation, is a particular word or phrase that describes the content of your web page.



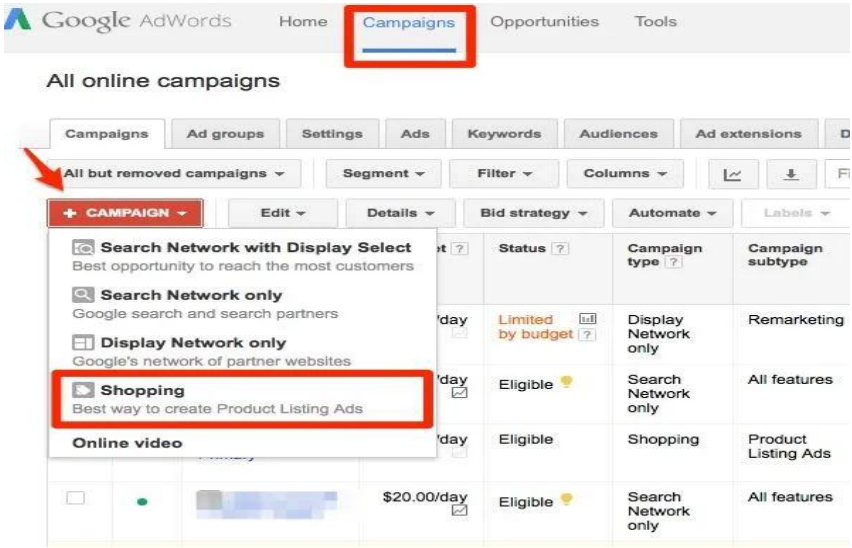
How to do Keyword Research?



What is Search Engine Marketing?



Google Ads Campaign:



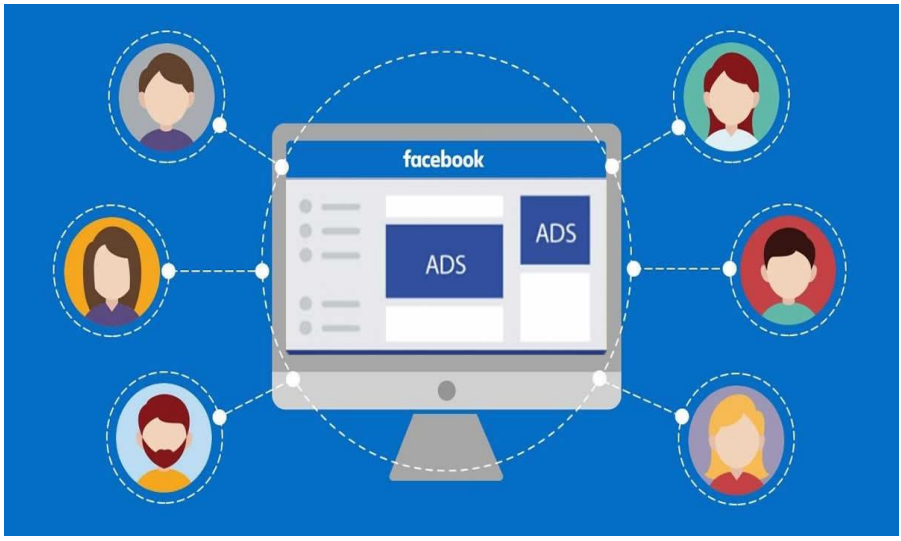
3.3.6 What is SMO and SMM?

- Social Media Optimization (SMO) is the use of social media networks to manage and grow an organization's message and online presence.
- Social Media Marketing (SMM) is the use of social media advertising to do marketing to prospect leads and get them follow or buy your Products/Services.

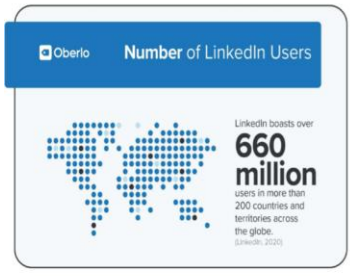
Platform	Usage	Text / Blog	Image	Video
Linkedin	• Professional Network • Candidate Search • Branding	☑	☑	
Facebook	• Lead Generation • Fan Following • Brand Awareness		☑	☑
Instagram	• Inspiration • Showcase • Hashtagging		☑	☑
Twitter	• Trend setting • Branding • Hashtagging	☑	☑	
Youtube	• Pay Per Click • Promotional Videos			☑
Pinterest	• Image Inspirations • Product showcase		☑	
Quora	• Answer questions • Blog posting	☑	☑	

Why Facebook Ads?

- Facebook has over 1.5 Billion users worldwide
- Average time spent on Facebook is about 20 mins
- Most popular social media platform
- Facebook knows the details about users like location, interests, searches, etc
- Most cost-effective platform for advertisement



Why LinkedIn?



3.4 EMAIL MARKETING:

Email marketing is a powerful marketing channel, a form of direct marketing as well as digital marketing, that uses email to promote your business's products or services. It can help make your customers aware of your latest items or offers by integrating it into your marketing automation efforts. It can also play a pivotal role in your marketing strategy with lead generation, brand awareness, building relationships or keeping customers engaged between purchases through different types of marketing emails.

3.4.1 Objectives of Email Marketing:

Email marketing serves various objectives, depending on the goals and strategies of a business or organization. Here are some common objectives of email marketing:

- **Promote Products or Services:** One of the primary objectives of email marketing is to promote and showcase products or services to a targeted audience. This includes announcing new product launches, highlighting features, and offering special promotions or discounts to encourage sales.
- **Customer Retention:** Keeping existing customers engaged and loyal is a crucial objective. Email marketing helps nurture customer relationships by providing updates, personalized recommendations, and exclusive offers to encourage repeat business.
- **Brand Awareness:** Email campaigns can reinforce brand identity and keep the brand top-of-mind for subscribers. Consistent communication helps build brand recognition and trust.
- **Educate and Inform:** Email marketing is an effective way to educate customers about products, services, industry trends, or related topics. Educational content can position a business as an authority in its field.
- **Event Promotion:** Promoting events, such as webinars, workshops, conferences, or product launches, is a specific objective of email marketing. It can help increase event attendance and participation.
- **Customer Feedback and Surveys:** Email surveys and feedback requests are used to gather valuable insights from customers, enabling businesses to make informed decisions and improvements.

- **Cross-Selling and Upselling:** Email marketing can promote related or complementary products or services to existing customers, increasing the average transaction value.
- **Segmentation and Personalization:** An objective is to segment the email list and personalize content to deliver more relevant messages to specific groups of subscribers. Personalization can enhance engagement and conversion rates.
- **Compliance and Data Protection:** Ensuring compliance with email marketing laws and data protection regulations, such as the CAN-SPAM Act or GDPR, is a fundamental objective to avoid legal issues.
- **Testing and Optimization:** Continuously testing and optimizing email campaigns for better open rates, click-through rates, and conversions is an ongoing objective to improve overall performance.

Advantages of Email Marketing:

- **Cost-Effective:** Email marketing is one of the most cost-effective forms of digital marketing. There are minimal expenses associated with email campaigns, making it accessible for businesses of all sizes.
- **Wide Reach:** You can reach a large and global audience with email marketing, making it an efficient way to communicate your message.
- **Targeted Messaging:** Segmentation and personalization tools allow you to send highly targeted messages to specific groups or individuals based on their interests, behavior, and demographics.
- **Highly Measurable:** You can track the performance of your email campaigns with metrics such as open rates,

click-through rates, conversion rates, and more, allowing you to analyze and improve your strategies.

- **Automation:** Email marketing platforms offer automation features that allow you to send automated responses, drip campaigns, and follow-up messages based on user behavior and triggers.
- **Direct Communication:** Email provides a direct and private channel for communication with your audience, allowing you to control the messaging and brand image.
- **Increases Customer Engagement:** Well-crafted and relevant emails can engage customers, keep your brand top-of-mind, and encourage repeat business.
- **Builds Relationships:** Consistent and valuable email communication can help build trust and lasting relationships with your audience.

Disadvantages of Email Marketing:

- **Overcrowded Inboxes:** Many people receive a large volume of emails daily, leading to inbox clutter. This can result in your emails being overlooked or deleted.
- **Deliverability Challenges:** Emails may end up in spam folders, and ensuring email deliverability can be challenging, particularly if you don't follow best practices.
- **List Management:** Building and maintaining a quality email list can be time-consuming, and managing unsubscribes and bounces is essential to maintain a healthy list.
- **Content Quality:** Poorly designed or irrelevant content can lead to subscribers unsubscribing or marking your emails as spam.
- **Compliance Issues:** Email marketing must comply with laws like the CAN-SPAM Act (in the United States) and

GDPR (in the European Union), which can be complex to navigate.

- **Mobile Responsiveness:** Emails must be mobile-friendly since many people check their emails on smartphones and tablets. Poorly formatted emails can lead to a negative user experience.
- **Opt-Outs and Unsubscribes:** Some recipients may opt out of your email list or unsubscribe if they feel overwhelmed or no longer interested in your content.
- **Competition:** The high volume of emails people receive means you're competing with other marketers for attention in the inbox.

Use E-mail Marketing to acquire New Customers:

Email marketing can be a very effective way to acquire new customers. Here are some tips:

- **Build a targeted email list:** The first step is to build a targeted email list of potential customers. You can do this by offering a lead magnet, such as a free e-book, webinar, or discount code, in exchange for their email address. You can also collect email addresses at trade shows, conferences, and other events.
- **Create a Compelling Lead Magnet:** Offer something of value to your target audience in exchange for their email addresses. This could be a free e-book, whitepaper, webinar, discount code, or access to exclusive content.
- **Design Engaging Sign-Up Forms:** Place sign-up forms prominently on your website and social media profiles. Ensure they are easy to fill out and include a clear call to action (CTA) that explains the benefits of subscribing.
- **Welcome Email Series:** When someone subscribes, send a series of welcome emails to introduce your brand, set

expectations, and provide a warm welcome. Include a thank-you message and details about the lead magnet.

- **Educational and Value-Driven Content:** Send a series of informative and valuable emails that address your subscribers' pain points, needs, or interests. These emails should not be overly promotional but should establish your expertise and credibility.
- **Product or Service Introduction:** Gradually introduce your products or services in a non-invasive manner. Highlight the benefits and solutions they offer to subscribers' problems.
- **Exclusive Offers and Discounts:** Create a sense of urgency by offering exclusive promotions or discounts to new subscribers. Emphasize that these offers are available for a limited time.
- **Responsive Design:** Ensure that your emails are mobile-responsive, as many people check their emails on mobile devices. A mobile-friendly design enhances the user experience.
- **Monitor and Analyze Results:** Track key metrics like open rates, click-through rates, conversion rates, and unsubscribe rates. Use analytics to understand what's working and refine your email campaigns accordingly.
- **Follow Up and Nurturing:** Continue to nurture leads who haven't converted yet. Implement drip campaigns or targeted follow-up emails to keep your brand top-of-mind.
- **Feedback Loop and Improvement:** Encourage new customers to provide feedback about their experience. Use this feedback to make improvements to your products, services, and email marketing strategy.

3.4.2 Email marketing activities:

Email marketing encompasses a range of activities designed to communicate with and engage your audience through email.

These activities can vary depending on your specific goals and target audience.

Here is a list of common email marketing activities:

- **Building an Email List:** Collecting email addresses from website visitors, social media followers, event attendees, and other sources. Using sign-up forms and lead magnets to encourage people to subscribe to your emails
- **Segmentation:** Organizing your email list into segments based on demographics, behaviors, preferences, or other criteria. Creating targeted email campaigns for each segment to improve relevance and engagement.
- **Personalization:** Personalizing email content, subject lines, and CTAs to address recipients by name and tailor the message to their interests and behaviors.
- **Testing and Optimization:** Conducting A/B tests on various elements of your emails, such as subject lines, content, images, and CTAs. Analysing email performance data and making improvements based on results.
- **Automation:** Setting up automated email sequences, such as welcome emails, abandoned cart reminders, and post-purchase follow-ups. Triggering emails based on user actions or behavior, such as website visits, form submissions, or purchase history.
- **Mobile Optimization:** Ensuring that emails are mobile-responsive and display properly on various devices and email clients. Considering mobile users in your email design and layout.
- **Compliance:** Complying with email marketing regulations and laws, such as the CAN-SPAM Act (in the United States) and GDPR (in the European Union). Including

clear unsubscribe options and sender identification in your emails.

- **Analytics and Reporting:** Tracking key email metrics, including open rates, click-through rates, conversion rates, bounce rates, and unsubscribe rates. Using analytics to assess the effectiveness of your email campaigns and make data-driven decisions.
- **Multichannel Marketing:** Coordinating email marketing efforts with other communication channels, including SMS, push notifications, and direct mail, to reach customers through multiple touchpoints.
- **Spam Avoidance:** Taking steps to avoid having your emails flagged as spam by adhering to best practices for email content and sender reputation.

3.4.3 Reasons for email marketing popularity:

- **Reach:** Email is one of the most widely used forms of communication, with over 4 billion active email users worldwide. This means that email marketing allows you to reach a large audience with your message.
- **Cost-effectiveness:** Email marketing is a very cost-effective way to reach your target audience. The cost of sending an email is negligible, and there are a number of affordable email marketing platforms available.
- **Measurability:** Email marketing is very measurable. You can track the open rates, click-through rates, and conversion rates of your email campaigns to see what is working and what is not. This information can help you to improve your campaigns over time.
- **Personalization:** Email marketing allows you to personalize your messages to make them more relevant to each individual subscriber. This can help to increase engagement and conversion rates.

- **Targeting:** You can segment your email list and send targeted messages to different groups of subscribers based on their interests, demographics, or purchase history. This allows you to send more relevant and effective messages.
- **Automation:** Email marketing can be automated to save you time and effort. You can create automated email sequences that are triggered when certain events occur, such as when a subscriber signs up for your email list or abandons their shopping cart.
- **High ROI:** When executed effectively, email marketing offers a high return on investment (ROI). The ability to drive sales, nurture leads, and retain customers makes it a cost-effective tool.
- **Easy Sharing:** Email content can be easily shared by recipients with others, expanding the reach of your messages through forward and social sharing options.
- **Compliance and Privacy:** Email marketing platforms typically include features to help businesses comply with email marketing laws and regulations, ensuring ethical practices.
- **Personal and Professional:** People use email for both personal and professional communication, making it a versatile platform for various types of messages.

3.4.4 Facts of Email Marketing:

- Email is still the most widely used form of digital communication, with over 4.6 billion active users worldwide.
- Email marketing is one of the most effective ways to reach your target audience, with an average open rate of 19.7%.
- Email marketing is also very cost-effective, with an average ROI of $40 for every $1 spent.

- Personalized email campaigns can generate up to 50% higher open rates and 20% higher click-through rates than non-personalized campaigns.
- Segmented email campaigns can generate up to 760% more revenue than non-segmented campaigns.
- Automated email campaigns can save you time and effort, while also improving the results of your email marketing campaigns.
- Email marketing can be used to achieve a variety of business goals, such as increasing brand awareness, driving traffic to your website, generating leads and sales, and nurturing customer relationships.
- Email is the most popular marketing channel among B2B marketers, with 93% of B2B marketers using email to distribute content.
- Emails with social sharing buttons see a 158% increase in click-through rates.
- The average email open rate is 19.7%, while the average open rate for welcome emails is 68.6%.
- The average email click-through rate is 2.7%.
- The average unsubscribe rate is 0.1%.

3.4.5 Importance of email marketing:

- **Direct and Personal Communication:** Email allows you to communicate directly with your audience in a personalized manner. You can address recipients by their names, tailor content to their preferences, and segment your email list to send targeted messages. This personal touch fosters a stronger connection between your brand and your audience.
- **Wide Reach:** Email is a ubiquitous communication channel. Nearly everyone has an email address and billions of people use email regularly. This wide reach allows you

to connect with a broad audience, whether they're local or global.

- **Highly Targeted:** You can segment your email list based on various criteria such as demographics, purchase history, behavior, and more. This enables you to send tailored messages to specific groups of subscribers, increasing the relevance and effectiveness of your emails.
- **Measurable Results:** Email marketing provides robust analytics and tracking capabilities. You can monitor open rates, click-through rates, conversion rates, and more to measure the performance of your campaigns. This data allows you to make data-driven decisions and continuously optimize your email marketing strategy.
- **Enhances Customer Engagement:** Regularly sending valuable content, promotions, and updates via email keeps your brand top of mind with your audience. It also encourages engagement by prompting recipients to interact with your website or make purchases.
- **Drive Traffic and Sales:** Email marketing can be an effective tool for driving traffic to your website, online store, or specific landing pages. It can also lead to direct sales if you promote products or services in your emails.
- **Builds Trust and Credibility**: Consistent, informative, and relevant emails can help build trust and credibility with your audience. Over time, subscribers who receive valuable content from your brand are more likely to become loyal customers.
- **Customer Retention:** Email marketing is not only about acquiring new customers but also about retaining existing ones. You can use email to nurture customer relationships, provide post-purchase support, and encourage repeat business.

Components and concepts related to email marketing:

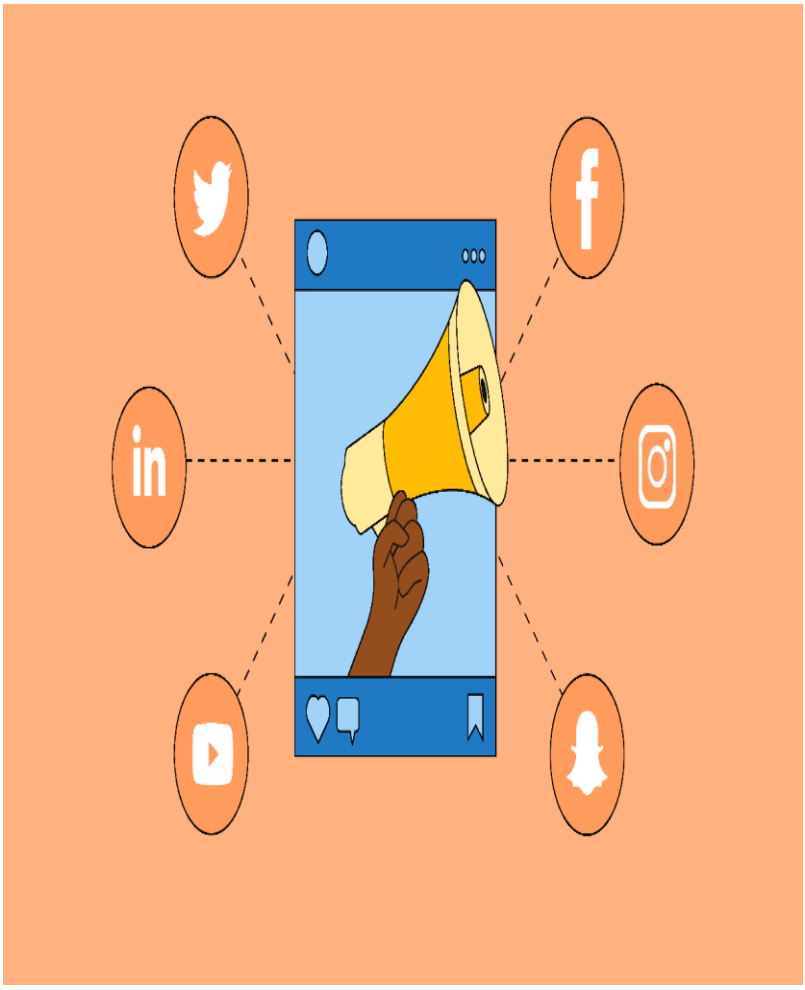
- **Audience Engagement:** Email marketing involves sending targeted emails to a group of subscribers to engage them, build relationships, and achieve marketing goals.
- **Email List:** Building and maintaining a quality email list is crucial for success in email marketing.
- **Content and Personalization:** Emails should contain valuable content and may be personalized to enhance engagement.
- **Metrics and Analytics:** Marketers use data like open rates, click-through rates, and conversions to measure the effectiveness of email campaigns.
- **Compliance and Deliverability:** Email marketing must adhere to regulations, and emails need to reach recipients' inboxes to be effective.

3.5 AFFILIATE MARKETING:

Affiliate marketing is an advertising model in which a company compensates third-party publishers to generate traffic or leads to the company's products and services. The third-party publishers are affiliates, and the commission fee incentivizes them to find ways to promote the company.

3.5.1 Influencer Marketing:

Influencer marketing is a digital marketing strategy that involves collaborating with individuals who have a dedicated and engaged following on social media platforms, blogs, or other online channels. These individuals, known as influencers, have the ability to impact the purchasing decisions and opinions of their followers due to their credibility, authority, or popularity in a specific niche or industry. Influencer marketing aims to leverage this influence to promote products, services, brands, or causes.



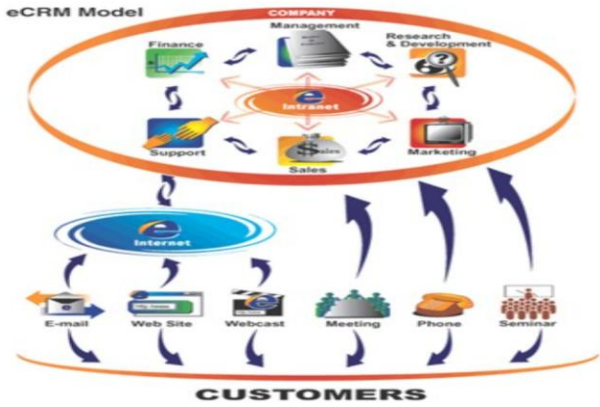
3.5.2 Difference between influencer marketing and affiliate marketing:

Aspect	Influencer Marketing	Affiliate Marketing
Primary Objective	Brand awareness, trust, engagement	Drive sales and conversions
Nature of Partners	Influencers with dedicated followings	Publishers, bloggers, content creators
Content Focus	Authentic storytelling and brand advocacy	Product features, benefits, and value
Payment Structure	Flat fees, free products, or a combination	Commission-based on successful referrals or sales
Audience Engagement	Relies on influencer's audience engagement	Targets an audience actively seeking solutions
Relationship Duration	Can be short-term or long-term collaborations	Ongoing but often transactional
Brand Control	Influencers have creative freedom and control	Brands have more control over messaging
Compensation Timing	Often paid upfront for content creation	Earns commissions based on performance

3.6 E-CRM:

The E-CRM or electronic customer relationship management encompasses all the CRM functions with the use of the net environment i.e., intranet, extranet and internet. Electronic CRM

concerns all forms of managing relationships with customers making use of information technology (IT).



3.6.1 Components of E-CRM:

- **Data Collection:** E-CRM starts with the collection of customer data, which can come from various sources such as websites, social media, email interactions, purchase history, and customer support interactions. This data is stored in a centralized database.
- **Data Analysis:** Once data is collected, it's analyzed to gain insights into customer behavior, preferences, and needs. Advanced analytics and data mining techniques are often used to identify patterns and trends.
- **Customer Segmentation:** E-CRM involves dividing customers into segments based on their characteristics and behavior. This segmentation allows for more targeted marketing and communication strategies.
- **Personalization:** Personalization is a crucial aspect of E-CRM. By leveraging customer data, businesses can deliver personalized content, product recommendations, and offers

to individual customers, increasing engagement and satisfaction.

- **Multichannel Communication:** E-CRM facilitates communication through multiple digital channels, including email, social media, chat, and mobile apps. It ensures that customers can interact with the company using their preferred method.
- **Customer Service and Support:** E-CRM systems often include customer service and support modules, allowing businesses to track and manage customer inquiries and issues efficiently. Automation and self-service options can also enhance the customer support experience.
- **Feedback and Surveys:** Gathering feedback from customers through surveys and feedback forms is an essential part of E-CRM. It helps in understanding customer satisfaction levels and areas that need improvement

Advantages of E-CRM:

- **Improved Customer Service:** E-CRM enables businesses to respond to customer inquiries and issues more quickly and efficiently. It provides a centralized database of customer information, making it easier for customer service representatives to access relevant data.
- **Enhanced Customer Relationships:** By using customer data to personalize interactions, businesses can build stronger, more meaningful relationships with their customers. This can lead to increased customer loyalty and repeat business.
- **Targeted Marketing:** E-CRM allows for precise segmentation and targeting of marketing campaigns. Businesses can tailor their messaging and offers to specific customer segments, improving the effectiveness of marketing efforts.

- **Increased Sales:** Personalization and targeted marketing can lead to higher conversion rates and increased sales. E-CRM systems often include lead management and sales automation tools that help sales teams' close deals more efficiently.
- **Data-Driven Decision-Making:** E-CRM systems provide valuable insights through data analysis. This data-driven approach allows businesses to make informed decisions and continually optimize their strategies.
- **Competitive Advantage:** Companies that effectively implement E-CRM can gain a competitive edge by providing superior customer experiences and staying ahead of market trends.
- **Scalability:** E-CRM systems can scale with the growth of a business. Whether a company has a small customer base or a large one, the system can accommodate changing needs.

Disadvantages of E-CRM:

- **Privacy Concerns:** Collecting and storing customer data can raise privacy concerns. Mishandling of personal information or data breaches can damage a company's reputation and lead to legal issues.
- **Implementation Costs:** Setting up and customizing an E-CRM system can be expensive, especially for small businesses. The initial investment may include software, hardware, and training costs.
- **Data Quality Challenges:** E-CRM relies on accurate and up-to-date customer data. Maintaining data quality can be a challenge, as incorrect or outdated information can lead to miscommunications and errors.
- **Resistance to Change:** Employees may resist adopting new E-CRM processes and tools. Training and change

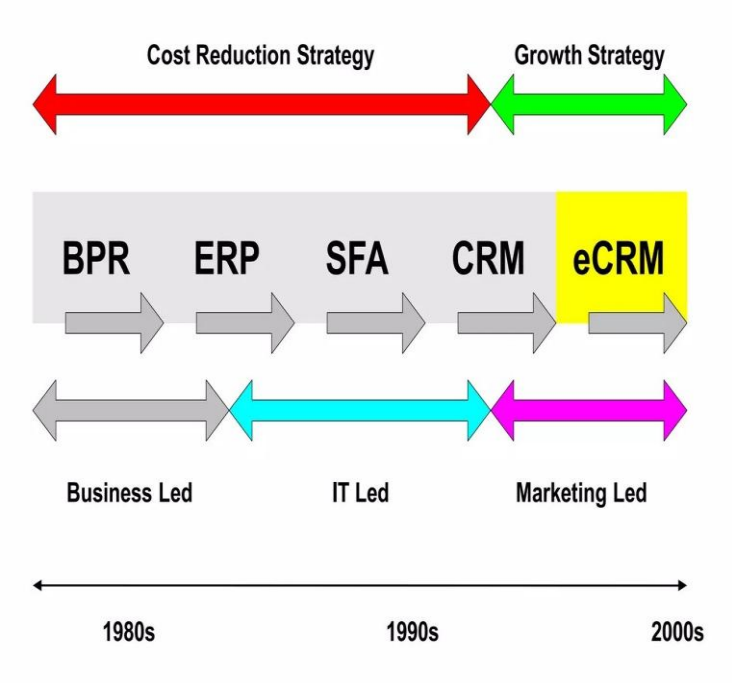
management efforts may be required to ensure smooth implementation.

- **Overreliance on Technology:** While technology is a valuable tool, businesses should not rely solely on E-CRM systems. The human touch and personal interactions with customers remain essential.
- **Customer Perception:** Some customers may be uncomfortable with the level of personalization that E-CRM allows. It's essential to strike a balance between personalization and respecting privacy.
- **Integration Challenges:** Integrating E-CRM systems with other existing systems and databases within the organization can be challenging, leading to data silos and inefficiencies.

3.6.2 Customer Relationship Management:

- CRM is a strategy by which companies optimise profitability through enhanced customer satisfaction.
- CRM is about automating and enhancing the customer-centric business processes of Sales, Marketing, and Service.
- CRM also focuses on added customer loyalty that directly affects the organization's bottom line.

3.6.3 Evolution of e-crm:



3.6.4Differences between CRM & E-CRM

Aspect	CRM	e-CRM
Scope	Broad, includes digital and non-digital interactions	Focused on digital interactions and relationships
Technology Utilization	Utilizes various communication methods, including digital tools	Primarily relies on digital technologies and channels

Communication Channels	Encompasses both online and offline channels (e.g., in-person, phone calls, direct mail)	Primarily online channels (e.g., email, social media, web chat)
Data Collection and Analysis	Collects and analyzes data from various sources, including digital and offline interactions	Specializes in collecting and analyzing digital data (e.g., web behavior, email engagement)
Target Audience	Suitable for businesses with diverse customer interaction channels	Suited for businesses with a significant online presence
Flexibility	Adaptable to include digital components, not inherently digital-first	Designed with a digital-first approach, focused on online customer engagement

3.6.5Importance of e-CRM:

- **Customer-Centric Focus:** e-CRM places the customer at the center of business operations. It helps organizations better understand their customers' needs, preferences, and behaviors, allowing for personalized and targeted interactions.

- **Improved Customer Satisfaction:** By leveraging e-CRM tools and data analytics, businesses can provide more tailored products, services, and support, ultimately leading to higher customer satisfaction and loyalty.
- **Enhanced Communication:** e-CRM facilitates real-time communication with customers through various digital channels, including email, social media, chatbots, and online communities. This allows for quicker responses to inquiries and issues.
- **Data Collection and Analysis:** e-CRM systems collect vast amounts of customer data, which can be analyzed to gain insights into customer behavior and preferences. This data-driven approach helps in making informed decisions and optimizing marketing efforts.
- **Personalization:** With the help of e-CRM, businesses can deliver personalized experiences to customers, such as personalized product recommendations, content, and marketing messages. This personalization can significantly increase conversion rates and sales.
- **Targeted Marketing:** e-CRM enables businesses to segment their customer base and target specific groups with relevant marketing campaigns. This leads to more efficient and cost-effective marketing efforts.
- **Customer Retention:** Retaining existing customers is often more cost-effective than acquiring new ones. e-CRM tools help in identifying at-risk customers and implementing strategies to retain them through loyalty programs and personalized engagement.
- **Cross-Selling and Upselling:** Through data analysis, businesses can identify opportunities for cross-selling and upselling to existing customers, increasing revenue without acquiring new customers.

- **24/7 Availability:** Many e-CRM tools and chatbots can provide customer support and assistance 24/7, ensuring that customers can get help when they need it.
- **Competitive Advantage:** Implementing e-CRM effectively can give a business a competitive advantage in the market. Customers are more likely to choose a company that offers a personalized and seamless experience.

3.6.6E-CRM System Architecture

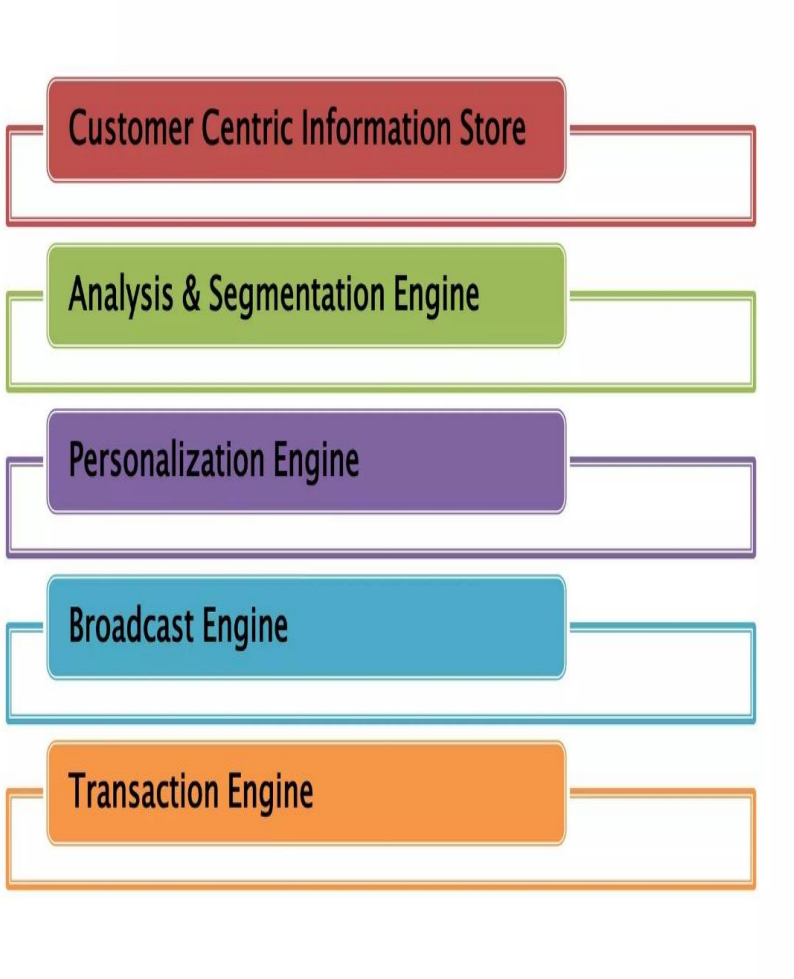
Technical e-CRM Capabilities:

- **Customer analytic software** predicts, measures, and interprets customer behaviors, allowing companies to understand the effectiveness of e-CRM efforts.
- **Data mining software** builds predictive models to identify customers most likely to perform a particular behavior.
- **Campaign management software** leverages the data warehouse to plan and execute multiple, highly targeted campaigns overtime, using triggers that respond timed events and customer behaviour.
- **Business simulation** used in conjunction with campaign management software optimises offer; messaging and

channel delivery prior to the execution of campaigns, and compares planned costs and ROI projections with actual results.

- **A real time decision engine** coordinates and synchronises communications using business intelligence.

3.6.75 Engines of e-CRM:



- **The customer-centric information store:**
  - Consolidates information about millions of customers together with preferences, permissions, and information that may be useful to them.

- **The analysis and segmentation engine:**
  - Helps in leveraging this customer information to build a business campaign strategy and evaluate its success.
- **The personalisation engine:**
  - Helps in personalising the entire customer experience, configuring unique sets of messages and offers to each customer.
- **The broadcast engine**
  - Helps to proactively deliver information and offers to every customer via the media of his or her choice.
- **The transaction engine**
  - Helps to facilitate the interactions between customer and the company, either exchanging information or driving transactions.

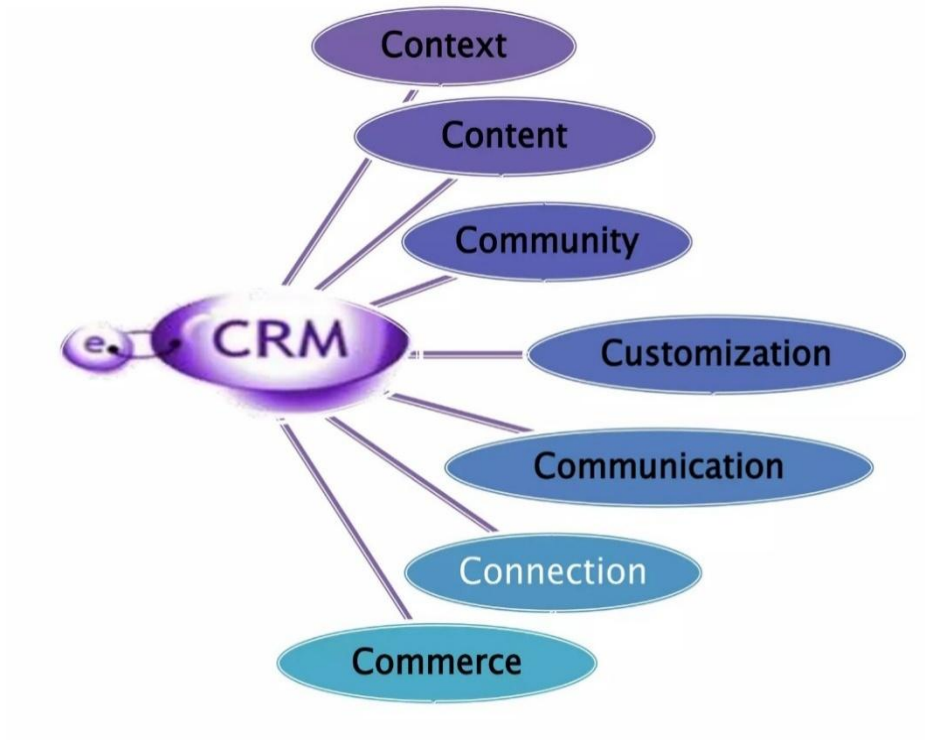
Equipped with such infrastructure, companies can continually create significant customer value at Internet speed, automating the "who, what, when, where, and how of sales and marketing".

3.6.8E-CRM Components:

Components	Purpose	What does it do			
Presentation layer	Customer facing web site	Look and feel, site navigation and wire frames.			
Tools and Applications	Enabling technology to support eMarketing, eShopping, eCommerce and eCare	eMarket-ing Web content Personi-lisation Mercha-ndising Catalog Admin	eShopp-ing Product Configu-rator Shopping cart Customisation	eComm-erce Order Mgmt. Authorisa-tion Payment processing tax Calculation Billing	eCare Collabo-ration Co-browsing Chat E-mail FAQ
Business rules	Business Automation	Documenting Business rules for automation			
Measure-ment, Analysis and Reporting	Continuous,	Measurement and Reporting Tools, Metrics, Analytics, Database, Reporting Database			
Real-Time information Data	Capture, storage and dynamic access to real time information	Product Catalog Pricing Financial systems OLTP (Real Time)			
Backend Data Information	Integration with backend legacy systems	Inventory Operational Accounting (DB) Supply Chain Supply Financials Chain			

3.6.9Planning for e-CRM:

7 C's of effective e-CRM



3.6.10Planning for e-CRM - The Strategy

- **Terms of Reference**
  - Everyone needs to be clear on what they understand by e-CRM for the project and why they consider e-CRM is going to be of benefit.
- **Commercial Scope**
  - What is the realistic scope and likely ROI for the initiative?
- **Customer Insight**
  - The better you know your customers, or get to know them, the better you will be able to serve them.

Who are your current and future customers?

How much do you currently know about them?
What are your points of contact with them?
How do they perceive you etc.?

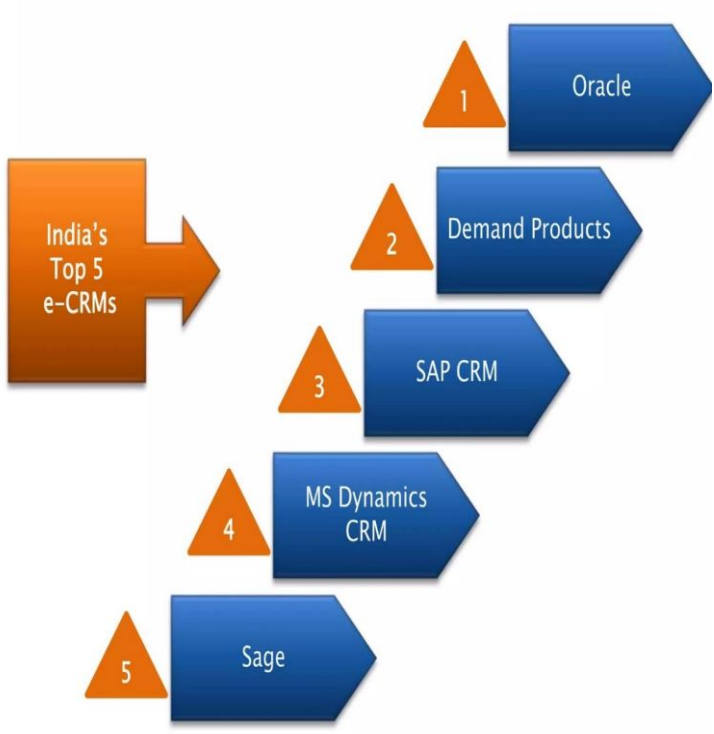
- **Data Capture & Analysis**
  - What data you will need to support your digital strategy?
  - How you are going to capture that data?
  - How you will store, manage and use that data?
- **Business Case & Implementation Path**
  - How do you best roll out and phase the implementation of your e-CRM initiative?
  - How do you ensure you build a platform for future growth and yet not spend too long and too much money trying to do everything at once?
  - What is your optimal cost / ROI development path in light of your digital strategy?
- **Do & Review**

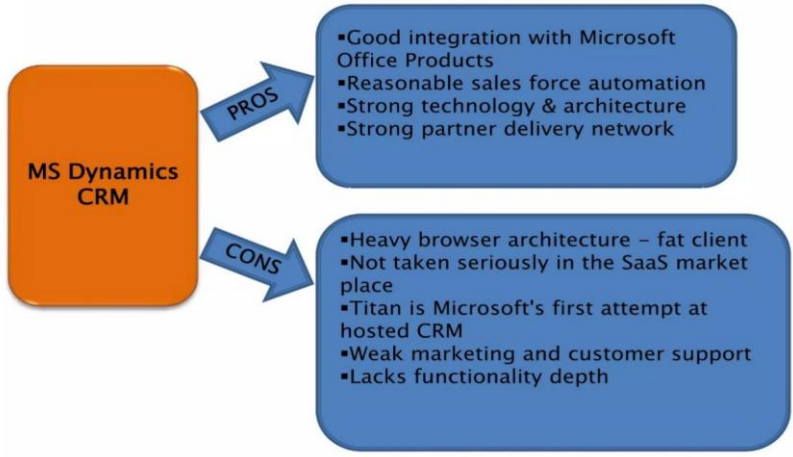
3.6.11Planning for e-CRM Facts

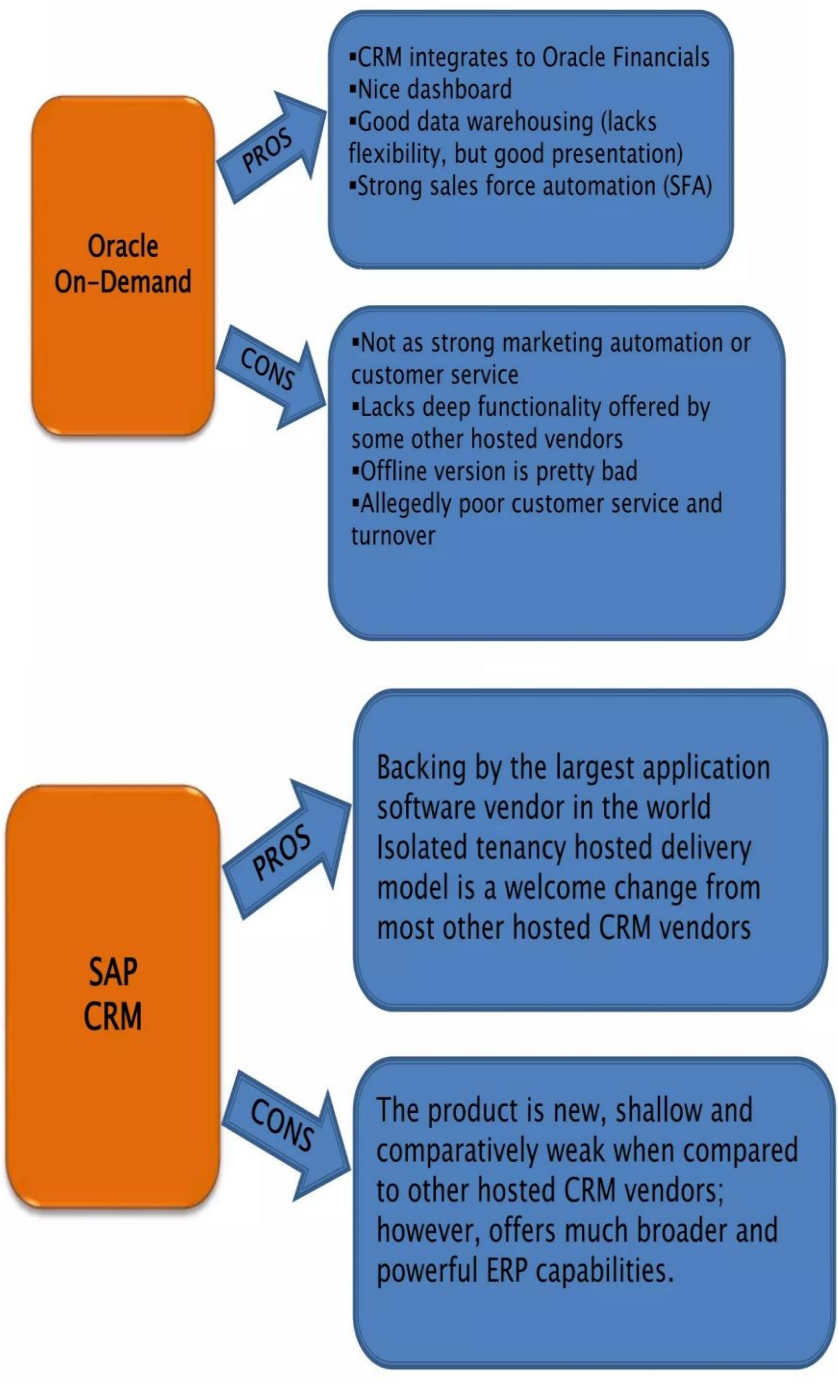
- A Forrester Research study of 70 retailers found that convenience was the number one ranked reason (84%) for purchasing on-line versus off-line.
- A study by the Boston Consulting Group found that 65% of on-line customers who purchase at a given web site will never make a second purchase.
- A recent McKinsey & Co. study revealed that a 10% gain in repeat customers can add about 10% to the company's profits.
- Typically costs 5 times as much to acquire a new customer as it does to retain an existing one.

The best way to keep existing customers happy is to deliver value to them on their own terms.

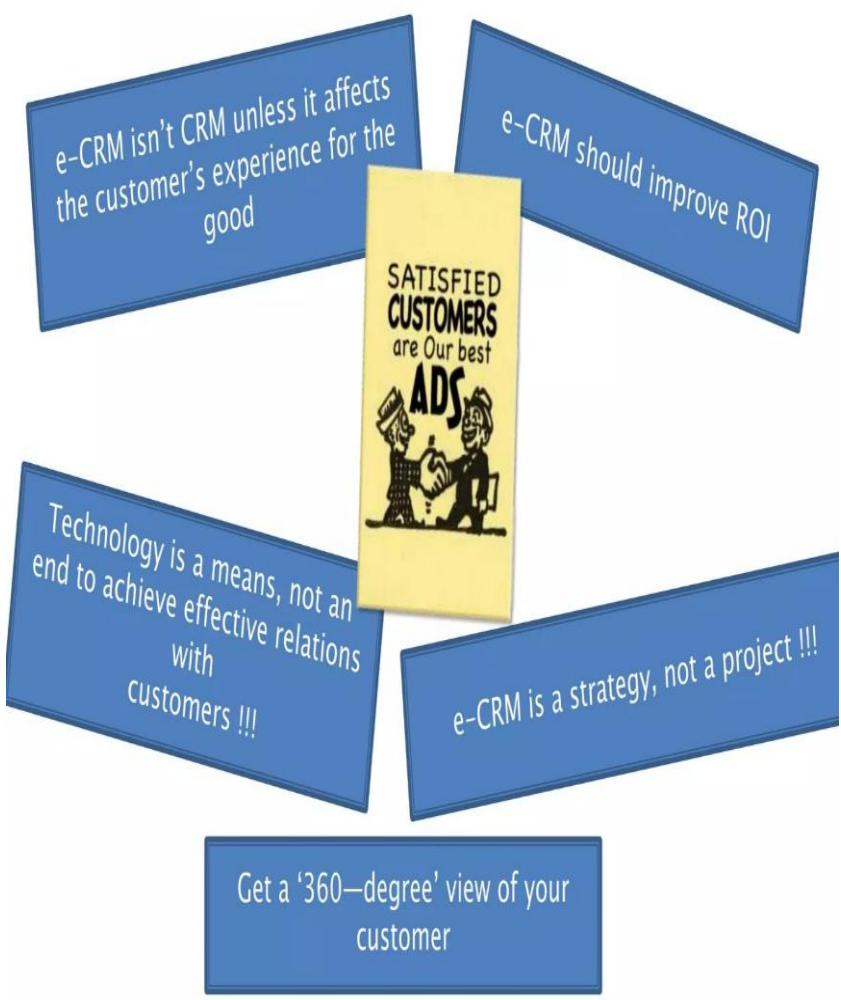
3.6.12 Comparative Analysis:






Oracle
On-Demand
PROS
▪CRM integrates to Oracle Financials
▪Nice dashboard
▪Good data warehousing (lacks flexibility, but good presentation)
▪Strong sales force automation (SFA)
CONS
▪Not as strong marketing automation or customer service
▪Lacks deep functionality offered by some other hosted vendors
▪Offline version is pretty bad
▪Allegedly poor customer service and turnover
SAP
CRM
PROS
Backing by the largest application software vendor in the world
Isolated tenancy hosted delivery model is a welcome change from most other hosted CRM vendors
CONS
The product is new, shallow and comparatively weak when compared to other hosted CRM vendors; however, offers much broader and powerful ERP capabilities.

3.6.13E-CRM: The Closure



3.7 ONLINE SERVICES:

Online services refer to a wide range of services and applications that are accessible and delivered over the internet. These services have become an integral part of modern life, offering convenience, accessibility, and efficiency.

3.7.1 Categories of online services:

- **Communication Services:**
  - Email: Services like Gmail, Outlook, and Yahoo Mail provide email communication and storage.
  - Instant Messaging: Platforms like WhatsApp, Facebook Messenger, and Slack enable real-time text and multimedia messaging.
- **Social Media Services:**

- Social Networking: Platforms like Facebook, Twitter, Instagram, and LinkedIn facilitate social connections and content sharing.
- Video Sharing: YouTube and Vimeo allow users to upload and watch videos.
- Photo Sharing: Instagram and Flickr focus on image sharing and discovery.

- **E-Commerce Services:**
  - Online Retail: Websites like Amazon, eBay, and Walmart offer a wide range of products for online shopping.
  - Payment and Money Transfer: Services like PayPal, Venmo, and Cash App allow online payments and money transfers.
- **Streaming Services:**
  - Video Streaming: Netflix, Hulu, Amazon Prime Video, and Disney+ provide on-demand video content.
  - Music Streaming: Spotify, Apple Music, and Pandora offer music streaming and playlists.

- **Cloud Services:**
  - File Storage: Services like Google Drive, Dropbox, and iCloud provide cloud-based storage and file sharing.
  - Productivity Suites: Google Workspace (formerly G Suite), Microsoft 365, and Zoho offer cloud-based productivity tools like word processing and spreadsheets.
- **Search Engines:**
  - Google, Bing, and Yahoo are popular search engines that help users find information on the internet.

- **Online Learning and Education:**
  - Platforms like Coursera, edX, Khan Academy, and Udemy offer online courses, tutorials, and educational content.

- **Gaming Services:**
  - Platforms like Steam, Xbox Live, PlayStation Network, and mobile app stores provide access to video games and online gaming communities.

- **Travel and Booking Services:**
  - Websites like Expedia, Booking.com, and Airbnb facilitate travel planning, accommodation booking, and flight reservations.
- **Healthcare Services:**
  - Telehealth platforms enable remote medical consultations and healthcare services, allowing patients to connect with healthcare providers online.
- **Food Delivery and Meal Kits:**
  - Services like Uber Eats, DoorDash, Grubhub, and HelloFresh offer food delivery and meal kit subscriptions.
- **Ride-Sharing and Transportation:**
  - Platforms like Uber, Lyft, and Grab provide on-demand ride-sharing and transportation services.
- **News and Media:**
  - News websites, digital publications, and news aggregators offer online news, articles, and multimedia content.
- **Government and Civic Services:**
  - Many government agencies offer online services for tax filing, voter registration, and accessing public records.

- **Home and Lifestyle Services:**
  - Home improvement platforms like Houzz and TaskRabbit connect users with professionals for home-related services.
- **Dating and Relationship Services:**
  - Dating apps and websites like Tinder, Match.com, and OkCupid help people connect and find potential partners.

3.8 BUSINESS ORIENTED E-BUSINESS:

Business-oriented e-business, also known as B2B e-business (Business-to-Business electronic business), refers to the use of digital technology and the internet to conduct various business activities, transactions, and processes between two or more businesses.

3.8.1 Key aspects of business-oriented e-business:

- **Electronic Transactions:** B2B e-business involves the electronic exchange of goods, services, information, and payments between businesses. This eliminates the need for traditional paper-based processes, reducing costs and improving efficiency.
- **Supply Chain Management:** It plays a crucial role in optimizing supply chains. Businesses use e-business tools and systems to manage inventory, track shipments, and coordinate with suppliers, leading to streamlined operations and reduced inventory holding costs.
- **E-Procurement:** Businesses can procure goods and services online, often through centralized platforms. This enables efficient vendor selection, cost comparison, and negotiation, leading to cost savings and improved procurement processes.
- **Electronic Data Interchange (EDI):** B2B e-business frequently employs EDI to facilitate the seamless

exchange of structured data between organizations. EDI standards ensure compatibility and automation in data transfer.

- **Collaborative Commerce:** E-business tools enable collaboration and information sharing among business partners, fostering better communication and cooperation within supply chains.
- **Customer Relationship Management (CRM):** Businesses use e-business solutions to manage customer interactions and enhance customer service, ultimately driving customer satisfaction and loyalty.
- **Marketplaces and Exchanges:** Online marketplaces and industry-specific exchanges connect businesses with potential partners, suppliers, and customers, expanding their reach and opportunities.
- **Data Analytics:** B2B e-business generates vast amounts of data that can be analyzed to gain insights into market trends, customer behavior, and operational efficiencies, aiding in data-driven decision-making.
- **Security and Privacy:** Ensuring the security of sensitive business information and transactions is paramount in B2B e-business. Robust cybersecurity measures are essential to protect against data breaches and fraud.
- **Global Reach:** E-business transcends geographical boundaries, allowing businesses to access international markets and forge partnerships worldwide.

3.9 E-GOVERNANCE:

- Electronic governance or e-governance is the application of IT for delivering government services, exchange of information, communication transactions, integration of various stand-alone systems between government to citizen (G2C), government-to-business (G2B), government- to-government (G2G), government-to-

employees (G2E) as well as back- office processes and interactions within the entire government framework. Through e-governance, government services are made available to citizens in a convenient, efficient, and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens, and businesses/interest groups. In e-governance, there are no distinct boundaries, finance and support.

- The two main objectives of E governance is to restore the democracy to its true meaning with the help of improvisation of the participation of the citizen in the governing process by giving feedback and access to information and overall participation of the citizen in the decision making.

3.9.1 E- Governance vs E- Government:

E-Governance	E-Government
Deals with the board spectrum of the relation and networking in a government for uses and	E-government is actually a narrower discipline dealing with the development of

applications of ICT.	online services to the citizens.
Assesses the impact of technology on administration of a government and the relations between government offices and communication of the government with different segments of society.	Examples of e-government services are e- tax, e-transportation, e-health and the like.
Encompasses steps and actions of government agencies to develop and administer with a view to ensure implementation of e-government services to the public.	E-government is also termed as e-go, Internet government, digital government, online government, connected government by different authors and agencies.

3.9.2 Benefits of e-governance:

- Improves delivery and efficiency of government services
- Improved government interactions with business and industry
- Citizen empowerment through access to information
- More efficient government management
- Less corruption in the administration
- Increased transparency in administration
- Greater convenience to citizens and businesses
- Cost reductions and revenue growth Increased legitimacy of government
- Flattens organisational structure (less hierarchic)
- Reduces paperwork and red-tapism in the administrative process which results in better planning and coordination between different levels of government.

3.9.3 Scope of e-government:

- Government-to-government (G to G),

- Government-to-citizens (G to C), and
- Government to business (G to B)

Government-to-government (G to G):

- Government to government (G to G) involves sharing data and conducting electronic exchanges between various governmental agencies.
- Benefit are
  - Cost savings, which is achieved by increasing the speed of the transactions,
  - Reduction in the number of personnel necessary to complete a task, and improving the consistency of outcomes. Another advantage, which flows from this, is
  - Improvement in the management of public resources.
- In many respects, the government to government (G to G) sector represents the backbone of e-government.

Government to citizen (G to C):

- Government to citizen (G to C) facilitates citizen interaction with government, which is primary goal of e-government.
- This attempts to make transactions, such as
  - payment of taxes,
  - renewing licenses and
  - applying for certain benefits, less time consuming and easy to carry out.
- Government to citizen initiatives also strives to enhance access to public information through the use of websites and kiosks.

Government to Business (G to B)

- Government to Business (G to B) sector includes both the procurement of goods and services by the government as

well as the sale of surplus government goods to the public on line.

- There are two motivating forces behind G to B. Currently; the business community prefers to carry out its activities such as sales, procurement, and hiring through electronic means.
- There are large numbers of software companies, which are producing number of products focusing on performing routine business activities on line. Thus, many companies like to extend the cost savings realized through Business to Business (B to B) transactions to their business with union, state and local level governments. The second reason for the growth of G to B is the demand for cost cutting and efficient procurements in the government. Developing countries, where there is great pressure to minimize costs due to shortage of funds, G to B are being encouraged by the governmental agencies.

3.10 (NeGP):

- In order to expand e-government initiative in India, the National e- Governance Plan (NeGP) was officially commenced in May, 2006.
- The NeGP has three tier functional models i.e. the whole work has been split into clearly delineated Mission Mode Projects (MMPs).
- "Mission Mode" implies that the objective and the scope of the project are clearly defined, that the project has measurable outcomes and service-levels, and the project has well-defined milestones and timelines for implementation.
- Each MMP is designed and developed as project mode on a mission basis as reflected in the nomenclature. It consists of three types of MMPs viz.
  - Central Mission Mode Projects,

- State MMPs and
- Integrated MMPs.

3.10.1 Central MMPs:

- Banking
- Central Excise & Customs
- Income Tax (IT)
- Insurance
- MCA21
- National Citizen Database
- Passport
- Immigration, Visa and Foreigners Registration & Tracking
- Pension
- e-Office

Banking:

- Evolution of core banking technology in India has brought in the convenience of "anytime, anywhere banking" to Indian customers. There is now a movement towards integration of core banking solutions of various banks, which is expected to bring in operational efficiency and reduce the time and effort involved in handling and settling transactions, thereby improving customer service and facilitating regulatory compliance.
- The Banking MMP covers the following services:
  - Electronic Central Registry under Sarfaesi Act, 2002
  - One India One Account-for Public Sector Banks
  - Electronic Mass Payment System
- The detailed concept note is being worked out by the Department of Economic Affairs, Banking & Insurance Division.

Central Excise & Customs:

- The Central Board for Excise and Customs (CBEC) is implementing this MMP with a view to facilitate trade and industry by streamlining and simplifying customs and

excise processes, and to create a climate for voluntary compliance.

- Some of the services proposed to be covered in this MMP are:
  - Simplification of registration, returns, revenue reconciliation and exports procedures
  - Movement towards integration of goods and service taxation
  - e-Registration for excise and service tax
  - e-Filing of returns and refunds
  - Integration of e-filing with system driven, risk-based scrutiny
  - Export facilitation through linkages between Excise and Customs
  - Improved dispute resolution mechanism
  - Monitoring of arrears and their recovery
  - Central Excise Revenue reconciliation

Income Tax (IT):

- The Income Tax Department of India is implementing a plan for setting up a comprehensive service that enables citizens to transact all businesses with the Department on an anywhere, anytime basis.
- Some of the services proposed to be covered under the Income Tax MMP are:
  - Allocation of Permanent Account Number (PAN)
  - Tax accounting
  - Taxpayer grievance redressal
  - Taxpayer correspondence
  - Tax compliance
  - Online submission of returns
  - Processing of tax return
  - Processing of tax-deducted-at-source (TDS) return

Insurance:

- This MMP has been conceived with a view to improve services for customers in the General Insurance sector.
- The MMP aims to:
  - Facilitate customer service through education, information, speedy processing of claims and online issuance of policies on web
  - Provide automated grievance reporting and redressal facility to customers
  - Create and enlarge business opportunities
  - Create holistic database of insurance users
  - Integrate insurance database(s) with other government database(s) to analyze social security aspects and facilitate service delivery

MCA21:

- The Ministry of Corporate Affairs (MCA), Government of India, has initiated the MCA21 project, which enables easy and secure access to MCA services in an assisted manner for corporate entities, professionals, and the general public.
- The MCA21 project is designed to fully automate all processes related to enforcement and compliance of the legal requirements under the Companies Act, 1956

National Citizen Database:

- Project UID, a Planning Commission initiative, proposes to
  - Create a central database of residents, initially of those above the age of 18 years
  - Generate a unique identification number (UID) for all such residents
- The UID is intended to provide a robust basis for efficient delivery of various social and welfare services to persons

below the poverty line (BPL). It can also be used as the basis for identifying and authenticating a person's entitlement to government services and benefits through a single system rather than all government departments individually and independently investing in creating infrastructure, systems and procedures for verifying entitlement of residents under various schemes of the Government. To this end, the project envisages provision of linking of existing databases, as well as providing for future additions, by the user agencies.

Passport:

- The Passport Seva Project was launched by the Ministry of External Affairs with the objective of delivering Passport Services to the citizens in a comfortable environment with wider accessibility and reliability.
- The project envisages setting up of 77 Passport Seva Kendras (PSKs) across the country, a Data Centre and Disaster Recovery Centre, Call centre operating 18x7 in 17 languages, and a centralized nationwide computerized system for issuance of passports.
- The entire operation will function in a "less paper" environment with an attempt being made to deliver passports within 3 working days to categories not requiring police verification.

Immigration, Visa and Foreigner's Registration & Tracking (IVFRT):

- In order to Modernize and upgrade the Immigration services, "Immigration, Visa and Foreigners Registration & Tracking (IVFRT)" has been identified and included as one of the MMPs to be undertaken by the Ministry of Home Affairs under the National e-Governance Plan (NeGP). The core objective of this Project is to develop

and implement a secure and integrated service delivery framework that facilitates legitimate travellers while strengthening security. The scope of the project includes 169 Missions, 77 ICPS (Immigration Check Posts), 5 FRROS (Foreigners Regional Registration Offices), and FROS (Foreigners Registration Offices) in the State/District Headquarters.

- The implementation of this MMP will enable authentication of traveler's identity at the Missions, Immigration Check Posts (ICPS) and Foreigners Registration Offices (FROS) through use of intelligent document scanners and biometrics, updation of foreigner's details at entry and exit points, improved tracking of foreigner's through sharing of information captured during visa issuance at Missions, during immigration check at ICPs, and during registration at FRRO/ FROS.

Pension:

- Under this MMP, a Pensioner's Portal (http://pensionersportal.gov.in) has been set up with the following components:
  - Non-interactive component to provide updated information on pension issues
  - Interactive component to monitor grievance redressal at three interlinked levels, as follows:
    - ✓ Central-level in Department of Pensions & Pensioners' Welfare (nodal point)
    - ✓ Central Ministries/ Department-level
    - ✓ Pensioners' Associations-level (field level)

E-Office:

- This MMP aims at significantly improving the operational efficiency of the Government by transitioning to a "Less Paper Office".
- The objectives of the MMP are:

- To improve efficiency, consistency and effectiveness of government responses
- To reduce turnaround time and to meet the demands of the citizens charter
- To provide for effective resource management to improve the quality of administration
- To reduce processing delays
- To establish transparency and accountability

3.10.2 State MMPs:

- Agriculture
- Commercial Taxes
- e-District
- Employment Exchange
- Land Records
- Municipalities
- Gram Panchayats
- Police
- Road Transport
- Treasuries

Agriculture:

- The MMP is to be operationalised by Department of Agriculture and Cooperation (DAC), and aims to provide services, such as:
  - Information to farmers on seeds, fertilizers, pesticides
  - Information to farmers on Govt. Schemes
  - Information to farmers on Soil recommendations
  - Information on crop management
  - Information on weather and marketing of agriculture produce

Commercial Taxes:

- The MMP is spearheaded by the Department of Revenue (DOR), Ministry of Finance, with strategic consultancy

provided by the National Institute for Smart Government (NISG) and Ernst & Young (E &Y).

- The objective is to facilitate simplification of administrative procedures and reduction of processing timelines. Some of the key recommendations are:
  - Electronic filing of returns
  - Electronic clearance of refunds
  - Electronic payment of tax
  - Online dealer ledger
  - Online issuance of CST statutory forms through Tax Information Exchange System (TINXSYS)
  - Facility to dealer to obtain various online information services

E-District:

- Indicative services planned to be delivered through this MMP include:
  - Certificates: Creation and distribution of certificates for income, domicile, caste, Birth, Death etc.
  - Licences: Arms Licenses etc.
  - Public Distribution System (PDS): Issue of Ration Card, etc.
  - Social Welfare Schemes: Disbursement of old-age pensions, family pensions, widow pensions, etc.
  - Complaints: Related to unfair prices, absentee teachers, non-availability of doctor, etc.

Employment Exchange:

- The Ministry of Labour & Employment is in the process of conceptualizing this MMP. It is expected that the MMP will help match the requirements of employers against employee databases. It is also expected that the MMP will have mechanisms to provide valuable guidance and career counseling to the unemployed, and facilitate online registration of vacancies by employers.

Land Records:

- The Land Records MMP, being implemented by Ministry of Rural Development (MoRD), seeks to accomplish the following across States:
  - Completion of all data entry related to digitization of land records
  - Provision of legal sanctity to computerized Records-of- Rights (RoRs)
  - Stopping further issue of manual RORS
  - Setting up computer centers at Tehsils
  - Enabling Web access

Municipalities:

- This MMP is one with significant citizen interaction, given that municipalities provide a large number of basic services for millions of citizens living in urban centers across the Nation.
- The key objectives of the MMP are:
  - To provide single window services to citizens on anytime, anywhere basis
  - To increase the efficiency and productivity of Urban Local Bodies (ULBS)
  - To develop a single, integrated view of ULB information system across all ULBS in the State
  - To provide timely and reliable management information relating to municipal administration for effective decision-making
  - To adopt a standards-based approach to enable integration with other related applications

Gram Panchayats:

- The Panchayat represents the first-level of Government interaction for over 60 per cent of the Indian populace, and provides a large number of basic services for millions of citizens living in rural locations across the Nation.

- Aims of this MMP are:
  - Issue of trade licences and NoC
  - House-related services
  - Issue of certificates of Birth and Death, Income and Solvency
  - Dissemination of internal process of Panchayat agenda, voting, and resolution
  - Copy of proceedings of Gram Sabha and Action Taken Report (ATR)
  - Receipt of funds / progress report
  - Dissemination of BPL data.

Police:

- This MMP has been included in NeGP in light of the ever-increasing threats of terror attacks and of continually ascending crime graphs.
- It includes aspects such as creation of- and sharing of-crime-related databases across departments, effective personal management, and efficient inventory control.

Road Transport:

- The Road Transport MMP was included in NeGP with a view to create a unified data schema which could be used by all States and Union Territories to computerize their respective transport offices (for faster and better-managed issue of vehicle registration certificates and driving licenses).

Treasuries:

- Due to non-computerization or part-computerization of State Treasuries, most of the operational information continues to be exchanged in paper form.
- A Core Group on Computerization of Treasuries in State has been constituted to formulate a draft scheme on the Treasuries MMP under NeGP.

- The detailed concept note is being worked out by the Department of Expenditure.

e-Seva (electronic Seva):

- Launched on the 25th of August 2001.
- Improvised version of TWINS project.
- e-Seva centres offer 118 different services like payment of utility bills/taxes, registration of births/deaths, registration of application for passports, issue of births/deaths certificates, filing of sales tax returns, railway reservations, bill payments of Airtel, Hutch etc.

Vidya Vahini:

- It provides opportunity for schools, teachers & students all across the nation, to express and share their creative & academic potential via the internet.
- Its mission is to spread education, uniform quality of education across India to develop their creativity and problem-solving skills.

FRIENDS:

- Fast, Reliable, Instant, Efficient Network for the Disbursement of Services is part of the Kerala IT Mission.
- FRIENDS counters handle 1000 types of payments that citizens can make like; utility payments for electricity & water, revenue taxes, license fees, motor vehicle taxes, university fees, etc.

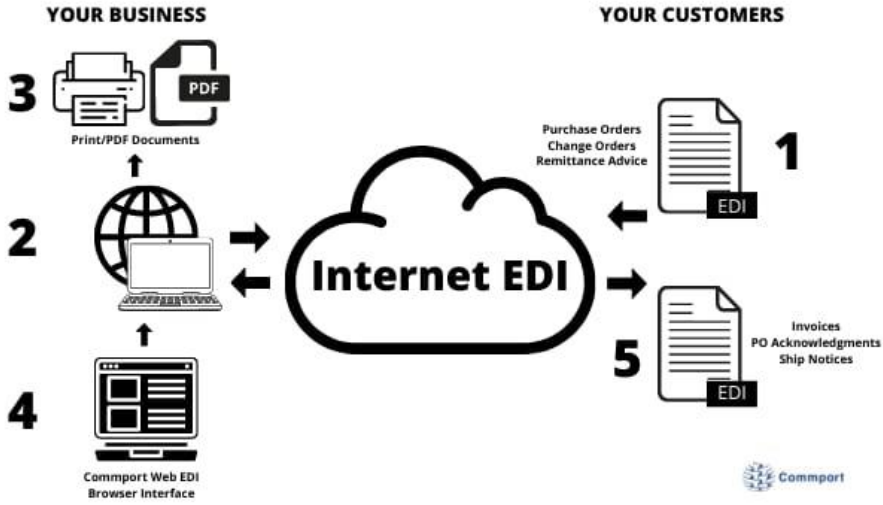
CARD:

- Computer-aided Administration of Registration Department.
- Initiated to meet objectives to demystify the registration process, bring speed, efficiency, consistency & reliability, substantially improve the citizen interface etc.

3.11 EDI ON THE INTERNET:

3.11.1 Meaning:

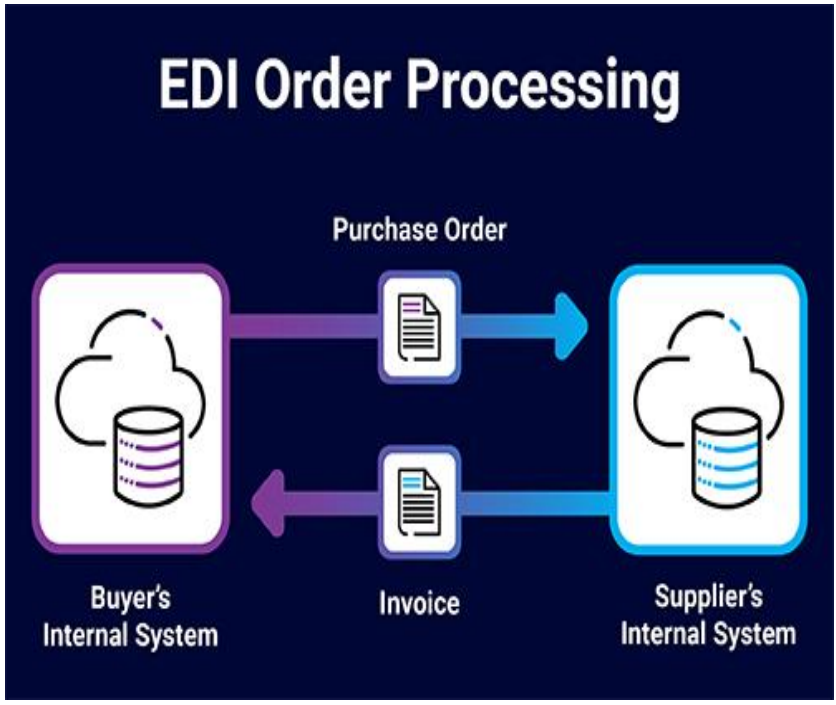
- Electronic Data Interchange (EDI) is defined as the inter-process communication (computer application to computer application) of business information in a standardized electronic form.
- The EDI, trading partners establishes computer links that enables them to exchange information electronically.
- Electronic Commerce is a term popularized by the advent of commercial services of the Internet.
- EDI is used for regular and standardized transactions between organizations.

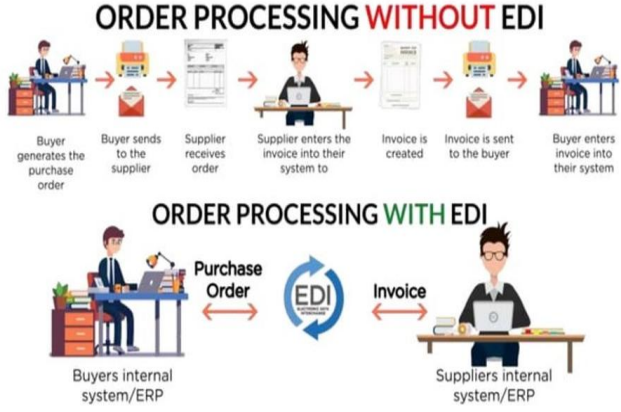


3.11.2 Definition:

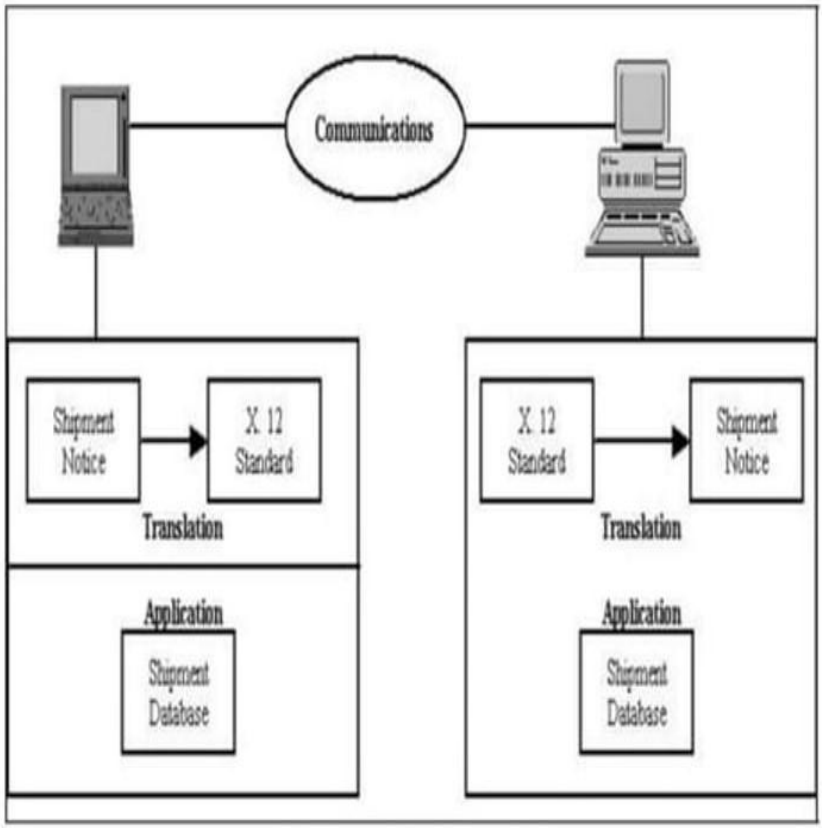
- Electronic Data Interchange is the transmission, in a standard syntax, of unambiguous information of business or strategic significance between computers of independent organizations - The Accredited Standards Committee for EDI of the American National Standards Institute.

- Simply EDI is "Paperless Trade"





3.11.3 The EDI process:



3.11.4 EDI Documents:

Following are the few important documents used in EDI:

- Invoices
- Purchase orders
- Shipping Requests
- Acknowledgement
- Business Correspondence letters
- Financial information letters

Advantages of EDI on the Internet:

- **Cost Savings:** Internet EDI reduces communication costs by eliminating the need for dedicated data lines

and expensive VAN (Value-Added Network) services.

- **Global Reach:** It facilitates collaboration with partners worldwide, supporting international trade and business expansion.
- **Real-time Communication:** Internet EDI enables real-time document exchange, accelerating business processes and reducing delays.
- **Accessibility:** It can be accessed from anywhere with an internet connection, making it convenient for remote and international partners.
- **Improved Accuracy**: Automation and standardized formats reduce the risk of errors associated with manual data entry and document handling.

Disadvantages of EDI on the Internet:

- **Security Concerns:** Transmitting sensitive business data over the internet introduces security risks, including the potential for data breaches.
- **Compatibility Issues:** Different partners may use varying EDI standards or versions, which can lead to compatibility challenges.
- **Setup Complexity:** Implementing Internet EDI can be complex, requiring organizations to establish secure connections and protocols.
- **Dependence on Internet:** Internet EDI relies on internet connectivity, making it vulnerable to interruptions or downtime.
- **Integration Challenges:** Integrating Internet EDI with existing systems can be challenging and may require custom development efforts.

3.11.5 EDI Application in Business:

- Retail Sector
- Manufacturing Sector

- Financial Sector
- Business documents
- Business partners
- Automobile Sector

Retail Sector:

- In the retail sector profit margins usually depend upon efficient inventory management.
- EDI provides a structured way to maintain and replenish goods stocked at a retail outlet.
- Retailers use a common model stock for each shop location and the point of sale stock position is updated continuously and data in fed via EDI enabled SCM (supply chain management) network.
- The EDI software monitors all the logistics and makes updates in the original stock.

Manufacturing Sector:

- EDI ensures effective and efficient management of materials required for production of a commodity.
- The Inventory position of OEM is constantly updated through EDI and the supplier is notified about shortage of materials.
- helps the supplier to plan and schedule supply according to requirements of the manufacturer.
- The suppliers respond via EDI with an ASN to identify the parts/materials to be delivered and the approximate delivery time and as soon as the shipment is delivered at the production plant the inventory is updated again.

Financial Sector:

- EDI replaces the labour-intensive activities of collecting, processing and dispersing payments with an electronic system.

- It facilitates the flow of payment between the bank accounts of trading partners without requiring any human intervention.
- A payee's bank account is electronically credited and the payer's account is electronically debited on the scheduled day of payment; such an exchange is known as electronic fund transfer (EFT).

Automobile Sector

- keep customers updated with the current product and pricing information during the purchase cycle.
- An advance shipping notice is transmitted through EDI to the customers to prepare a loading schedule and to ensure proper receipt of the product.
- The customer may also make payment on receipt of goods via EDI to speed up the payment process.

Business documents:

- These are any of the documents that are typically exchanged between businesses.
- The most common documents exchanged via EDI are purchase orders, invoices and advance ship notices.
- But there are many, many others such as bill of lading, customs documents, inventory documents, shipping status documents and payment documents.

Business partners

- The exchange of EDI documents is typically between two different companies, referred to as business partners or trading partners.
- For example, Company A may buy goods from Company B.
- Company A sends orders to Company B.
- Company A and Company B are business partners.

Examples of EDI Applications in Business

- Railway rolling stock monitoring
- Tender tracking
- Order tracking
- Airway bills
- Custom clearance
- Scheduling Notices
- Cheque clearance

3.12 Important Questions:

5 marks:

1. What is consumer-oriented e business?
2. Discuss the major players of consumer-oriented e-business.
3. List the advantages and disadvantages of consumer-oriented e business.
4. Infer the tern E-Tailing.
5. Compare retailing and e tailing.
6. Summarize the sectors using e tailing business.
7. Explain the types of E Tailers.
8. Compare pure play e tailer and bricks and clicks e tailers.
9. List out the advantages and disadvantages of e tailing.
10. Discuss the types of good used in e tailing.
11. Annotate on email marketing.
12. Paraphrase on EDI.
13. Compare influence marketing and affiliate marketing.
14. Summarize e-CRM best practices.
15. Explain business-oriented e-business.

10 marks:

1. Discuss consumer-oriented e-businesses from various industries.

2. Elaborate the consumer-oriented e-business models with suitable examples.
3. Illustrate the consumer-oriented e-business models with advantage and disadvantages.
4. Evaluate the process of E Tailing.
5. Discuss the e tailing models with advantages and disadvantages.
6. Elaborate the e tailing models and techniques.
7. Discuss e mail marketing in detail.
8. Structure the digital marketing fundamentals in detail.
9. Analyse the e-CRM best practices with suitable examples.
10. Explain the EDI on the internet.

UNIT IV: E-BUSINESS PAYMENTS AND SECURITY

E-payments - Characteristics of payment of systems, protocols, e-cash, e-cheque and Micro payment systems- internet security – cryptography – security protocols – network security.

4.1 E-PAYMENTS:

- Electronic payments (e-payments) are digital transactions between two parties. They allow customers to pay for goods and services without using cash or checks. E-payments are quick, efficient, and secure. They can be made online at any time, from anywhere in the world.
- The most common types of e-payments are credit and debit cards. Other e-payment methods include: E-wallets, Cryptocurrencies, Bank transfers, Mobile pay.
- E-payments can help businesses improve security, visibility, and efficiency. They can also lower costs and save time on manual processes.
- Credit cards are the most utilized electronic payment form. Customers who pay using credit cards are more likely to spend more because they can spread payment over a longer period. Credit card payments are also faster than other payment methods, such as checks or transfers.

4.1.1 Types of e-payment:

- **Card Based Payment Systems:**
  - Credit Card Payments: Transactions are made using credit issued by banks, and users pay the credit card company at a later date.
  - Debit Card Payments: Transactions are made by deducting funds directly from the user's bank account.
- **Digital Wallets and Mobile Payment Systems:**
  - Mobile Wallets: Smartphone apps like Apple Pay, Google Pay, and Samsung Pay that store card information and enable contactless payments.
  - Peer-to-Peer (P2P) Payment Apps: Apps like Venmo, Cash App, and PayPal that facilitate money transfers between individuals.
- **Bank-Centric Payment Systems:**
  - Online Bank Transfers: Users initiate payments directly from their bank accounts through online banking portals.
  - Automated Clearing House (ACH) Transfers: Used for various financial transactions, including direct deposits and bill payments in the United States.
- **Cryptocurrency Payment Systems:**
  - Bitcoin and Altcoins: Digital currencies that allow for peer-to-peer transactions on blockchain networks.
- **Electronic Check (e-Check) Payment Systems:**
  - Electronic versions of traditional paper checks, enabling electronic fund transfers from the payer's bank account to the payee.
- **Contactless Payment Systems:**
  - Contactless Cards: Credit or debit cards with NFC technology for tap-and-go payments.

- NFC Wearables: Smartwatches, fitness bands, or other wearables with NFC capabilities for payments.

- **QR Code Payment Systems:**
  - Users scan QR codes presented by merchants to initiate payments, often seen in mobile apps and payment terminals.
- **Online Payment Platforms:**
  - Payment Gateways: Third-party services (e.g., Stripe, PayPal) that enable businesses to accept online payments through various methods.
  - Subscription Billing Systems: Manage recurring payments and subscription services.
- **Biometric Payment Systems:**
  - Use biometric data, such as fingerprints or facial recognition, for user authentication and payment authorization.
- **Instant Payment Systems:**
  - Real-time payment systems that facilitate instant transfers between bank accounts, reducing transaction processing times.
- **Government Payment Systems:**
  - Government agencies often offer e-payment systems for tax payments, fines, and government services.
- **Cross-Border Payment Systems:**
  - Facilitate international transactions and currency conversion, such as SWIFT (Society for Worldwide Interbank Financial Telecommunication) and international payment gateways.
- **Retailer-Specific Payment Systems:**
  - Some large retailers offer their payment apps or systems to streamline transactions within their stores or online platforms.

- **Subscription and Membership Billing Systems:**
  - Used by subscription-based businesses and organizations to bill customers on a recurring basis.
- Cashless Payment Systems in Transit:
  - Payment systems for public transportation, allowing passengers to use contactless cards or mobile apps for fare payment.

Advantages of E-Payments:

- **Convenience:** E-payments offer unparalleled convenience. Users can make transactions from the comfort of their homes or anywhere with internet access, eliminating the need for physical presence at banks or payment centers.
- **Speed:** E-payments are typically faster than traditional payment methods. Transactions can be completed in seconds, reducing the time and effort required for financial transactions.
- **Accessibility:** E-payments are accessible 24/7, allowing users to manage their finances at any time, including weekends and holidays.
- **Cost-Efficiency:** E-payments often have lower transaction costs compared to traditional methods like checks or cash. Businesses can save on printing and handling costs, and consumers can avoid ATM fees or check-cashing fees.
- **Security:** Advanced encryption and authentication measures enhance the security of e-payments, reducing the risk of theft, fraud, or loss associated with physical cash or checks.
- **Record Keeping:** E-payment systems automatically generate digital records of transactions, making it easier for users to track and manage their financial history, which can be invaluable for budgeting and auditing purposes.

- **Global Access:** E-payment systems can facilitate international transactions, allowing businesses to expand their customer base globally and consumers to shop from international vendors with ease.
- **Reduced Paper Usage:** E-payments contribute to environmental sustainability by reducing the need for paper checks, invoices, and receipts.
- **Automation:** E-payment systems can be integrated with accounting software, streamlining financial processes for businesses and reducing the risk of human error.
- **Incentives and Rewards:** Many e-payment platforms offer rewards, cashback, or loyalty programs, providing users with additional financial benefits for using electronic payment methods.

Disadvantages of E-Payments:

- **Security Risks:** E-payment systems are vulnerable to cyberattacks, data breaches, and hacking, which can result in the theft of personal and financial information.
- **Technical Issues:** Technical glitches or system downtime can disrupt e-payment services, leading to inconvenience for users and potential financial losses.
- **Dependency on Technology:** E-payments rely on internet connectivity and technology, making them inaccessible to individuals without internet access or in regions with poor connectivity.
- **Privacy Concerns:** E-payment providers may collect and share user data for marketing or analytics purposes, raising concerns about privacy and data protection.
- **Fraudulent Transactions:** Despite security measures, e-payment fraud is still a concern, and users may face challenges in resolving unauthorized transactions.

- **Exclusion of Vulnerable Populations:** E-payments can exclude individuals who are not tech-savvy, have disabilities, or lack access to digital devices, exacerbating financial inequality.
- **Fees:** Some e-payment services charge transaction fees or subscription fees, which can add up over time and affect the cost-effectiveness of using these methods.
- **Lack of Anonymity:** E-payments leave digital trails, making it difficult for users to remain completely anonymous in their financial transactions.
- **Regulatory Compliance:** E-payment providers must adhere to various regulations, which can lead to compliance challenges and potential legal issues.
- **Loss of Physical Currency:** The shift to e-payments may lead to a decline in the use of physical currency, potentially causing issues for individuals or communities who rely on cash transactions.

4.1.2 Assess the mode of e payment system:

- **Convenience:**
  - High Convenience: Mobile wallets, contactless payment systems, and peer-to-peer payment apps are extremely convenient, allowing users to make payments quickly and easily, both online and in physical stores.
  - Moderate Convenience: Credit and debit card payments, online bank transfers, and prepaid cards are also convenient but may require users to carry physical cards or remember account details.
- **Security:**
  - High Security: Cryptocurrency payments and biometric payment systems offer high levels of

security through encryption, blockchain technology, and biometric authentication.

- Moderate Security: Credit and debit card payments, when used responsibly and with secure authentication methods, provide reasonable security. E-checks and online bank transfers also offer security but may be vulnerable to phishing attacks.
- Varied Security: The security of mobile wallets and P2P payment apps can vary based on the specific app, the strength of user authentication, and the measures taken by the user to secure their device and accounts.

- **Speed:**
  - High Speed: Contactless payments, mobile wallets, and cryptocurrency transactions are among the fastest e-payment methods, often settling within seconds.
  - Moderate Speed: Credit and debit card payments, online bank transfers, and ACH transfers can vary in speed, with some taking a few minutes to a few days to process, depending on the banks and payment networks involved.
- **Cost:**
  - Low Cost: Many e-payment methods have minimal or no transaction fees for users. However, businesses may incur processing fees for certain e-payment modes.
  - Moderate Cost: Credit card payments often involve merchant fees, which can be passed on to consumers indirectly through higher prices. Cryptocurrency transactions may have variable transaction fees.
- **Accessibility:**
  - High Accessibility: Mobile wallets, P2P payment apps, and contactless payment systems are accessible to most smartphone users with internet access.

- Moderate Accessibility: Credit and debit cards, as well as online bank transfers, are widely accessible but may require access to a bank account or card issuance.

- **Privacy:**
  - Low Privacy: Most e-payment systems leave digital traces, making it challenging to maintain complete privacy. Cryptocurrencies offer a higher level of privacy and anonymity.
- **Acceptance:**
  - High Acceptance: Credit and debit cards, along with mobile wallets like Apple Pay and Google Pay, are widely accepted by merchants globally.
  - Varied Acceptance: The acceptance of other e-payment methods, such as cryptocurrencies and specific mobile payment apps, can vary depending on location and industry.

4.1.3 Common forms of e-payment methods:

- **Credit and Debit Cards:** Credit cards allow users to make purchases on credit, while debit cards deduct funds directly from the user's bank account for transactions.
- **Mobile Wallets:** Apps like Apple Pay, Google Pay, and Samsung Pay store card information securely on smartphones, enabling contactless payments at stores and online.
- **Online Bank Transfers:** Users can transfer money directly from their bank accounts for online payments through banking portals or third-party payment gateways.
- **Digital Wallets:** Services like PayPal, Venmo, and Skrill link bank accounts or credit cards to facilitate online payments and person-to-person transfers.

- **Cryptocurrencies:** Bitcoin, Ethereum, and others enable peer-to-peer transactions without intermediaries, using digital wallets for storage.
- **Electronic Checks (e-Checks):** Digital versions of traditional paper checks, where users provide bank account details for electronic fund transfers.
- **Peer-to-Peer (P2P) Payment Apps:** Apps like Venmo and Cash App allow quick money transfers between users, typically linked to bank accounts or debit cards.
- **Contactless Payment Cards:** Credit and debit cards with NFC technology enable secure contactless payments by tapping near compatible terminals.
- **QR Code Payments:** Users can scan QR codes presented by merchants to initiate payments, popular in mobile apps and certain regions.
- **Online Payment Platforms:** Payment gateways like Stripe, Square, and Adyen provide businesses with tools to accept payments on their websites or apps, offering various payment options and processing services.

4.1.4 Requirements of e- payment system:

- **Security:** Robust security measures, including encryption and authentication, to safeguard sensitive data.
- **User Authentication:** Methods to verify user identities, such as passwords, biometrics, or two-factor authentication.
- **Payment Processing:** Efficient handling of various transaction types like credit cards, bank transfers, and digital wallets.
- **Currency Support:** Ability to process multiple currencies for international transactions.
- **Integration Capabilities**: Compatibility with e-commerce platforms, websites, and mobile apps.

- **Transaction Records:** Maintenance of detailed transaction records for audit and reporting.
- **Customer Support:** Services to assist users with payment-related inquiries and issues.
- **Scalability:** Ability to handle varying transaction volumes from small businesses to large enterprises.
- **Cross-Border Transactions:** Support for international regulations and currency exchange.
- **Payment Gateway:** Integration with payment gateways or acquiring banks for payment processing.

4.2 CHARACTERISTICS OF PAYMENT OF SYSTEMS:

- **Security:** Payment systems prioritize security to protect sensitive financial information and prevent fraud. They often employ encryption, authentication mechanisms, and fraud detection systems to safeguard transactions.
- **Efficiency:** Payment systems are designed to streamline transactions, making them quicker and more efficient compared to traditional methods like cash or checks. The goal is to reduce processing time and minimize administrative overhead.
- **Accuracy:** Payment systems are highly accurate, ensuring that the correct amount of funds is transferred from the payer to the payee. This reduces the risk of errors and disputes.
- **Innovation:** Payment systems continually evolve to incorporate new technologies and meet changing consumer preferences. Innovations like contactless payments, biometric authentication, and blockchain-based systems have emerged in recent years.
- **User Experience:** A positive user experience is essential for widespread adoption. Payment systems aim to provide

a user-friendly interface, responsive customer support, and features that enhance the overall experience.

- **Privacy and Data Protection:** Payment systems must adhere to privacy regulations and data protection standards to safeguard users' personal and financial information.

4.2.1 Annotate on payment of gateway system:

- **Transaction Authorization:** Payment gateways securely authorize and process payment transactions, ensuring the success or failure of payments in real-time.
- **Encryption and Security:** They employ strong encryption ss to protect sensitive customer data and maintain high standards of security compliance like PCI DSS.
- **Payment Method Compatibility:** Payment gateways support multiple payment methods, including credit/debit cards, digital wallets, and bank transfers, providing flexibility for customers.
- **Fraud Detection:** They incorporate fraud detection tools and algorithms to identify and prevent potentially fraudulent transactions.
- **Integration and Analytics:** Payment gateways seamlessly integrate with e-commerce platforms, provide transaction data, and offer analytics to help businesses optimize their online sales strategies.
- **Multi-Currency Support:** Payment gateways often offer multi-currency capabilities, enabling businesses to accept payments in various currencies and facilitate international transactions.
- **Customer Support and Reporting:** They provide customer support for setup and troubleshooting and offer detailed transaction reporting and settlement services to aid businesses in managing their financial operations.

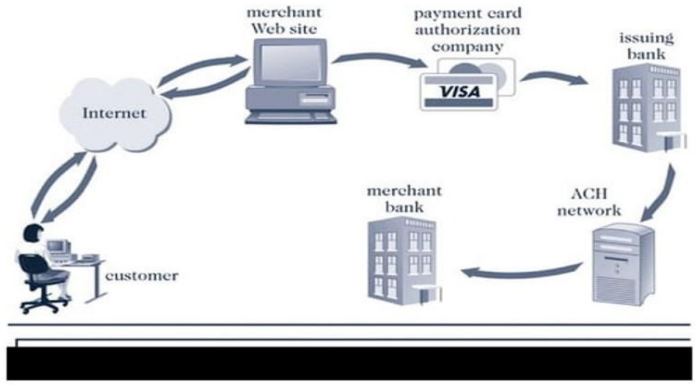
4.2.2 Payment cards:

Payment cards are all types of plastic cards that consumers use to make purchases:

- Credit cards
  - Such as a Visa or a MasterCard, has a present spending limit based on the user's credit limit.
- Debit cards
  - Removes the amount of the charge from the cardholder's account and transfers it to the seller's bank.
- Charge cards
  - Such as one from American Express, carries no present spending limit.

Payment acceptance and processing:

- Open and closed loop systems will accept and process payment cards.
- A merchant bank or acquiring bank is a bank that does business with merchants who want to accept payment cards.
- Software packaged with your electronic commerce software can handle payment card processing automatically.



Advantages and Disadvantages of payment cards:

- Advantages:
  - Payment cards provide fraud protection.
  - They have worldwide acceptance.
  - They are good for online transactions.
- Disadvantages:
  - Payment card service companies charge merchants per-transaction fees and monthly processing fees.

4.2.2 Electronic cash:

- Electronic cash is a general term that describes the attempts of several companies to create a value storage and exchange system that operates online in much the same way that government-issued currency operates in the physical world.
- Concerns about electronic payment methods include:
  - Privacy
  - Security
  - Independence
  - Portability
  - Convenience

Holding electronic cash: online and offline cash

- Two approaches to holding cash: online storage and offline storage.
- Online cash storage means that an online bank is involved in all transfers of electronic cash.
- Offline cash storage is the virtual equivalent of money you keep in your wallet. However, it must prevent double or fraudulent spending.

Advantages of electronic cash:

- Electronic cash transactions are more efficient and less costly than other methods.

- The distance that an electronic transaction must travel does not affect cost.
- The fixed cost of hardware to handle electronic cash is nearly zero.
- Electronic cash does not require that one party have any special authorization.

Disadvantages of electronic cash:

- Electronic cash provides no audit trail.
- Because true electronic cash is not traceable, money laundering is a problem.
- Electronic cash is susceptible to forgery.
- So far, electronic cash is a commercial flop.

4.2.4 Check free:

- Check Free provides online payment processing services to both large corporations and individual Internet users.
- Check Free permits users to pay all their bills with online electronic checks.
- CheckFree provides part of the technology that the Web portal Yahoo! uses to provide its Yahoo! Bill Pay service.

Click share:

- Clickshare is an electronic cash system aimed at magazine and newspaper publishers.
- Users with an ISP that supports Clickshare are automatically registered with Clickshare.
- Clickshare tracks users with the standard HTTP Web protocol.

4.2.5 Electronic wallets:

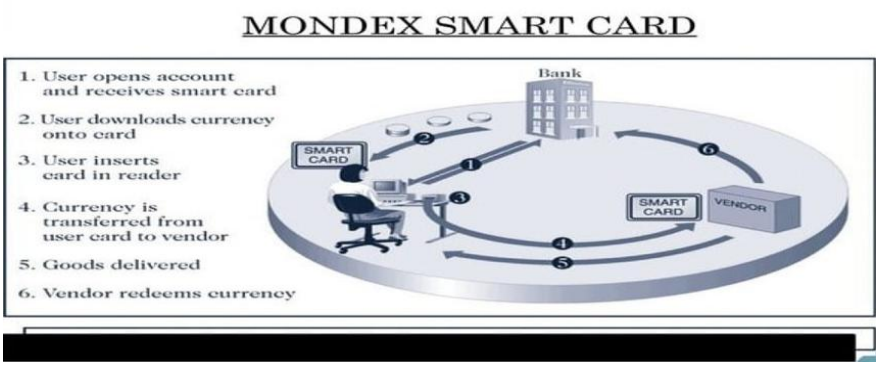
- An electronic wallet serves a function similar to a physical wallet:
- holds credit cards, electronic cash, owner identification, and owner contact information
- provides owner contact information at an electronic commerce site's checkout counter
- Some electronic wallets contain an address book.
- Electronic wallets make shopping more efficient.
- Electronic wallets fall into two categories based on where they are stored:
  - Server-side electronic wallet
  - Client-side electronic wallet
- Electronic wallets store shipping and billing information, including a consumer's first and last names, street address, city, state, country, and zip or postal code.
- E.g. Microsoft .NET passport,yahoo! Wallet

4.2.6 The w3c proposed standard:

- The W3C Electronic Commerce Interest Group (ECIG) developed a set of standards called the the Common Markup for Micropayment Per- Fee-Links.
- This standard identifies existing system micropayment types of online connections, stored-value systems, and combined online- offline systems.

4.2.7 Smart card:

- A smart card is a plastic card with an embedded microchip containing information about you.
- A smart card can store about 100 times the amount of information that a magnetic strip plastic card can store.
- A smart card contains private user information, such as financial facts, private encryption keys, account information, credit card numbers, health insurance information, etc.
- E.g. Mondex smart card, Octopus smart card



What Electronic Payment system is?

- Electronic payment system is a system which helps the customer or user to make online payment for their shopping.
- To transfer money over the Internet.
- Methods of traditional payment.
  - Check, credit card, or cash.
- Methods of electronic payment.
  - Electronic cash, software wallets, smart cards, and credit/debit cards.

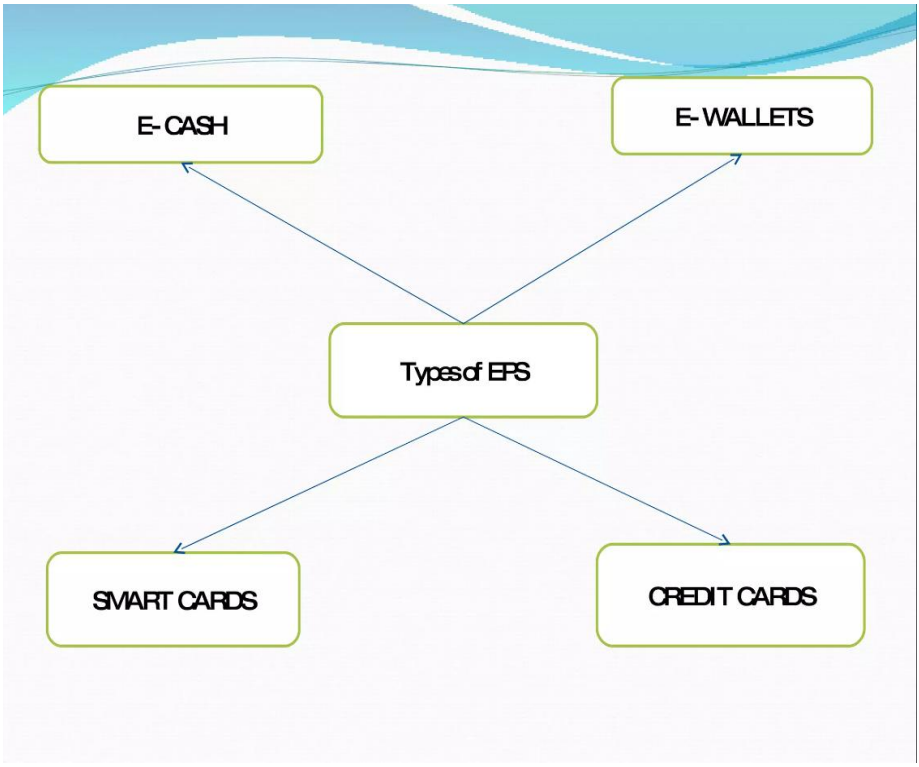
Some Examples Of EPS: -

- Online reservation
- Online bill payment
- Online order placing (nirulas)
- Online ticket booking (Movie)

Two storage methods

- On-line
  - Individual does not have possession personally of electronic cash
  - Trusted third party, e.g. online bank, holds customers' cash accounts
- Off-line

- Customer holds cash on smart card or software wallet
- Fraud and double spending require tamper-proof encryption



4.2.8 E-wallet:

An e-wallet, short for electronic wallet or digital wallet, is a digital tool or application that allows individuals and businesses to store, manage, and transact with various forms of digital currency, such as traditional fiat currency (e.g., dollars, euros) or cryptocurrencies (e.g., Bitcoin, Ethereum). E-wallets provide a convenient and secure way to make online and mobile payments, as well as manage financial transactions.

Key aspects of e-wallets:

- **Storage of Digital Currency:** E-wallets serve as a digital repository for various forms of digital currency, including:
  - Fiat Currency: Many e-wallets support the storage of traditional currencies like USD or EUR. Users can link their bank accounts or credit/debit cards to load funds into their e-wallets.

- Cryptocurrencies: E-wallets designed for cryptocurrencies allow users to store, send, and receive digital assets like Bitcoin, Ethereum, or other altcoins. These wallets generate public and private keys for secure storage and transaction verification.

- **Transaction Capabilities:**
  - Payments: Users can make payments to merchants for goods and services using the funds stored in their e-wallets. This can be done online, in physical stores (if the wallet supports contactless payments), or in-app for various services.
  - Peer-to-Peer (P2P) Transfers: E-wallets often enable users to send funds to friends, family, or business associates easily. This is particularly common for mobile e-wallets like Venmo or PayPal.
  - Bill Payments: Many e-wallets allow users to pay bills, such as utility bills or credit card bills, directly from their digital wallets.
- **Security Features:**
  - Encryption: E-wallets use strong encryption techniques to secure stored funds and transaction data.
  - Authentication: Users typically need to authenticate themselves, often with a PIN, password, biometrics (e.g., fingerprint or facial recognition), or two-factor authentication (2FA) for added security.
  - Backup and Recovery: E-wallets often provide backup and recovery options, allowing users to regain access to their funds if they lose their device or forget their login credentials.
- **Types of E-Wallets:**
  - Mobile Wallets: These are smartphone applications that allow users to make payments in physical stores

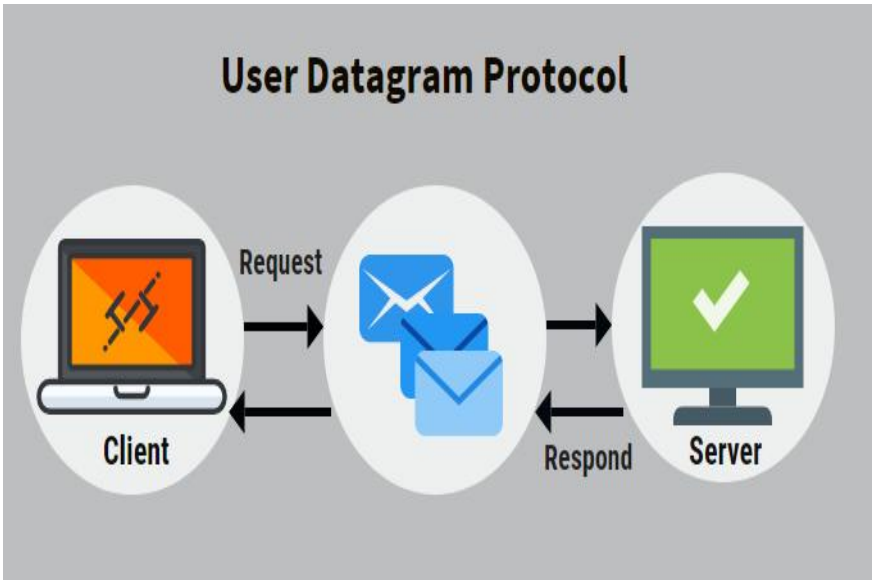
or online. Examples include Apple Pay, Google Pay, and Samsung Pay.

- Web Wallets: Web-based e-wallets are accessible through web browsers and can be used on various devices. PayPal is a well-known example.
- Desktop Wallets: Software applications installed on desktop or laptop computers for managing cryptocurrencies.
- Hardware Wallets: Physical devices that store cryptocurrency offline, providing additional security against hacking.
- Cryptocurrency Exchanges: Some cryptocurrency exchanges offer built-in e-wallets for users to store their assets securely.

- **Advantages:**
  - Convenience: E-wallets simplify payment processes, reducing the need for physical cash or cards.
  - Security: E-wallets offer encryption, authentication, and backup features to protect funds and data.
  - Accessibility: E-wallets are accessible to anyone with a compatible device and an internet connection.
  - Record Keeping: E-wallets provide transaction history, helping users track their spending.
- **Challenges:**
  - Security Risks: E-wallets can be vulnerable to cyberattacks, fraud, and phishing attempts.
  - Adoption Barriers: Some users, particularly in regions with limited internet access or technology literacy, may face challenges in adopting e-wallets.
  - Regulatory Environment: The regulatory landscape for e-wallets and digital currencies varies by country and can impact their use.

4.3 PROTOCOLS:

E-business payment and security protocols are essential for ensuring the safe and secure exchange of financial information and transactions over the internet. These protocols employ various encryption and authentication methods to protect sensitive data and prevent unauthorized access.



The protocol typically involves the following steps:

- The customer selects the products or services they wish to purchase and adds them to their shopping cart.
- The customer proceeds to checkout and enters their payment information, such as their credit card number or bank account information.
- The merchant's website encrypts the customer's payment information and transmits it to the payment processor.
- The payment processor verifies the customer's payment information and authorizes the transaction.

- The payment processor transfers the funds from the customer's account to the merchant's account.
- The merchant ships the products or provides the services to the customer.

The following security measures are typically implemented to protect e-business payments:

- **Encryption:** All data transmitted between the customer, merchant, and payment processor is encrypted to protect it from unauthorized access.
- **Authentication:** The customer and merchant are authenticated to ensure that they are who they say they are.
- **Fraud prevention:** Various fraud prevention measures are implemented, such as address verification and CVV code checks.
- **Compliance:** The merchant and payment processor must comply with all applicable regulations, such as the Payment Card Industry Data Security Standard (PCI DSS).

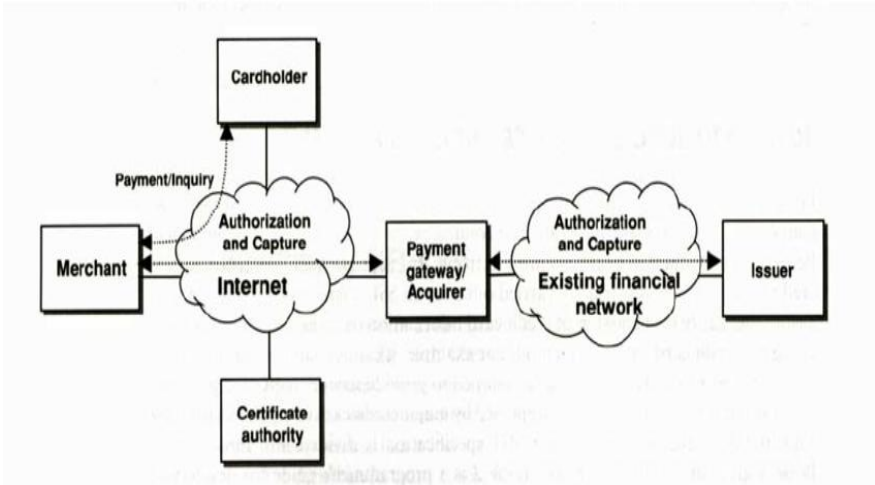
Common e-business payment protocols include:

- **Secure Sockets Layer (SSL):** SSL is a security protocol that encrypts data transmitted over the internet.
- **3D Secure:** 3D Secure is an additional security layer for online credit and debit card payments. It requires users to authenticate themselves with their bank before completing a transaction.
- **Secure Electronic Transaction (SET):** SET is a protocol that provides end-to-end security for online credit and debit card payments. It encrypts all data transmitted between the buyer, seller, and payment processor.

4.3.1 SET protocol:

Secure Electronic Transaction (SET) was an early cryptographic protocol developed in the late 1990s to ensure secure online credit

card transactions. While it played a significant role in advancing online payment security, it has largely been replaced by more modern protocols like SSL/TLS for encrypting data during transmission. Nevertheless, understanding SET provides insights into the evolution of e-commerce security.



Key Components of the SET Protocol:

- **Digital Certificates:** SET relies on digital certificates issued by trusted Certification Authorities (CAs). These certificates are used to authenticate the identities of both the cardholder and the merchant.
- **Payment Gateway:** A payment gateway is responsible for managing the payment process, including encryption, decryption, and communication with financial institutions.
- **Merchant's Point of Sale (POS):** The merchant's POS system is responsible for initiating and facilitating the payment transaction.
- **Cardholder's Wallet:** The cardholder's digital wallet is a software application or component that securely stores cardholder information, such as card numbers and digital certificates.

4.3.2 How SET Works:

- **Initialization:** The cardholder obtains a digital certificate from a trusted CA, which verifies the cardholder's identity. The cardholder's digital wallet also generates a unique Payment Gateway Key (PGK) for each online transaction.
- **Payment Request:** When the cardholder initiates an online payment, the merchant sends a payment request to the cardholder's digital wallet.
- **Cardholder Authentication:** The cardholder's digital wallet uses their digital certificate to prove their identity to the merchant. It also generates a unique transaction key (Session Key) for that specific transaction.
- **Transaction Encryption: The** payment details, including the card number and transaction amount, are encrypted with the Session Key and sent to the merchant.
- **Merchant Authorization:** The merchant forwards the encrypted payment details to the payment gateway. The payment gateway decrypts the information, verifies the digital signature of the cardholder's digital certificate, and checks the card number against a Certificate Revocation List (CRL) to ensure it is not stolen or expired.
- **Payment Approval:** If the payment gateway confirms the cardholder's identity and the card's validity, it sends an authorization request to the card issuer for approval.
- **Card Issuer Verification:** The card issuer verifies the transaction and, if approved, sends an authorization response to the payment gateway.
- **Transaction Completion:** The payment gateway forwards the authorization response to the merchant, confirming the successful payment.
- **Transaction Record:** A digital certificate is generated to serve as a record of the transaction.

Advantages of SET Protocol:

- **Enhanced Security:** SET was designed to provide robust security through strong encryption and digital signatures. It aimed to protect sensitive payment data from interception and tampering during online transactions.
- **Cardholder Anonymity:** SET allowed for cardholder anonymity, as merchants did not receive the actual card number. Instead, they received a digital certificate and payment information, adding a layer of privacy for consumers.
- **Digital Certificates:** The use of digital certificates issued by trusted Certification Authorities (CAs) helped verify the identities of both the cardholder and the merchant, reducing the risk of fraud.
- **Protection Against Stolen Cards:** SET employed a Certificate Revocation List (CRL) to check the validity of digital certificates. This added layer of security reduced the risk of transactions involving stolen or expired card information.
- **Data Integrity:** The protocol ensured the integrity of payment data by using encryption and digital signatures to detect any unauthorized modifications during transmission.

Disadvantages of SET Protocol:

- **Complexity:** SET was highly complex to implement, both for consumers and merchants. Obtaining digital certificates, setting up digital wallets, and configuring the protocol required technical expertise.
- **Limited Adoption:** Due to its complexity and the significant effort required for implementation, SET saw limited adoption among merchants and consumers. The

complexity made it less attractive compared to simpler alternatives.

- **Infrastructure Costs:** Implementing SET required significant infrastructure investments, including obtaining digital certificates, setting up secure servers, and developing or purchasing specialized software.
- **Usability Issues:** The complexity of SET led to usability issues, making it less user-friendly for both consumers and merchants. This hindered its widespread acceptance in the e-commerce industry.
- **Emerging Alternatives:** As e-commerce continued to grow, simpler and more user-friendly security protocols like SSL/TLS became widely adopted. These alternatives offered strong encryption and authentication while being easier to implement.

4.3.3 Example of SET Usage:

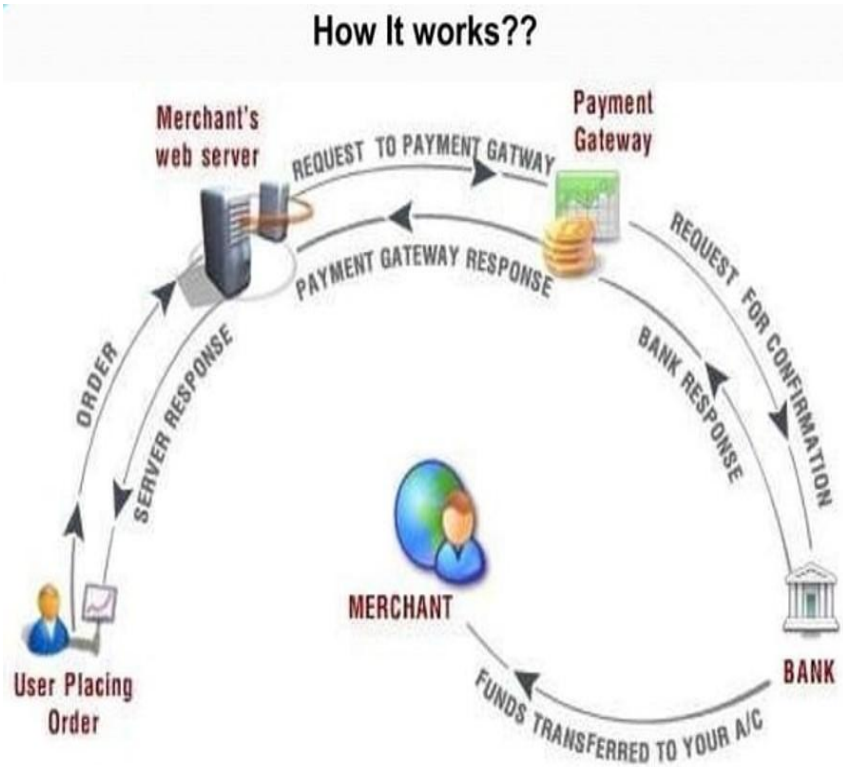
Imagine a customer, Alice, wants to purchase a book from an online bookstore, Bob's Books, using SET:

- Alice initiates the payment and receives a digital certificate from a trusted CA.
- She uses her digital wallet to create a unique Session Key for the transaction.
- Bob's Books sends a payment request to Alice's digital wallet, which provides her digital certificate and Session Key for authentication.
- Alice's digital wallet encrypts the payment details with the Session Key and sends them to Bob's Books.
- Bob's Books forwards the encrypted payment details to its payment gateway.
- The payment gateway verifies Alice's identity, checks the certificate against the CRL, and sends an authorization request to Alice's card issuer.

- The card issuer approves the payment and sends an authorization response to the payment gateway.
- The payment gateway informs Bob's Books of the successful payment, and Alice receives her book.

What are payment Gateways??

- A payment gateway is an e-commerce application service provider service that authorizes payments for e-businesses, online Shopping, etc.
- Payment gateway protects credit cards details encrypting sensitive information, such as credit card numbers, to ensure that information passes securely between the customer and the merchant and also between merchant and payment processor.



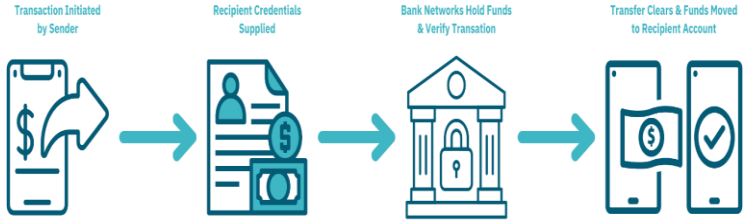
4.4 ELECTRONIC FUND TRANSFER:

Meaning:

Electronic fund transfer (EFT) is the electronic fund transfer of money from one bank account to another, either with in a single financial system and without the direct invention of bank staff.

Definition:

According to the united states electronic fund transfer act of 1978 it is a funds transfer initiated through an electronic terminal, telephone, computer (including online banking) or magnetic tape for the purpose of ordering, instructing, or, authorizing a financial institution to debit or credit a consumers account.



4.4.1 Types of electronic fund transfer:

There are many ways to transfer money electronically. Below are descriptions of common EFT payments you might use for your business.

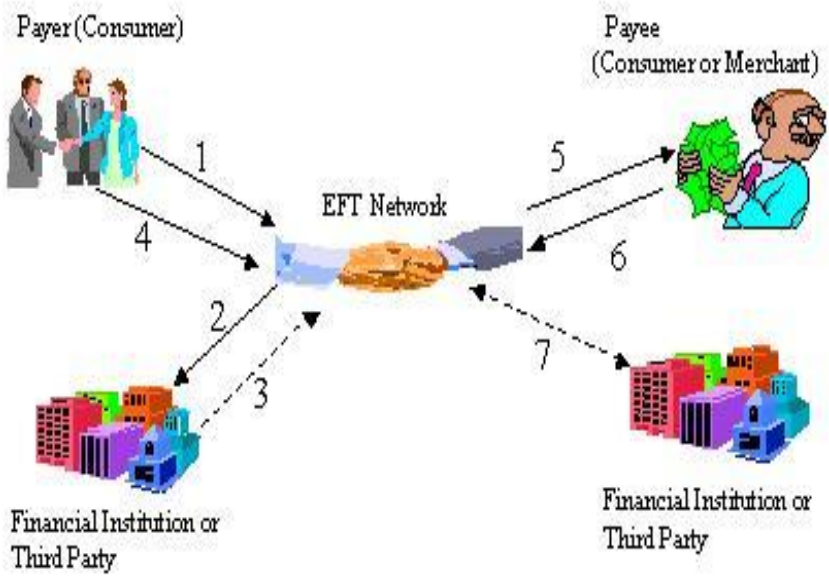
EFTS include, but are not limited to:

- Automated teller machine (ATM) transfers;
- Direct deposit payment or withdrawals of funds initiated by the payer; Direct debit payments for which a business debits the consumers bank accounts for
- payment for goods and services;
- Transfers initiated by telephone;
- Transfers resulting from credit or debit card transactions, whether or not initiated through on payment terminal.
- Wire transfer via an international banking network such as SWIFT;
- Electronic bill payment in online banking which may be delivered by EFT or paper check;
- Transactions involving stored value of electronic money, possibly in a private currency;
- Instant payment.

4.4.2 Process of EFT:

- Entering supplier master information.
- Entering payment instrument defaults.

- Entering bank account information.



Various modes of EFT in India - NEFT, RTGS, IMPS

NEFT (NATIONAL ELECTRONIC FUNDS TRANSFER):

- The national electronic funds transfer is a nation-wide money transfer system which allows customers with the facility to electronically transfer funds from their respective bank accounts to any other account of the same bank or of any other bank network
- Funds transfer through NEFT requires a transferring bank and a destination bank.
- Before transferring funds via NEFT you register the beneficiary, receiving funds, for this you must possess information such as name of the recipient, recipients bank

name, a valid account number belonging to the recipient and his respective banks IFSC code.

- Any sum of money can be transferred using the NEFT system with a maximum capital of Rs 10,00,000.

RTGS (REAL TIME GROSS SETTLEMENT):

- It is a real time fund transfer system which facilitates you to transfer funds from one bank to another in real time or on a gross basis. The transaction isn't put on a waiting list and cleared out instantly.
- RTGS payment gateway, maintained by the Reserve Bank Of India makes transactions between banks electrically. The transferred amount is instantly deducted from the account of one bank and credited to the other bank's account.
- The remitting customer needs to add the beneficiary and his bank account details prior to transacting funds via RTGS. The details required while transferring funds would be the beneficiary's name; his/her account number, receiver's bank address and the IFSC code of the respective bank.
- The minimum value that can be transferred using RTGS is Rs 2Lakhs and above. However, there is no upper cap on the amount that can be transacted.

IMPS (IMMEDIATE PAYMENT SERVICE):

- The National Payment Corporation of India introduced a pilot mobile payment project also known as the immediate payment service (IMPS).
- IMPS offer instant electronic transfer service using mobile phones. The IMPS service also features a secure transfer gateway and an immediate confirmation on fulfilled orders.

- IMPS is offered on all the cellular devices via mobile banking or through SMS facility.
- To be able to transfer money vi IMPS route you must first for the immediate payment services with your bank.
- Thus, IMPS enable customers to use mobile instruments as an instant money transfer gateway, facilitating user convenience and saving time and effort involved in other modes of transfer.

4.4.3 Advantages of EFT:

- Increase efficiency and productivity.
- Manage cash flow easily.
- Improve safety and control.
- Saves money.
- Eliminate the risks associated with lost, stolen, misdirected cheques.

4.4.4 Disadvantages of EFT:

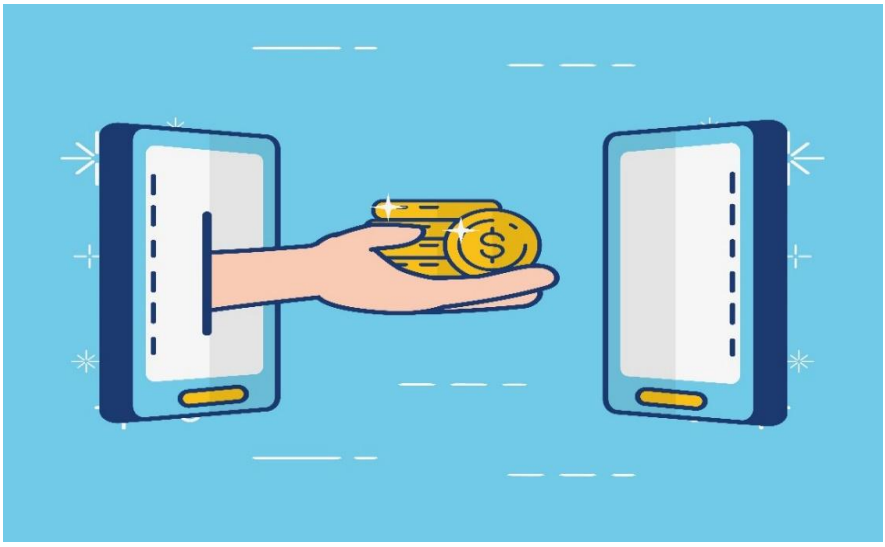
- Once an amount is transferred, the bank cannot reverse a transaction.
- If you entered the target account number incorrectly, there is no way to reverse the transaction since the bank would process the transaction under the belief that the information you provided is accurate.

4.5 E-CASH:

- E-cash is a digital form of currency that can be used to make online and offline payments. E-cash is typically stored on a computer or mobile device and can be transferred to merchants using a variety of methods, such as email, SMS, or QR codes.
- One of the key benefits of e-cash is that it can be used to make payments anonymously. This can be useful for people who want to protect their privacy or who live in

countries where traditional payment methods are not widely accepted.

- Another benefit of e-cash is that it can be used to make micropayments. Micropayments are very small payments, typically less than $1. Micropayment systems are often used to pay for digital content, such as articles, songs, and videos.



Some examples of e-cash include:

- Bitcoin
- Ethereum
- Litecoin
- PayPal
- Google Pay
- Apple Pay

4.5.1 Advantages of E-Cash:

- **Convenience:** E-cash transactions can be conducted electronically, enabling quick and convenient payments and transfers without the need for physical currency.

- **Accessibility:** E-cash is accessible to anyone with an internet connection and an appropriate digital wallet or account, making it widely available to a global audience.
- **Security:** E-cash transactions can be highly secure when implemented with strong encryption and authentication methods, reducing the risk of theft or fraud.
- **Reduced Cost:** E-cash transactions can be more cost-effective than traditional cash transactions, as they often eliminate the need for physical infrastructure like bank branches and ATMs.
- **Instantaneous Transactions:** E-cash transactions can be processed in real-time, providing immediate confirmation and access to funds for both the sender and receiver.
- **Record Keeping:** E-cash transactions generate digital records, making it easier to track and manage financial transactions for individuals and businesses.
- **Global Transactions:** E-cash can facilitate international transactions and cross-border payments more efficiently than traditional banking systems, reducing currency conversion fees and delays.
- **Microtransactions:** E-cash enables microtransactions, allowing for the purchase of small digital goods or services that might not be feasible with traditional payment methods.
- **Reduced Need for Physical Cash Handling:** E-cash can reduce the need for physical cash handling, making it safer and more hygienic, especially in situations like the COVID-19 pandemic.

4.5.2 Disadvantages of E-Cash:

- **Security Risks:** While e-cash can be secure, it is also susceptible to various cyber threats, including hacking,

phishing, and malware attacks. Users must take precautions to protect their digital wallets.

- **Dependency on Technology:** E-cash transactions depend on technology infrastructure, including internet access and digital devices. Service disruptions or technical issues can disrupt transactions.
- **Lack of Anonymity:** E-cash transactions can be traced and monitored more easily than physical cash transactions, potentially compromising user privacy.
- **Digital Divide:** Not everyone has equal access to digital devices or internet connectivity, limiting the adoption of e-cash in some regions or among certain demographics.
- **Regulatory Challenges:** The regulatory landscape for e-cash can be complex, leading to legal and compliance challenges for businesses and users.
- **Transaction Fees:** Some e-cash systems may impose transaction fees or currency conversion charges, which can affect the overall cost of using digital currency.
- **Irreversible Transactions:** In some cases, e-cash transactions can be irreversible, meaning that if a mistake is made, there may be no recourse for recovering funds.
- **Market Volatility:** Cryptocurrencies, a form of e-cash, can be highly volatile, leading to fluctuations in their value and affecting their use as a stable medium of exchange.
- **Dependency on Third Parties:** Many e-cash systems rely on third-party providers, which can pose risks related to the reliability and trustworthiness of these service providers.

4.6 E-CHEQUES:

An e-cheque is an electronic version of a traditional paper check. E-cheques can be used to make online payments to merchants that

accept e-cheques. To make an e-cheque payment, the buyer must provide the merchant with their bank account information and the amount of the payment. The merchant will then initiate an e-cheque transfer from the buyer's bank account to their own.

E-cheques are a convenient and secure way to make online payments. They are also a good option for people who do not have a credit card or debit card.

Some examples of e-cheque services include:

- ACH eCheck
- PayPal eCheck
- Google Pay eCheck
- Apple Pay Cash

4.6.1 Advantages of E-Cheques:

- **Convenience:** E-cheques offer the convenience of making payments electronically, eliminating the need for physical cheques and trips to the bank.

- **Cost Savings:** They can be more cost-effective than traditional paper cheques, as they reduce expenses related to printing, mailing, and processing physical cheques.
- **Security:** E-cheques often include security features like encryption and authentication to protect against fraud and unauthorized access.
- **Accessibility:** E-cheques are accessible 24/7, allowing users to initiate transactions at their convenience, even outside of traditional banking hours.
- **Record Keeping:** E-cheques generate digital records of transactions, making it easier to track and manage payment history.
- **Remote Transactions:** They enable payments to be made remotely, which is especially useful for businesses with customers or suppliers in different locations.

4.6.2 Disadvantages of E-Cheques:

- **Digital Literacy:** Users and businesses need to be digitally literate to use e-cheques effectively, which can be a barrier for some individuals and organizations.
- **Security Risks:** While e-cheques offer security features, they are not immune to cyber threats, such as hacking and phishing attacks. Users must take precautions to protect their e-cheque transactions.
- **Dependency on Technology:** E-cheques rely on internet access and digital devices, making them vulnerable to disruptions in technology infrastructure.
- **Regulatory Challenges:** The regulatory environment for e-cheques can be complex, and compliance with legal requirements can be challenging for businesses and service providers.

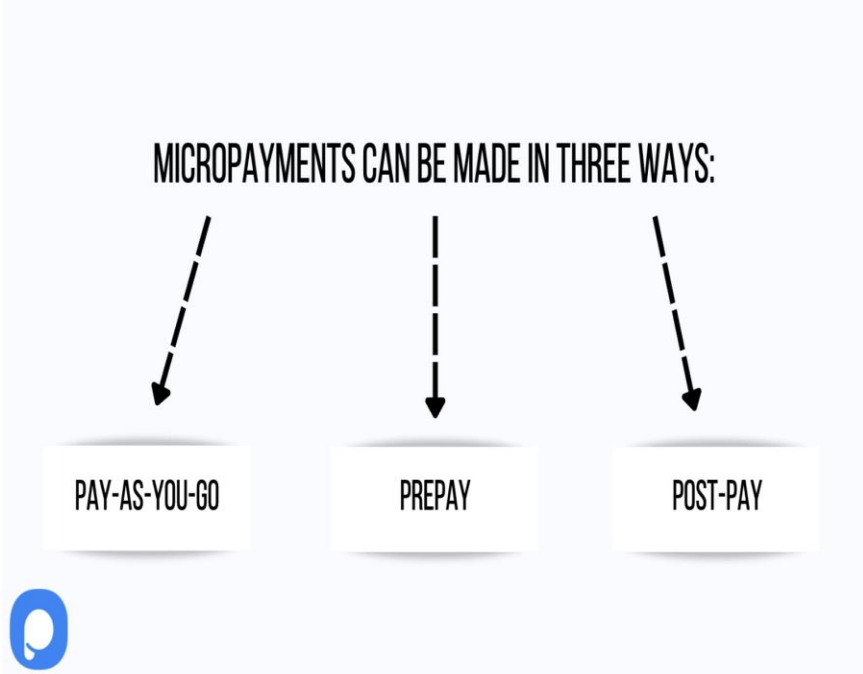
- **Transaction Fees:** Some e-cheque services may charge transaction fees, impacting the overall cost of using digital cheques.
- **Limited Acceptance:** E-cheque acceptance may not be universal, and some organizations or individuals may prefer traditional paper cheques or other payment methods.

4.7 MICRO PAYMENT SYSTEMS:

- Micropayment systems are designed to process very small payments, typically less than $1. Micropayment systems are often used to pay for digital content, such as articles, songs, and videos.
- Micropayment systems can be implemented in a variety of ways. One common approach is to use a digital wallet. Digital wallets allow users to store and manage their digital currency. When a user wants to make a micropayment, they can simply transfer the desired amount of digital currency from their wallet to the merchant's wallet.
- Another approach to micropayments is to use a subscription model. With a subscription model, users pay a recurring fee to access a library of content. This approach is often used for streaming services, such as Netflix and Spotify.

Some examples of micropayment systems include:

- Flattr
- Micropayment.io
- BuyMeACoffee
- Ko-fi
- Patreon



4.7.1 Aspects of micro payment systems:

- **Low Transaction Value:** Micro-payment systems are primarily intended for small-value transactions, often ranging from a fraction of a cent to a few dollars. These transactions may include micropayments for digital content, in-game purchases, or small online services.
- **Minimal Transaction Costs:** To be economically viable for both merchants and consumers, micro-payment systems must keep transaction costs low. Traditional payment processing fees can eat into the value of microtransactions, so micro-payment solutions aim to reduce or eliminate such fees.
- **Digital and Online Focus:** Micro-payment systems are inherently digital and are designed for online and digital content and services. They are well-suited for digital goods

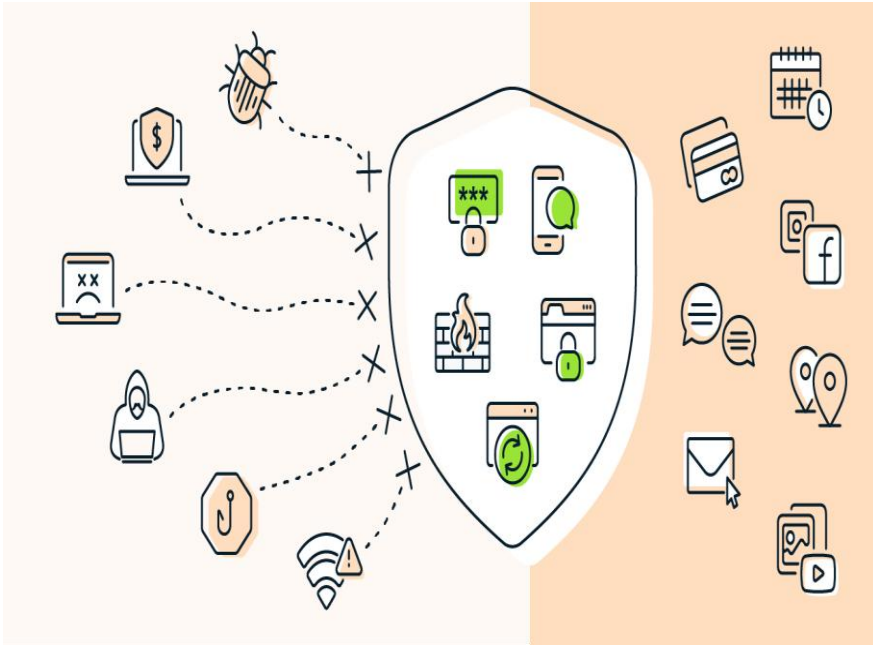
like e-books, music downloads, mobile apps, and virtual in-game items.

- **Frequent Transactions:** Micro-payment systems are built to handle a high volume of transactions. Users often engage in numerous micro transactions over a short period, so the system must be scalable and capable of processing many payments efficiently.
- **Payment Methods:** Micro-payment systems often offer a variety of payment methods, including credit/debit cards, digital wallets, prepaid accounts, and even cryptocurrency options, to accommodate different user preferences.
- **One-Click Payments:** To streamline the payment process, micro-payment systems may provide one-click or single-tap payment options, allowing users to make purchases with minimal effort.
- **Subscription and Membership Models:** In addition to individual microtransactions, some micro-payment systems offer subscription or membership models that provide access to content or services for a recurring fee, which can be composed of many microtransactions.
- **Cross-Platform Compatibility:** To reach a wide audience, micro-payment systems should be compatible with various devices and platforms, including desktop computers, smartphones, and tablets.
- **Monetization for Content Creators:** Micro-payment systems provide a means for content creators, such as bloggers, musicians, and video streamers, to monetize their work by receiving small payments from their audience.
- **Tokenization:** Some micro-payment systems use tokenization, where small amounts of currency are converted into digital tokens within the system. These

tokens can be traded and spent like real currency within the ecosystem.

4.8 INTERNET SECURITY:

Internet security is the practice of protecting computers, networks, and data from unauthorized access, use, disclosure, disruption, modification, or destruction. Internet security is important for both businesses and individuals, as it helps to protect sensitive data such as trade secrets, financial information, and personal data.



4.8.1 There are a number of different internet security threats, including:

- **Malware**: Malware is malicious software that can damage or disable computers and networks. Malware includes viruses, worms, Trojans, and spyware.
- **Phishing:** Phishing is a type of social engineering attack that attempts to trick users into revealing sensitive information, such as passwords or credit card numbers.

Phishing attacks are often carried out through email or SMS messages.

- **Denial-of-service (DoS) attacks:** DoS attacks attempt to overwhelm a computer or network with traffic, making it unavailable to legitimate users.
- **Man-in-the-middle attacks:** Man-in-the-middle attacks intercept communications between two parties and impersonate one of the parties. This allows the attacker to steal data or eavesdrop on communications.

4.8.2 There are a number of different internet security measures that can be taken to protect against these threats, including:

- **Firewalls:** Firewalls monitor and control incoming and outgoing network traffic. Firewalls can be used to block malicious traffic and prevent unauthorized access to networks.
- **Antivirus software:** Antivirus software detects and removes malware from computers. Antivirus software should be kept up to date to ensure that it can detect the latest malware threats.
- **Spam filters:** Spam filters block spam emails from reaching your inbox. Spam filters can help to reduce the risk of phishing attacks.
- **Strong passwords:** Strong passwords are at least 12 characters long and include a mix of upper and lowercase letters, numbers, and symbols. Strong passwords should be unique for each account and should be changed regularly.
- **Multi-factor authentication (MFA):** MFA adds an extra layer of security to accounts by requiring users to enter a code from their phone in addition to their password. MFA can help to prevent unauthorized access to accounts, even if the attacker has obtained the user's password.

4.9 CRYPTOGRAPHY:

Cryptography is the practice of transforming information into a form that cannot be read without the proper key. Cryptography is used to protect data in transit and at rest.

Cryptography is based on mathematical algorithms that are used to encrypt and decrypt data. Encryption is the process of transforming data into an unreadable format. Decryption is the process of transforming encrypted data back into its original readable format.

4.9.1 Types of cryptography: symmetric and asymmetric.

- Symmetric cryptography uses the same key to encrypt and decrypt data. This means that both the sender and receiver of the data must share the same key. Symmetric cryptography is fast and efficient, but it is important to keep the key secret, otherwise an attacker could use it to decrypt the data.
- Asymmetric cryptography uses two different keys to encrypt and decrypt data: a public key and a private key. The public key is used to encrypt the data, and the private key is used to decrypt it. Anyone can have the public key,

but only the owner of the private key can decrypt the data. Asymmetric cryptography is slower than symmetric cryptography, but it is more secure because the private key does not need to be shared with the sender or receiver of the data.

4.9.2 Cryptography is used in a variety of applications:

- Secure communication: Cryptography is used to protect data in transit, such as when sending email or chatting online.
- Data storage: Cryptography is used to protect data at rest, such as when storing data on a hard drive or in the cloud.
- Digital signatures: Cryptography is used to create digital signatures, which can be used to verify the authenticity and integrity of digital messages and documents.
- Cryptocurrencies: Cryptography is used to secure cryptocurrencies, such as Bitcoin and Ethereum.

4.9.3 Advantages of Cryptography:

- **Data Confidentiality:** Cryptography ensures that sensitive data remains confidential and protected from unauthorized access. Only individuals with the appropriate decryption keys can read the data.
- **Data Integrity:** Cryptographic techniques, such as hashing, can verify the integrity of data. If the data is altered in any way, even by a single character, the hash value changes, alerting users to potential tampering.
- **Authentication:** Cryptography provides mechanisms for verifying the identity of parties involved in a communication or transaction. Digital signatures, for example, can prove the authenticity of a message or document.

- **Non-Repudiation:** Cryptographic digital signatures offer non-repudiation, meaning that a sender cannot deny sending a message or making a transaction, as the digital signature provides proof of their involvement.
- **Secure Communication:** Cryptographic protocols, like SSL/TLS, ensure secure communication over networks, protecting data during transmission and preventing eavesdropping.
- **Protection Against Cyber Threats:** Cryptography defends against various cyber threats, including unauthorized access, data breaches, and man-in-the-middle attacks, enhancing overall cybersecurity.
- **Privacy:** Cryptography helps protect user privacy by securing personal information and communications from surveillance and intrusion.
- **Secure E-Commerce:** Cryptography secures online transactions, ensuring the confidentiality of financial data and reducing the risk of fraud.
- **Secure Access Control:** Cryptographic mechanisms can control access to systems, resources, and sensitive data, enhancing access security.
- **Digital Currencies:** Cryptocurrencies like Bitcoin rely on cryptographic techniques for secure and transparent transactions.

4.9.4 Disadvantages of Cryptography:

- **Complexity:** Cryptographic systems can be complex to implement and manage, requiring specialized knowledge and expertise.
- **Key Management:** Secure key management is essential, and the loss or compromise of encryption keys can lead to data loss or breaches.

- **Performance Overhead:** Strong encryption can introduce computational overhead, impacting system performance, especially in resource-constrained environments.
- **Quantum Threat:** Emerging quantum computing poses a potential threat to existing encryption algorithms, requiring the development of quantum-resistant cryptography.
- **Misuse:** Cryptography can be misused for illegal activities, such as ransomware attacks or encryption of malicious software.
- **Key Exchange:** Secure key exchange can be challenging, especially in public-key cryptography, where verifying the authenticity of public keys is critical.
- **Legacy Systems:** Migrating legacy systems to use modern cryptographic standards can be costly and complex.
- **Legal and Regulatory Challenges:** Cryptography often faces legal and regulatory challenges related to export restrictions, data privacy laws, and government access to encrypted data.
- **User Experience:** In some cases, added security measures, such as complex passwords or frequent key management tasks, can create a poor user experience.
- **False Sense of Security: Relying** solely on cryptography can lead to a false sense of security if other security aspects, like secure implementation and regular updates, are neglected.

4.10 SECURITY PROTOCOLS:

Security protocols are a crucial aspect of cybersecurity and information security. They are a set of rules and procedures that define how data should be transmitted, received, and protected in various communication and computing systems. These protocols help ensure the confidentiality, integrity, and availability of data while mitigating security risks and threats.

4.10.1 Security protocols used in different domains:

- **Network Security Protocols:**
  - IPSec (Internet Protocol Security): Used for securing communication over IP networks, IPSec provides authentication, encryption, and data integrity for VPNs (Virtual Private Networks).
  - SSL/TLS (Secure Sockets Layer/Transport Layer Security): These protocols secure data transmission over the internet, commonly used for securing websites (HTTPS), email, and various online services.
  - SSH (Secure Shell): SSH provides secure remote access and data transfer over a network, typically used for secure command-line access to servers and file transfers.

- **Web Security Protocols:**
  - HTTPS (HTTP Secure): An extension of HTTP, HTTPS encrypts data transmitted between web browsers and servers, ensuring secure communication for online transactions and data exchange.
  - OAuth (Open Authorization): Used for secure third-party authentication and authorization, OAuth enables users to grant limited access to their resources without sharing their credentials.
- **Email Security Protocols:**
  - S/MIME (Secure/Multipurpose Internet Mail Extensions): S/MIME provides email encryption and digital signatures, ensuring the confidentiality and authenticity of email messages.
  - DKIM (Domain Keys Identified Mail): DKIM verifies the authenticity of email messages by checking their digital signatures, helping prevent email spoofing and phishing attacks.
- **Wireless Security Protocols:**
  - WPA/WPA2/WPA3 (Wi-Fi Protected Access): These protocols secure wireless networks by encrypting data and providing authentication mechanisms to prevent unauthorized access.
  - EAP (Extensible Authentication Protocol): EAP is used in Wi-Fi and other networks for secure user authentication, often in conjunction with WPA or WPA2.
- **Cloud Security Protocols:**
  - OAuth and OpenID Connect: These protocols are used for secure authorization and single sign-on (SSO) in cloud-based applications, allowing users to access multiple services with a single login.

- Cloud Access Security Broker (CASB) Protocols: CASB solutions use various protocols to monitor and secure interactions between users and cloud applications, enforcing security policies and data protection.

- **IoT (Internet of Things) Security Protocols:**
  - MQTT (Message Queuing Telemetry Transport): MQTT is a lightweight messaging protocol for IoT devices that can be secured using SSL/TLS to ensure the confidentiality and integrity of data.
  - CoAP (Constrained Application Protocol): CoAP is a protocol for IoT devices, and it can be secured using DTLS (Datagram Transport Layer Security) for secure communication.
- **Blockchain Security Protocols:**
  - Consensus Algorithms: Blockchain networks use consensus algorithms like Proof of Work (PoW) and Proof of Stake (PoS) to secure transactions and maintain the integrity of the blockchain.
  - Digital Signatures: Blockchain transactions often use digital signatures to verify the authenticity of transactions and ensure data integrity.
- **Industrial Control Systems (ICS) Security Protocols:**
  - Modbus Security: Modbus is a common protocol for industrial control systems, and secure versions (e.g., Modbus/TCP Secure) are used to protect against unauthorized access and data tampering.
  - DNP3 (Distributed Network Protocol 3): DNP3 is used in SCADA systems, and secure implementations are employed to safeguard critical infrastructure.

4.10.2 Advantages of Security Protocols:

- **Data Protection:** Security protocols help protect sensitive data from unauthorized access, interception, or tampering.

They establish secure channels for data transmission and storage.

- **Access Control:** These protocols can enforce access controls, ensuring that only authorized users or entities can access certain resources or perform specific actions.
- **Authentication:** Security protocols enable user and entity authentication, which is essential for verifying the identity of users or devices. This helps prevent unauthorized access.
- **Data Integrity:** Security protocols ensure that data remains unaltered during transmission or storage, preventing data corruption or unauthorized modifications.
- **Confidentiality:** Encryption and other security measures included in protocols can safeguard sensitive information from eavesdroppers or unauthorized entities.
- **Network Security:** In network security, protocols like IPsec, SSL/TLS, and SSH provide secure communication, reducing the risk of data breaches and unauthorized access to network resources.
- **Compliance:** Many industries and organizations are required to comply with regulations and standards related to data security. Security protocols help meet these compliance requirements.
- **Interoperability:** Standardized security protocols facilitate the interoperability of different systems and devices, ensuring that they can communicate securely.

4.10.3 Disadvantages of Security Protocols:

- **Complexity:** Implementing and managing security protocols can be complex and resource-intensive, requiring specialized knowledge and expertise.
- **Overhead:** Security protocols can introduce overhead in terms of processing power, bandwidth, and latency, which may impact system performance.

- **Interoperability Issues:** In some cases, security protocols may not be compatible with certain systems, causing interoperability problems.
- **False Positives/Negatives:** Security protocols can sometimes generate false alarms (false positives) or fail to detect threats (false negatives), leading to security gaps or unnecessary disruptions.
- **Cost:** Implementing robust security protocols can be expensive, involving the costs of software, hardware, training, and ongoing maintenance.
- **User Experience:** Security measures like multi-factor authentication and frequent password changes can be cumbersome for users, potentially leading to frustration.
- **Evolution of Threats:** Security protocols must constantly evolve to keep up with evolving cybersecurity threats. Older protocols may become vulnerable.
- **Lack of Awareness:** Users and administrators may not always be aware of the best security practices or the importance of adhering to security protocols, leading to vulnerabilities.

4.11 NETWORK SECURITY:

The term "network security" refers to the practice of implementing various measures and strategies to protect computer networks, devices, and the data they transmit or store from unauthorized access, damage, or breaches. Network security encompasses a wide range of technologies, processes, and best practices that aim to ensure the confidentiality, integrity, and availability of network resources. It involves defending a network infrastructure against both internal and external threats, such as cyberattacks, malware, unauthorized access, and data breaches, while also safeguarding the privacy and trustworthiness of data and communication within the network.

4.11.1 Role of network security in e-business:

- **Protection of Sensitive Data:** E-businesses deal with a vast amount of sensitive data, including customer information, financial records, and intellectual property. Network security safeguards this data from unauthorized access, theft, and breaches.
- **Customer Trust and Confidence:** Strong network security measures, such as encryption and secure authentication, build trust with customers. When customers trust that their data is safe, they are more likely to engage in online transactions and share their information.
- **Secure Transactions:** E-business relies heavily on secure online transactions. Network security protocols like SSL/TLS ensure that data exchanged during transactions,

including payment information, remains confidential and unaltered.

- **Prevention of Unauthorized Access:** Network security mechanisms, including firewalls and intrusion detection/prevention systems, help prevent unauthorized users from gaining access to internal networks, applications, and systems.
- **Protection from Cyber Threats:** Network security systems actively monitor network traffic to detect and mitigate various cyber threats, such as malware, viruses, phishing attempts, and social engineering attacks.
- **Secure Remote Access:** As remote work and mobile access become more prevalent, network security ensures that employees and partners can securely access e-business resources from anywhere, maintaining confidentiality and data integrity.
- **Data Encryption:** The use of encryption technologies secures data both in transit and at rest, making it unreadable to unauthorized parties even if intercepted.
- **Incident Response and Recovery:** Network security measures include incident response plans and backups to mitigate damage from security incidents and recover lost data.
- **Vendor and Partner Security:** E-businesses often collaborate with third-party vendors and partners. Network security ensures that these external entities meet security standards to prevent vulnerabilities.
- **Monitoring and Auditing:** Ongoing monitoring and auditing of network traffic and security events help detect anomalies and potential threats in real-time.
- **Educating Employees:** Employee awareness and training programs are essential for network security. Employees need to recognize security threats, practice good

cybersecurity hygiene, and understand their role in maintaining security.

4.11.2 Advantages of network security:

- **Data Protection**: Network security safeguards sensitive data from unauthorized access and protects its confidentiality.
- **Prevention of Unauthorized Access:** It prevents unauthorized individuals or entities from gaining access to network resources, ensuring data and resource security.
- **Business Continuity:** Effective network security measures help maintain uninterrupted business operations, even in the face of cyberattacks.
- **Risk Mitigation:** Network security reduces the risk of security breaches and data loss by identifying vulnerabilities and implementing controls.
- **Compliance:** Network security helps organizations comply with industry regulations and data protection laws, avoiding legal and financial penalties.

4.11.3 Disadvantages of network security:

- **Complexity:** Implementing and managing network security can be complex, requiring specialized skills and knowledge.
- **Cost:** Effective network security can be costly due to expenses related to hardware, software, and ongoing maintenance.
- **Performance Overhead:** Strong security measures can impact network performance, potentially slowing down data transfer and causing latency.
- **User Experience:** Stringent security policies may create a poor user experience, leading to frustration among employees and users.

- **Privacy Concerns:** Some network security measures, like deep packet inspection, raise privacy concerns due to the level of monitoring and data inspection involved.

4.12 Important Questions:

5 marks:

1. Infer the term E Payment.
2. Summarize the characteristics of e payment system.
3. List out the advantages and disadvantages of e cash.
4. What do you know about e wallet?
5. Paraphrase on electronic payment system.
6. Discuss set protocol in detail.
7. Annotate on payment of gateway system.
8. List out the requirements of e- payment system.
9. Discuss electronic fund transfer.
10. Infer the term network security.
11. Discuss the legal issues in e-business.
12. Discuss the ethical issues in e-business.
13. Discuss the privacy issues in e-business.
14. What is a professional code of ethics?
15. How to develop a code of ethics

10 marks:

1. Briefly explain Business oriented e-business with real examples.
2. Discuss the common forms of e-payment methods.
3. Illustrate the aspects of micro payment systems.
4. Describe the Cryptography in details.
5. Explain security protocols used in various domains.
6. Discuss the role of Network security in e business.
7. Assess the mode of e payment system.
8. Categorize various e payment system.
9. Discuss SET Protocol in detail with suitable examples.
10. Describe electronic fund transfer in detail.

UNIT V: LEGAL AND PRIVACY ISSUES

Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.

5.1 LEGAL ETHICS AND PRIVACY ISSUES:

Legal, ethics, and privacy issues are distinct but interconnected aspects that play a crucial role in various domains, especially in the digital age.

5.1.1 Explanation of each:

- **Legal Issues:**
  - **Online Contracts and Agreements:** Ensuring that online contracts, terms of service, privacy policies, and end-user license agreements are legally sound and enforceable is critical. Issues may arise regarding contract formation, consent, and transparency.
  - **Intellectual Property Rights:** Protecting intellectual property (IP) is essential, whether it's copyrighted content, trademarks, or patents. E-businesses must navigate the legal landscape to prevent IP infringement and address disputes.
  - **Data Privacy and Security:** Data breaches and privacy violations can lead to legal consequences. Businesses must comply with data protection laws like the General Data Protection Regulation (GDPR) in Europe and the California Consumer Privacy Act (CCPA) in the United States.

- **Consumer Protection:** Laws governing consumer rights, deceptive advertising, and unfair business practices are crucial. E-businesses must provide accurate product information, have transparent refund and return policies, and comply with relevant regulations.
- **Payment Processing and Financial Regulations:** Handling payment card data requires compliance with the Payment Card Industry Data Security Standard (PCI DSS). Additionally, financial regulations and anti-money laundering (AML) laws apply in some cases.
- **Digital Marketing and Advertising:** Email marketing compliance, including anti-spam laws like the CAN-SPAM Act, is important. Transparency in native advertising and endorsements and adherence to advertising standards are key.
-

- **Ethical Issues:**
  - **Transparency:** Ethical e-businesses are transparent about their business practices, including pricing, product quality, and the use of customer data.
  - **Fair Competition:** Ethical e-businesses compete fairly and do not engage in anti-competitive practices, monopolies, or predatory pricing.
  - **Environmental Responsibility:** Ethical considerations may involve environmentally friendly practices, such as reducing carbon footprints and minimizing waste in the e-business supply chain.
  - **Customer Trust:** Maintaining and building customer trust is a primary ethical concern. E-businesses must deliver on promises and provide excellent customer service.
  - **Data Use and Privacy:** Ethical e-businesses respect and protect customer data, using it responsibly and ensuring customer consent for data collection and use.
  - **Social Responsibility:** E-businesses have a responsibility to be socially conscious and may engage in philanthropic efforts or support charitable causes.

- **Privacy Issues:**
  - **Data Collection and Consent**: E-businesses must be clear about the data they collect, how it's used, and obtain user consent. Privacy policies are essential for transparency.
  - **Data Security:** Protecting customer data from breaches is a significant privacy concern. Implementing security measures to safeguard data is crucial.
  - **Third-Party Sharing:** When sharing customer data with third parties, businesses must ensure this is done ethically and with proper consent.
  - **Cookies and Tracking:** Informing users about the use of cookies and tracking mechanisms and allowing them to opt out is essential for privacy compliance.
  - **Children's Privacy:** Special considerations apply to the privacy of children online. Compliance with laws like the Children's Online Privacy Protection Act (COPPA) is necessary.
  - **Cross-Border Data Transfer:** Data protection laws may require special considerations when transferring data across borders, such as utilizing standard contractual clauses or privacy shield frameworks.

5.1.2 List of some of the issues related to e-business each:

- **Legal Issues:**
  - **Intellectual property infringement:** This can include copyright infringement, trademark infringement, and patent infringement. For example, if you sell counterfeit products on your e-commerce website, you could be sued by the owner of the trademark or patent.
  - **Data protection and privacy:** E-businesses collect a lot of data about their customers, such as their names,

addresses, contact information, and payment information. This data must be protected from unauthorized access and use. E-businesses must also comply with all applicable data protection and privacy laws.

- **Product liability:** E-businesses are liable for the products they sell, just like traditional brick-and-mortar stores. If a customer is injured by a product purchased from your e-commerce website, you could be sued.
- **Shipping and returns:** E-businesses must comply with all applicable shipping laws and regulations. They must also have clear and fair returns policies in place.
- **Taxes:** E-businesses must collect and pay taxes on their sales, depending on the jurisdiction where they operate.
- **Competition law:** E-businesses must comply with all applicable competition laws. For example, they cannot engage in price fixing or anti-competitive practices.

- **Ethical issues:**
  - **Privacy and data protection:** E-businesses collect a lot of data about their customers, such as their names, addresses, contact information, and payment information. This data must be protected from unauthorized access and use. E-businesses must also be transparent about how they collect and use customer data.
  - **Security:** E-businesses must take steps to protect their customers' data from cyberattacks. This includes implementing strong security measures and regularly patching software vulnerabilities.

- **Fair business practices:** E-businesses must engage in fair and ethical business practices. This includes avoiding deceptive advertising and misleading customers. E-businesses must also treat their customers fairly and resolve any disputes promptly and fairly.
- **Environmental impact:** E-businesses have a responsibility to minimize their environmental impact. This includes reducing their use of energy and resources, and recycling and disposing of waste responsibly.
- **Labour practices:** E-businesses should ensure that their employees are treated fairly and ethically. This includes paying fair wages, providing safe working conditions, and respecting workers' rights.

- **Privacy issues:**

  - **Unauthorized access to data:** E-businesses are vulnerable to cyberattacks, which can give hackers access to customer data. This data can then be used for identity theft, fraud, or other criminal activities.
  - **Misuse of data:** E-businesses may misuse customer data for their own purposes, such as selling it to third-party advertisers or using it to develop targeted marketing campaigns without the customer's consent.
  - **Lack of transparency:** E-businesses may not be transparent about how they collect and use customer data. This can make it difficult for customers to understand and control how their data is being used.
  - **Difficulty exercising privacy rights:** E-businesses may make it difficult for customers to exercise their privacy rights, such as the right to access, correct, or delete their data.

5.1.3 Associate with business:

Legal issues

Legal issues in business are a complex and integral part of the corporate landscape. These issues encompass various aspects of business operations, transactions, and relationships, and they are governed by a broad range of laws and regulations.

Here, we'll discuss some of the prominent legal issues associated with business:

- **Business Formation and Structure:** Choosing the appropriate legal structure for a business, such as a sole proprietorship, partnership, LLC, or corporation, involves compliance with specific legal requirements and implications for liability, taxation, and governance.
- **Contracts and Agreements:** Businesses engage in contracts with customers, suppliers, employees, and partners. Legal issues may arise if parties fail to fulfil contractual obligations or if contracts are poorly drafted or ambiguous.
- **Intellectual Property (IP) Rights:** Protecting IP assets, including trademarks, copyrights, patents, and trade secrets, is essential. Legal disputes may occur over IP infringement, theft, or misuse.
- **Labor and Employment Law:** Compliance with labor laws, including minimum wage, overtime, workplace safety, and anti-discrimination laws, is critical. Issues like wrongful termination, harassment, and wage disputes can lead to legal action.
- **Taxation and Financial Compliance:** Businesses must adhere to tax laws and financial regulations. Issues may include tax evasion, improper deductions, or failure to report income accurately.

- **Antitrust and Competition Law:** Engaging in anti-competitive practices, price-fixing, monopolistic behavior, or unfair competition can result in legal action and regulatory scrutiny.
- **Consumer Protection:** Laws governing consumer rights, product safety, and truth in advertising require businesses to provide accurate information, uphold warranties, and protect consumers from harm.
- **Environmental Regulations:** Compliance with environmental laws, including emissions standards, waste disposal, and pollution control, is essential. Violations can lead to fines and legal consequences.
- **Data Privacy and Security:** Protecting customer data and complying with data protection laws (e.g., GDPR, CCPA) is crucial. Data breaches and privacy violations can result in legal liabilities.
- **Contract Disputes and Litigation:** Legal issues may lead to contract disputes and litigation, involving breach of contract claims, damages, and settlement negotiations.

Ethical issues:

Ethical issues in business encompass a wide range of concerns related to moral principles, values, and conduct within the corporate world. These issues can affect various aspects of business operations, decision-making, and stakeholder relationships.

Here, we'll discuss some of the prominent ethical issues associated with business:

- **Corporate Social Responsibility (CSR):**
  - Companies face ethical questions about their social and environmental impact. Are they contributing

positively to society, or are they solely focused on profits?

- Balancing financial interests with ethical responsibilities, such as sustainability and community engagement, is an ongoing challenge.

- **Ethical Leadership:**
  - Ethical leadership sets the tone for an organization. Leaders must exemplify honesty, integrity, and ethical decision-making.
  - Ethical lapses at the leadership level can have cascading effects on the entire organization.
- **Workplace Ethics:**
  - Issues related to employee treatment, fairness, and discrimination can arise. Workplace harassment, discrimination, and unequal pay are common ethical concerns.
  - Ensuring a diverse, inclusive, and equitable workplace is an ongoing ethical challenge.
- **Fair Business Practices:**
  - Ethical issues may emerge when companies engage in unfair competition, price-fixing, or anti-competitive behavior.
  - Ensuring fair and transparent business practices is crucial for maintaining trust in the marketplace.
- **Product Safety and Quality:**
  - Providing safe and high-quality products is an ethical obligation. Companies must avoid cutting corners or compromising safety to maximize profits.
  - Ethical dilemmas may arise when companies are aware of product defects but fail to address them promptly.

- **Environmental Responsibility:**
  - Sustainability and environmental ethics are pressing concerns. Companies must consider their carbon footprint, resource usage, and pollution levels.
  - Ethical choices may involve adopting eco-friendly practices, reducing waste, and investing in renewable energy.
- **Supplier and Vendor Relationships:**
  - Ethical issues can arise in supply chains when companies source products or materials from suppliers with unethical labor practices or environmental violations.
  - Ensuring ethical sourcing and fair treatment of suppliers is essential.
- **Consumer Protection:**
  - Ethical considerations include truthful advertising, fair pricing, and product safety. Companies should not mislead consumers or engage in deceptive practices.
  - Ethical marketing and advertising practices are crucial for maintaining consumer trust.
- **Data Privacy and Security:**
  - Companies face ethical dilemmas related to the collection, use, and protection of customer data. Ethical breaches can lead to privacy violations and data breaches.
  - Safeguarding customer data and respecting privacy rights are ethical imperatives.
- **Global Business Ethics:**
  - International business operations raise ethical challenges, including compliance with foreign laws, cultural differences, and bribery and corruption risks.

- Navigating these complexities while upholding ethical standards is vital.

Privacy issues:

Privacy issues in business pertain to the collection, use, storage, and protection of personal and sensitive information belonging to customers, employees, and other stakeholders. With the increasing digitization of business operations and the growing volume of data, privacy concerns have become a significant challenge for organizations.

Here are some of the prominent privacy issues associated with business:

- **Data Collection and Consent:**
  - Collecting and processing personal data without clear and informed consent from individuals can lead to privacy breaches.
  - Companies must ensure that individuals understand how their data will be used and for what purposes.
- **Data Security and Breaches:**
  - Inadequate data security measures can result in data breaches, where sensitive information is accessed or stolen by malicious actors.
  - Businesses must invest in robust cybersecurity practices and notify affected parties promptly in the event of a breach.
- **Customer Data Handling:**
  - Mishandling customer data can harm trust and lead to legal consequences. Privacy policies and practices must align with applicable data protection laws.
  - Companies should have clear policies on data retention, sharing, and disposal.

- **Employee Data Privacy:**
  - Monitoring employee activities and collecting personal data must be done transparently and with respect for employee privacy rights.
  - Employers should establish clear guidelines for employee data protection.
- **Third-Party Data Sharing:**
  - Sharing customer or employee data with third-party vendors or partners can raise privacy concerns. Companies must ensure third parties adhere to privacy and security standards.
  - Contracts with third parties should include provisions for data protection and compliance.
- **Cross-Border Data Transfer:**
  - Transferring personal data across borders may involve different data protection laws and requirements. Companies need to navigate these complexities, often through mechanisms like standard contractual clauses.
- **Children's Privacy:**
  - Businesses that collect data from children must comply with laws like the Children's Online Privacy Protection Act (COPPA) in the U.S. and similar regulations worldwide.
  - Consent from parents or guardians and clear privacy practices are necessary.
- **Biometric Data and Facial Recognition:**
  - The use of biometric data, including facial recognition technology, requires careful consideration of privacy concerns and compliance with laws regulating its use.

- **Location Data and Tracking:**
  - Collecting and using location data from mobile devices or IoT devices can infringe on privacy rights.
  - Businesses must inform users about data collection and allow them to opt out.
- **Artificial Intelligence (AI) and Machine Learning:**
  - The use of AI in data analysis and decision-making must be transparent and free from bias. Privacy risks may arise from algorithmic decisions.

5.1.4 Professional code of ethics in business

A professional code of ethics in e-business outlines the principles, values, and guidelines that individuals and organizations in the electronic business sector should follow to ensure ethical conduct and responsible behavior. Such a code serves as a framework for maintaining integrity, trust, and accountability in e-commerce and online business activities.

Here are some key elements often found in a professional code of ethics for e-business:

- **Transparency:** E-business professionals should strive to be transparent in their dealings with customers, partners, and stakeholders. This includes providing clear and accurate information about products, services, pricing, and terms and conditions.
- **Privacy and Data Protection:** Respect for user privacy is paramount. Professionals should protect customer data, obtain informed consent for data collection, and adhere to relevant data protection laws, such as GDPR or CCPA.
- **Honesty and Integrity:** E-business practitioners should conduct themselves with honesty and integrity, refraining from deceptive practices, false advertising, and fraudulent activities.

- **Fair Competition:** Encourage fair competition and avoid anticompetitive behavior. Professionals should not engage in practices that harm competitors or manipulate markets unfairly.
- **Customer Service:** Provide excellent customer service by addressing customer concerns promptly, fairly, and professionally. Ensure a clear process for handling complaints and disputes.
- **Security:** Take steps to protect sensitive information and maintain cybersecurity measures to prevent data breaches. This includes using encryption, secure payment processing, and regular security audits.
- **Environmental Responsibility:** Consider the environmental impact of e-business operations. Strive to reduce waste, energy consumption, and the carbon footprint associated with online activities.
- **Accessibility:** Ensure that digital products and services are accessible to all individuals, including those with disabilities, in compliance with accessibility standards.
- **Compliance with Laws and Regulations:** E-business professionals must comply with all applicable laws, regulations, and industry standards, including tax laws, consumer protection laws, and e-commerce regulations.
- **Ethical Advertising and Marketing:** Adhere to ethical advertising practices, avoiding false claims, clickbait, and misleading marketing tactics. Use accurate, clear, and honest messaging.

5.1.5 Way to develop a code of ethics:

To develop a code of ethics in detail, you can follow these steps:

- **Identify your core values.** What are the most important principles that guide your decision-making and behavior?

Some common core values include honesty, integrity, respect, responsibility, and fairness.

- **Brainstorm ethical principles.** For each core value, brainstorm a list of ethical principles that you want to uphold. For example, if honesty is one of your core values, you might brainstorm ethical principles such as:
  - Be truthful in all communications.
  - Avoid conflicts of interest.
  - Disclose all relevant information.
  - Keep promises and commitments.
  - Be fair and objective in decision-making.
- **Write your code of ethics.** Once you have a list of ethical principles, write a code of ethics that incorporates those principles. Your code of ethics should be clear, concise, and easy to understand. It should also be specific enough to provide guidance in specific situations, but flexible enough to adapt to changing circumstances.
- **Share your code of ethics with employees and stakeholders.** Once you have written your code of ethics, share it with your employees and stakeholders. This will help to ensure that everyone is aware of your ethical standards and expectations.
- **Train employees on the code of ethics**. Provide training to your employees on the code of ethics. This will help them to understand the code and how to apply it in their work.
- **Enforce the code of ethics.** It is important to enforce your code of ethics. This means taking disciplinary action against employees who violate the code.
- **Review and update the code of ethics regularly.** The world is constantly changing, so your code of ethics should too. Review and update your code of ethics regularly to ensure that it is still up-to-date and effective.

5.2 PROTECTION NEEDS AND METHODOLOGY:

In e-business, protection needs and methodologies are critical for ensuring the security of digital assets, customer data, and online transactions. E-businesses face unique challenges due to their reliance on the internet and the digital landscape.

5.2.1 Overview of the protection needs and methodology specific to e-business:

- **Protection Needs in E-Business:**
  - **Data Confidentiality:** Protecting sensitive customer information, financial data, and business secrets from unauthorized access or disclosure.
  - **Data Integrity:** Ensuring that data remains accurate and unaltered during transmission and storage, preventing unauthorized changes or corruption.
  - **Availability:** Ensuring that e-business websites, applications, and services are available to customers and users without disruptions, even during high traffic or cyberattacks.
  - **User Authentication:** Verifying the identity of users to prevent unauthorized access to accounts and sensitive information.
  - **Transaction Authorization:** Controlling and authorizing transactions to prevent fraudulent activities and ensuring that legitimate transactions are processed securely.
  - **Payment Security:** Protecting financial transactions, including credit card payments, from fraud and securing payment gateways.
  - **Data Protection:** Encrypting sensitive data, such as payment card information and customer profiles, to protect it from theft or interception.
  - **Vulnerability Management:** Identifying and addressing vulnerabilities in e-business systems,

applications, and databases to prevent exploitation by attackers.

- **Malware Défense:** Implementing security measures to detect and remove malware, such as viruses and ransomware.
- **Intrusion Detection and Prevention:** Monitoring network and system activity to detect and respond to unauthorized access or malicious activity in real-time.
- **Incident Response:** Developing incident response plans to address security incidents effectively, minimizing damage, and ensuring a swift recovery.

- **Protection Methodology for E-Business:**
  - **Risk Assessment:** Conduct a thorough risk assessment to identify potential threats and vulnerabilities specific to e-business operations, including those related to the internet and digital assets.
  - **Security Policies and Procedures:** Develop and document security policies and procedures that guide security practices, access control, and data protection.
  - **Access Control:** Implement strong access controls, including multi-factor authentication (MFA) and role-based access control (RBAC) to protect user accounts and sensitive systems.
  - **Encryption:** Encrypt sensitive data at rest and in transit to prevent eavesdropping and data breaches.
  - **Security Awareness Training:** Train employees and users in e-business security best practices, including recognizing phishing attempts and adhering to security policies.
  - **Security Technology Implementation:** Deploy security technologies such as firewalls, intrusion detection/prevention systems, antivirus software, and

security information and event management (SIEM) tools.

- **Continuous Monitoring:** Continuously monitor network and system activity for suspicious behavior, and regularly review logs and alerts.
- **Incident Response Planning:** Develop an incident response plan with predefined procedures for addressing security incidents, including data breaches.
- **Backup and Disaster Recovery:** Establish data backup and disaster recovery plans to ensure business continuity and data availability in the event of disruptions.
- **Compliance and Regulations:** Ensure compliance with industry-specific regulations and e-commerce laws, including data protection and privacy regulations.
- **Regular Updates and Patch Management:** Keep e-business systems and software up to date with security patches to address vulnerabilities.

5.3 CONSUMER PROTECTION:

Consumer protection in legal and privacy issues revolves around safeguarding the rights, interests, and privacy of individuals as they engage in commercial transactions and interact with businesses.

5.3.1 Explanation of consumer protection in these two contexts:

Legal Consumer Protection:

Objective: To ensure that consumers are treated fairly in the marketplace and have legal recourse if they encounter deceptive or unfair practices by businesses.

Key Aspects:

- **Consumer Rights:** Legal frameworks grant consumers rights, such as the right to accurate information, the right to safe products, and the right to a fair grievance process.
- **Regulatory Agencies:** Many countries have government agencies responsible for enforcing consumer protection laws and regulations, such as the Federal Trade Commission (FTC) in the United States.
- **Laws and Regulations:** Consumer protection laws are enacted to address issues like false advertising, product safety, and unfair business practices. Violations can result in fines and legal actions.

Privacy Consumer Protection:

Objective: To ensure that individuals have control over their personal information and are protected from unauthorized data collection and misuse by organizations.

5.3.2 Key aspects of consumer protection:

- **Data Protection Laws:** Privacy laws like GDPR in Europe and CCPA in California empower consumers by giving them control over their personal data. These laws require businesses to be transparent about data practices and provide mechanisms for individuals to opt out.
- **Consent:** Consumers have the right to provide informed consent for the collection and processing of their data. They should be able to opt in or opt out of data collection

and receive clear information about how their data will be used.

- **Data Breach Notification:** Many privacy laws require organizations to notify consumers in the event of a data breach, allowing them to take steps to protect themselves.
- **Right to Access and Delete Data:** Consumers often have the right to request access to their personal data held by organizations and to request the deletion of that data.

5.3.3 Role of consumer protection in e business:

Consumer protection plays a crucial role in e-business to ensure that consumers can engage in online transactions and interactions with confidence and trust. It encompasses a range of measures and regulations aimed at safeguarding consumers' rights, privacy, and financial well-being in the digital marketplace.

An analysis of the role of consumer protection in e-business:

- **Fraud Prevention:** Consumer protection measures help prevent fraud and deceptive practices that can harm online shoppers. This includes fake websites, phishing scams, and fraudulent e-commerce businesses.
- **Data Privacy:** E-businesses collect a vast amount of customer data. Consumer protection regulations, such as the General Data Protection Regulation (GDPR) in Europe and the California Consumer Privacy Act (CCPA) in the U.S., ensure that businesses handle personal data responsibly and transparently.
- **Transparent Pricing and Terms:** Consumer protection laws require e-businesses to provide clear and accurate pricing information, including taxes and fees, as well as transparent terms and conditions. This helps prevent hidden charges and misleading offers.
- **Product Safety:** In e-business, consumers often purchase products without physical inspection. Consumer protection

laws ensure that products sold online meet safety standards and are accurately represented.

- **Refund and Return Policies:** Consumer protection laws often require e-businesses to have clear refund and return policies, ensuring consumers can return defective or unsatisfactory products.
- **Consumer Education:** Consumer protection agencies and organizations often provide educational resources to help consumers make informed decisions in the digital marketplace.
- **Age Verification and Child Protection:** E-businesses must implement age verification measures to prevent the sale of age-restricted products to minors, such as alcohol, tobacco, or adult content.
- **Payment Security:** E-businesses must adhere to security standards like the Payment Card Industry Data Security Standard (PCI DSS) to protect customer payment card data during online transactions.
- **Product Reviews and Ratings:** Regulations may require e-commerce platforms to monitor and address fake or misleading product reviews and ratings, enhancing consumer trust.
- **Cross-Border Consumer Protection:** International e-commerce transactions often involve cross-border purchases. Consumer protection efforts aim to address the unique challenges and disputes that can arise in such cases.

5.4 CYBER LAWS:

Cyber law, also known as cybersecurity law or internet law, is a legal field that governs activities and issues related to the internet, digital technologies, and cyberspace. It encompasses a wide range of legal matters in the digital realm.

5.4.1 Key Areas of Cyber Law:

- **Cybersecurity:** Cybersecurity laws focus on protecting computer systems, networks, and data from unauthorized access, breaches, and cyberattacks. This includes laws related to data breaches, hacking, and the use of encryption.
- **Privacy:** Privacy laws govern the collection, storage, and use of personal information online. They often include regulations on obtaining user consent, data protection, and the handling of sensitive information.
- **Intellectual Property:** Cyber law addresses issues related to copyright infringement, trademark violations, and intellectual property theft in the digital space. It also covers issues like domain name disputes.
- **E-commerce and Consumer Protection:** Laws related to e-commerce govern online transactions, digital contracts, and consumer protection. They address issues such as

online fraud, digital signatures, and electronic payment methods.

- **Cybercrime:** Cyber law deals with various forms of cybercrime, including online fraud, identity theft, cyberbullying, and cyberterrorism. It also addresses legal procedures for investigating and prosecuting cybercriminals.
- **Regulation of Online Content:** Laws related to online content often involve issues of free speech, hate speech, defamation, and the responsibility of online platforms for content hosted on their sites.

5.4.2 Cyber Law in E-Business:

In the context of e-business, cyber law plays a vital role in ensuring the legality, security, and trustworthiness of online transactions and activities.

Specific ways cyber law applies to e-business:

- **E-commerce Regulations:** Cyber law governs online contracts, electronic signatures, and the rights and responsibilities of parties engaged in e-commerce transactions. It ensures that online transactions are legally enforceable.
- **Data Protection:** E-businesses must comply with data protection laws (e.g., GDPR) to safeguard customer data. They must inform customers about data collection practices and obtain consent where required.
- **Cybersecurity Compliance:** E-businesses are subject to cybersecurity laws and regulations that require them to implement security measures to protect customer data and sensitive information.
- **Intellectual Property:** E-businesses must respect intellectual property rights when using trademarks, copyrights, and patents in their online activities. Cyber law

addresses issues like domain name disputes and online piracy.

- **Online Advertising:** Cyber law covers online advertising practices, including regulations against deceptive advertising and spam.

5.4.3 Various cyber laws related to e business:

- **Data Privacy and Protection Laws:**
  - General Data Protection Regulation (GDPR): Applies to businesses operating within the European Union (EU) and governs the processing of personal data.
  - California Consumer Privacy Act (CCPA): Protects the privacy rights of California residents and gives them control over their personal information.
  - Health Insurance Portability and Accountability Act (HIPAA): Regulates the use and disclosure of personal health information in the United States.
- **Cybersecurity Laws:**
  - Cybersecurity laws and regulations: Encompass a variety of rules and standards that require businesses to secure their digital infrastructure and data.
  - Cybersecurity Information Sharing Act (CISA): Encourages the sharing of cybersecurity information between private companies and the U.S. government.
- **Electronic Signatures and Records Laws:**
  - Electronic Signatures in Global and National Commerce Act (ESIGN): Provides legal recognition of electronic signatures and records in the United States.
  - eIDAS Regulation: Governs electronic identification and trust services for electronic transactions within the EU.

- **E-Commerce and Contract Laws:**
  - Uniform Electronic Transactions Act (UETA): Provides legal framework for electronic contracts and signatures in the U.S. at the state level.
  - Electronic Commerce Directive: Establishes legal principles for e-commerce activities within the EU.
- **Cybercrime Laws:**
  - Computer Fraud and Abuse Act (CFAA): Criminalizes various cybercrimes in the United States, such as hacking and unauthorized access.
  - Convention on Cybercrime (Budapest Convention): An international treaty aimed at harmonizing cybercrime laws and fostering cooperation among countries.
- **Intellectual Property Laws:**
  - Digital Millennium Copyright Act (DMCA): Addresses copyright issues related to the internet, including safe harbors for internet service providers.
  - TRIPS Agreement: Part of the World Trade Organization (WTO) framework, it covers intellectual property rights in the context of international trade.
- **Online Consumer Protection Laws:**
  - Consumer Protection Laws: Address issues like deceptive advertising, unfair business practices, and online scams to protect consumers in e-commerce transactions.
  - Unfair, Deceptive, or Abusive Acts or Practices (UDAAP): Focuses on preventing unfair or deceptive practices by financial institutions in the United States.

- **Child Online Protection Laws:**
  - Children's Online Privacy Protection Act (COPPA): Regulates the online collection of personal information from children under 13 in the U.S.
  - General Data Protection Regulation (GDPR) and ePrivacy Directive: Contains provisions for the protection of children's data within the EU.
- **Cross-Border Data Transfer Laws:**
  - Laws and regulations that address cross-border data transfers and establish mechanisms for ensuring data protection when data is transferred to countries with differing privacy standards.

5.5 CYBERSECURITY:

Cybersecurity is the practice of protecting computer systems, networks, data, and digital assets from various threats, vulnerabilities, and attacks. It is a critical component of modern information technology and plays a pivotal role in safeguarding the confidentiality, integrity, and availability of digital information.

5.5.1 Key Objectives of Cybersecurity:

- **Confidentiality:** Protecting data from unauthorized access or disclosure.
- **Integrity:** Ensuring data remains accurate and unaltered by unauthorized parties.

- **Availability:** Ensuring that systems and data are accessible and operational when needed.
- **Authenticity:** Verifying the identity of users and entities to prevent unauthorized access.
- **Non-Repudiation:** Ensuring that actions and transactions cannot be denied by the parties involved.

5.5.2 Cybersecurity Threats:

- **Malware:** Software designed to harm, steal, or disrupt systems, including viruses, worms, Trojans, and ransomware.
- **Phishing:** Deceptive tactics to trick users into revealing sensitive information or clicking on malicious links.
- **Cyberattacks:** Deliberate efforts to compromise systems or networks, including distributed denial of service (DDoS) attacks and man-in-the-middle (MitM) attacks.
- **Insider Threats:** Threats from within an organization, such as employees or contractors with malicious intent or inadvertent actions.
- **Social Engineering:** Manipulating individuals into revealing confidential information through psychological tactics.
- **Zero-Day Vulnerabilities:** Exploiting undiscovered software vulnerabilities.
- Advanced Persistent Threats (APTs): Long-term, targeted attacks by well-funded and organized adversaries.

5.5.3 Cybersecurity Measures:

- **Firewalls:** Network security devices that filter incoming and outgoing traffic to block unauthorized access.
- **Antivirus and Antimalware Software:** Programs that detect and remove malicious software.

- **Intrusion Detection and Prevention Systems (IDPS):** Monitor network traffic for suspicious activity and act to prevent attacks.
- **Encryption:** Protects data by converting it into a code that can only be deciphered with the correct decryption key.
- **Access Control:** Ensures that only authorized individuals have access to systems and data.
- **Patch Management:** Regularly updating software and systems to fix known vulnerabilities.
- **Security Awareness Training:** Educating employees and users about cybersecurity best practices.
- **Incident Response Plan:** A documented strategy for responding to and mitigating cybersecurity incidents.
- **Backup and Disaster Recovery**: Creating copies of data and systems to restore operations in case of data loss or disruption.

5.5.4 Cybersecurity Frameworks and Standards:

- **NIST Cybersecurity Framework:** Developed by the National Institute of Standards and Technology, this framework provides guidelines for managing and reducing cybersecurity risk.
- **ISO/IEC 27001:** An international standard for information security management systems (ISMS) that helps organizations establish, implement, maintain, and continually improve cybersecurity practices.
- **CIS Controls:** A set of prioritized actions that provide specific and actionable ways to mitigate prevalent cybersecurity threats.

5.5.5 Legal and Regulatory Aspects:

- Various countries have enacted cybersecurity laws and regulations that require organizations to protect sensitive data and report data breaches.

- The European Union's General Data Protection Regulation (GDPR) imposes strict data protection requirements and penalties for non-compliance.
- Industry-specific regulations, such as the Health Insurance Portability and Accountability Act (HIPAA) in healthcare and the Payment Card Industry Data Security Standard (PCI DSS) in payment card processing, also impose cybersecurity requirements.

5.6 CONTRACTS AND WARRANTIES:

5.6.1 Contract:

A contract is a legally binding and enforceable agreement between parties that is established, executed, or performed electronically. Just like traditional contracts, e-business contracts outline the terms and conditions of an agreement between two or more parties involved in an online transaction or electronic interaction. These contracts govern various aspects of e-commerce, including the sale of goods or services, licensing agreements, terms of use for websites or mobile apps, and more.

5.6.2 Warranties:

Warranties refer to assurances or guarantees made by a seller or service provider to the buyer or user regarding the quality, performance, characteristics, or fitness for a particular purpose of a product or service being offered online. These warranties are a

crucial aspect of online transactions and help build trust between businesses and consumers.

Contracts and warranties are fundamental aspects of e-business transactions that establish legal rights and obligations between parties engaged in online commerce. Here's a discussion of contracts and warranties in e-business:

5.6.3 Contracts in E-Business:

- **Formation of E-Business Contracts:**
  - E-business contracts, like traditional contracts, require the elements of offer, acceptance, consideration, legality of purpose, legal capacity, and mutual assent.
  - Online contracts are typically formed through actions such as clicking "I agree," "Accept," or "Submit" buttons, which indicate the user's acceptance of the contract's terms.
- **Types of E-Business Contracts:**

- Sale of Goods and Services: E-businesses use contracts to sell products, services, subscriptions, and digital goods online.
- Terms of Use and Privacy Policies: Websites often include contracts governing user interactions, outlining terms of use, privacy practices, and data handling.
- Licensing Agreements: Software and digital content are often subject to licensing contracts that specify usage rights and restrictions.
- Employment and Freelance Contracts: E-businesses may engage employees or freelancers through online employment contracts.
- Service Level Agreements (SLAs): E-businesses offering cloud services or hosting may enter into SLAs with customers, defining service quality and availability.

- **Electronic Signatures:** E-businesses often use electronic signatures to indicate agreement to contract terms. Electronic signatures can be legally binding if they meet the criteria specified in electronic signature laws.
- **International Considerations:** Cross-border e-business transactions may involve varying contract laws, requiring businesses to consider jurisdictional issues and international contract harmonization.
- **Enforceability:** E-business contracts are generally enforceable, but specific contract enforcement can vary based on jurisdiction, contract type, and compliance with consumer protection laws.

5.6.4 Warranties in E-Business:

- **Express Warranties:** E-businesses may provide express warranties, explicitly stating promises about product

quality or performance. These can be conveyed through product descriptions, advertising, or written statements.

- **Implied Warranties:** Implied warranties, such as the implied warranty of merchantability and fitness for a particular purpose, are often applied by default to e-business transactions, ensuring that products or services meet basic quality standards.
- **Limited and Full Warranties:** E-businesses may offer limited warranties that outline the terms and conditions of warranty coverage, including duration and limitations. Full warranties provide comprehensive coverage with clearly defined terms.
- **Disclaimers:** Some e-businesses include disclaimers to limit or exclude warranties, especially implied warranties. Disclaimers should comply with applicable consumer protection laws and regulations.
- **Warranty Documentation:** E-businesses typically provide warranty documentation, often available online, that details the terms of the warranty, procedures for making warranty claims, and contact information for customer support.
- **Consumer Protection:** Consumer protection laws, both offline and online, often require e-businesses to honor warranties and provide adequate support for warranty claims.

5.7 TAXATION AND ENCRYPTION POLICIES:

5.7.1 Taxation policies in E-Business:

Taxation policies in e-business refer to the rules, regulations, and laws that govern the collection of taxes on electronic transactions, online sales, and digital commerce. These policies can vary

widely from one country or jurisdiction to another and may affect both businesses and consumers involved in e-commerce.

5.7.2 Key aspects of taxation policies in e-business:

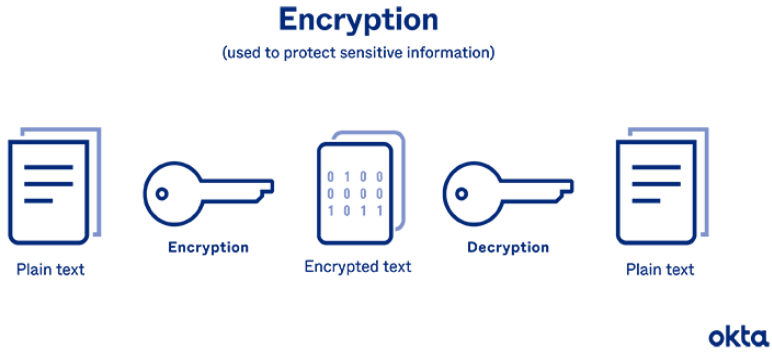
- **Sales Tax and Value Added Tax (VAT):** Many countries impose sales tax or VAT on the sale of goods and services. In e-business, determining the appropriate tax rate and complying with tax collection and remittance requirements can be complex, especially when dealing with cross-border transactions.
- **Digital Goods and Services Taxation:** Tax policies often distinguish between physical goods and digital goods or services. Digital goods, such as software downloads or e-books, may be subject to different tax rules.
- **Cross-Border Transactions:** E-businesses that operate internationally must navigate the complexities of cross-

border taxation, including determining which country's tax laws apply and complying with local tax regulations.

- **Taxation of Online Marketplaces:** Online marketplaces, like Amazon or eBay, may have specific tax obligations, which can include collecting and remitting taxes on behalf of third-party sellers.
- **Digital Services Taxes (DST):** Some countries have introduced DSTs targeting revenues generated by digital companies. These taxes are designed to address the challenges of taxing multinational digital corporations.
- **Tax Compliance and Reporting:** E-businesses must keep accurate records of their transactions and comply with reporting requirements, which may include filing periodic tax returns and providing tax information to customers.

5.7.3 Encryption Policies in E-Business:

Encryption policies in e-business pertain to the use of encryption technologies to protect the confidentiality and security of digital data during online transactions, communications, and data storage. Encryption policies aim to ensure that sensitive information remains secure from unauthorized access and eavesdropping.



5.7.4 Key aspects of encryption policies in e-business:

- **Data Encryption Standards:** Encryption policies typically specify the standards and algorithms to be used for encrypting data, such as Advanced Encryption Standard (AES) or Transport Layer Security (TLS).
- **Data in Transit Encryption:** E-businesses often use encryption protocols like HTTPS to secure data transmission over the internet. This ensures that data exchanged between users and websites is encrypted and protected from interception.
- **Data at Rest Encryption:** Policies may require the encryption of data stored on servers, databases, and cloud storage to prevent unauthorized access in case of a data breach.
- **Encryption Key Management:** Policies may include guidelines for securely managing encryption keys, including key generation, storage, rotation, and access control.
- **Compliance with Data Protection Laws:** Many data protection and privacy regulations, such as GDPR, require organizations to implement encryption as a security measure to protect personal and sensitive data.
- **Access Control and Authentication:** Encryption policies may specify how access to encrypted data is controlled and authenticated, ensuring that only authorized individuals can decrypt and access it.
- **Security Auditing and Monitoring:** Policies may mandate regular security audits and monitoring to ensure that encryption practices are effective and in compliance with security standards.

- **Incident Response Plans:** E-businesses should have plans in place for responding to security incidents involving encrypted data, including breach notification and recovery procedures.
- **Third-Party Encryption Services:** Some e-businesses may rely on third-party encryption services or providers. Policies should define the requirements and responsibilities associated with these arrangements.

5.7.5 Various e-commerce application:

E-commerce applications encompass a wide range of software and platforms that facilitate online transactions, electronic buying and selling, and the exchange of goods and services over the internet. These applications cater to various aspects of e-commerce, from online storefronts to payment processing and inventory management.

Here's an elaboration on the various e-commerce applications:

- **Online Storefronts and Shopping Carts:** These are the core applications that enable businesses to create and manage their online presence, display products or services, and allow customers to browse, select, and add items to their cart for purchase.
- **Payment Processing Solutions:** Payment gateways and processors facilitate secure online transactions by handling payment information, authorizing payments, and ensuring the funds are transferred from customers to businesses. Examples include PayPal, Stripe, and Square.
- **Inventory Management Systems:** Inventory management applications help businesses track and manage their product stock levels, automate reordering processes, and ensure that items are available for online customers.
- **Content Management Systems (CMS):** CMS platforms like WordPress, Shopify, and Magento allow businesses to create, edit, and organize digital content, including product

listings, images, and descriptions on their e-commerce websites.

- **Order and Shipping Management:** These applications assist businesses in processing and tracking customer orders, managing shipping logistics, and providing order status updates to customers.
- **Digital Marketing Tools:** E-commerce relies heavily on digital marketing applications for search engine optimization (SEO), email marketing, social media marketing, pay-per-click (PPC) advertising, and affiliate marketing to attract and retain customers.
- **Marketplace Platforms:** Marketplaces like Amazon, eBay, and Alibaba serve as e-commerce platforms where businesses can list and sell their products alongside other sellers.
- **Subscription E-commerce Platforms: S**ubscription e-commerce applications support businesses that offer subscription-based services or products, including subscription box services, streaming platforms, and digital content providers.
- **Augmented Reality (AR) and Virtual Reality (VR) E-commerce:** These emerging applications enable customers to experience products in a virtual environment before making a purchase decision. Examples include AR try-on for fashion items and VR showrooms for real estate.
- **Blockchain-Based E-commerce:** Blockchain technology is used to enhance transparency and security in e-commerce transactions, particularly in supply chain management and digital asset ownership.

5.8 Important Questions:

5 marks:

1. Explain cyber laws.
2. Define contract.

3. Define warranties.
4. Discuss taxation policies.
5. Discuss the encryption policies.
6. Explain Protection needs and methodology.
7. Discuss cyber security in detail.
8. List out the legal issues related to e business.
9. List out the ethical issues related to e business.
10. List out the privacy issues related to e business.
11. Discuss the legal issues in e-business.
12. Discuss the ethical issues in e-business.
13. Discuss the privacy issues in e-business.
14. What is a professional code of ethics?
15. How to develop a code of ethics.

10 marks:

1. Describe the legal and ethical issues in detail
2. Discuss the ethical issues associate with business.
3. Explain the professional code of ethics in business.
4. Elaborate the way to develop a code of ethics.
5. Analyze the role of consumer protection in e business.
6. Categorize the various cyber laws related to e business.
7. Discuss contracts and warranties in e business.
8. Explain taxation and encryption policies in e business.
9. Discuss the Protection needs and methodology in e business.
10. Elaborate the various e commerce application.

CASE STUDY

CASE 1:

A small business owner, let's call him John, is looking to expand his business online. He currently has a brick-and-mortar store, but he wants to reach a wider audience by selling his products online. John is not sure where to start, so he decides to do some research on e-business.

John learns that there are a number of things he needs to do in order to start an e-business. He needs to create a website, set up a payment processor, and find a shipping company. He also needs to develop a marketing plan to reach potential customers.

John decides to hire a web developer to create his website. He also chooses a payment processor that is accepted by his target market. John then finds a shipping company that offers competitive rates and reliable service.

Once John has taken care of the technical aspects of his e-business, he turns his attention to marketing. He creates a website and social media presence, and he starts running ads on Google and Facebook. John also attends trade shows and networking events to meet potential customers.

John's e-business starts to grow slowly but steadily. He is able to reach a wider audience and sell more products online. He is also able to save money on overhead costs by not having a brick-and-mortar store.

Questions:

1. What are the benefits of e-business for small businesses?
2. What are the challenges of e-business for small businesses?
3. What are some tips for small businesses that are considering starting an e-business?

Answer:

1. **Benefits of e-business for small businesses:**
   - **Expanded Market Reach:** E-business allows small businesses like John's to reach a broader audience, potentially on a global scale, increasing the customer base.
   - **Cost Savings:** Operating online can reduce overhead costs associated with maintaining a physical store, such as rent, utilities, and in-store staff.
   - **24/7 Availability:** E-businesses can serve customers around the clock, providing convenience and flexibility for both the business and its clients.
   - **Data Analytics:** Online platforms provide valuable data and insights about customer behavior, allowing for informed decision-making and targeted marketing.
   - **Scalability:** Small businesses can easily scale their operations to meet increasing demand without significant physical infrastructure changes.
2. **Challenges of e-business for small businesses:**
   - **Initial Investment:** Setting up an e-business requires an initial investment in website development, payment processing, and marketing.
   - **Competition:** The online marketplace is highly competitive, making it challenging for small businesses to stand out among larger competitors.
   - **Cybersecurity:** E-businesses must address cybersecurity concerns to protect customer data and business information from cyber threats.
   - **Technical Expertise:** Operating online may require technical skills or hiring professionals, like web developers and digital marketers.

- **Customer Trust:** Building trust with online customers can be more difficult for small businesses without a well-established reputation.

3. **Tips for small businesses starting an e-business:**
   - **Comprehensive Business Plan:** Develop a solid e-business plan that outlines your goals, target audience, budget, and marketing strategy.
   - **User-Friendly Website:** Invest in a user-friendly and mobile-responsive website that offers a smooth shopping experience.
   - **Secure Payment Processing:** Ensure a secure payment processing system to build trust with customers.
   - **Effective Marketing:** Utilize a mix of digital marketing strategies, including social media, email marketing, and paid advertising, to reach your target audience.
   - **Data Analysis:** Regularly analyze customer data to make data-driven decisions and adjust your strategy as needed.
   - **Customer Support:** Provide excellent customer support to address inquiries and issues promptly, enhancing customer satisfaction.
   - **Cybersecurity Measures:** Implement robust cybersecurity measures to protect customer data and your business from online threats.
   - **Continuous Learning:** Stay updated on e-commerce trends and technologies to adapt to changing market conditions.
   - **Networking:** Attend trade shows and network with potential customers and other businesses to expand your reach.
   - **Patience and Persistence:** E-business success may take time, so be patient and persistent in your efforts to grow your online presence.

CASE 2:

You are the CEO of a small business that sells handmade furniture. You have been selling your furniture through your website and at local craft fairs for a few years, but you want to expand your reach and sell more furniture. You decide to start using e-commerce technologies to improve your business.

Questions:

1. What are some e-commerce technologies that you can use to improve your business?
2. How can these technologies help you to improve your business?
3. What are the challenges of using e-commerce technologies?
4. What are some tips for using e-commerce technologies effectively?

Answer:

1. **E-commerce technologies to improve your handmade furniture business:**
    - **E-commerce Website:** Develop a user-friendly and mobile-responsive website where customers can browse and purchase your furniture online.
    - **Payment Processors:** Integrate secure payment gateways to accept online payments, providing customers with convenient checkout options.
    - **Customer Relationship Management (CRM) Software:** Use CRM tools to manage customer interactions, track leads, and nurture relationships with your clientele.
    - **Inventory Management System:** Implement an inventory management system to keep track of stock levels, restocking needs, and to prevent overstocking or understocking.

- **E-commerce Platforms:** Consider using popular e-commerce platforms like Shopify, WooCommerce, or BigCommerce to simplify website management.
- **Digital Marketing Tools:** Utilize digital marketing technologies, including email marketing software and social media management tools, to promote your furniture business online.
- **Analytics and Reporting Tools:** Implement tools like Google Analytics to track website performance and customer behavior, allowing you to make data-driven decisions.
- **Shipping and Logistics Software:** Use shipping and logistics software to streamline order fulfillment, track shipments, and offer various shipping options to customers.

2. **Benefits of using e-commerce technologies:**
   - **Expanded Market Reach:** E-commerce technologies enable you to reach a broader audience, potentially on a global scale.
   - **Improved Customer Experience:** A user-friendly website and convenient payment options enhance the customer's shopping experience.
   - **Increased Efficiency:** Technologies like inventory management systems and automated order processing can streamline operations.
   - **Data-Driven Decisions:** Analytics tools provide insights into customer behavior, helping you tailor your offerings and marketing strategies.
3. **Challenges of using e-commerce technologies:**

Initial Investment: Implementing e-commerce technologies may require an initial financial investment for development and tools.

Technical Expertise: You may need technical skills or professional assistance to set up and maintain these technologies effectively.

Cybersecurity: Protecting customer data and maintaining secure transactions is crucial and can be a challenge.

Competition: The e-commerce market is competitive, making it important to stand out among other sellers.

4. Tips for using e-commerce technologies effectively:

Invest Wisely: Prioritize investments based on your business needs and potential return on investment.

User-Friendly Design: Ensure your website is easy to navigate and responsive on various devices.

Cybersecurity: Implement robust security measures to protect customer data and maintain trust.

Customer Support: Provide excellent customer support to address inquiries and issues promptly.

Data Analysis: Regularly analyze customer data to adjust your strategy and offerings.

Marketing Strategy: Create a well-thought-out digital marketing strategy to attract and retain customers.

Keep Learning: Stay updated on e-commerce trends and technologies to remain competitive

Test and Iterate: Continuously test and refine your online presence to improve the customer experience and sales.

CASE 3:

Streamlining Supply Chain with E-Business Application

Background:

"Global Electronics," a multinational electronics manufacturer, faced challenges in managing its complex supply chain. The company produced a wide range of products, sourced components from various suppliers worldwide, and had multiple distribution centers. To improve efficiency and reduce costs, they decided to implement an E-Business application to streamline their supply chain processes.

Scenario:

Global Electronics developed an E-Business application called "SupplyNet." This application aimed to connect suppliers, manufacturers, and distributors in a centralized platform, enabling real-time communication, order processing, inventory management, and demand forecasting.

Implementation Steps:

1. Supplier Integration:

Global Electronics onboarded its suppliers onto the SupplyNet platform. Each supplier had access to their dedicated portal, where they could upload product information, update inventory levels, and receive orders from Global Electronics.

2. Order Processing and Tracking:

The application facilitated automated order processing, reducing manual intervention and human errors. Both suppliers and distributors could track orders in real-time, enhancing transparency and reducing delays.

3. Inventory Management:

SupplyNet provided a centralized view of inventory levels across all suppliers and distribution centers. This visibility enabled efficient inventory management, reducing overstocking or stockouts.

4. Demand Forecasting:

By analyzing historical data and current trends, the application generated demand forecasts, helping suppliers prepare for production and adjust inventory levels accordingly.

5. Communication and Collaboration:

The platform offered messaging and collaboration tools for seamless communication between all parties. This reduced miscommunication and improved decision-making.

Questions

1. Why did Global Electronics decide to implement the Supply Net E-Business application?
2. How does the Supply Net application benefit the supplier-distributor relationship?
3. How does the application help with inventory management?
4. What role does demand forecasting play in the supply chain?
5. What are the potential challenges in implementing and maintaining the Supply Net application?
6. How does the Supply Net application contribute to overall supply chain efficiency?

Answer:

- Global Electronics decided to implement the SupplyNet E-Business application to address challenges in managing its complex supply chain. The application aimed to streamline supply chain processes, improve efficiency, reduce costs, and enhance transparency by connecting suppliers, manufacturers, and distributors in a centralized platform.

- The SupplyNet application benefits the supplier-distributor relationship by providing a centralized platform for real-time communication, order processing, and inventory management. It reduces manual intervention and errors, enhances transparency, and fosters collaboration, ultimately leading to smoother and more efficient interactions between suppliers and distributors.
- Demand forecasting in the supply chain is essential as it uses historical data and current trends to predict future demand for products. The application's demand forecasting feature helps suppliers prepare for production and adjust inventory levels accordingly, ensuring that they can meet customer demand without overstocking or understocking.
- Potential challenges in implementing and maintaining the SupplyNet application may include:
  - Resistance to Change: Employees and partners may be resistant to adopting new technology and processes.
  - Data Integration: Ensuring seamless data integration between various suppliers, manufacturers, and distributors can be complex.
  - Security and Privacy: Protecting sensitive supply chain data and ensuring cybersecurity can be a challenge.
  - Training and Adoption: Proper training and user adoption are crucial for the successful implementation and maintenance of the application.
  - Technical Issues: Dealing with technical glitches, downtime, or system issues can disrupt operations.
- The SupplyNet application contributes to overall supply chain efficiency by:

- Reducing Manual Processes: It automates order processing, reducing human errors and manual intervention.
- Enhancing Transparency: Real-time tracking and communication tools increase transparency and reduce delays.
- Optimal Inventory Management: By providing a centralized view of inventory, it helps in maintaining optimal inventory levels
- Better Decision-Making: Through demand forecasting and data analysis, it supports data-driven decision-making.
- Improved Communication: Seamless communication and collaboration tools reduce miscommunication and facilitate faster decision-making.

CASE 4:

MegaMart is a large retailer with a physical presence in over 500 stores across the United States. The company is considering expanding its business to the online market.

Questions

I. What are the key considerations for MegaMart as it develops its e business framework?

2. What are the competitive advantages that MegaMart can bring to the online market?

Answer:

1. **Key considerations for MegaMart as it develops its e-business framework:**
   - **E-commerce Platform Selection:** Choose a robust and scalable e-commerce platform to build and manage the online store.

- **Website Design and User Experience:** Create a user-friendly and visually appealing website to attract and retain online customers.
- **Inventory Management:** Implement effective inventory and order management systems to prevent overstocking or stockouts.
- **Logistics and Shipping:** Develop efficient shipping and delivery processes to meet customer expectations for fast and reliable delivery.
- **Payment Processing:** Integrate secure and convenient payment gateways for seamless online transactions.
- **Data Security:** Ensure robust cybersecurity measures to protect customer data and maintain trust.
- **Marketing and Promotion:** Develop a digital marketing strategy to attract and retain online customers.
- **Customer Support:** Provide excellent online customer support through multiple channels.
- **Mobile-Friendly:** Ensure the website is mobile-responsive to cater to customers using smartphones and tablets.
- **Data Analytics:** Implement tools for data analysis to gain insights into customer behavior and preferences.
- **Legal and Compliance:** Comply with e-commerce laws and regulations, including data privacy and consumer protection.

2. **Competitive advantages that MegaMart can bring to the online market:**
    - **Extensive Physical Presence:**MegaMart's established network of over 500 physical stores can serve as pick-up points, distribution centers, or return locations, offering convenience to online shoppers.
    - **Brand Recognition:** The MegaMart brand is already well-known, which can attract a loyal customer base to its online store.

- **Wide Product Selection:** The company's large physical inventory can be leveraged to offer a wide range of products online, giving customers plenty of choices.
- **Competitive Pricing:** MegaMart can use its size and resources to offer competitive prices and discounts, attracting price-conscious online shoppers.
- **Customer Loyalty Programs:** Existing customer loyalty programs can be extended to online shoppers, encouraging repeat business
- **Cross-Promotion:** MegaMart can cross-promote its online and offline stores, creating a seamless shopping experience for customers.
- **Local Delivery Options:** The physical store network allows for local delivery options, potentially offering same-day or next-day delivery for online orders.
- **In-Store Returns:** Customers can return online purchases to physical stores, reducing return shipping costs and enhancing the return process.
- **Click and Collect:** MegaMart can offer "click and collect" services, allowing customers to order online and pick up items in-store.
- **Omni-Channel Experience:** Providing a seamless omni-channel experience, where customers can switch between online and offline shopping, can be a significant advantage.

CASE 5:

Walmart is the world’s largest retailer, with over 10,500 stores in 24 countries. The company has been a pioneer in the use of e-business, and its e business applications have helped it to become a leader in the retail industry.

Questions

1. How has Walmart used e-business to improve its customer service?
2. What are the challenges that Walmart faces in implementing e-business applications?
3. How can Walmart continue to improve its e-business applications in the future?

Answer:

1. **How has Walmart used e-business to improve its customer service?**

Walmart has leveraged e-business to enhance customer service in several ways:

- **Online Shopping:** Through its e-commerce platform, Walmart offers customers the convenience of online shopping, providing a wide range of products with easy access and delivery options.
- **Order Tracking:** Customers can track their orders in real-time, giving them visibility into the status and location of their purchases.
- **In-Store Pickup:** Walmart's e-business applications enable "click and collect" services, allowing customers to order online and pick up items in-store, offering convenience and time-saving options.
- **Customer Reviews:** Online platforms often include customer reviews and ratings, helping shoppers make informed purchasing decisions.
- **Personalization:** By using customer data and analytics, Walmart can personalize online recommendations and offers to tailor the shopping experience to individual preferences

- **Mobile Apps:** Walmart has developed mobile apps that offer features like mobile ordering, payment, and in-app shopping lists for customers on the go.

2. **What are the challenges that Walmart faces in implementing e-business applications?**
   - **Technical Challenges:** Implementing and maintaining e-business applications at such a large scale can be technically complex, requiring robust infrastructure and cybersecurity measures
   - **Data Management:** Handling vast amounts of customer data and ensuring its security and privacy is a significant challenge.
   - **Competition:** The e-commerce market is highly competitive, with other major players like Amazon, and Walmart must continually innovate to stay ahead.
   - **Supply Chain Integration:** Coordinating the supply chain for both physical stores and online sales can be challenging to ensure inventory accuracy and timely deliveries.
   - **Regulatory Compliance:** Complying with e-commerce regulations, data protection laws, and consumer rights can be complex, especially with a global presence
   - **Customer Expectations:** Meeting and exceeding customer expectations for fast, reliable, and convenient online shopping can be demanding.
3. **How can Walmart continue to improve its e-business applications in the future?**
   - **Innovation:** Invest in cutting-edge technologies, such as AI, machine learning, and big data analytics, to enhance personalization and improve the customer experience.
   - **Supply Chain Optimization:** Continue to optimize supply chain processes to reduce delivery times and costs while maintaining product availability

- **Cybersecurity:** Strengthen cybersecurity measures to protect customer data and maintain trust.
- **Mobile Experience:** Enhance the mobile shopping experience with features like augmented reality for virtual try-ons and improved app functionality.
- **Sustainability:** Embrace sustainable practices in e-commerce, such as reducing packaging waste and offering eco-friendly product options.
- **International Expansion:** Continue expanding and refining e-commerce operations in international markets to capture global growth opportunities
- **Omni-Channel Integration:** Strive for seamless omni-channel integration to provide a unified shopping experience for customers, where they can switch between online and in-store shopping seamlessly.

CASE 6:

Fabmart's e-tailing model Fabmart was one of the first online stores in India, launched in 1999. It began as a music store but gradually expanded to include a wide range of products. Fabmart gained a reputation for the huge number of brands it showcased and for its unique promotional campaigns.

Question:

What were the key factors in the success of Fabmart's e-tailing model.

Answer:

The success of Fabmart's e-tailing model can be attributed to several key factors:

- **Early Entry into E-commerce:** Being one of the first online stores in India, Fabmart had the advantage of entering the e-commerce market at an early stage. This

allowed them to establish a brand presence and build a customer base before the market became more competitive.

- **Diversification of Product Range:** Fabmart started as a music store but wisely expanded to include a wide range of products. This diversification allowed them to tap into a broader customer base and cater to a variety of consumer needs.
- **Wide Brand Selection:** Fabmart's success can be attributed to the wide range of brands it showcased. This variety provided customers with numerous options to choose from, making it a one-stop destination for various brands and products.
- **Unique Promotional Campaigns:** Fabmart's unique promotional campaigns helped in attracting and retaining customers. Innovative marketing strategies can create buzz and differentiate a brand in a competitive market.
- **Customer-Centric Approach:** A focus on customer satisfaction and convenience played a crucial role in Fabmart's success. Providing a user-friendly website, easy navigation, and reliable customer service helped build trust and loyalty among its customers.
- **Strong Online Presence:** Building a robust online presence, including a user-friendly website and mobile app, is vital for e-commerce success. Fabmart's early entry allowed them to establish a strong digital presence.
- **Quality Assurance:** Ensuring the quality of products and timely delivery is essential for building trust with online shoppers. Fabmart's commitment to product quality and reliable delivery contributed to its success.
- **Adaptability and Innovation:** E-commerce is a dynamic and ever-evolving industry. Fabmart's ability to adapt to

changing market trends and incorporate innovative features into its model helped it stay competitive.

- **Supply Chain Efficiency:** Efficient supply chain management is crucial in e-commerce. Fabmart's ability to manage its supply chain effectively, including inventory and logistics, contributed to its success.
- **Competitive Pricing:** Offering competitive prices and attractive discounts is a common strategy in e-commerce. Fabmart likely succeeded in part due to its pricing strategies that appealed to cost-conscious online shoppers.

CASE 7:

An e-commerce company, Acme Corporation, is headquartered in the United States and sells products to customers all over the world. Acme Corporation has a complex taxation and encryption policy in place to comply with the laws of the different countries in which it operates.

Taxation policy:

Acme Corporation collects and remits sales taxes to the appropriate tax authorities in all US states where it has a physical presence. For sales to customers outside of the US, Acme Corporation collects and remits VAT to the appropriate tax authorities in the customer's country of residence.

To comply with these tax laws, Acme Corporation has implemented a complex system to track the location of its customers and the sales taxes they owe. Acme Corporation also uses a variety of methods to collect and remit sales taxes, including direct debit, PayPal, and credit cards.

Encryption policy:

Acme Corporation uses strong encryption to protect all of its customers' personal and financial information. This includes data

such as names, addresses, credit card numbers, and order history. Acme Corporation also uses encryption to protect its own trade secrets and intellectual property.

Acme Corporation's encryption policy is designed to comply with the laws of all of the countries in which it operates. This includes the General Data Protection Regulation (GDPR) in the European Union.

Questions:

1. Why is it important for e-businesses to have a taxation policy?

2. What are some of the challenges that e-businesses face when it comes to taxation?

3. Why is it important for e-businesses to have an encryption policy?

4. What are some of the challenges that e-businesses face when it comes to encryption?

Answers:

1. Why is it important for e-businesses to have a taxation policy?

E-businesses need to have a taxation policy in place to comply with the laws of the countries in which they operate. Failing to comply with tax laws can result in fines, penalties, and even criminal prosecution.

2. What are some of the challenges that e-businesses face when it comes to taxation?

One of the biggest challenges for e-businesses is the complexity of international tax laws. E-businesses need to be aware of the tax laws in every country where they sell products or services. Another challenge is the fact that tax laws are constantly

changing. E-businesses need to stay up-to-date on the latest tax laws to ensure that they are complying.

3. Why is it important for e-businesses to have an encryption policy?

E-businesses need to have an encryption policy in place to protect their customers' personal and financial information. This information is a valuable target for cybercriminals. E-businesses also need to protect their own trade secrets and intellectual property from unauthorized access.

4. What are some of the challenges that e-businesses face when it comes to encryption?

One of the biggest challenges for e-businesses is choosing the right encryption technology. There are a variety of encryption technologies available, and each has its own strengths and weaknesses. E-businesses need to choose an encryption technology that is appropriate for their needs and budget.

Another challenge is implementing encryption correctly. If encryption is not implemented correctly, it will not be effective in protecting data. E-businesses need to have a plan in place for managing their encryption keys and for testing their encryption systems on a regular basis.

Conclusion:

E-businesses need to have a taxation and encryption policy in place to comply with the laws of the countries in which they operate and to protect their customers' personal and financial information. E-businesses need to carefully consider their needs and budget when choosing encryption technology and when implementing encryption systems.

CASE 8:

Scenario:

An e-commerce company has experienced a recent increase in fraudulent transactions. The company is concerned about the security of its customers' data and financial information.

Questions:

1. What are the most common types of e-business transaction security threats?

2. What are some of the best practices for e-businesses to secure their transactions?

3. What specific steps can e-businesses take to protect their customers from fraud?

Answers:

1. The most common types of e-business transaction security threats include:

- **Phishing attacks:** Phishing attacks are attempts to trick users into revealing their personal information, such as passwords or credit card numbers, by sending them fraudulent emails or text messages that appear to be from a legitimate source, such as their bank or a well-known company.
- **Man-in-the-middle attacks:** Man-in-the-middle attacks occur when an attacker intercepts communication between two parties and pretends to be one of them. This can allow the attacker to steal sensitive information or redirect transactions to fraudulent websites.
- **Malware attacks:** Malware attacks involve the installation of malicious software on a user's computer or device. This malware can then be used to steal personal

information, including financial data, or to disrupt e-commerce transactions.

2. Some of the best practices for e-businesses to secure their transactions include:

- **Using strong encryption:** Encryption scrambles data so that it cannot be read by unauthorized individuals. E-businesses should use strong encryption to protect all sensitive data, including customer information and financial data.
- **Implementing multi-factor authentication (MFA):** MFA adds an extra layer of security to logins and transactions by requiring users to provide two or more factors of authentication, such as a password and a one-time code generated by an authenticator app.
- **Using fraud detection and prevention systems:** Fraud detection and prevention systems can help e-businesses to identify and block fraudulent transactions. These systems can be used to analyze transaction data for suspicious activity, such as unusual spending patterns or multiple failed login attempts.

3. Specific steps that e-businesses can take to protect their customers from fraud include:

- **Educating customers about e-business transaction security threats:** E-businesses should educate their customers about the most common types of e-business transaction security threats and how to protect themselves from them. This can be done through email campaigns, website articles, and social media posts.
- **Offering secure payment options:** E-businesses should offer a variety of secure payment options, such as credit cards, PayPal, and Amazon Pay. These payment providers

have fraud protection systems in place to help protect customers from fraud.

- **Monitoring customer accounts for suspicious activity:** E-businesses should monitor customer accounts for suspicious activity, such as unusual spending patterns or multiple failed login attempts. If suspicious activity is detected, the e-business should contact the customer to verify their identity and take steps to protect their account.

Conclusion:

E-businesses can take a number of steps to secure their transactions and protect their customers from fraud. By implementing best practices such as strong encryption, MFA, and fraud detection and prevention systems, e-businesses can help to ensure that their customers' data and financial information is safe and secure.

CASE 9:

Company: Facebook
Issue: Cambridge Analytica data scandal
Overview:
In 2018, it was revealed that Cambridge Analytica, a political consulting firm, had harvested the personal data of millions of Facebook users without their consent. The data was then used to target voters with political advertising during the 2016 US presidential election.

Legal and ethical issues:
The Cambridge Analytica scandal raised a number of legal and ethical issues, including:

Data privacy:
Facebook users had not consented to their data being shared with Cambridge Analytica. This raised concerns about whether Facebook had violated its users' privacy rights.

Misleading advertising:

Cambridge Analytica used the data it had harvested to target voters with political advertising. Some of these ads were misleading and deceptive. This raised concerns about whether Cambridge Analytica had violated consumer protection laws.

Election interference:

Cambridge Analytica's use of data to target voters raised concerns about whether it had interfered in the US presidential election.

Questions:

1. What are the main legal and ethical issues raised by the Cambridge Analytica scandal?
2. What steps could Facebook have taken to prevent the scandal from happening?
3. What lessons can other e-businesses learn from the Cambridge Analytica scandal?

Answers:

1. The main legal and ethical issues raised by the Cambridge Analytica scandal are data privacy, misleading advertising, and election interference.

2. Facebook could have taken a number of steps to prevent the scandal from happening, including:

- Being more transparent about how it collects and uses user data.
- Obtaining explicit consent from users before sharing their data with third-party apps.
- Better monitoring and auditing third-party apps.

3. Other e-businesses can learn a number of lessons from the Cambridge Analytica scandal, including:

- The importance of data privacy.

- The need to be transparent about how they collect and use user data.
- The importance of obtaining explicit consent from users before sharing their data with third-party apps.
- The need to carefully vet third-party apps.

Additional thoughts:

- The Cambridge Analytica scandal is a reminder that e-businesses have a responsibility to protect their users' privacy and to be transparent about how they use user data. E-businesses should also take steps to prevent their data from being misused by third-party apps.
- In addition to the legal and ethical issues raised by the Cambridge Analytica scandal, there are also a number of business risks associated with data breaches and privacy scandals. For example, companies that experience data breaches can face financial losses, reputational damage, and customer churn.
- E-businesses can mitigate these risks by implementing strong data security measures and by being transparent about how they collect and use user data.

CASE 10:

Company: Amazon
Payment System: Amazon Pay
E-Business Characteristics:

Security:
Amazon Pay uses a variety of security measures to protect customer data,
including encryption, fraud detection, and identity verification.
Reliability:
Amazon Pay is a highly reliable payment system, with a very low uptime rate.

Scalability:

Amazon Pay is able to handle a large volume of transactions, even during peak

shopping periods.

Convenience:

Amazon Pay is a convenient payment option for customers, as it allows them to

pay for their purchases with a single click.

Acceptability:

Amazon Pay is accepted by millions of merchants worldwide.

Questions

1. What is the key e-business characteristics of Amazon Pay?
2. How does Amazon Pay meet the needs of e-businesses?
3. What are some of the benefits of using Amazon Pay for e-businesses?
4. What are some of the challenges of using Amazon Pay for e-businesses?

Answer:

1. The key e-business characteristics of Amazon Pay are security, reliability, scalability, convenience, and acceptability.

2. Amazon Pay meets the needs of e-businesses by providing a secure, reliable, and scalable payment solution that is convenient for customers and accepted by millions of merchants worldwide.

3. Some of the benefits of using Amazon Pay for e-businesses include:

- **Increased customer satisfaction:** Amazon Pay is a convenient and trusted payment option for customers,

which can lead to increased customer satisfaction and loyalty.

- **Reduced fraud:** Amazon Pay uses a variety of security measures to protect customer data and reduce fraud.
- **Increased sales:** Amazon Pay can help e-businesses increase sales by making it easier for customers to complete their purchases.

4. Some of the challenges of using Amazon Pay for e-businesses include:

- **Fees:** Amazon Pay charges merchants a fee for each transaction.
- **Integration:** Amazon Pay can be complex and time-consuming to integrate with e-commerce platforms.
- **Competition:** There are a number of other e-payment providers available, so e-businesses need to carefully consider which payment solution is best for their needs.

Conclusion:

Overall, Amazon Pay is a popular and widely accepted e-payment system that offers a number of benefits for e-businesses. However, e-businesses need to weigh the benefits and challenges of using Amazon Pay before deciding whether or not to implement it.