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Higher Education for All

E-BUSINESS

COURSE CODE: B23NE02SE

Undergraduate Programme in Nano Entrepreneurship

Skill Enhancement Course

Self Learning Material



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The State University for Education, Training and Research in Blended Format, Kerala

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Vision

To increase access of potential learners of all categories to higher education, research and training, and ensure equity through delivery of high quality processes and outcomes fostering inclusive educational empowerment for social advancement.

Mission

To be benchmarked as a model for conservation and dissemination of knowledge and skill on blended and virtual mode in education, training and research for normal, continuing, and adult learners.

Pathway

Access and Quality define Equity.

E-Business

Course Code: B23NE02SE

Semester - V

Discipline Specific Elective Course
Undergraduate Programme in
Nano Entrepreneurship
Self Learning Material

(With Model Question Paper Sets)

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Development of the Content

Dr. Sangeetha K. Pratap
Dr. K. X. Joseph
Dr. Radhakrishnan E K
Dr. Smarty P. Mukundan
Dr. Hareesh N Ramanathan
Dr. Ajith Kumar R
Dr. Nisa James
Dr. Umesh U
Dr A. Nishad

Development of the Content

Block 1: Dr. Athena Prince
Block 2: Dr. Surya Robert

Review and Edit

Dr. Sanitha K.K.

Lingusitics

Dr. Swapna N.R.

Scrutiny

Dr. Athena Prince
Dr. Surya Robert

Cover Design

Jobin J.

Co-ordination

Director (IC), MDDC :
Dr. Sajeevkumar G.
Coordinator, Development:
Dr. Anfal M.
Coordinator, Distribution:
Dr. Abdul Razak Kunnathodi

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MESSAGE FROM VICE CHANCELLOR

Dear learner,

I extend my heartfelt greetings and profound enthusiasm as I warmly welcome you to Sreenarayanaguru Open University. Established in September 2020 as a state-led endeavour to promote higher education through open and distance learning modes, our institution was shaped by the guiding principle that access and quality are the cornerstones of equity. We have firmly resolved to uphold the highest standards of education, setting the benchmark and charting the course.

The courses offered by the Sreenarayanaguru Open University aim to strike a quality balance, ensuring students are equipped for both personal growth and professional excellence. The University embraces the widely acclaimed "blended format," a practical framework that harmoniously integrates Self-Learning Materials, Classroom Counseling, and Virtual modes, fostering a dynamic and enriching experience for both learners and instructors.

The University aims to offer you an engaging and thought-provoking educational journey. The BA Nano Entrepreneurship program is structured to address the growing demand for innovative entrepreneurs, particularly focused on nano businesses. The program's curriculum is crafted with a balanced blend of theoretical insights and practical exposure, ensuring that learners are equipped to navigate the challenges and opportunities of this dynamic sector. Special attention has been given to the inclusion of real-world examples and case studies, enhancing learners' understanding of nano entrepreneurship's unique landscape. Moreover, the curriculum fosters a holistic approach to entrepreneurship that nurtures creativity, innovation, and strategic thinking. Through practical application and industry-driven examples, learner's will develop the skills necessary to succeed in this cutting-edge field. The Self-Learning Material has been meticulously crafted, incorporating relevant examples to facilitate better comprehension.

Rest assured, the university's student support services will be at your disposal throughout your academic journey, readily available to address any concerns or grievances you may encounter. We encourage you to reach out to us freely regarding any matter about your academic programme. It is our sincere wish that you achieve the utmost success.



Regards,
Dr. Jagathy Raj V.P.

01-10-2026

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BLOCK 1 Introduction to E-Business

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Unit 1 Introduction

Learning Outcomes

After completing this unit, the learner will be able to:

- ◊ explain the meaning and nature of E -Business
- ◊ gain insight into the different types and models of E -Business
- ◊ differentiate between traditional business and e-business
- ◊ discuss the benefits and limitations of E -business

Prerequisite

Anjali is a nano entrepreneur. She owns a small bakery in her town. With limited capital, she personally manages everything from purchasing ingredients and baking products to serving customers and maintaining accounts. Customers visited her bakery, selected their favourite items, paid in cash, and took them home. Orders and sales transactions were recorded manually in notebooks. The bakery relied mainly on word-of-mouth publicity and conducted business only during regular shop hours, making it a typical example of a traditional business. Over time, Anjali noticed that the customer preferences were changing. Customers started buying bakery items through online shopping platforms. To meet these changing preferences and keep customers, she launched a website where customers could view products, place orders, and pay online. She also created social media pages to promote new products and special offers, partnered with food delivery platforms to provide home delivery, and started communicating with customers through WhatsApp. She adopted digital tools to maintain customer records, track sales, and manage inventory more efficiently. As a result, her bakery gradually transformed from a traditional business into an e-business.

As her bakery grew, Anjali experienced different types of e-business. She purchased baking ingredients online from suppliers (Business-to-Business – B2B), sold products directly to customers through her website (Business-to-Consumer – B2C), collaborated with food bloggers who promoted her products (Consumer-to-Business – C2B), and renewed business licences and filed taxes through government portals (Business-to-Government – B2G and Government-to-Business – G2B).

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The shift from traditional business to e-business brought many benefits, including a larger customer base, 24×7 operations, improved efficiency, lower operating costs, and higher customer satisfaction. Anjali's journey from a small nano enterprise to a successful digital business reflects the transformation taking place across the business world. This story reflects the various aspects of e-business. This unit will discuss more about the aspects of e-business, digitalisation of business, the imperatives driving digital transformation, the differences between traditional business and e-business, the types and models of e-business, principles that guide digital enterprises, and the benefits and limitations of conducting business in the digital age.

Keywords

E-Business, E-Business Models, Digitalisation, Benefits, Limitations

Discussion

1.1.1 Meaning and Nature of E-Business

Technology has transformed how businesses operate in the modern world. Traditionally, business activities were characterised by direct face-to-face interactions with customers, cash-based transactions, paper-based documentation, and manual record-keeping. Businesses maintained orders, sales, inventory, and accounts in registers or notebooks, making it difficult to retrieve and analyse business information. Marketing efforts mainly depended on word-of-mouth publicity, print media, or local advertisements, limiting customer reach. Businesses operated only during fixed working hours and served customers mainly within their local geographical area. In addition, businesses communicated with customers and suppliers through personal visits, telephone calls, or postal services, often resulting in delays. Thus, the growth of these businesses was constrained by location, time, and the availability of physical resources. However, the arrival and growing popularity of the Internet and the development of digital communication systems opened immense opportunities for business organizations to manage their operations more efficiently. Today, organisations increasingly rely on digital technologies to conduct their business activities electronically. This transformation has led to the emergence of electronic business, or e-business.

E-business refers to the use of information and communication technologies (ICT) in all areas of business to conduct, support, and improve business activities. According to Colin Combe, Electronic business is defined as "the use of the internet to network and empower business processes, electronic commerce, organizational communication and collaboration within a company and with

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its customers, suppliers, and other stakeholders". E-business thus involves the use of the Internet, intranets, extranets, and other computer networks to facilitate business operations. E-business is often used interchangeably with E-Commerce, or Electronic Commerce. However, there are considerable differences between these two terms.

E-commerce, or electronic commerce, refers to the buying, selling, marketing, and servicing of products and services through electronic networks, particularly the Internet. E-business is a much broader concept than e-commerce. In addition to electronic commercial transactions, e-business includes the use of information and communication technologies (ICT) to support internal business processes within an organisation such as procurement, logistics, supply chain management, inventory management, human resource management, customer relationship management, and order processing. Therefore, e-commerce is a subset of e-business, as it primarily deals with electronic commercial transactions, whereas e-business encompasses both internal and external business activities. Since e-business also involves electronic interactions and transactions with customers, suppliers, and other business partners, there is a considerable overlap between the activities of e-business and e-commerce.

E-business has indeed become an integral component of the modern business strategy. Organisations use websites, mobile applications, cloud computing, artificial intelligence, digital payment systems, enterprise resource planning (ERP), customer relationship management (CRM), and social media platforms to manage business operations efficiently. E-business enables business organisations to reach customers globally, reduce operational costs, improve decision-making and enhance customer satisfaction.

The COVID-19 pandemic accelerated e-business adoption across industries. During this period, businesses that had implemented digital technologies were better able to maintain their operations despite lockdowns and restrictions on physical interactions, highlighting the importance of e-business in ensuring business continuity and organisational resilience.

1.1.2 Digitalisation of Business/E-Business Imperatives

Digitalisation of business refers to the process of integrating digital technologies into business processes and business models to improve efficiency, enhance customer experience, reduce costs, and create new value. It primarily focuses on improving existing processes and operations. Before digitalisation, businesses relied on manual processes such as paper-based record-keeping, cash transactions, printed advertisements, physical stores, and face-to-face interactions with customers. Inventory was maintained in stock registers, financial records were recorded in ledgers, and communication with customers and suppliers was primarily through telephone calls or in-person meetings.

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With digitalisation, digital technologies have replaced or enhanced these traditional methods.

- ◊ Businesses now use websites, social media, and online marketplaces for marketing and sales.
- ◊ Accounting software and digital payment systems are used for financial transactions.
- ◊ Inventory management software and barcode systems are used for stock control.
- ◊ Digital platforms are used for customer service, supplier coordination, and employee management.

Thus, in business digitalisation, the core business remains unchanged while digital technologies make operations more efficient, accurate, and customer-friendly. The digitalisation of various business functions has paved the way for the widespread adoption of e-business, enabling organisations to integrate digital technologies into both internal operations and external business transactions.

E-Business Imperatives

E-business imperatives denote the key drivers that encourage business organisations to adopt e-business practices. The major e-business imperatives are discussed below.

i. Responding to Changing Customer Expectations and Preferences

Today, customers expect businesses to provide fast, convenient, and personalised services, and businesses that fail to meet these expectations risk losing customers to their competitors. Therefore, the adoption of e-business technologies such as websites, mobile applications, chatbots, and Customer Relationship Management (CRM) systems has indeed become essential for delivering superior customer experiences, providing personalised services, and building long-term customer loyalty.

ii. Enhancing Operational Efficiency

Adopting e-business technologies helps organisations automate routine tasks and streamline operations. Digital systems can handle business activities such as inventory management, order processing, payroll, accounting, and communication. This reduces manual effort and human error. This results in faster execution of business processes, improved productivity, better resource utilisation, and increased operational efficiency. Consequently, organisations can devote more time and resources to strategic activities rather than routine administrative tasks.

iii. Reducing Operational Costs

Reduction of operational costs is one of the major advantages of e-business. Digital technologies enable businesses to minimise expenses associated with

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paper-based documentation, physical infrastructure, traditional advertising, and manual processing. For example, businesses can promote products through digital marketing or automate customer service using artificial intelligence (AI). Such measures significantly reduce operating costs while improving service quality and overall profitability.

iv. Achieving Competitive Advantage

Business organisations must continuously innovate and respond quickly to changing market conditions in today's highly competitive business environment. Adopting e-business helps businesses introduce new products and services faster, improve customer service, analyse competitors, and respond effectively to changing consumer preferences. Organisations that effectively leverage e-business technologies gain a competitive advantage by delivering greater customer value, improving operational agility, and strengthening their market position.

v. Expanding Global Market Reach

The internet has enabled businesses to reach customers worldwide. Today, even small and medium-sized enterprises (SMEs) can promote and sell their products internationally through e-commerce websites, online marketplaces, and digital marketing without establishing physical stores in foreign countries. This expanded market access creates new revenue opportunities, enhances brand visibility, and enables businesses to compete effectively on a global scale.

vi. Supporting Data-Driven Decision Making

Modern businesses generate vast amounts of digital data through customer transactions, websites, social media platforms, and internal business operations. Managers can easily analyse data to identify customer preferences, forecast demand, evaluate business performance, and make informed strategic decisions by using business intelligence and data analytics tools. This data-driven decision-making reduces uncertainty, improves planning, and enables organisations to respond proactively to changing market conditions.

vii. Strengthening Customer Relationship Management (CRM)

The long-term success of any business depends on maintaining strong customer relationships. E-business technologies help organisations collect and analyse customer information, monitor purchasing behaviour, personalise marketing campaigns, and provide timely after-sales support. Customer Relationship Management (CRM) systems help businesses understand customer needs, improve customer satisfaction, increase customer retention, and build long-lasting relationships that contribute to sustainable growth.

viii. Improving Supply Chain Integration

E-business facilitates the real-time information exchange among suppliers, manufacturers, distributors, retailers, and customers. This improves coordination

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throughout the supply chain. Improved supply chain integration reduces delays, minimises inventory costs, enhances transparency, and ensures the timely delivery of products and services.

ix. Ensuring Business Continuity and Resilience

Sometimes, unexpected events such as natural disasters, pandemics, cyberattacks, or economic crises can disrupt business operations. During such circumstances, e-business technologies help organisations maintain business continuity through cloud computing, remote working, digital collaboration platforms, and online customer services. These capabilities enable businesses to continue operations with minimal interruption of business processes. Moreover, they enhance organisational resilience and reduce the impact of unforeseen disruptions.

x. Facilitating Digital Payments and Financial Transactions

The widespread adoption of digital payment systems has transformed the way businesses conduct financial transactions. Electronic payment methods such as internet banking, mobile wallets, Unified Payments Interface (UPI), and debit and credit cards provide customers with secure, fast, and convenient payment options. Digital payments improve financial transparency, reduce cash-handling risks, simplify accounting procedures, and enhance overall operational efficiency.

xi. Supporting Sustainability and Environmental Responsibility

E-business contributes to sustainable business practices by reducing paper consumption, minimising business travel through virtual meetings, and promoting electronic communication and digital documentation. These practices help businesses reduce their carbon footprint, minimise operational waste, conserve natural resources, and contribute to long-term environmental sustainability.

For nano businesses, adopting e-business is no longer optional but necessary for sustainable growth and competitiveness. Since nano enterprises generally operate with limited financial, human, and technological resources, e-business provides cost-effective solutions for marketing, sales, customer relationship management, digital payments, inventory management, and communication. By taking advantage of digital technologies such as social media, e-commerce platforms and mobile payment systems, nano entrepreneurs can reach wider markets, improve operational efficiency, enhance customer satisfaction, and compete effectively with larger businesses. Thus, e-business serves as a powerful enabler of growth, innovation, and long-term sustainability for nano enterprises.

1.1.3 Traditional Business and E-Business

Traditional business and e-business represent two distinct approaches to conducting business. Traditional business relies on conventional methods of managing business operations, while e-business integrates digital technologies into various business functions to enhance efficiency and customer value. The following table compares the key differences between traditional business and e-business.

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Table 1.1.1

Differences between Traditional Business and E -Business

Basis	Traditional Business	E-Business
(i) Meaning	It refers to the conventional method of conducting business through physical establishments and relying mainly on face-to-face interactions, paper-based documentation, and manual business processes.	It refers to the conduct and management of business activities using electronic networks, particularly the Internet, by integrating digital technologies into business operations.
(ii) Ease of Formation	Traditional businesses require more time, capital, and physical infrastructure to establish.	E-business can be established more quickly with comparatively lower investment and limited physical infrastructure than traditional business.
(iii) Business Presence	Traditional businesses operate through physical stores, offices, or service centres.	E-business operates through websites, mobile applications, digital platforms, or a combination of physical and online channels.
(iv) Physical Presence of Customers	In traditional business, customers generally visit the business premises to purchase products or avail services.	Here, customers can access products and services online without visiting the business premises.
(v) Market Reach	Market reach of a traditional business is generally limited by geographical location.	E-business can serve regional, national, and global markets through the Internet.
(vi) Business Availability	A traditional business only operates during specified working hours.	E-business operations can be carried out 24×7, allowing customers to access products and services at any time.
(vii) Communication	Communication in a traditional business mainly occurs through face-to-face meetings, telephone calls, printed documents, and postal services.	Communication mainly takes place through email, websites, social media, instant messaging, mobile applications, and video conferencing.

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(viii) Product Inspection Before Purchase	Here, customers can physically inspect, test, or sample products before purchasing them.	Here, customers rely on digital images, videos, specifications, reviews, and virtual demonstrations before making a purchase.
(ix) Initial Investment	A traditional business requires higher investment in land, buildings, furniture, inventory, and other physical infrastructure.	E-business requires comparatively lower investment because extensive physical infrastructure is not essential.
(x) Operating Cost	Operating costs in traditional business are higher due to rent, utilities, staffing, transportation, and manual administration.	Operating costs are comparatively lower because digital technologies automate many business processes.
(xi) Speed of Transactions	Transactions are comparatively slower because they involve manual procedures and physical documentation.	Transactions are completed more quickly through automated digital systems and electronic payment methods.
(xii) Documentation and Record Management	A traditional business relies mainly on paper-based records and manual filing systems.	E-business uses electronic records, databases, cloud storage, and enterprise information systems for efficient record management.
(xiii) Decision Making	Decisions are generally based on manual reports and limited information.	Decisions are supported by real-time data, business intelligence, analytics, and digital dashboards.
(xiv) Marketing Approach	Traditional businesses use conventional marketing methods such as newspapers, television, radio, brochures, exhibitions, and personal selling.	E-businesses employ digital marketing techniques such as search engine optimisation (SEO), social media marketing, email marketing, content marketing, and online advertising.
(xv) Customer Relationship Management	Customer relationships are developed mainly through direct personal interaction.	Customer relationships are managed through CRM systems, digital communication, personalised marketing, and online support.

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(xvi) Supply Chain and Business Processes	In traditional business, business processes and supply chain activities involve greater manual coordination and paperwork, resulting in longer processing time.	Digital integration enables real-time information sharing, automated workflows, faster order processing, and better supply chain coordination in e-business.
(xvii) Security and Transaction Risk	Traditional businesses face comparatively lower cyber-related risk. However, they may encounter risks associated with physical operations such as theft or damage.	E -businesses may face cybersecurity risks such as data breaches, online fraud, identity theft, malware, and payment security issues, requiring strong digital security measures.
(xviii) Scalability	Expansion usually requires significant investment in physical infrastructure, workforce, and distribution networks.	Business operations can be expanded rapidly through digital platforms with comparatively lower additional investment.
(xix) Flexibility and Innovation	Adapting to changing market conditions and introducing new products or services is generally slower.	Businesses can quickly introduce new products, modify services, adopt new technologies, and respond rapidly to changing customer needs and market trends.

1.1.4 Types of E-Business

1. Business-to-Business (B2B)

These electronic transactions are conducted between two or more business organisations. B2B transactions generally involve manufacturers, suppliers, wholesalers, distributors, and retailers. In this model, businesses purchase goods or services from other businesses rather than selling directly to individual consumers. B2B transactions are characterised by bulk purchases, long-term business relationships, negotiated pricing, formal contracts, and the use of electronic procurement systems such as Electronic Data Interchange (EDI) and Enterprise Resource Planning (ERP). As B2B transactions involve high-value orders and recurring purchases, businesses focus on efficiency, supply chain integration, and cost reduction. Alibaba.com and IndiaMART are examples of platforms that facilitate B2B transactions.

2. Business-to-Consumer (B2C)

It is the most common form of e-business and involves transactions in which businesses sell products or services directly to individual consumers through

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digital platforms. Customers can browse products, compare prices, place orders, make secure online payments, and receive home delivery through websites or mobile applications. B2C transactions emphasize customer convenience, quick service, and personalized shopping experiences. Businesses use digital marketing, customer relationship management (CRM), and online customer support to enhance customer satisfaction and loyalty. Examples of B2C transactions include online retailers selling electronics, clothing, books, and groceries directly to consumers, as well as online food delivery and travel booking services. Amazon and Flipkart are well-known examples of B2C e-business, as they facilitate online transactions between businesses and individual consumers.

3. Consumer-to-Consumer (C2C)

These refer to electronic transactions which are conducted between individual consumers. An online platform facilitates these transactions as an intermediary. In this model, individuals buy and sell goods or services directly to one another without involving a traditional business as the seller. C2C platforms offer features such as product listings, communication channels, secure payment systems, and user ratings to build trust and transparency. This model is commonly used for selling second-hand goods, handmade products, collectibles, and personal services. OLX, eBay, Facebook Marketplace, and Quikr can facilitate Consumer-to-Consumer (C2C) transactions.

4. Consumer-to-Business (C2B)

It is a type of e-business in which individuals offer products, services, or expertise to businesses. The growth of freelancing, crowdsourcing, digital content creation and influencer marketing has significantly expanded the C2B model. The C2B model is characterized by flexible pricing, project-based work, independent service providers, and digital collaboration. Businesses benefit by accessing specialized skills without maintaining permanent employees. Common forms of C2B business include freelance graphic designers creating logos for companies, photographers licensing images to businesses, software developers taking on freelance projects, and social media influencers promoting brands for compensation. Some such C2B platforms include Upwork, Fiverr, Freelancer.com, Shutterstock, and Adobe Stock.

5. Business-to-Government (B2G)

These are electronic business transactions in which business organizations provide goods or services to government departments, public sector undertakings, or government agencies through digital platforms. These transactions commonly occur through e-procurement systems, electronic tendering (e-tendering), and online government procurement portals. B2G e-business improves transparency, reduces paperwork, enhances efficiency, and promotes fair competition in government procurement. For example, a registered supplier can submit an online bid through the Government e-Marketplace (GeM) to supply goods or services to a government department.

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6. Government-to-Business (G2B)

This refers to the digital delivery of government services to business organizations. This includes the provision of services like business registration, licensing, tax administration, compliance information, permits, and other regulatory services to businesses. These digital services simplify administrative procedures, reduce processing time, improve transparency, and encourage ease of doing business. Thus, G2B services improve operational efficiency by eliminating unnecessary paperwork and physical visits to government offices. Examples include online company registration, GST registration, digital renewal of business licences, and obtaining environmental clearances through government portals.

7. Government-to-Citizen (G2C)

It refers to the electronic delivery of public services from government agencies directly to citizens. Citizens can access various government services through digital platforms without visiting government offices. Examples include online passport applications, income tax e-filing, utility bill payments, driving licence renewals, access to digital certificates, and online applications for welfare schemes. This model improves accessibility and efficiency by enabling faster service delivery, reducing paperwork, and increasing public convenience. G2C services enhance citizen participation and improve the overall quality of public administration.

1.1.5 Models of E-Business

A business model is the way an organisation structures the flow of its products, services, and information, as well as the methods through which it generates revenue and delivers benefits to suppliers and customers. In addition, a business model enables a firm to evaluate its business environment more efficiently, identify and utilise market opportunities, understand customer needs more effectively, and strengthen its competitive position by creating barriers to entry for rivals. An e-business model can be considered as an adaptation of this traditional business model to the digital or Internet-based environment. E-business models make use of electronic communication technologies to create and deliver value. The Internet has expanded both the variety and combination of business models by enabling connections among consumers, businesses, public organisations, private organisations, and government agencies.

The following are the different types of E-Business Models

i. Brokerage Model

Under this model, brokers generally do not own the products or services being sold. Instead, they provide a digital platform that enables buyers and sellers to interact and complete transactions efficiently. They act as intermediaries, bringing buyers and sellers together to facilitate transactions. Here, Brokers earn revenue by charging a fee or commission for every successful transaction from the buyers,

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sellers, or both. Examples of the brokerage model include eBay, Airbnb, Booking.com, and Upwork.

The brokerage model may exist in several forms. They include auction brokers, transaction brokers, buy/sell fulfilment brokers, search agents, virtual marketplaces, and demand collection systems. An auction broker manages online auctions on behalf of sellers. He earns income through listing fees and commissions. A transaction broker facilitates various transactions such as travel bookings, ticket reservations, insurance purchases, or stock trading and charges a service fee for each transaction. A buy/sell fulfilment broker coordinates order fulfilment by arranging order processing and delivery between buyers and sellers. Search agents help customers to compare products, prices, or services from different sellers and may receive referral fees or commissions. Virtual marketplaces provide a common digital platform where multiple buyers and sellers can conduct transactions. The platform operator earns revenue through commissions, listing fees, or subscription charges.

ii. **Advertising Model**

In this model, websites, search engines, and online directories provide information or services to users, usually free of charge. However, they generate revenue from advertisements. Popular search engines and directories such as Google and Yahoo attract many visitors by offering valuable content. They earn income by selling advertising space, displaying banner advertisements, or charging advertisers whenever users click on advertisements (pay-per-click). When users click on an advertisement, they are redirected to the advertiser's website, and the advertiser pays the website owner for every valid click. The success of this model depends on generating high website traffic.

iii. **Aggregator Model**

Businesses operating under this model are commonly known as aggregators or platform intermediaries. Under the aggregator model, aggregators bring products and services from multiple sellers together on a single online platform. Products may be sold at fixed prices or through online auctions, and many aggregators operate entirely online without maintaining a traditional brick-and-mortar store. The aggregator model acts as a digital intermediary that brings multiple sellers or service providers and customers together on one platform. Aggregators connect buyers and sellers by identifying customer needs, organising available products, matching demand with supply, supporting order fulfilment, and creating value for sellers. Examples of the aggregator model include Amazon Marketplace, Flipkart, MakeMyTrip, Uber, Ola, and Zomato, which bring together multiple sellers or service providers on a single digital platform.

iv. **Infomediary Model**

In this model, the information relating to consumers and businesses is collected, analysed, and sold for marketing purposes to interested organisations. An

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information intermediary (Infomediary) also supports business firms by collecting and managing customer information to maximise its value. Since consumer information and purchasing behaviour are valuable for designing effective marketing strategies, many organisations operate as infomediaries. Examples of the infomediary model include Nielsen, Experian, Similarweb, Statista, and BizRate, which collect, analyse, and provide information to support business and marketing decisions.

v. **Community Model**

This model creates electronic communities (e-communities) where individuals and organisations interact online to exchange ideas, build relationships, conduct transactions, and seek entertainment. In this model, members actively share information, products, services, and experiences while supporting one another. Unlike the advertising model, this model depends primarily on user loyalty rather than website traffic. Organisations use message boards, e-mail lists, discussion forums, chat rooms, newsletters, and other interactive Internet tools to develop and maintain online communities. Facebook, Reddit, LinkedIn, Quora, and Wikipedia are examples of the community model of e-business, where value is created through user participation, content sharing, networking, and collaboration.

vi. **Subscription Model**

The Subscription Model enables e-business organisations to provide digital products or services in return for a recurring subscription fee. Customers pay a daily, monthly, or annual fee to access the services. Many organisations combine free content with premium content, where additional features are available only to subscribers. Subscription fees are charged regardless of usage, and many businesses combine subscription and advertising models to increase revenue. This model is commonly used for content services, person-to-person networking services, trust services, and Internet service providers. Examples include Netflix, Spotify, Amazon Prime, Microsoft 365, and Adobe Creative Cloud.

vii. **Manufacturer (Direct) Model**

This model is also called the Direct Model. In this model, the manufacturer sells products directly through its website, and ownership transfers to the buyer after purchase. This model improves operational efficiency, customer service, and understanding of customer needs. Dell, Tesla, Apple, HP, and Lenovo are examples of the manufacturer (direct) model of e-business.

viii. **Affiliate Model**

It is a commission-based business model in which an affiliate promotes the products or services of another company through its website, blog, social media platforms, or other digital channels. Here, the affiliate does not purchase, store, or deliver the products. Instead, all activities related to inventory management, order processing, shipping, and customer service are handled by the parent company

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or merchant. When a customer is redirected through the affiliate's promotional link and completes a purchase on the merchant's website, the affiliate receives a predetermined commission. This model enables businesses to expand their market reach through affiliate partners while allowing affiliates to earn income without maintaining inventory or managing product delivery. Amazon Associates is one of the most well-known examples of the affiliate business model.

The following table shows the distinction between types of e-business and models of e-business.

Table 1.1.1

Differences between types of E-Business and Models of E-Business

Basis	Types of E-Business	Models of E-Business
Meaning	Describes the type of relationship between the parties involved in an e-commerce transaction.	Describes how an e-commerce business operates, creates value, and generates revenue.
Main Question	Who transacts with whom?	How does the business create value and make money?
Primary Focus	Focuses on the nature and direction of the transaction or relationship between buyers, sellers, consumers, and government.	Focuses on the method through which the business delivers products/services and earns income.
Parties Involved	Identifies the parties participating in the transaction, such as businesses, consumers, and government.	Describes the business's method of earning revenue, regardless of whether its customers are businesses, consumers, or government.
Purpose	Helps identify the nature of the interaction and exchange taking place between the parties.	Helps explain how the business sustains its operations and generates income or profit.

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Examples	B2B – Business to Business; B2C – Business to Consumer; C2C – Consumer to Consumer; C2B – Consumer to Business; B2G – Business to Government; G2B – Government to Business; G2C – Government to Consumer.	Brokerage Model, Advertising Model, Subscription Model, Aggregator Model, Commission Model, Affiliate Model, Freemium Model, etc.
Nature	Represents a transaction or relationship category.	Represents a business strategy or revenue-generating mechanism.
What it explains	Explains the direction of exchange between the parties.	Explains how the business earns revenue from its activities.
Example	When an online retailer sells a product directly to an individual customer, the transaction is B2C.	If the online retailer earns a percentage or commission from each sale, it follows a commission/revenue model.

1.1.6 Principles of E-Business

These principles ensure e-business operations are carried out efficiently, securely, customer-oriented, and legally compliant, and can deliver long-term value for all stakeholders. Organizations that adhere to these principles are better positioned to build customer trust, improve operational performance, and achieve sustainable growth in the digital economy.

1. Customer-Centric Approach

E-business must always place customers at the centre of all business activities. Digital businesses should always try to understand the needs, preferences, and expectations of customers to provide personalized products, services, and experiences. Websites must be user-friendly. They must provide good customer support, secure payment options, timely delivery, and effective complaint resolution. These measures will help contribute to higher customer satisfaction and loyalty. Thus, a customer-centric approach helps businesses to build long-term relationships and gain a competitive advantage.

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2. Accessibility and Convenience

E-business should provide customers with convenient access to products, services, and information anytime, anywhere through digital platforms. Websites and mobile applications should be easy to navigate, compatible with different devices, and available 24×7. Convenient online shopping, digital payments, and quick access to customer support enhance the overall user experience and encourage repeat business.

3. Security and Privacy

As online transactions involve sensitive personal and financial information, businesses must protect customer data through encryption, secure payment gateways, authentication mechanisms, firewalls, and cybersecurity measures. Privacy policies should clearly explain to customers how customer information is collected, stored, and used. Strong security practices help to build customer trust and reduce the risk of fraud, cyberattacks, and identity theft.

4. Transparency and Trust

Businesses should provide accurate product descriptions, transparent pricing, clear return and refund policies, and truthful advertising. Customers should receive complete information regarding delivery schedules, warranties, and terms and conditions before making purchases. Transparency enhances credibility and strengthens customer confidence in the business.

5. Efficiency and Automation

E-business mainly aims to improve operational efficiency by automating routine business processes. Automation helps to reduce manual errors, speed up transaction processing, improve inventory management, streamline order fulfilment, and lower operating costs. Technologies such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and workflow automation enable businesses to operate more efficiently and improve service quality.

6. Integration of Business Processes

Another key principle of e-business is integrating business functions such as marketing, sales, finance, inventory management, customer service, and supply chain management. Integration enables real-time information sharing, improves coordination among departments, reduces duplication of work, and supports better decision-making. Well-integrated systems enhance productivity and provide a seamless customer experience.

7. Continuous Innovation

As the digital business environment changes rapidly due to technological advancements, e-businesses must continuously innovate by introducing new products, services, technologies, and business models. Innovation helps

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organizations stay competitive, improve customer value, respond to market changes, and explore new revenue opportunities.

8. Data-Driven Decision Making

E-business generates vast amounts of digital data through customer interactions, transactions, and online activities. Businesses should analyse this data to understand customer behaviour, forecast demand, evaluate market performance, and identify emerging market trends. Data-driven decision-making improves strategic planning, reduces uncertainty, and supports informed managerial decisions.

9. Legal and Ethical Compliance

E-business organizations must comply with all applicable laws, regulations, and ethical standards. This includes laws relating to consumer protection, electronic contracts, intellectual property rights, taxation, digital signatures, and data protection. Ethical practices such as honest advertising, fair pricing, and respect for customer privacy enhance business reputation and reduce legal risks.

10. Collaboration and Communication

E-business depends on effective communication and collaboration among employees, suppliers, distributors, customers, and business partners. Digital communication tools such as email, cloud platforms, video conferencing, enterprise collaboration software, and customer support systems facilitate information sharing and improve coordination. Strong collaboration enhances productivity, accelerates decision-making, and strengthens business relationships.

11. Scalability and Flexibility

An effective e-business system should be capable of expanding as the business grows. Digital platforms must be scalable to handle increasing customer traffic and transactions without compromising performance. Flexibility enables organizations to adapt quickly to changing customer demands, technological developments, and market conditions, ensuring long-term sustainability.

12. Sustainability and Social Responsibility

Modern e-businesses should operate responsibly by minimizing environmental impact and contributing positively to society. Digital operations reduce paper usage, promote electronic documentation, minimize travel through virtual meetings, and support environmentally friendly business practices. Businesses should also maintain ethical labour practices, support community development, and contribute to sustainable economic growth.

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1.1.7 Benefits of E-Business

i. Global Market Reach

E-business helps business organizations expand their market reach beyond geographical boundaries. Businesses can easily promote and sell their products or services to customers located in different regions and countries without establishing physical outlets. E-business also enables small and medium-sized enterprises to compete with larger businesses by using online platforms and digital marketing tools. Thus, e-business supports growth and creates opportunities for global expansion at relatively low cost.

ii. Round-the-Clock Business Operations

Unlike traditional businesses that operate only during fixed business hours, e-businesses can provide products and services to customers 24 hours a day, 7 days a week through digital platforms. Customers can easily browse products, place orders, make payments, and access services anytime, from any location with an internet connection. This flexibility improves customer convenience and increases sales opportunities. Moreover, Businesses can use automated systems, such as online payment gateways and chatbots, to provide uninterrupted service to customers. Operating 24/7 enhances customer satisfaction and strengthens business competitiveness.

iii. Reduction in Operating Costs

E-business reduces operating costs by minimizing the need for physical infrastructure, printed documents, and manual processes. Electronic communication, digital marketing, online transactions, and automated business operations significantly help to lower administrative and operational expenses. In addition, businesses can reduce costs related to rent, utilities, and staffing by operating online. Thus, savings from digital operations enable organizations to improve profitability while offering products and services at competitive prices. Cost efficiency is therefore a major advantage of e-business.

iv. Improved Speed

E-business enables organizations to complete transactions quickly and efficiently. Customers can place orders, make payments, and receive confirmations within a few minutes through online platforms. Businesses can process orders, generate invoices, and communicate with suppliers electronically, thus reducing delays and paperwork. Faster transaction processing helps to enhance customer satisfaction.

v. Improved Customer Convenience

E-business provides customers with greater convenience by allowing them to shop or access services from anywhere using computers or mobile devices. Customers can compare products, read reviews, make secure payments, and track

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their orders without visiting a physical store. Multiple payment options, home delivery, and easy return policies further enhance the shopping experience. This convenience improves customer satisfaction, encourages repeat purchases, and helps businesses build long-term customer relationships.

vi. Better Communication and Collaboration

E-business improves communication among businesses and stakeholders such as customers, suppliers, and employees through digital technologies like email, instant messaging, video conferencing, and cloud-based collaboration tools. Information can be shared quickly, reducing communication delays and improving coordination. Efficient communication supports better decision-making, strengthens business relationships, and enhances teamwork across different locations. It also enables organizations to respond promptly to customer enquiries and business challenges.

vii. Efficient Supply Chain Management

E-business enhances supply chain management by integrating suppliers, manufacturers, distributors, and retailers through digital systems. Through real-time information sharing, business firms can monitor inventory levels, track shipments, and coordinate procurement activities efficiently. This reduces inventory costs, minimises delays, and improves product availability. Electronic supply chain management also strengthens coordination among business partners. This will lead to faster delivery and improved customer service. Consequently, businesses can achieve greater operational efficiency and competitiveness.

viii. Better Customer Relationship Management (CRM)

E-business enables organizations to build stronger customer relationships by collecting and analysing customer data. Businesses can easily understand customer preferences, purchasing behaviour, and feedback to offer personalized products, services, and promotional offers. Customer Relationship Management (CRM) systems help maintain regular communication with customers, resolve complaints quickly, and improve after-sales service. Thus, effective CRM increases customer satisfaction, loyalty, and retention, contributing to long-term business success.

ix. Data-Driven Decision Making

E-business systems generate valuable data on customer behaviour, sales performance, website traffic, and market trends. Businesses can then use this information to make informed decisions regarding pricing, marketing, inventory management, and product development with the aid of data analytics tools. Data-driven decision-making enables organizations to identify new business opportunities, respond to changing market conditions, and improve overall business performance.

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x. Competitive Advantage

E-business technologies enable organizations to gain a competitive advantage by improving efficiency, innovation, and customer service. Digital technologies also help organizations to improve productivity, reduce costs, and enhance operational performance. Companies that effectively implement e-business strategies are better positioned to compete in both domestic and international markets. This helps ensure long-term sustainability and growth.

Nano businesses can adopt digital technologies to improve the efficiency and competitiveness of their business operations. They can adopt digital technologies in various areas such as online marketing through social media, online sales using e-commerce platforms, digital payment systems, customer relationship management (CRM), inventory and order management, communication with customers and suppliers, online customer support, and accounting and bookkeeping software. This adoption helps nano entrepreneurs to overcome geographical and resource constraints, enhance business performance, and create greater value for customers.

1.1.8 Limitations of E-Business

i. Security and Privacy Risks

Online transactions involve the exchange of sensitive information. This includes personal details, banking information, and payment credentials. Thus, online transactions are vulnerable to cyber threats such as hacking, phishing, malware, and identity theft. Therefore, businesses must invest in secure technologies, encryption, firewalls, and other cybersecurity measures to protect customer data. Failure to ensure adequate security can result in financial losses, legal consequences, and loss of customer trust.

ii. Dependence on Technology

As e-business relies heavily on information technology, internet connectivity, and digital infrastructure, technical problems such as server failures, software errors, power outages, or poor internet connectivity can disrupt business operations. This may result in delayed transactions, reduced productivity, and customer dissatisfaction. Therefore, businesses need reliable technological infrastructure and regular system maintenance.

iii. Lack of Physical Interaction

Because e-business does not allow customers to physically examine or test products before purchase, as in traditional businesses, customers cannot assess the quality, size, texture, or appearance of products directly. This may lead to uncertainty or dissatisfaction after delivery. This limitation is particularly significant for products such as clothing, furniture, and luxury goods. Businesses can address

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this challenge by providing detailed product descriptions, images, videos, and flexible return policies. Still, the issue of physical inspection of products cannot be completely replaced.

iv. High Initial Investment

Although e-business can reduce operating costs in the long run, establishing an e-business may also require a considerable initial investment. Firms must spend on website development, hardware, software, cybersecurity systems, payment gateways, cloud services, and employee training. Additional expenditure will also be required for website maintenance, software updates, and digital marketing. For small businesses and start-ups, these initial costs may pose a financial challenge, especially in the early stages of operation.

It can thus be concluded that e-business can reduce physical infrastructure costs, but secure, scalable technology, integration, and training can still require significant upfront investment.

v. Privacy Concerns

E-business organizations collect and store large volumes of customer data, including their personal information, purchasing behaviour, and payment details. Customers may lose confidence in the business if it does not manage this information properly or if it is misused.

vi. Trust and Credibility Issues

Due to concerns regarding fraud, counterfeit products, misleading advertisements, and misuse of personal information, many consumers remain cautious about conducting online transactions. So, new or unfamiliar online businesses may find it difficult to establish customer trust and credibility.

vii. Resistance within the Organisation

Business firms may face resistance from employees who are reluctant to change existing work practices or adopt new digital technologies at the time of adoption of e-business practices. This resistance may arise due to various reasons like fear of job displacement, lack of digital skills, inadequate training, or uncertainty about new systems and processes. Such resistance can delay the successful implementation of e-business initiatives and reduce their effectiveness.

viii. Digital Divide

The benefits of e-business cannot be fully realized by individuals who lack access to the internet, digital devices, or the necessary technological skills. In many developing regions, inadequate digital infrastructure and low levels of digital literacy limit participation in online business activities. This digital divide restricts market access and creates inequality in e-business adoption.

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ix. Rapid Technological Changes

E-business operates in a rapidly evolving technological environment. New technologies, changing customer expectations, and emerging cybersecurity threats require businesses to continuously update their websites, software, security systems, and digital tools. Frequent technological upgrades add costs and require employee training, which can be challenging, particularly for small and nano businesses. Organizations that fail to keep pace with technological advancements may lose their competitive advantage and struggle to meet customer expectations.

x. Logistics and Delivery Challenges

Online ordering is convenient for customers, but delivering physical products successfully depends on efficient logistics and supply chain management. Issues like delays in transportation, damaged goods, incorrect deliveries, high shipping costs, and inefficient return management can adversely affect customer satisfaction and business reputation. Businesses operating in remote or rural areas may face additional challenges due to inadequate transportation and delivery infrastructure.

Recap

- ◊ E-business refers to the use of information and communication technologies (ICT) in all areas of business to conduct, support, and improve business activities.
- ◊ E-commerce, or electronic commerce, refers to the buying, selling, marketing, and servicing of products and services through electronic networks, particularly the Internet.
- ◊ Digitalisation of business refers to the process of integrating digital technologies into business processes and business models in order to improve efficiency, enhance customer experience, reduce costs, and create new value. It primarily focuses on improving existing processes and operations.
- ◊ B2B transactions are electronic transactions conducted between two or more business organisations. In this model, businesses purchase goods or services from other businesses rather than selling directly to individual consumers.
- ◊ B2C involves transactions in which businesses sell products or services directly to individual consumers through digital platforms.
- ◊ C2C refers to electronic transactions which are conducted between individual consumers. These transactions are facilitated by an online platform that acts as an intermediary. In this model, individuals buy and sell goods or services directly to one another without involving a traditional business as the seller.

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- ◊ C2B is a type of e-business in which individuals offer products, services, or expertise to businesses.
- ◊ B2G refers to electronic business transactions in which business organizations provide goods or services to government departments, public sector undertakings, or government agencies through digital platforms.
- ◊ G2B refers to the digital delivery of government services to business organizations.
- ◊ G2C refers to the electronic delivery of public services from government agencies directly to citizens.
- ◊ An e-business model can be considered as an adaptation of this traditional business model to the digital or Internet-based environment. E-business models make use of electronic communication technologies to create and deliver value.
- ◊ In Brokerage model, brokers generally do not own the products or services being sold. Instead, they provide a digital platform that enables buyers and sellers to interact and complete transactions efficiently.
- ◊ In Advertising model, websites, search engines, and online directories provide information or services to users, usually free of charge. However, they generate revenue from advertisements.
- ◊ Under the aggregator mode, products and services from multiple sellers are brought together by the aggregators on a single online platform.
- ◊ In Infomediary model, the information relating to consumers and businesses are collected, analysed, and sold for marketing purposes to interested organisations. An information intermediary (Infomediary) also supports business firms by collecting and managing customer information to maximise its value.
- ◊ Community model results in the formation of electronic communities (e-communities) where individuals and organisations interact online to exchange ideas, build relationships, conduct transactions, and seek entertainment.
- ◊ The Subscription Model enables e-business organisations to provide digital products or services in return for a recurring subscript**ion fee.**
- ◊ In manufacturer model, the products are sold directly through the manufacturer's website, and ownership is transferred to the buyer after purchase.
- ◊ Affiliate model is a commission-based business model in which an affiliate promotes the products or services of another company through its website, blog, social media platforms, or other digital channels.

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Objective Questions

1. Which term refers to the use of Information and Communication Technologies (ICT) in all areas of business?
2. Which form of commerce involves the buying and selling of goods and services through electronic networks, particularly the Internet?
3. What is the process of integrating digital technologies into business processes and business models called?
4. Which e-business model involves electronic transactions between business organizations?
5. Which e-business model involves businesses selling products or services directly to individual consumers?
6. Which e-business model facilitates electronic transactions between individual consumers?
7. Which e-business model enables individuals to offer products, services, or expertise to businesses?
8. Which e-business model involves business organizations providing goods or services to government agencies?
9. Which e-business model refers to the digital delivery of government services to business organizations?
10. Which e-business model refers to the electronic delivery of government services directly to citizens?
11. Which e-business model acts as an intermediary between buyers and sellers without owning the products?
12. Which e-business model generates revenue primarily through advertisements?
13. Which e-business model brings together products and services from multiple sellers on a single online platform?
14. Which e-business model collects, analyses, and sells consumer and business information for marketing purposes?
15. Which e-business model provides products or services in return for a recurring fee?

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Answers

1. E-business
2. E-commerce
3. Digitalisation
4. B2B
5. B2C
6. C2C
7. C2B
8. B2G
9. G2B
10. G2C
11. Brokerage
12. Advertising
13. Aggregator
14. Infomediary
15. Subscription

Self-Assessment Questions

1. What is e-business?
2. Explain the concept of digitalisation of business. How does digitalisation improve business operations and customer experience?
3. Differentiate between traditional business and e-business
4. Describe the various types of e-business models.
5. Explain the different types of e-business.
6. Explain the benefits and limitations of e-Business
7. Explain the principles of e-Business.

Assignments

1. Analyse how digitalisation has transformed traditional businesses into e-businesses. Illustrate your answer with suitable examples.

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2. "E-business has become essential for the growth and competitiveness of nano businesses." Analyse this statement by highlighting its advantages and challenges.

3. Evaluate the role of digitalisation in transforming various sectors such as the job market, banking, marketing, entertainment, and e-shopping. Support your answer with relevant examples.

4. Compare and contrast the Brokerage, Advertising, Aggregator, and Subscription models of e-business. Which model do you think is most suitable for a nano business? Justify your answer.

5. Critically examine the role of digital technologies in enabling e-outsourcing and facilitating collaboration between businesses and service providers across different geographical locations.

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Unit 2 Applications of E-Business in Industries

Learning Outcomes

After completing this unit, the learner will be able to:

- ◊ describe the various areas of digitalisation in business
- ◊ discuss the applications of digitalisation in the job market, real estate, publishing, banking and personal finance, marketing, grocery retailing, shopping, online delivery of digital products, entertainment and media, and outsourcing

Prerequisite

Meera is a young nano entrepreneur. She runs a small handmade soap business from her home. She daily checks online job portals to hire a part-time delivery assistant for her business. She also searches real estate websites to find an affordable workspace to expand her operations. To learn new packaging techniques, she purchases an e-book from an online publishing platform. Using her mobile banking app, she transfers payments to suppliers, receives money from customers, and monitors her business finances. She uses social media and other digital marketing platforms to promote her business and attract customers from different parts of the country. When raw materials run low, she orders them from an online grocery and wholesale marketplace. She also buys packaging materials from an e-shopping website. After a busy day, Meera relaxes by watching an educational business podcast on a video streaming platform.

Meera's journey shows how digitalisation has become essential to running even the smallest business. Today, businesses regardless of their size use digital technologies to recruit employees, search for business locations, access digital publications, manage banking and finances, market products, purchase inputs, sell goods and services, download digital products, access entertainment and learning resources, and outsource specialised tasks. Digitalisation enables entrepreneurs to operate more efficiently, reduce costs, expand their customer base, and compete effectively in the digital economy. This unit explores the application of digital technologies across different sectors. It explains how digitalisation has transformed the job market, real estate, publishing, banking and personal finance, marketing, grocery retailing, shopping, online delivery of digital products, entertainment and media, and outsourcing, thereby creating new opportunities and improving business efficiency.

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Keywords

E-Business, Digitalisation, E-publishing, E-Wbanking

Discussion

Over the past few decades, digital technologies have become integral to business operations. Digital technologies have transformed all aspects of business, including production, marketing, finance, human resource management, customer relationship management, and supply chain management. Today, businesses are increasingly adopting digital platforms and technologies to improve operational efficiency, reduce costs, enhance customer experiences, and remain competitive in a rapidly evolving business environment. This widespread integration of digital technologies into business processes and activities is commonly called digitalisation.

Modern business organizations use digital technologies to collect and analyse customer data, forecast market trends, personalise products and services, support data-driven decision-making, and collaborate with customers, suppliers, and business partners across geographical boundaries. Consequently, digitalisation has become a strategic necessity rather than merely a technological option for achieving innovation, competitiveness, and sustainable business growth.

1.2.1 Areas of Digitalisation in Business

Digitalisation has transformed almost every business function by integrating digital technologies into organizational activities. Digitalisation of business refers to integrating digital technologies into business functions to improve efficiency, reduce costs, enhance customer satisfaction, and gain a competitive advantage. It enables businesses to improve efficiency, enhance customer satisfaction, reduce costs, and gain a competitive advantage. The major areas of digitalisation in business include the following:

i. Business Operations

Digital technologies help to automate routine business activities such as production planning, inventory management, procurement, and workflow management. Enterprise Resource Planning (ERP) systems help to integrate different business functions, improve coordination, reduce processing time, and enhance operational efficiency.

ii. Customer Relationship Management (CRM)

Businesses use digital platforms, CRM software, mobile applications, chatbots, and social media to interact with customers, manage customer data, and provide personalized services. This will help improve customer satisfaction

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and loyalty. Improved customer satisfaction and loyalty contribute to increased sales and business growth.

iii. Marketing and Sales

Digitalisation has transformed traditional marketing through websites, social media, email marketing, search engine optimisation (SEO), online advertising, and e-commerce platforms. These technologies enable businesses to reach wider markets, personalise promotional activities, and evaluate marketing performance.

iv. Finance and Accounting

The employment of digital technologies, online banking, digital payment systems, electronic invoicing, accounting software, and cloud-based financial management systems, improves the speed, accuracy, transparency, and efficiency of financial transactions and reporting.

v. Human Resource Management

Electronic Human Resource Management (e-HRM) refers to the use of digital technologies, internet-based applications, and information systems to perform and manage human resource functions electronically. It enables organizations to automate HR activities, improve efficiency, reduce administrative workload, and provide better employee services through digital platforms. It includes online recruitment and selection, payroll processing, attendance management, performance appraisal, employee self-service portals, and online training.

vi. Supply Chain and Logistics Management

Adoption of digital technologies such as Radio Frequency Identification (RFID), Global Positioning System (GPS), Internet of Things (IoT), and Warehouse Management Systems (WMS) enable real-time monitoring of procurement, inventory, transportation, and distribution. This, in turn, helps improve supply chain visibility, operational efficiency, and customer service.

vii. Communication and Collaboration

The application of digital communication tools such as email, video conferencing, cloud collaboration platforms, and instant messaging facilitates effective communication and collaboration among employees, customers, suppliers, and business partners, regardless of their geographical location.

viii. Business Analytics and Decision Support

Business firms use technologies like Business Intelligence (BI), Artificial Intelligence (AI), and Big Data Analytics to collect, process, and analyse large volumes of business data generated from customers, sales, operations, and market activities. These technologies enable business organizations to identify business trends, understand customer behaviour, forecast demand, evaluate business performance, and support strategic and operational decision-making. As a result,

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businesses can respond more effectively to changing market conditions, improve operational efficiency, and gain a competitive advantage.

ix. Procurement and Vendor Management

E-procurement systems aid businesses to carry out procurement activities electronically through digital platforms. They help organizations to identify and evaluate suppliers, invite quotations, compare prices, place purchase orders, process payments, monitor supplier performance, and manage procurement records efficiently. This improves transparency, reduces paperwork, shortens procurement time, and lowers procurement costs.

x. Knowledge Management and Cybersecurity

Digital databases, cloud storage, and knowledge management systems aid business firms by facilitating the storage and sharing of organisational information, while cybersecurity technologies such as encryption, firewalls, and intrusion detection systems protect digital assets and ensure business continuity.

1.2.2 Digitalisation of Job Market

The digitalisation of the job market refers to applying digital technologies to employment-related activities such as recruitment, selection, workforce management, skill development, and remote work. It involves using internet-based platforms, mobile applications, Artificial Intelligence (AI), cloud computing, and data analytics to connect employers with job seekers and manage employment processes efficiently. By enabling employers and job seekers to connect more efficiently through online portals, mobile applications, and professional networking websites, digital platforms have transformed the traditional job market. As a result, employment processes have become faster, more transparent, and accessible to a larger pool of candidates.

The major components of the digital job market are discussed below.

i. Online Job Portals

Online job portals help to provide a digital platform where employers can advertise vacancies while job seekers can search for employment opportunities. Eligible candidates can create profiles, upload their resumes and apply for jobs based on their location, industry, qualifications, salary, and experience. Online job portals have simplified the recruitment process by enabling employers to reach a large number of potential candidates in a short period. They also give job seekers access to a wide range of opportunities across industries and regions. This increases transparency, reduces recruitment costs, and accelerates the overall hiring process. Many portals also offer career guidance, resume-building tools, interview preparation resources, and job alerts, making recruitment more efficient and accessible. Examples of online job portals include LinkedIn, Naukri.com, Indeed, and Monster.com.

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ii. Company Career Portals

Many business organizations maintain dedicated career sections on their official websites where vacancies are advertised directly. Candidates can submit online applications, upload their resumes, and track their application status using these official websites. These portals enable business organizations to communicate directly with prospective employees, reduce recruitment costs, and strengthen their employer brand. Company career portals enable business organizations to communicate directly with prospective employees without relying on external recruitment agencies. They also improve recruitment efficiency, reduce hiring costs, and strengthen the employer's brand image.

iii. Professional Networking Platforms

Professional networking platforms enable individuals to create digital profiles. Individuals can use these platforms to showcase their qualifications, skills, certifications, and work experience. These platforms facilitate professional networking, knowledge sharing, career development, and recruitment by allowing employers to identify and approach suitable candidates. LinkedIn. is a prominent example of a professional networking platform.

iv. Mobile Recruitment

Today, various mobile applications (apps) enable candidates to search for jobs, receive notifications, submit applications, communicate with recruiters, and participate in interviews from any location. Organizations can reach a larger pool of applicants quickly with the help of these apps while candidates can respond to job opportunities immediately without requiring access to a desktop computer. This improves recruitment speed, enhances candidate engagement, and supports a more accessible and efficient hiring process. Examples of mobile recruitment applications include Apna, WorkIndia, Naukri, Indeed, LinkedIn Jobs, and Foundit.

v. Artificial Intelligence (AI) and Applicant Tracking Systems (ATS)

Today, many business organisations use Artificial Intelligence (AI) and Applicant Tracking Systems (ATS). AI-powered systems analyse resumes, match candidate profiles with job requirements, rank applicants, schedule interviews, and respond to candidate queries through chatbots. On the other hand, ATS helps to automate application management by storing candidate information, screening resumes, generating recruitment reports, and monitoring the hiring process. These technologies help reduce recruitment time, administrative workload, and human error while improving the consistency of candidate evaluation.

vi. Virtual Interviews

Today, many organisations use video conferencing technologies to conduct virtual interviews. Virtual interviews help organisations reduce travel costs, save time, and recruit candidates from different geographical regions. The adoption of

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virtual interviews has increased significantly during the COVID-19 pandemic and continues because of their flexibility and cost-effectiveness.

vii. Remote Work

It refers to a work arrangement in which employees perform their responsibilities from home or another location outside the traditional office environment. Business organizations use digital communication and collaboration platforms to assign tasks, monitor performance, conduct meetings, and facilitate teamwork. Remote working offers several advantages for both employers and employees. Remote work offers employees benefits such as flexible hours, less commuting time, better work-life balance, and more job opportunities beyond their location. On the other hand, employers can reduce office infrastructure costs, access a wider talent pool, and maintain business continuity during emergencies such as natural disasters or pandemics. Thus, remote work has become an integral component of the modern digital workplace.

viii. Gig Economy and Freelancing

The gig economy refers to a labour market characterized by short-term, project-based, or freelance employment facilitated through digital platforms. Rather than entering long-term employment contracts, professionals undertake assignments for multiple clients based on their skills and expertise. The gig economy provides businesses with access to skilled professionals without the long-term costs associated with permanent employment, while workers benefit from flexible work schedules, multiple income opportunities, and the freedom to choose projects according to their interests and expertise. Freelancers such as software developers, graphic designers, digital marketers, content writers, translators, consultants, accountants, photographers, online tutors, and web designers are examples of gig workers. The gig economy also includes platform-based workers such as food delivery partners associated with Swiggy and Zomato, ride-hailing drivers working through Uber and Ola, and freelance professionals who offer their services through digital platforms such as Upwork, Fiverr, Freelancer, and Truelancer.

For nano businesses, digital job platforms provide an affordable way to recruit skilled employees, freelancers, or part-time workers without extensive recruitment costs.

1.2.3 Digitalisation of real estate

The real estate sector is a major contributor to the economic growth, employment generation, and infrastructure development in an economy. Traditionally, buying, selling, renting, and managing properties involved extensive paperwork, multiple intermediaries, lengthy negotiations, and repeated physical visits to properties. These processes were often time-consuming, expensive, and lacked transparency. Digitalisation has transformed how the real estate sector operates.

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Digitalisation of real estate means integrating digital technologies into property-related activities such as buying, selling, leasing, renting, financing, construction, property management, and customer service. It also involves replacing traditional manual procedures with electronic systems, online platforms, and automated technologies to improve efficiency, transparency, and convenience.

Digitalisation simplifies property search, improves transparency, reduces paperwork, and speeds up transaction processing. Buyers can compare multiple properties, take virtual tours, verify information, and complete transactions more conveniently. It helps developers reduce marketing costs and improve customer relationship management. Government agencies also benefit through better land record management, transparent property registration, and improved tax administration. Overall, digitalisation has enhanced efficiency, reduced costs, and increased trust among stakeholders in the real estate market.

The following are the applications of digitalisation in real estate:

i. Online Property Portals

These portals provide a digital marketplace where buyers, sellers, tenants, landlords, and real estate developers interact. Detailed information about residential, commercial, and industrial properties, including photographs, floor plans, prices, amenities, neighbourhood information, and customer reviews are provided by these platforms. These platforms help in simplifying the property search process by allowing users to compare multiple properties based on their preferences. They also help to reduce marketing costs for developers and increase the visibility of property listings, enabling faster transactions. MagicBricks, 99acres, Housing.com, and NoBroker are examples of online property portals.

ii. Virtual Property Tours

Virtual property tours enable prospective buyers to inspect properties remotely using technologies such as 360-degree images, videos, and Virtual Reality (VR). Thus, using these facilities instead of physically visiting multiple properties, buyers can explore the layout, interiors, surroundings, and amenities of a property using computers, smartphones, or other digital devices. Thus, virtual property tours help to save time and travel costs and help buyers shortlist suitable properties more efficiently. This helps prospective buyers make informed purchasing decisions.

iii. Digital Documentation

Property transactions usually involve numerous legal documents such as title deeds, sale agreements, tax receipts, occupancy certificates, and registration records. Digital documentation allows such legal documents to be stored, verified, shared, and retrieved electronically. Digital documentation reduces paperwork, minimises the risk of document loss, improves record accuracy, and speeds up property transactions. It also enhances transparency by making information more accessible to buyers, sellers, financial institutions, and regulatory authorities.

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iv. Digital Payment Systems

Digital payment technologies enable buyers to pay booking amounts, rent, maintenance charges, registration fees, and loan instalments electronically through internet banking, mobile banking, UPI, and digital wallets. These systems ensure faster, safer, and more transparent financial transactions while reducing dependence on cash. Digital payments also improve financial record-keeping and simplify reconciliation for both buyers and developers.

v. Online Property Registration

Many state governments in India have introduced online facilities for different stages of property registration. Depending on the state, these facilities may enable citizens to book registration appointments, submit or upload documents, make e-payments of stamp duty and registration fees, and track the status of applications electronically. In some states, additional stages of the registration process may also be supported through online platforms, while certain procedures may still require physical verification or appearance before the registering authority. These digital services reduce paperwork and administrative delays, improve transparency, make registration services easier to access, and strengthen record management.

vi. Property Management Software

Property management software is a digital application which helps developers, housing societies, landlords, property managers, and facility managers to efficiently manage residential and commercial properties. It automates various property management activities such as tenant and lease management, rent collection, maintenance requests, visitor management, accounting, billing, and communication with tenants or residents through a centralized digital platform. By automating routine administrative tasks, property management software improves operational efficiency, reduces paperwork and administrative workload, minimizes errors, and enhances the quality of services provided to tenants and property owners. It also enables better record management, timely maintenance, and effective communication among all stakeholders.

vii. PropTech (Property Technology)

PropTech refers to using innovative digital technologies in the real estate industry. Proptech combines information technology, data analytics, and digital platforms to improve property development, marketing, investment, and management.

It involves using Artificial Intelligence for property recommendations, Blockchain for secure property records and transactions, Internet of Things (IoT) for smart buildings, Big Data Analytics for market forecasting, Geographic Information Systems (GIS) for location analysis and Virtual and Augmented Reality for immersive property viewing.

Nano entrepreneurs can use digital real estate platforms to identify suitable business locations or rental spaces while saving time and reducing search costs.

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1.2.4 E-publishing

It refers to creating, producing, distributing, and disseminating publications in digital format through electronic media. Instead of printing content on paper, publications are prepared electronically and made available through websites, mobile applications, e-book platforms, digital libraries, and online databases. E-publishing includes digital books, electronic journals, online newspapers, digital magazines, newsletters, research reports, blogs, and other electronic documents. Readers can access these publications using computers, smartphones, tablets, and dedicated e-reading devices. The digital format allows content to be updated easily, distributed instantly, and accessed by a global audience.

E-publishing encompasses a wide variety of digital publications such as e-books, e-journals, online newspapers and magazines, digital newsletters, self–publishing platforms, digital libraries and institutional repositories.

1. E-Books

These are electronic versions of printed books that can be read using computers, smartphones, tablets, or dedicated e-readers. E-books include features such as search functions, bookmarks, hyperlinks, adjustable font sizes, and note-taking tools, making reading more convenient and interactive. Examples of e-books include Kindle e-books, which are available through Amazon Kindle, Google Play Books, and Apple Books.

2. Electronic Journals (E-Journals)

They publish scholarly articles, research papers, case studies, and reviews in digital format. E-journals are subscribed to by universities, research institutions, and libraries as they provide quick access to current research and facilitate academic collaboration. Examples of electronic journals include the Journal of Business Research, Electronic Commerce Research, Nature, and the Indian Journal of Commerce.

3. Online Newspapers and Magazines

Many newspapers and magazines are now available through websites and mobile applications. Readers can access breaking news, feature articles, editorials, photographs, and videos in real time. Digital editions often include interactive content and personalized news recommendations. *The Hindu, The Indian Express*, and *The New York Times* are examples of online newspapers. *India Today* and *Forbes* are examples of online magazines.

4. Digital Newsletters

Organizations, educational institutions, and businesses publish electronic newsletters to communicate information, announcements, promotional content, and updates to employees, customers, and stakeholders. Newsletters are distributed

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through email or online platforms, reducing printing costs and enabling instant communication. Examples of digital newsletters include the Harvard Business Review Newsletter, Morning Brew, OpenAI Newsletter, and company newsletters distributed by organizations through email.

5. Self-Publishing Platforms

Self-publishing enables authors to publish their work independently without relying on traditional publishing houses. Writers can upload manuscripts, design book covers, set prices, and distribute their books directly to readers through online marketplaces. Self-publishing provides greater creative freedom, faster publication, and higher royalty earnings for authors. Examples of self-publishing platforms include Amazon Kindle Direct Publishing (KDP), Kobo Writing Life, Apple Books for Authors, and Draft2Digital.

6. Digital Libraries and Institutional Repositories

Digital libraries collect, preserve, and provide access to books, journals, theses, dissertations, reports, and other learning resources in an electronic format. Universities and research institutions maintain institutional repositories to preserve and disseminate scholarly work. These digital collections support education, research, and lifelong learning by providing convenient access to reliable information.

Nano entrepreneurs can use e-publishing to create digital brochures, product catalogues, training materials, and promotional content at a lower cost.

1.2.5 E- Banking and Personal Finance

Electronic Banking or E-Banking refers to the provision of banking services through digital technologies and electronic channels. E-banking includes services like internet banking, mobile banking, Automated Teller Machines (ATMs), electronic fund transfers (EFT), and other digital payment systems. E-banking allows the customers to transfer funds, make payments, check account balances, apply for loans, and carry out various other banking activities securely. E-banking systems employ security measures such as user authentication, passwords, One-Time Passwords (OTPs), encryption, and other cybersecurity mechanisms in order to protect customer information and financial transactions. E-banking has significantly improved the efficiency and accessibility of financial services. Customers can complete banking transactions anytime without visiting bank branches, saving time and effort. Digital banking reduces paperwork, speeds up transaction processing, and enables secure fund transfers across geographical boundaries.

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Major Services of E-Banking

1. Internet Banking

Internet banking provides customers with the facility to access banking services through a bank's official website using secure login credentials. Customers can check account balances, transfer funds, download account statements, pay utility bills, and apply for banking products online through internet banking. Internet banking offers convenience, reduces paperwork, and lets customers complete banking transactions 24 hours a day without visiting a branch.

2. Mobile Banking

It allows customers to perform banking transactions through the bank's smartphone application. These applications provide services such as fund transfers, bill payments, balance enquiries, cheque requests, fixed deposit management, and loan repayments. Mobile banking provides greater flexibility by allowing customers to manage their finances at any time and from anywhere. It has become one of the most widely used digital banking services due to the increasing use of smartphones.

3. Automated Teller Machines (ATMs)

Customers can withdraw cash, check account balances, change PINs, and obtain mini statements using ATMs; deposit facilities are available through selected ATMs or cash-recycler machines. ATMs provide round-the-clock banking services and reduce congestion in bank branches while improving customer convenience.

4. Digital Payment Systems

Digital payment systems enable electronic money transfers between individuals, businesses, and financial institutions. Popular payment methods include internet banking, UPI, Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT), Real-Time Gross Settlement (RTGS), debit cards, credit cards, QR codes, and digital wallets.

5. Digital Wallets

Digital wallets help store payment information electronically and enable customers to make online and offline payments without the use of physical cash or cards. Users can pay utility bills, recharge mobile phones, purchase goods, and transfer money conveniently through mobile applications. Digital wallets simplify everyday financial transactions and promote financial inclusion by enabling easy access to digital payment services.

6. Online Investment and Financial Services

Banks and financial institutions provide online platforms that let customers invest in fixed deposits, mutual funds, government securities, insurance policies,

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and pension schemes. Customers can monitor investment performance, receive account statements, and make investment decisions electronically. These services improve accessibility to financial markets and encourage individuals to participate in wealth creation and long-term financial planning.

Nano businesses benefit from e-banking by making quick payments, receiving customer payments digitally, monitoring cash flow, and maintaining financial records.

Personal Finance

It refers to the planning and management of an individual's financial resources to achieve financial security and meet their short-term and long-term financial goals. Personal finance comprises various activities such as budgeting, saving, investing, borrowing, insurance planning, tax planning, and retirement planning. Effective personal financial management enables individuals to allocate their income efficiently, manage financial risks, and build long-term wealth.

Digital personal finance refers to using digital technologies and financial applications to manage personal finances efficiently. Mobile banking applications, digital wallets, budgeting and expense-tracking applications, investment platforms, and personal finance management software enable individuals to monitor income and expenditure, prepare budgets, pay bills, transfer funds, manage savings and investments, repay loans, and plan taxes. These applications also provide spending analysis, financial insights, bill payment reminders, automated savings, and personalized investment recommendations. Consequently, digital personal finance enables individuals to make informed financial decisions, improve financial discipline, and achieve their financial goals more effectively.

Digital personal finance applications assist individuals in budgeting, monitoring expenses, managing investments, and planning future financial goals. These technologies encourage financial discipline, improve financial literacy, and support better financial decision-making.

1.2.6 E- Marketing

Electronic marketing (e-marketing) refers to the use of digital technologies and electronic communication channels to plan, promote, price, and distribute products and services. It involves using websites, search engines, email, mobile applications, social media platforms, online advertising, and other digital communication channels to reach existing and potential customers. As compared to traditional marketing, e -marketing enables businesses to reach customers across the globe at a relatively low cost while operating continuously without geographical limitations. Organizations can target specific customer groups based on age, location, interests, and purchasing behaviour, thereby improving the effectiveness of promotional campaigns. Business firms can also measure marketing performance in real time

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using digital analytics. Moreover, e-marketing enables firms to monitor website traffic, customer engagement, conversion rates, and return on investment (ROI), allowing them to modify marketing strategies quickly. E-marketing also facilitates personalized communication, strengthens customer relationships, improves brand visibility, and supports business growth.

The following are the various components of e-marketing

Components of E-Marketing

i. Website Marketing

It refers to the use of a business website to promote products and services, provide information, and interact with customers through digital technologies. A business website can be considered the digital storefront of a business organization. It provides various information about its products, services, prices, company profile, contact details, and customer support. Websites also enable customers to browse products, place orders, make electronic payments, and access after-sales services. An effective website enhances brand visibility and credibility, improves customer experience, and supports online sales. It also serves as the foundation for other digital marketing activities such as search engine optimization (SEO), social media marketing, and email marketing.

ii. Search Engine Optimization (SEO)

It refers to the process of improving a website's ranking and visibility in search engine results. Businesses optimise website content, keywords, website structure, images, and technical performance to improve search engine rankings and attract organic traffic. Effective SEO helps businesses reach potential customers actively searching for related products or services. It increases website traffic, enhances brand visibility and credibility, reduces dependence on paid advertising, improves user experience, and contributes to higher conversion rates and business growth.

iii. Search Engine Marketing (SEM)

It refers to promoting websites through paid advertisements on search engines. Businesses bid on keywords so that their advertisements appear when users search for relevant products or services. SEM provides immediate visibility, generates qualified leads, and allows businesses to target specific customer segments based on location, interests, and search behaviour.

iv. Social Media Marketing

It involves promoting products and services through social media platforms such as Facebook, Instagram, LinkedIn, X (formerly Twitter), and YouTube. Businesses publish promotional content, interact with customers, conduct advertising campaigns, and build online communities. Social media marketing strengthens customer engagement, improves brand awareness, encourages customer feedback, and facilitates viral marketing through content sharing.

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v. Email Marketing

It involves sending promotional messages, newsletters, product updates, discount offers, and personalized communications directly to customers through email. It is an economical and effective way to maintain customer relationships, promote repeat purchases, and communicate with existing customers. Businesses can also measure campaign performance through open rates and click-through rates.

vi. Content Marketing

It involves creating valuable and informative content to attract and retain customers. Businesses publish blogs, articles, videos, podcasts, infographics, case studies, and educational materials. These contents help customers solve problems or gain useful knowledge. High-quality content helps to build customer trust, improve search engine rankings, and establish the organization as an industry expert.

vii. Mobile Marketing

It refers to the use of smartphones and tablets to promote products through SMS, mobile applications, push notifications, QR codes, and location-based services. As smartphone use increases, mobile marketing lets businesses communicate with customers instantly and deliver personalized offers based on preferences and location.

viii. Affiliate Marketing

It is a performance-based digital marketing strategy in which individuals or business organizations (affiliates) promote a company's products or services through digital channels in exchange for a commission. Commission is earned on successful sales, leads, or other predefined customer actions. It enables businesses to expand their market reach, increase online sales, and improve brand visibility while paying marketing costs only when they achieve measurable results.

ix. Influencer Marketing

It involves collaborating with social media personalities, bloggers, or industry experts who influence consumer purchasing decisions. Businesses use influencers' credibility and popularity to promote their products to followers. This strategy increases brand awareness, improves customer trust, and effectively reaches niche markets.

Nano businesses can promote their products through social media and online advertising at a relatively low cost, enabling them to compete with larger businesses.

1.2.7 E-Shopping

It refers to purchasing goods and services through the Internet using websites or mobile applications. Consumers can conveniently search for products on

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mobile apps or websites, compare prices, place orders, make electronic payments, and receive products through home delivery or other delivery arrangements. E-shopping eliminates geographical barriers by allowing customers to buy from sellers worldwide. E-shopping also provides access to a wide range of products, detailed product information, customer reviews, price comparisons, and attractive promotional offers, enabling informed purchasing decisions. E-shopping also offers various advantages to businesses. Businesses benefit from reduced operational costs, wider market reach, and improved customer engagement through digital platforms. In addition, e-shopping allows businesses to analyse customer preferences using data analytics, personalize product recommendations, and improve inventory management.

Process of E-Shopping

E-shopping involves a sequence of digital activities that enable customers to complete purchases conveniently.

1. Product Search

In this step, customers search for products on websites or mobile apps by entering keywords or browsing product categories.

2. Product Comparison

In this second step, customers compare prices, product specifications, customer ratings, reviews, warranties, and delivery options before deciding to purchase.

3. Shopping Cart

After comparing the products, the customer selects the best product. The selected product is added to a virtual shopping cart. Here, customers can modify quantities, remove items, or continue shopping before checkout.

4. Order Placement

In this step, the customers confirm product selection, provide delivery addresses, choose shipping options, and place the order electronically.

5. Digital Payment

Payments in e-shopping can be completed using internet banking, UPI, debit cards, credit cards, digital wallets, or other electronic payment methods.

6. Order Processing and Delivery

The seller processes the order, packages the products, and arranges delivery through logistics partners. Customers receive tracking information and delivery updates until the products are delivered.

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7. After-Sales Service

E-shopping platforms provide various services such as product returns, refunds, warranty claims, customer support, and product reviews to improve customer satisfaction and build long-term relationships.

Components of E-Shopping

The following are the various components of e-shopping :

1. Online Storefront

It is the digital interface through which customers browse products and interact with sellers, and it contains descriptions of products, images, prices, offers, customer reviews, and purchase options. A well-designed storefront improves user experience and encourages online purchases.

2. Product Catalogue

It organises products into categories and provides detailed information regarding specifications, prices, availability, and promotional offers. Customers can easily search, compare, and select products according to their preferences from the product catalogues.

3. Shopping Cart

A virtual shopping cart temporarily stores selected products before customers proceed to payment. It allows customers to modify orders and calculate the total purchase value, including taxes and shipping charges.

4. Payment Gateway

A payment gateway processes electronic payments between customers and sellers. It encrypts financial information, authorizes transactions, and ensures secure online payments. Secure payment gateways increase customer confidence and reduce transaction risks.

5. Logistics and Delivery System

Efficient logistics ensure timely packaging, shipment, tracking, and delivery of products. Modern logistics systems use GPS, barcode scanning, warehouse automation, and route optimization technologies to improve delivery efficiency.

6. Customer Support System

This includes online chat, email support, telephone assistance, FAQs, complaint handling, return policies, and refund management. Effective customer service enhances customer satisfaction and encourages repeat purchases.

Nano entrepreneurs can establish online stores or sell through digital marketplaces to reach customers beyond their local markets.

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1.2.8 E-Grocers

These are businesses that sell grocery products through electronic platforms such as websites and mobile applications. They allow customers to purchase food items like fruits, vegetables, dairy products, beverages, household supplies, personal care products, and other daily necessities online. E-grocers integrate digital technologies with inventory management, payment systems, and logistics to facilitate online ordering and home delivery. Customers can shop anytime, compare prices, access promotional offers, and receive products at their preferred location.

Business Models of E-Grocers

Different e-grocers adopt different operational models depending on their resources and target market.

i. Inventory-Based Model

In this model, the e-grocer owns warehouses or fulfilment centres where it stores products before delivering them to customers. The company manages inventory, packaging, and logistics independently. This model ensures better quality control and faster order processing. However, it requires significant investment in warehousing and inventory management.

ii. Marketplace Model

Here, the e-grocer acts as an intermediary by connecting customers with multiple grocery retailers. Orders are forwarded to partner stores, and they supply the products while the platform manages online ordering and payments. This model requires less investment in inventory and lets customers access products from multiple sellers through a single platform.

iii. Hyperlocal Delivery Model

Hyperlocal delivery platforms partner with nearby grocery stores and supermarkets. After receiving customer orders, the platform collects products from local stores and delivers them quickly. Thus, this model supports local retailers while providing customers with rapid delivery and fresh products.

iv. Subscription-Based Model

Some e-grocers offer subscription services for regularly purchased products, such as milk, bread, fruits, vegetables, and household essentials. Customers receive scheduled deliveries without placing repeated orders, thus improving convenience and customer retention.

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Components of E-Grocery Business

The following are the various components of e-grocers.

i. Online Ordering Platform

First, the customers place orders through websites or mobile applications. These platforms provide product information, prices, images, reviews, and promotional offers.

ii. Digital Payment Systems

After selecting products, customers add them to a virtual shopping cart and proceed to payment. E-grocers accept payments through internet banking, UPI, debit cards, credit cards, digital wallets, and cash on delivery.

iii. Inventory Management

Inventory management systems monitor stock levels, product availability, expiry dates, and demand forecasts in real time. Efficient inventory management reduces wastage, prevents stock shortages, and ensures timely order fulfilment.

iv. Logistics and Delivery Management

Efficient logistics are essential for successful e-grocery operations. GPS technology, route optimization software, and delivery management systems enable timely delivery of orders. Proper logistics are particularly important for perishable products such as fruits, vegetables, dairy products, and frozen foods.

v. Customer Relationship Management

E-grocers use Customer Relationship Management (CRM) systems to manage customer data, analyse purchasing behaviour, offer personalized recommendations, and handle customer complaints.

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1.2.9 Online Delivery of Digital Products

Digital products are intangible goods that are created, stored, distributed, and consumed in electronic form. Unlike physical products, these products do not require manufacturing, packaging, or physical transportation. They can be delivered instantly through digital networks after purchase or subscription. Examples of digital products include software applications, e-books, online courses, digital newspapers, music files, movies, video games, mobile applications, templates, photographs, research reports, and cloud-based services.

Online delivery of digital products refers to the electronic distribution of digital goods and services via the Internet. After purchasing or subscribing to a product, customers receive immediate access through downloading, streaming, cloud-based access, or online licensing. Unlike physical distribution, online delivery does not require transportation or storage of products, as they can be delivered

electronically through websites, mobile applications, cloud platforms, or digital marketplaces instantly, from anywhere at any time.

Online delivery offers numerous advantages for businesses and consumers. One advantage is that customers receive immediate access to products without waiting for physical delivery, making the purchasing process faster and more convenient. Digital products can be accessed from anywhere with an internet connection, allowing businesses to serve customers worldwide. From a business perspective, online delivery significantly reduces manufacturing, packaging, storage, and transportation costs. It also simplifies product updates, improves inventory management, and enables subscription-based revenue models. In addition, digital delivery supports environmental sustainability by reducing paper consumption, packaging materials, and transportation-related carbon emissions.

Types of Digital Products

The following are the different types of digital products

i. Software Applications

These include operating systems, office applications, antivirus software, graphic design tools, accounting software, and business applications through online platforms distributed by software companies. Customers can download or subscribe to software without purchasing physical installation media.

ii. E-Books and Digital Publications

This includes books, journals, magazines, newspapers, and research reports published in electronic formats such as PDF and EPUB. Readers can purchase or subscribe to these publications and access them instantly using computers, smartphones, tablets, or e-readers.

iii. Online Learning Materials

Educational institutions and e-learning platforms provide online courses, lecture videos, digital textbooks, assignments, quizzes, and certificates electronically. Students can access learning resources anytime, making education more flexible and accessible.

iv. Digital Music and Audio Content

Music streaming platforms distribute songs, podcasts, audiobooks, and other audio content through subscription or pay-per-download models. Customers can access large music libraries without purchasing physical CDs or DVDs.

v. Digital Videos and Movies

This includes movies, television programmes, documentaries, and educational videos delivered through streaming platforms and online rental services. Customers can watch content instantly on various digital devices without permanently

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downloading large files. For example, a customer subscribes to Netflix and watches a newly released movie on a smartphone or smart TV without purchasing a DVD or visiting a cinema. The movie is delivered digitally over the internet, making it an example of online delivery of digital products.

vi. Mobile Applications

Today, numerous mobile applications are distributed through application stores for communication, entertainment, education, banking, health, and productivity. Users can download or update applications directly to their smartphones or tablets.

vii. Digital Games

Video games are increasingly distributed through online gaming platforms, enabling users to download, install, or stream games electronically. Regular updates, downloadable content (DLC), and cloud gaming services have further transformed the gaming industry.

1.2.10 Entertainment and Media

The entertainment and media industry has undergone one of the most significant transformations due to digitalisation. Traditionally, entertainment content such as movies, television programmes, music, newspapers, magazines, and radio broadcasts were distributed through physical media or scheduled broadcasting channels. Consumers depended on cinemas, television networks, radio stations, bookstores, and newspaper vendors to access information and entertainment.

The rapid development of the Internet, smartphones, high-speed broadband, cloud computing, and digital streaming technologies has fundamentally changed how media content is created, distributed, and consumed. Today, audiences can access movies, television programmes, music, podcasts, digital newspapers, online magazines, games, and live events through websites and mobile applications anytime, anywhere.

Digitalisation has transformed entertainment from a scheduled, location-dependent activity into an on-demand, personalized experience. Digital entertainment and media refer to the creation, distribution, and consumption of entertainment and information through digital technologies and internet-based platforms. It involves delivering audio, video, text, images, games, and interactive content electronically through computers, smartphones, tablets, smart televisions, and other digital devices.

Digital media comprises streaming services, online news portals, social media platforms, podcasts, digital music services, online gaming, e-magazines, and video-sharing platforms. These services enable users to access content on demand, interact with creators, and personalize their entertainment experience according to individual preferences.

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Digital entertainment offers numerous advantages to consumers and businesses. Consumers can access a wide variety of entertainment content anytime and from any location using internet-enabled devices. In addition to this, on-demand availability eliminates the dependence on fixed broadcasting schedules and allows users to choose content according to their preferences. Personalized recommendations, multilingual content, and interactive features further improve the user experience. For businesses, digital platforms provide access to global audiences, reduce distribution costs, and create multiple revenue streams through subscriptions, advertisements, and premium content.

Major Forms of Digital Entertainment and Media

The following are the major forms of digital entertainment and media.

1. Video Streaming Platforms

They provide access to movies, television programmes, documentaries, educational videos, and live events through internet-based subscriptions. Users can watch content at their convenience without depending on scheduled television broadcasts. These streaming services offer personalized recommendations, multiple language options, offline viewing, and high-definition video quality, enhancing the customer experience. Netflix, Amazon Prime Video, YouTube, and JioHotstar are examples of video streaming services that let users watch movies, television programmes, documentaries, educational videos, and live events online.

2. Digital Music Platforms

They enable users to stream or download songs, albums, podcasts, and audiobooks through subscription or advertisement-supported services. Users can create personalized playlists, receive music recommendations, and access millions of songs from different genres and languages. Digital music distribution has largely replaced physical media such as CDs and audio cassettes due to its convenience and accessibility. Spotify, Apple Music, YouTube Music, Amazon Music, Gaana, and JioSaavn are examples of digital music services that enable users to stream or download songs, podcasts, and audiobooks.

3. Online News and Digital Journalism

Today, most newspapers, magazines, and news agencies publish content through websites and mobile applications. Digital journalism enables readers to access breaking news, feature articles, editorials, photographs, videos, and live updates in real time. In addition, online news platforms offer greater accessibility and allow readers to interact through comments, social media sharing, and multimedia content. BBC News, The Hindu, The Indian Express, Times of India, and NDTV are examples of online news platforms that provide news, articles, videos, and live updates through digital channels.

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4. Social Media Platforms

Social media platforms enable individuals and organizations to create, share, and experience digital content. Businesses, governments, educational institutions, media organizations, and individuals use these platforms to communicate, promote products, share information, and engage with audiences. Social media has become an important channel for entertainment, marketing, news dissemination, and public interaction. Facebook, Instagram, X (formerly Twitter), LinkedIn, Snapchat, and Threads are examples of social media platforms that enable users to create, share, and interact with digital content.

5. Online Gaming

Digitalisation has transformed gaming into a global online industry. Players can access games through computers, gaming consoles, smartphones, and cloud gaming platforms. Multiplayer online games allow users from different countries to interact and compete in virtual environments. The gaming industry has expanded significantly through mobile gaming, esports, virtual reality gaming, and cloud-based gaming services. Battlegrounds Mobile India (BGMI), Free Fire MAX, Minecraft, Roblox, and Fortnite are examples of online games that let users play individually or with others through internet connectivity.

6. Podcasts and Audiobooks

Podcasts refer to digital audio programmes available for streaming or downloading. They cover a variety of topics, such as education, business, health, technology, and entertainment. Audiobooks enable users to listen to books rather than reading printed copies. These digital formats provide flexible learning and entertainment opportunities, particularly for individuals who prefer listening while travelling or performing other activities.

7. Digital Advertising and Content Creation

Content creators, influencers, businesses, and media organizations use digital platforms to publish videos, blogs, short films, tutorials, and promotional content. Revenue is generated through advertising, subscriptions, sponsorships, affiliate marketing, and premium content. The emergence of the creator economy has enabled individuals to develop successful careers by producing digital content for global audiences.

1.2.11 E-Outsourcing

It refers to contracting business functions or processes to external service providers through electronic communication and digital technologies. It involves using the internet, cloud computing, video conferencing, project management software, and online collaboration platforms to manage outsourced activities. Digital technologies facilitate communication, information sharing, project monitoring, and secure data exchange, making outsourcing faster, more efficient, and more flexible.

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E-outsourcing enables businesses to reduce operational costs by outsourcing non-core activities to specialized service providers. Organizations gain access to highly skilled professionals, advanced technologies, and global talent without investing heavily in infrastructure or recruitment. By outsourcing routine activities, organizations can concentrate on their core competencies, innovation, and strategic decision-making, thereby improving overall competitiveness. E-outsourcing also provides flexibility by enabling businesses to scale operations according to demand.

1.2.11.1 Types of E-Outsourcing

i. Information Technology Outsourcing (ITO)

It involves outsourcing IT-related activities such as software development, application maintenance, cloud computing, cybersecurity, database management, website development, and technical support. Organizations gain access to specialized technical expertise and can reduce infrastructure investment and maintenance costs.

ii. Business Process Outsourcing (BPO)

Here, organizations outsource routine business functions such as customer service, payroll processing, accounting, human resource administration, finance, and procurement. BPO enables organizations to improve operational efficiency, reduce costs, and focus on strategic business activities.

iii. Knowledge Process Outsourcing (KPO)

This involves the outsourcing of knowledge-intensive activities requiring specialized expertise such as financial analysis, legal research, engineering design, business consulting, and market research. KPO provides organizations with access to highly qualified professionals while enhancing innovation and decision-making.

iv. Digital Marketing Outsourcing

Many organizations outsource digital marketing activities such as social media management, search engine optimization (SEO), content creation, email marketing, online advertising, website management, and analytics to specialized marketing agencies. This enables businesses to benefit from professional marketing expertise without maintaining large in-house marketing departments.

Nano businesses can outsource activities such as website development, graphic design, digital marketing, accounting, and customer support to freelancers or specialized agencies without hiring full-time employees.

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Recap

- ◊ Digitalisation of business involves integrating digital technologies into various business functions to improve efficiency, productivity, and decision-making.
- ◊ Major areas of digitalisation include business operations, customer relationship management (CRM), marketing and sales, finance and accounting, human resource management (e-HRM), supply chain and logistics management, communication and collaboration, business analytics and decision support, procurement and vendor management, and knowledge management and cybersecurity.
- ◊ The digitalisation of the job market denotes the application of digital technologies to employment-related activities such as recruitment, selection, workforce management, skill development, and remote work. It involves using internet-based platforms, mobile applications, Artificial Intelligence (AI), cloud computing, and data analytics to connect employers with job seekers and manage employment processes efficiently.
- ◊ Digitalisation of real estate means integrating digital technologies into property-related activities such as buying, selling, leasing, renting, financing, construction, property management, and customer service. It also involves replacing traditional manual procedures with electronic systems, online platforms, and automated technologies to improve efficiency, transparency, and convenience.
- ◊ e-publishing refers to the creation, production, distribution, and dissemination of publications in digital format through electronic media. Instead of printing content on paper, publications are prepared electronically and made available through websites, mobile applications, and e-book platforms.
- ◊ Electronic Banking or E-Banking refers to the provision of banking services through digital technologies and electronic channels. E-banking includes services like internet banking, mobile banking, Automated Teller Machines (ATMs), electronic fund transfers (EFT), and other digital payment systems.
- ◊ Digital personal finance refers to the use of digital technologies and financial applications to manage personal finances efficiently. Mobile banking applications, digital wallets, budgeting and expense-tracking applications, investment platforms, and personal finance management software enable individuals to monitor income and expenditure, prepare budgets, pay bills, transfer funds, manage savings and investments, repay loans, and plan taxes.

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- ◊ Electronic marketing (e-marketing) refers to the use of digital technologies and electronic communication channels to plan, promote, price, distribute products and services. It involves using websites, search engines, email, mobile applications, social media platforms, online advertising, and other digital communication channels to reach existing and potential customers.
- ◊ E-Shopping refers to the process of purchasing goods and services through the internet using websites or mobile applications.
- ◊ E-Grocers are business establishments or firms that sell grocery products through electronic platforms such as websites and mobile applications.
- ◊ Online delivery of digital products refers to the electronic distribution of digital goods and services via the internet.
- ◊ Digital entertainment and media refer to the creation, distribution, and consumption of entertainment and information through digital technologies and internet-based platforms. It involves delivering audio, video, text, images, games, and interactive content electronically through the medium of computers, smartphones, tablets, smart televisions, and other digital devices.
- ◊ E-Outsourcing refers to the practice of contracting business functions or processes to external service providers through electronic communication and digital technologies. It involves the use of the internet, cloud computing, video conferencing, project management software, and online collaboration platforms to manage outsourced activities.

Objective Questions

1. Which process involves integrating digital technologies into various business functions?
2. Which area of digitalisation focuses on managing customer interactions digitally?
3. Which publishing method distributes publications in digital format?
4. Which term refers to banking services provided through digital channels?
5. Which type of marketing uses digital technologies and online communication channels?
6. Which term refers to purchasing goods and services through the internet?
7. What are online businesses that sell grocery products called?
8. Which process refers to the electronic distribution of digital goods via the internet?

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9. Which area involves creating and consuming entertainment through digital platforms?

10. Which practice involves contracting business functions through digital technologies?

11. Which digital platform helps manage personal finances?

12. Which area of digitalisation covers buying, selling, and managing properties digitally?

Answers

1. Digitalisation
2. CRM
3. E-publishing
4. E-banking
5. E-marketing
6. E-shopping
7. E-grocers
8. Online delivery of digital products
9. Digital entertainment and media
10. E-outsourcing
11. Digital personal finance
12. Digitalisation of real estate

Self Assessment Questions

1. Explain the concept of digitalisation of business.
2. Describe the major areas of digitalisation in business.
3. Explain the concept of e-banking and digital personal finance.
4. Discuss the role of e-marketing and e-shopping in modern business.
5. Explain the concept of e-outsourcing and its benefits to businesses.

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Assignments

1. Analyse how digitalisation improves business efficiency and customer satisfaction.
2. Evaluate the role of CRM in enhancing customer relationships and business growth.
3. Analyse the impact of digitalisation on the job market and employment practices.
4. Compare traditional business practices with digitalised business processes using suitable examples.
5. Critically examine the importance of e-outsourcing for nano businesses in the digital economy.
6. The growth of e-business in Kerala has created employment opportunities beyond traditional sales activities. An online business requires people for activities such as digital marketing, website management, order processing, inventory management, packaging, delivery, customer support, content creation, and data management. It also provides opportunities for individuals to work as freelancers, delivery partners, online sellers, and service providers.
7. Based on the above case, identify and classify the employment opportunities created through e-business. Explain how the growth of e-business can generate direct and indirect employment and suggest suitable opportunities for aspiring entrepreneurs and job seekers.

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BLOCK 2

E-Business Strategy and E-Governance

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Unit 1

E-Governance

Learning Outcomes

After completing this unit, the learners will be able to:

- ◊ explain the meaning of E-Governance and its key models (G2G, G2B, G2C) to demonstrate understanding of foundational concepts
- ◊ analyse the role of ICT in enabling E-Governance and evaluate its benefits and risks in realworld applications
- ◊ identify and discuss successful E-Governance initiatives in Kerala and other Indian states to illustrate practical implementation
- ◊ apply knowledge of ecitizen, eservice, efiling, esociety, etender, and eauction to interpret their relevance in modern governance
- ◊ compare and contrast traditional governance with E-Governance to assess how digital transformation impacts efficiency, transparency, and citizen participation

Prerequisite

E-Governance in Kerala – The Akshaya Project

The Government of Kerala pioneered one of India's most recognised E-Governance initiatives through the Akshaya Project, launched in 2002. Conceived as a community technology centre model, Akshaya aimed to bridge the digital divide by providing affordable access to ICT services in rural areas. The project introduced citizens to eliteracy programmes, helping them understand basic computer operations and internet use. By establishing centres across districts, Akshaya created a platform for delivering governmenttocitizen (G2C) services such as bill payments, certificates, and applications, thereby reducing bureaucratic delays and enhancing transparency. This initiative demonstrated how ICT could transform governance by making it more inclusive and citizencentric.

The success of Akshaya inspired similar models across India. For instance, Madhya Pradesh's eDistrict project and Andhra Pradesh's MeeSeva initiative adopted comparable frameworks to deliver G2C and G2B services. These platforms integrated efiling, etendering, and eauction systems, allowing businesses to interact with government departments efficiently. By digitising procurement

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and service delivery, states reduced corruption risks and improved accountability. Citizens benefited from eservices such as online grievance redressal, land record access, and utility payments, while businesses gained from transparent tendering and auction processes. The ICT backbone ensured interoperability between governmenttogovernment (G2G) departments, streamlining workflows and reducing duplication.

Kerala's Akshaya centres also evolved into hubs for ecitizen engagement, offering services like Aadhaar enrolment, pension distribution, and welfare scheme applications. This transformation highlighted both the benefits and risks of E-Governance: while accessibility, efficiency, and transparency improved, challenges such as data privacy, cyber security, and digital literacy gaps persisted. Nevertheless, the initiative demonstrated that with proper planning and citizen participation, E-Governance could strengthen democratic processes and foster an esociety. This unit focused on the meaning, models, ICT integration, benefits and risks, successful initiatives, and key applications of E-Governance in India.

Keywords

E-Governance, G2C, G2B, G2G, ICT, E-Citizen, E-Service, E-Filing, E-Tender, E-Auction

Discussion

2.1.1 E-Governance – Meaning

E-Governance refers to the use of information and communication technology (ICT) to improve the way governments work and deliver services. Some countries and organisations are still at the early stage of adopting eservices, while others have already developed advanced systems. However, moving towards a fully digital government is not easy. There are risks involved, and if these risks are not managed well, they can negatively affect the economy, efficiency, and success of E-Governance projects These risks can negatively affect the economy, efficiency, and success of e-governance projects if not managed well.

By using ICT in administration, governments and organisations can achieve greater efficiency, transparency, and cost savings. Services can be delivered faster and more accurately, ensuring that the needs of citizens, businesses, and other stakeholders are better met. E-Governance requires proper hardware, software, networking, and process redesign to improve service delivery. For example, applying for a government certificate online, paying a government fee digitally, or tracking a public-service application are everyday uses of E-Governance.

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In simple terms, E-governance integrates ICT into government processes to make them more responsive to the public. Its main purpose is to simplify procedures for governments, citizens, and businesses at national, state, and local levels. The two major applications are eservices (like online applications or bill payments) and etransactions (like digital fund transfers). Depending on the activity, egovernment can be divided into four areas: edemocracy (citizen participation), eservice provision (service delivery), emanagement (internal efficiency), and E-governance (overall coordination and policy making).

2.1.2 Definition of E-Governance

E-Governance is defined as "the use of information and communication technologies, and particularly the internet, as a tool to achieve better government"

According to UNESCO, "The public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective." (Source: UNESCO Thesaurus – Electronic Governance)

2.1.3 Objectives of E-Governance

- ◊ To strengthen and simplify administration for government, citizens, and businesses.
- ◊ To make government work more transparent and accountable, while meeting the needs and expectations of society through efficient public services and effective cooperation between people, organisations, and the state.
- ◊ To reduce inefficiency and unnecessary delays in government processes.
- ◊ To ensure faster delivery of services and information.
- ◊ To make business interactions easier by providing quick access to information and enabling digital communication through online platforms.

2.1.4 Types of Interactions in E-Governance

E-Governance means using information and communication technology (ICT) to deliver public services and manage government activities. It involves sharing information, communicating, conducting transactions, and linking different systems and services. These interactions can happen in several ways:

- ◊ **Government to Citizen (G2C):** Services provided directly to the public, such as online applications, bill payments, or certificates.
- ◊ **Government to Employees (G2E):** The use of digital tools and online systems by the government to communicate with, train, and manage its

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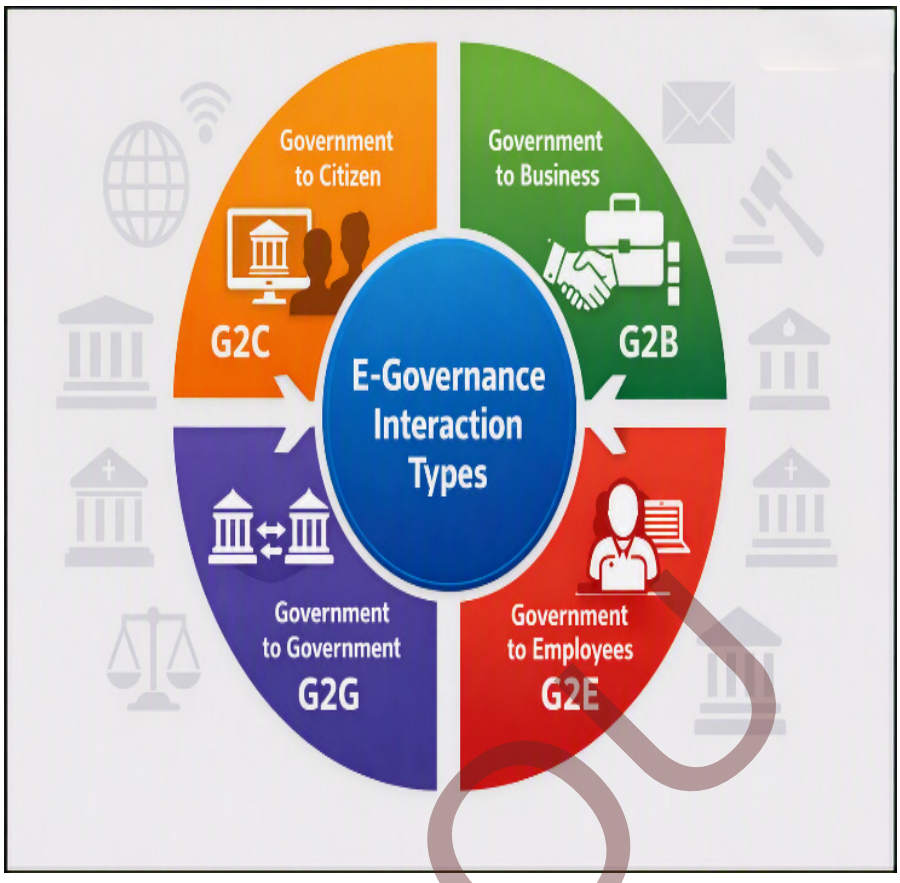


Fig 2.1.1 Types of Interactions in E-Governance

employees efficiently without relying on paper-based processes.

◊ **Government to Government (G2G):** Communication and coordination between different government departments and agencies.

◊ **Government to Business (G2B):** Services and processes that connect government with businesses, like etendering or tax filing.

a. Government to Citizen (G2C)

The main goal of Government to Citizen (G2C) E-Governance is to use technology to provide public services to citizens quickly, efficiently, and at a lower cost. It helps build a stronger connection between the government and the people through digital communication and service delivery.

G2C e-governance lets citizens interact directly with government officials through online platforms. People can send messages, submit feedback, share opinions, and make payments for services such as electricity or water bills. Other tasks like changing an address, applying for schemes or grants, or transferring services can now be done online without visiting government offices.

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However, G2C systems face challenges because not everyone has internet access or computer skills, especially in rural areas. Some websites also have technical or language barriers, and data security can be a concern. Still, many countries, including India, are improving their G2C systems to make governance more citizenfriendly.

Example: In India, the Akshaya Centres in Kerala are a good example of G2C E-Governance. They help citizens pay bills, apply for certificates, and access welfare schemes online, making government services faster and more accessible.

b. Government to Employees (G2E)

Government to Employees (G2E) is an important part of E-Governance that improves communication and efficiency between the government and its employees. It uses online tools and systems to help staff share information, manage records, and complete administrative tasks without paper. Employees can easily send documents, access official data, and update personal details online instead of printing or faxing files.

G2E services include several useful features. EPayroll allows employees to view salary details, pay bills, and check tax information online. ETraining helps new and existing employees learn new skills and stay updated with technology through online courses. ELearning provides computerbased lessons, videos, and interactive materials so employees can study at their own pace from anywhere. These tools make government work more organised, transparent, and efficient.

Example: In India, the SPARROW (Smart Performance Appraisal Report Recording Online Window) system used by the Government of India is a good example of G2E E-Governance. It allows government officers to fill in and review performance appraisal reports online, reducing paperwork and speeding up administrative processes.

c. Government to Government (G2G)

Government to Government (G2G) refers to the electronic sharing of information and systems between different government departments, agencies, or organisations. The aim is to improve communication, access to information, and coordination. By sharing data and resources, governments can reduce IT costs and make their services more efficient. This also allows citizens to access information more easily through online platforms.

Example: In India, the eDistrict project connects various departments like revenue, land records, and social welfare, enabling smoother communication and faster delivery of services to citizens.

d. Government to Business (G2B)

Government to Business (G2B) is the online interaction between government bodies and the business sector. It provides companies with information, guidance, and support for digital business practices. The goal is to reduce business difficulties,

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provide quick access to information, and enable electronic communication through E-Business tools. Governments can also reuse business data for legal purposes and improve transaction protocols.

Example: The GST portal in India is a strong example of G2B E-Governance. It allows businesses to file taxes, access compliance information, and communicate with government departments online, saving time and reducing paperwork.

2.1.5 Concept of E-Governance

E-Governance means using information and communication technology (ICT) to improve how governments deliver services and interact with citizens, businesses, and employees. It makes administration faster, more transparent, and more efficient. Instead of relying on paperbased systems, governments can use digital platforms to share information, manage records, and provide services online.

The main purpose of E-Governance is to strengthen good governance by making government more accountable, open, and citizenfriendly. It helps reduce corruption, cut costs, and improve convenience. Citizens can pay bills online, apply for certificates, or access welfare schemes. Businesses can file taxes or participate in etenders digitally. Employees can use epayroll and etraining systems. Government departments can share data to improve coordination.

International organisations also highlight its importance. The World Bank describes E-Governance as the use of ICT tools like the internet, mobile computing, and networks to improve relations between governments, citizens, and businesses. The Council of Europe explains it as using electronic technologies in three areas: relations between government and society, supporting democracy (like evoting), and delivering public services online.

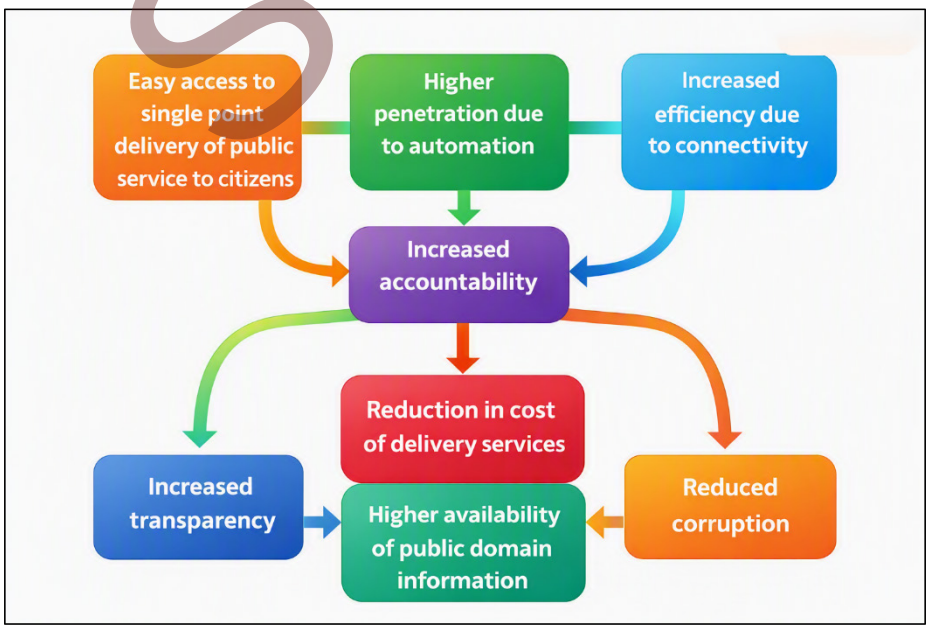


Fig. 2.1.2 Concept of E- Governance

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Examples:

- ◊ In India, the Aadhaar system provides digital identity to citizens, enabling access to services.
- ◊ The GST portal allows businesses to file taxes online.
- ◊ In Estonia, the eResidency programme lets entrepreneurs worldwide manage businesses digitally.

2.1.6 Benefits of E-Governance

E-Governance helps citizens access information and highquality public services. It makes government work simpler, more efficient, and more accountable. By using information and communication technology (ICT) along with improved administrative processes, governments can simplify complex procedures, update systems, and make rules clearer and easier to follow.

It benefits both citizens and the government. The rapid growth of communication technology allows government services to reach people directly, even in remote areas. This brings administration closer to citizens and makes public service delivery faster and more convenient.

Main Benefits:

1. **Speed and Efficiency:** Technology helps governments communicate and deliver services faster. The internet and smartphones enable quick sharing of large amounts of information worldwide. Example: Citizens can pay electricity bills or apply for certificates online instead of waiting in long queues.
2. **Cost Saving:** E-Governance reduces the need for paper, printing, and postage. By replacing manual processes with digital systems, governments save huge amounts of money every year. Example: Online tax filing through the GST portal saves both time and stationery costs for the government and businesses.
3. **Transparency:** Digital platforms make government operations more open. Citizens can access information online anytime, reducing secrecy and building trust. Example: The RTI (Right to Information) online portal allows people to file RTI applications online and receive responses electronically.
4. **Accountability:** When government actions are visible and traceable online, officials can be held responsible for their decisions. Transparency naturally leads to accountability. Example: The Public Grievance Portal enables citizens to lodge complaints and track responses, supporting accountability and follow-up.

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2.1.7 Risks and Limitations of E-Governance

1. **Loss of Interpersonal Communication:** One major drawback of E-Governance is that it reduces facetoface interaction between citizens and government officials. Personal communication matters because it builds trust, lets people explain problems directly, and maintains human connection in decisionmaking. When services move online, this personal touch is often lost.

Example: A villager who used to visit the local office to discuss land records may now only fill out online forms, which can feel impersonal and less supportive.

2. **High Setup Costs and Technical Problems:** Establishing E-Governance systems requires expensive infrastructure such as computers, servers, and secure networks. These systems also need regular maintenance, which adds to the cost. Technical failures like internet breakdowns or server crashes can interrupt services and cause delays.

Example: During online tax filing, if the GST portal crashes, businesses cannot submit returns on time, leading to frustration and penalties.

3. **Illiteracy and Lack of Digital Skills:** Many people in India, especially in rural areas, are not familiar with computers or smartphones. For them, accessing E-Governance services is difficult because they lack the skills to use digital platforms. This creates inequality, as only digitally literate citizens can benefit fully.

Example: Farmers who cannot use mobile apps may struggle to apply for crop insurance schemes online and miss out on government support.

4. **Cybercrime and Data Leakage:** Storing citizens' personal information online carries risks of hacking and misuse. Cybercrime can lead to theft of sensitive data such as identity details, financial records, or health information. If such breaches occur, people may lose trust in the government's ability to protect them.

Example: A breach involving a government identity database could expose sensitive personal information, raising concerns about privacy and security.

2.1.8 Importance of E-Governance

i. **Accessibility:** E-Governance ensures that citizens can access government services and information easily, anytime and anywhere. Online portals and mobile apps bring services to people's doorsteps. Example: Online income tax filing systems allow citizens to submit returns without visiting government offices.

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ii. **Transparency:** By publishing rules, policies, and decisions online, E-Governance reduces secrecy and makes government actions visible to the public. Example: Digital land records portals let citizens verify property details, reducing scope for manipulation.

iii. **Accountability:** When processes are digitised, every action leaves a trace. This makes officials more responsible for their decisions and actions. Example: Online grievance redressal systems track complaints, ensuring timely responses and accountability.

iv. **Service Quality:** Technology improves the speed and reliability of public services. Citizens receive quicker, more accurate, and userfriendly services. Example: Online railway ticket booking provides instant confirmation and reduces queues at counters.

v. **Interoperability:** Different government departments can share data seamlessly, avoiding duplication and improving coordination. Example: Linking Aadhaar with welfare schemes ensures benefits reach the right people by connecting databases across departments.

vi. **Participation:** E-Governance encourages citizens to engage in decisionmaking processes. Example: Evoting platforms allow citizens to participate in elections or local governance decisions more conveniently.

vii. **Inclusion:** Digital platforms extend services to rural and marginalised communities, bridging gaps in access. Example: Common Service Centres (CSCs) in villages provide digital access to government schemes and services.

viii. **Administrative Efficiency:** Automation reduces paperwork, speeds up processes, and cuts costs.

Example: Online pension disbursement systems save time and reduce administrative overheads.

ix. **Evidence Based Decision Making:** Data collected through E-Governance systems helps governments make informed policies.

Example: Realtime health data dashboards guide public health interventions during disease outbreaks.

Other Significances of E-Governance

◊ **E-Filing:** Taxpayers can file returns online from home at any time. This saves time, reduces errors, and provides faster refunds.

Example: The Income Tax eFiling portal in India allows individuals to submit returns electronically and receive quicker refunds.

◊ **E-Voting:** Shareholders can cast votes electronically, reducing costs and improving transparency. Results are declared immediately after voting closes.

Example: Shareholders of Indian companies use evoting to decide on mergers

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or policy changes without attending meetings physically.

◊ **Better access to information:** Citizens and businesses can easily collect data about government departments and participate in decisionmaking.

Example: The MyGov portal in India allows citizens to share suggestions and feedback on government policies.

◊ **Strengthening democracy:** E-Governance increases citizen participation at all levels, making democracy stronger.

Example: Online public consultations on new laws give citizens a voice in policymaking.

◊ **Reducing corruption:** Automation ensures that information about public welfare activities is available to everyone, reducing opportunities for corruption.

Example: Online tendering systems prevent favouritism and ensure fair competition.

◊ **Accountability:** Since government actions are visible online, officials know they are being monitored and act responsibly.

Example: The Public Grievance Redressal portal tracks complaints and responses, holding officials accountable.

◊ **Convenience:** Citizens can complete tasks online without visiting offices, saving time and effort.

Example: Applying for a driving licence or passport online reduces the need for multiple office visits.

◊ **Improved service delivery:** E-Governance provides better services, stronger business relations, citizen empowerment, more convenience, revenue growth, and cost reduction.

Example: Digital India and related public digital infrastructure include services such as Aadhaar and DigiLocker, while UPI supports digital payments.

2.1.9 Models of E-Governance

Over time, several e-governance models have been developed and are currently practiced across different regions. These models represent various ways in which Information and Communication Technology (ICT) can be applied to improve governance, enhance transparency, and strengthen citizen participation. The most recognised among them include the Broadcasting Model, Comparative Analysis Model, Critical Flow Model, EAdvocacy Model, and Interactive Service Model. Each approach plays a distinct role in shaping how governments deliver services and engage with society.

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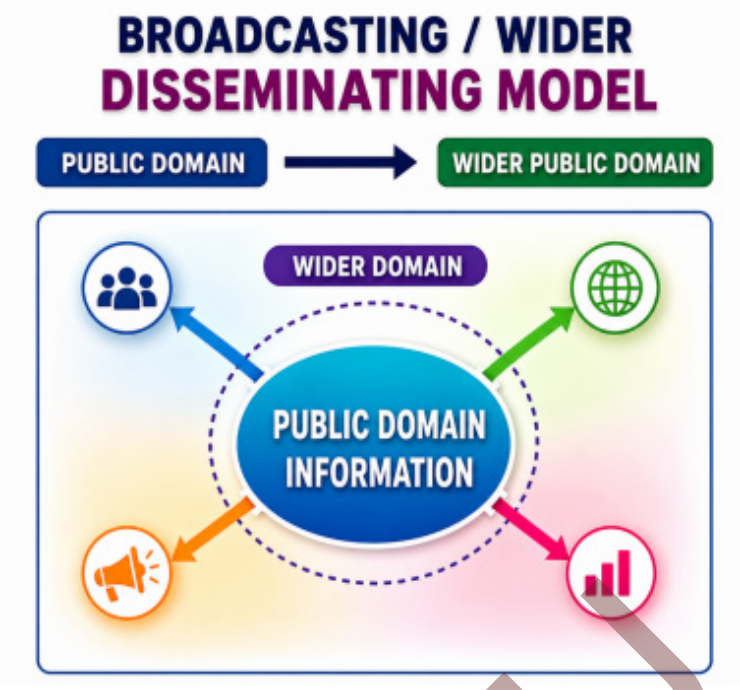


Fig. 2.1.3 Broadcasting Model of E-Governance

1. Broadcasting Model of E-Governance

The Broadcasting Model is one of the most basic and widely used approaches in e-governance. It focuses on mass dissemination of governance-related information already available in the public domain. Using Information and Communication Technologies (ICTs), governments spread this information to a wider audience, ensuring citizens are aware of ongoing governance processes, available services, and how they can benefit. This model is considered a stepping stone towards more advanced forms of digital governance because it promotes the free flow of information, which is essential for transparency and accountability. By making rules, regulations, policies, and performance reports accessible online, governments encourage citizen participation and build trust. The Broadcasting Model is fundamental because it ensures that people from all sections of society, urban or rural, educated or less literate, can access information easily. Developed countries, as well as states in India, use this model to give citizens greater access to governance services and increase involvement in decision-making.

Applications of the Broadcasting Model

- ◊ Publishing state rules and regulations online so that citizens can understand their rights and responsibilities.
- ◊ Making contact details of local, regional, and national officials (such as names, email addresses, and mobile numbers) available online for easy communication.

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◊ Uploading policy documents, budgets, investment details, and performance reports on government websites to ensure transparency.

Examples

1. **Kerala Government Websites:** The state government publishes rules, regulations, and welfare scheme details on official portals, allowing citizens to access information without visiting offices.

2. **RTI Online Portal:** Citizens across India can file Right to Information requests online and access government data, promoting transparency.

3. **Union Budget Portal:** The Government of India broadcasts budget documents and performance reports online, enabling citizens and businesses to analyse policies and plan accordingly.

4. **Election Commission Website:** Provides details about election rules, candidate lists, and voting procedures, ensuring citizens are informed and empowered.

5. **Digital India Initiative:** Acts as a broadcasting platform by spreading awareness about digital services, schemes, and opportunities available to citizens and entrepreneurs.

2. Comparative Analysis Model of E-Governance

The Comparative Analysis Model is a less frequently used approach, but it is highly significant, especially for developing countries. This model motivates people and policymakers through comparisons, showing differences between cases of poor governance and successful governance. By evaluating the negative aspects of bad governance and their impact on society, governments can learn valuable lessons and adopt better practices. The model relies on ICT to explore, compare, and analyse information available in both public and private domains, and then match it against established knowledge sets. Its strength lies in the vast capacity of digital networks to store, retrieve, and transmit diverse information instantly, overcoming geographical and organisational barriers. This makes it possible to highlight weaknesses, identify strengths, and promote evidence-based reforms. In short, the Comparative Analysis Model helps governments and citizens understand what works, what fails, and how lessons from past experiences can shape future policies.

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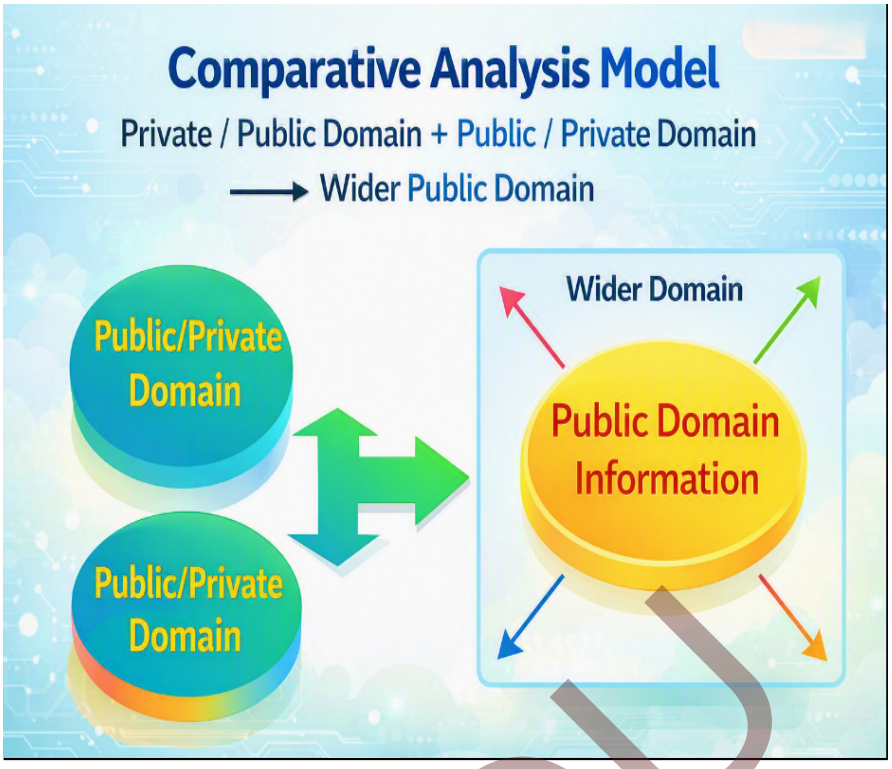


Fig. 2.1.4 Comparative Analysis Model of E-Governance

Applications of the Model

- ◊ Learning from earlier strategies and decisions, and applying those lessons to improve future policy-making.
- ◊ Evaluating the effectiveness of existing policies to identify strengths and weaknesses for reform.
- ◊ Defining precedents clearly, especially in judicial or legal matters such as patent disputes or property ownership rights, and using them to guide future decisions.
- ◊ Supporting informed decision-making at all levels by enhancing background knowledge and providing a clear rationale for action.
- ◊ Assessing the performance and track record of decision-makers or governing bodies to ensure accountability and transparency.

Examples

1. **RTI (Right to Information) Portal:** Citizens can compare government spending reports with promises made in policy documents, helping identify gaps in governance.
2. **NITI Aayog Reports:** Comparative studies of state-level performance in health, education, and entrepreneurship highlight which states are doing well

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and which need improvement.

3. **Judicial Precedents:** Courts in India often rely on past judgments in cases related to intellectual property or land disputes, setting standards for future decision-making.

4. **Swachh Survekshan rankings:** Comparing cities based on cleanliness and sanitation performance motivates local governments to improve their policies and delivery.

5. **Business Reforms Action Plan (BRAP) assessments:** Comparing States and Union Territories on business reforms can highlight where processes are simpler and more supportive.

3. Critical Flow Model of E-Governance

The Critical Flow Model focuses on disseminating or channelling vital and sensitive information that is often hidden or suppressed under poor governance. This model ensures that such crucial data reaches the right audience, such as the media, political parties, regulatory bodies, or even the general public, through the use of Information and Communication Technology (ICT) and convergent media. The main aim is to expose issues that affect transparency and accountability, enabling citizens and institutions to act responsibly. It plays a key role in strengthening democracy by ensuring that information which might otherwise be concealed is made accessible to those who can use it for reform or justice.

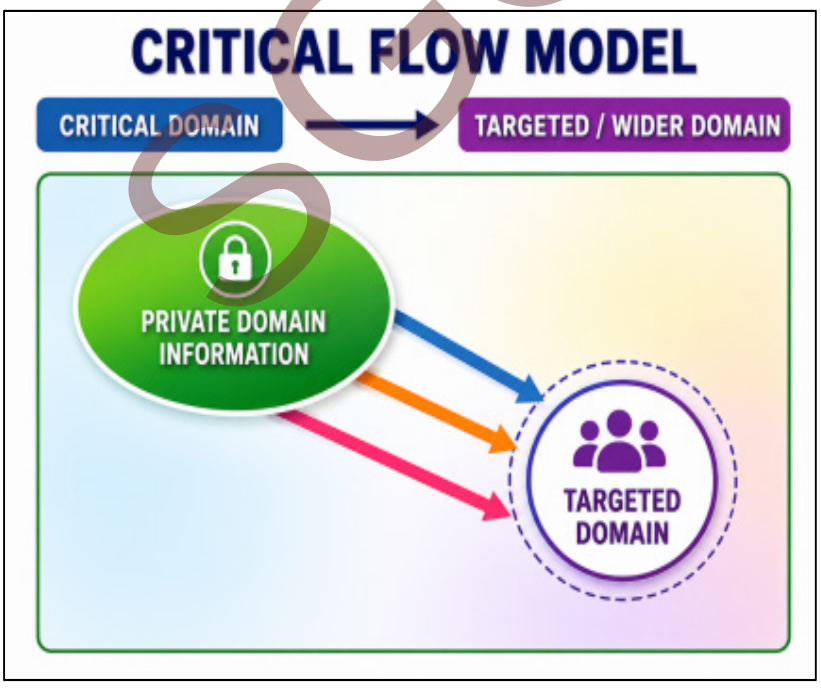


Fig. 2.1.5 Critical Flow Model of E-Governance

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This model is particularly important in developing countries, where corruption, environmental negligence, and human rights violations may go unnoticed without digital intervention. By using ICT tools like websites, online databases, and social media platforms, governments and civil organisations can share critical information instantly across regions and hierarchies. In essence, the Critical Flow Model promotes openness, encourages ethical governance, and empowers citizens to demand accountability.

Applications of the Model

- ◊ Making corruption-related data about specific ministries, divisions, or officials available online for public scrutiny or for review by electoral and regulatory bodies.
- ◊ Providing access to study papers, investigative reports, and impact assessments conducted by government departments or independent commissions to the concerned parties.
- ◊ Publishing cases of human rights violations online so that the judiciary, non-governmental organisations (NGOs), and citizens can take appropriate action.
- ◊ Making environmental information, such as details of radioactive leaks, effluent discharges, or company green ratings, accessible to the public and relevant authorities.

Examples

1. **Central Vigilance Commission (CVC) Portal:** Displays details of corruption cases and disciplinary actions against public officials, promoting transparency.
2. **National Human Rights Commission (NHRC) Website:** Shares reports and case details of human rights violations, enabling NGOs and citizens to follow up on justice.
3. **Pollution Control Board Websites:** Publish data on air and water quality, industrial emissions, and environmental compliance, helping communities monitor pollution levels.
4. **RTI Online Portal:** Allows citizens to request and access information about government decisions, budgets, and investigations, ensuring accountability.
5. **Media and Digital Platforms:** News portals and social media campaigns often use ICT to expose unethical practices, such as misuse of public funds or environmental negligence.

4. EAdvocacy Model of E-Governance

The EAdvocacy Model, also known as the Mobilisation and Lobbying Model, is one of the most widely used approaches in digital governance. It has often

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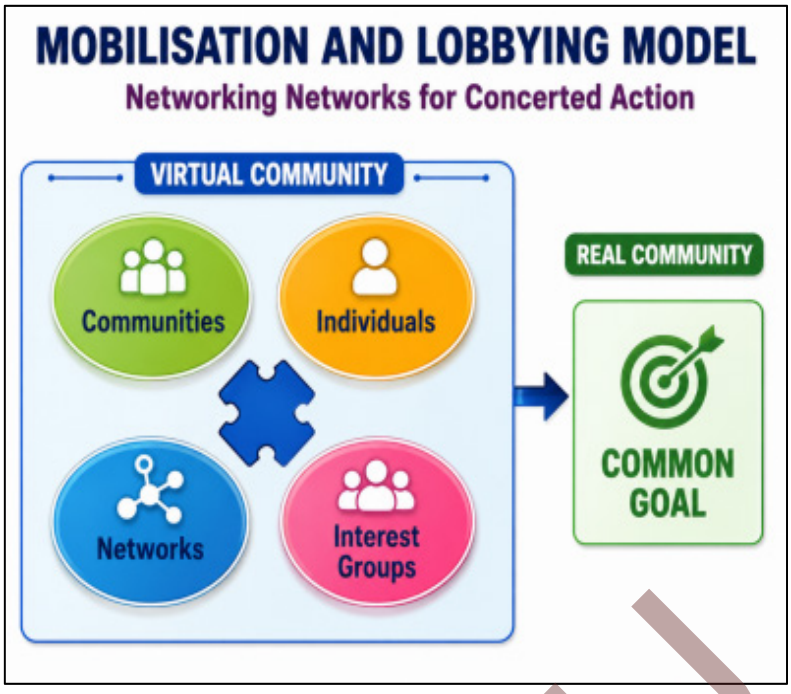


Fig. 2.1.6 EAdvocacy Model of E-Governance

supported global civil society by influencing decision-making processes at both national and international levels. This model is built on the idea of establishing a planned, targeted flow of information through ICT to build strong virtual allies who can complement real-world actions. By mobilising citizens, NGOs, and interest groups online, governments and organisations can foster debate, build pressure groups, and amplify the voices of communities often excluded from policy discussions. The strength of this model lies in its ability to connect people across geographical boundaries, enabling collective action and advocacy on issues that matter. It is particularly effective in democratic societies where public opinion and lobbying can shape government decisions. In essence, the E-Advocacy Model uses digital platforms to empower citizens, promote inclusivity, and ensure that diverse perspectives are considered in governance.

Applications of the Model

- ◊ Encouraging public debate on broader issues such as upcoming conferences, treaties, or policy reforms.
- ◊ Forming pressure groups on key concerns to compel decision-makers to address them.
- ◊ Providing a platform for suppressed or marginalised groups to share their opinions with the wider public.
- ◊ Catalysing broader citizen engagement in governance and decision-making processes.

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◊ Developing global knowledge on specific subjects where regional information is lacking, thereby supporting informed policy-making.

Examples

1. **MyGov Portal:** Citizens participate in discussions on government policies and upcoming initiatives, fostering public debate and collective input.
2. **Digital Campaigns for Social Issues:** Online movements such as those advocating for women's safety or environmental protection have influenced government action.
3. **NGO Advocacy Platforms:** Organisations use ICT to highlight issues like child labour or climate change, forming pressure groups that push for reforms.
4. **RTI Activism:** Citizens and activists use online platforms to demand transparency, compelling authorities to respond to concerns.
5. **Social Media Mobilisation:** Campaigns like #SwachhBharat and #DigitalIndia gained momentum through online advocacy, encouraging mass participation and policy support.

5. Interactive Service Model of E-Governance

The Interactive Service Model is designed to open up opportunities for citizens to be directly involved in governance processes. It is based on the idea that Information and Communication Technology (ICT) can connect every individual into a digital

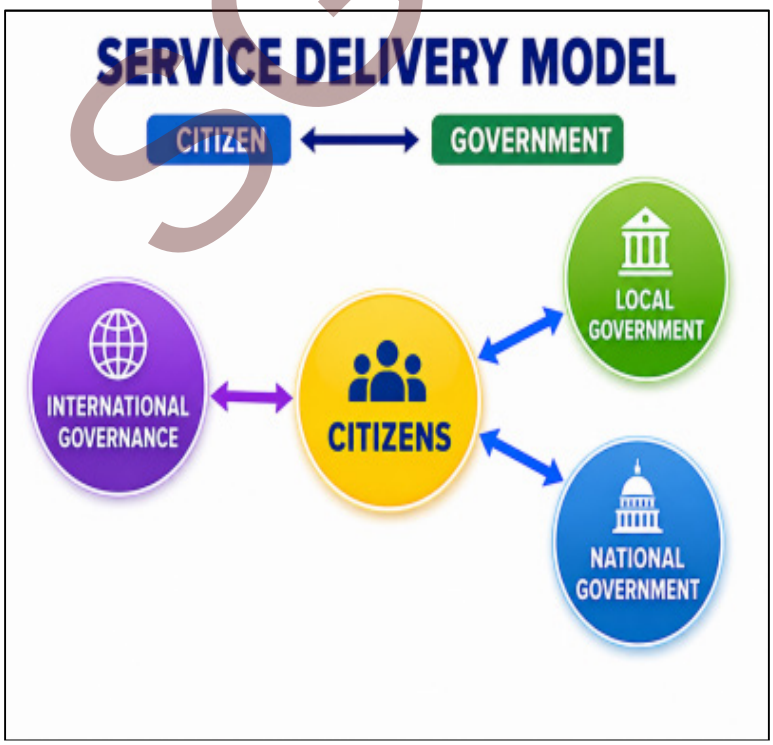


Fig. 2.1.7 Interactive Service Model of E-Governance

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network, allowing a twoway flow of information between the government and the people. Unlike oneway communication models, this approach fully utilises ICT's capacity to make governance more objective, transparent, and accountable. Under this model, government services are made interactively accessible to citizens through integrated policy portals. These portals enable people to access election-related digital services and participate in consultative polls, submit grievances online, share ideas and expertise, and take part in public opinion polling. By doing so, citizens are not just passive recipients of services but active contributors to decisionmaking. The model also supports decentralised governance, where local communities can interact directly with policymakers. Furthermore, it allows electronic execution of governance tasks such as revenue collection, tax filing, procurement, and transfer of payments. In essence, the Interactive Service Model transforms governance into a participatory process where citizens and government collaborate through digital platforms.

Applications of the Model

- ◊ Establishing open communication channels with policymakers and planning commissions.
- ◊ Conducting secure digital polls or consultations where legally permitted.
- ◊ Organising public forums and opinion surveys on important issues before policies are finalised.
- ◊ Allowing citizens to file petitions, reviews, and complaints directly with governing bodies.
- ◊ Supporting decentralised governance by involving local communities in decision-making.
- ◊ Performing electronic governance tasks such as tax filing, revenue collection, procurement, and fund transfers.

Examples

1. **Election-related digital services:** The Election Commission of India provides digital services for voter registration, application tracking, e-EPIC and grievances; voting in public elections is conducted through EVMs at polling stations, not Internet e-ballots.
2. **Centralised Grievance Redressal Portals:** Platforms like CPGRAMS (Centralised Public Grievance Redress and Monitoring System) allow citizens to lodge complaints online and track their resolution.
3. **MyGov Portal:** Citizens can share ideas, participate in polls, and contribute expertise to government initiatives.

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4. **UMANG App:** Provides interactive access to multiple government services, including tax payments, pension details, and welfare schemes.

5. **GST Portal:** Entrepreneurs and businesses file taxes electronically, ensuring compliance and reducing paperwork.

6. **Local Governance Platforms:** Panchayats in Kerala use ICT to involve citizens in planning and monitoring local development projects.

2.1.10 The Four Pillars of E-Governance

E-governance rests on four essential pillars. Without these, the system would be incomplete because e-governance uses information and communication technology (ICT) across government processes to improve its ability to serve the people. Online government solutions allow citizens to access services and information in ways that suit them best. Sharing government data and documents creates transparency and openness, which strengthens trust between citizens and the government. By applying ICT, e-governance supports government operations, empowers citizens, and builds confidence in public administration.

1. Process

The Process pillar focuses on how government procedures are organised, simplified, and made efficient through digital systems. It ensures that administrative tasks are carried out smoothly, transparently, and quickly. By redesigning traditional workflows and replacing manual paperwork with online systems, governments can reduce delays and corruption. This pillar also promotes accountability, as every step in the process can be tracked digitally. For entrepreneurs, streamlined processes mean faster approvals, fewer visits to government offices, and easier regulatory compliance. Example: A nano entrepreneur registering a new business



Fig 2.1.8 Four Pillars of E-Governance

online through a single-window portal can complete all formalities, such as tax registration and licence application, within minutes instead of waiting for weeks.

2. People

The People pillar represents the human element of e-governance. It includes both government employees and citizens who interact with digital systems. Skilled, trained personnel are essential to manage technology, guide users, and ensure services are delivered effectively. Similarly, citizens must know how to use digital platforms to access services. This pillar highlights the importance of digital literacy and capacity building. When people have the knowledge and skills, e-governance becomes more inclusive and effective. Example: Government officials conducting workshops to teach small entrepreneurs how to use online portals for applying for subsidies or checking scheme eligibility.

3. Technology

The Technology pillar forms the backbone of e-governance. It uses modern tools such as computers, mobile applications, cloud systems, and secure networks to connect citizens with government services. Technology enables faster communication, data sharing, and service delivery. It also ensures transparency, as digital records can be easily accessed and verified. For entrepreneurs, technology opens doors to opportunities by making government schemes and information available at their fingertips. Example: A nano entrepreneur using a mobile app to track the progress of their business licence application or to receive notifications about new government grants.

4. Resources

The Resources pillar refers to the financial, infrastructural, and human support required to build and sustain e-governance systems. Without adequate funding, even the best technology and processes cannot function effectively. Resources ensure that digital platforms are maintained, updated, and accessible to all citizens. This pillar also includes investments in training, equipment, and connectivity. For entrepreneurs, well-funded e-governance systems mean reliable access to services and opportunities for growth. Example: Government funding used to establish digital service centres in rural areas, allowing nano entrepreneurs to register their businesses, access training programmes, and apply for financial assistance online.

2.1.11 ICT and E-Governance

The Information Technology (IT) revolution has become a global phenomenon, encouraging societies and governments to adopt IT-based systems for administration and social processes. As a result, many nations worldwide have embraced electronic methods of governance, also known as e-governance or e-government. The use of Information and Communication Technologies (ICTs) helps connect different groups such as government-to-citizens, government-to-business, and even government-to-government. By doing so, ICT supports various governance

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processes and activities, making them faster, more transparent, and more reliable. In essence, e-governance uses digital tools to strengthen good governance and improve the relationship between the state and its people.

1. Good Governance

ICT plays a vital role in promoting good governance by making government processes more transparent, accountable, and efficient. Digital systems reduce corruption, minimise delays, and ensure that services are delivered fairly. Citizens can track applications, access information, and hold officials accountable. Example: Online portals for business registration let entrepreneurs track application progress, ensuring approvals are given fairly and without hidden delays.

2. Trust and Accountability

Technology builds trust between citizens and the government by ensuring that records are accurate and accessible. Accountability is strengthened because digital systems leave behind clear records of every transaction, making it difficult for officials to misuse power. Example: E-procurement systems allow small businesses to bid for government contracts transparently, creating trust that the process is fair and competitive.

3. Citizen's Awareness and Empowerment

ICT empowers citizens by giving them access to information and services. Awareness increases when people can easily find details about government



Fig. 2.1.9 Role of Technologies in E-Governance

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schemes, policies, and opportunities. Empowerment comes when citizens can use this information to make decisions and participate actively in governance. Example: A nano entrepreneur accessing an online database of training programmes and financial assistance schemes can make informed choices about growing their business.

4. Citizen's Welfare

Technology improves citizen welfare by making essential services more accessible and affordable. Digital platforms reduce the need for physical visits to government offices, saving time and money. Welfare schemes can be delivered directly to beneficiaries without intermediaries. Example: Direct Benefit Transfer (DBT) systems deposit subsidies or grants directly into entrepreneurs' bank accounts, ensuring that support reaches them without delays or corruption.

5. Democracy

ICT strengthens democracy by enabling citizens to participate more actively in decision-making processes. Digital platforms allow people to share feedback, vote electronically, and discuss policies. This makes governance more inclusive and responsive. Example: Online grievance redressal systems allow citizens to raise issues and suggest improvements, ensuring that their voices are heard in shaping policies.

6. Nation's Economic Growth

Technology contributes to national economic growth by supporting businesses, improving efficiency, and creating new opportunities. E-governance reduces barriers for entrepreneurs, encourages innovation, and attracts investment by making the business environment more transparent and reliable. Example: A government's online export portal helps small businesses connect with international buyers, boosting trade and contributing to the country's economic development.

2.1.12 Successful E-Governance Initiatives in Kerala and Other Indian States

1. E-Governance in Kerala

Kerala has been one of India's leading states in implementing e-governance initiatives. The state's success lies in its commitment to using Information and Communication Technology (ICT) to make governance more transparent, efficient, and citizen-friendly. One of the most recognised projects is the Akshaya Project, launched in 2002. It began as an e-literacy programme aimed at teaching basic computer skills to rural citizens. Over time, Akshaya evolved into a network of community technology centres that provide a wide range of e-services such as bill payments, certificate applications, Aadhaar enrolment, and welfare scheme registrations. These centres have helped bridge the digital divide and empowered

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citizens to access government services conveniently. Example: A small entrepreneur in Malappuram district can visit an Akshaya centre to register their business online, pay taxes, and apply for government subsidies, all in one place.

Another major initiative is e-District Kerala, which delivers government services electronically through district-level portals. Citizens can apply for income certificates, caste certificates, and other documents online without visiting government offices. This has reduced corruption and improved service delivery. Example: A student applying for a scholarship can easily download their income certificate from the e-District portal instead of waiting for manual approval.

2. E-Governance in Andhra Pradesh

Andhra Pradesh has also achieved remarkable success through its MeeSeva Project, meaning "At Your Service." This initiative provides hundreds of government services online, including land records, birth certificates, and business licences. It integrates multiple departments into a single digital platform, making governance more efficient and citizen-centric. Example: A business owner can use MeeSeva to check property details, pay utility bills, and apply for trade licences without visiting multiple offices.

3. E-Governance in Karnataka

Karnataka's Bhoomi Project is another pioneering initiative that digitised land records across the state. Before Bhoomi, land transactions were time-consuming and prone to manipulation. The project introduced computerised land record management, ensuring transparency and reducing disputes. Example: A farmer can now access their land ownership details online and apply for agricultural loans using verified digital records.

4. E-Governance in Gujarat

Gujarat has implemented the e-Gram Vishwagram Project, which connects village panchayats through broadband networks. This initiative enables rural citizens to access government services, pay bills, and communicate with officials digitally. It has strengthened local governance and improved rural connectivity. Example: A villager can use the e-Gram centre to apply for a ration card or check pension details without travelling to the district headquarters.

5. E-Governance in Madhya Pradesh

Madhya Pradesh's MPOnline Portal is a joint venture between the state government and Tata Consultancy Services. It provides a wide range of services, including exam registrations, bill payments, and business applications. The portal has made governance more accessible, especially in remote areas. Example: A student in a rural area can register for university entrance exams and pay fees online through MPOnline.

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2.1.13 E-Citizen

The idea of an e-citizen enables individuals to interact with the government digitally, making them active participants in governance. It ensures that citizens can access services, information, and opportunities without being restricted by geography or bureaucracy. As e-citizens, people can apply for documents, lodge complaints, and participate in policy discussions online. This strengthens democracy and builds trust between the government and the public. It also reduces corruption and delays, since digital systems record every transaction. In India, the Digital India Mission has been instrumental in creating e-citizenship by promoting digital literacy and access to online services. Platforms like MyGov encourage citizens to share ideas and feedback directly with policymakers. DigiLocker further empowers citizens by allowing them to store and access official documents electronically.

Example: A student in Kerala can download their Aadhaar card or driving licence from DigiLocker and use it for university admission without carrying physical copies.

2.1.14 E-Service

E-service refers to the electronic delivery of government services to citizens, businesses, and other stakeholders. It ensures faster, transparent, and efficient service delivery by replacing manual processes with digital systems. E-services cover a wide range of activities such as applying for certificates, paying bills, registering businesses, and accessing welfare schemes. They are particularly important in rural areas where physical access to government offices is limited. By offering services online, governments reduce travel costs and save time for citizens. E-services also promote inclusivity by ensuring that even small entrepreneurs can access schemes and licences easily. In India, Common Service Centres (CSCs) act as digital hubs that provide e-services to rural communities. These centres are crucial in bridging the digital divide and making governance more citizen-centric. Example: A farmer in Madhya Pradesh can visit a CSC to apply for crop insurance, pay electricity bills, and register for government subsidies—all through digital platforms.

2.1.15 E-Filing

E-filing is the process of submitting official documents, applications, or tax returns electronically instead of using paper-based methods. It simplifies administrative procedures, reduces errors, and ensures faster processing. E-filing systems are widely used in taxation, judiciary, and business registration. They promote transparency and accountability by maintaining digital records accessible to both citizens and officials. For entrepreneurs, e-filing reduces compliance burdens and streamlines business operations. It also saves time and money by eliminating the need for physical visits to government offices. In India, the Income

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Tax Department's e-filing portal has revolutionised tax compliance by allowing individuals and businesses to file returns online. Similarly, the MCA21 portal under the Ministry of Corporate Affairs enables entrepreneurs to register companies and file annual returns digitally.

Example: A nano entrepreneur in Delhi can file their GST returns online through the GST portal, ensuring compliance without hiring expensive intermediaries.

2.1.16 E-Society

An e-society represents a digitally connected community where citizens, businesses, and government interact through technology. It promotes digital literacy, social inclusion, and economic development. In an e-society, people use ICT for education, healthcare, communication, and entrepreneurship. It ensures that citizens are not left behind in the digital age and can participate actively in governance and development. India's vision of a "Digital Society" under the Digital India Mission aims to transform the country into a knowledge-based economy. E-society initiatives also encourage innovation and entrepreneurship by providing access to information and markets. Kerala's Akshaya Centres are a prime example of building an e-society by offering digital literacy and e-services to rural citizens. UMANG App integrates multiple government services into one mobile application, connecting society through technology.

Example: A villager in Kerala can use the UMANG App to check pension details, apply for scholarships, and access healthcare schemes, making them part of a digitally empowered society.

2.1.17 E-Tender

E-tendering is the process of inviting, submitting, and evaluating bids for government contracts electronically. It ensures transparency, fairness, and competitiveness in public procurement. By using online tendering systems, governments can prevent manipulation and corruption while giving all businesses equal opportunities. E-tendering reduces paperwork and speeds up procurement. It also allows small and nano entrepreneurs to participate in government contracts, which large firms previously dominated. In India, the Government e-Marketplace (GeM) is a public procurement platform that supports online bidding and reverse auctions and connects vendors with government buyers. It has opened new markets for small enterprises and improved public procurement efficiency. Example: A small textile manufacturer in Gujarat can register on GeM and supply uniforms to government schools through transparent e-tendering.

2.1.18 E-Auction

E-auction refers to conducting auctions online using secure digital platforms. It allows participants to bid for goods, services, or assets transparently and efficiently. E-auctions are used to sell government properties, allocate spectrum, auction coal

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blocks, and even sell agricultural produce. They eliminate middlemen and ensure fair pricing through open competition. E-auctions also increase participation by allowing bidders from different regions to compete without physical barriers. In India, MSTC Limited conducts e-auctions for coal mines, scrap materials, and other assets. Farmers and traders benefit from e-NAM (National Agriculture Market), which enables electronic trading and price discovery for agricultural commodities; it is better described as an electronic market platform than as a general-purpose e-auction portal. Example: A farmer in Maharashtra can sell their produce through eNAM, ensuring better prices by connecting directly with buyers across India.

These six components, e-citizen, e-service, e-filing, e-society, e-tender, and e-auction, form the backbone of e-governance in India. They make governance more transparent, efficient, and citizen-friendly while promoting entrepreneurship and digital inclusion. For nano entrepreneurs, these systems simplify operations, reduce costs, and open new opportunities in the digital economy.

Component	Benefits for Citizens	Benefits for Entrepreneurs
E-Citizen	Empowers individuals to access government services digitally, reducing travel and paperwork.	Provides entrepreneurs with easy access to licences, permits, and schemes through online platforms.
E-Service	Offers faster delivery of certificates, bill payments, and welfare schemes.	Simplifies business operations by enabling online applications for registrations, tax filings, and subsidies.
E-Filing	Makes tax filing and legal documentation easier, reducing errors and delays.	Ensures compliance with tax and corporate regulations through portals like GST and MCA21.
E-Society	Promotes digital literacy, inclusion, and access to education, healthcare, and welfare.	Creates a digital ecosystem where entrepreneurs can access training, markets, and financial services.

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E-Tender	Ensures transparency in government procurement, allowing fair competition.	Opens new markets by enabling small businesses to bid for government contracts via GeM.
E-Auction	Provides citizens with fair access to government assets and resources at competitive prices.	Allows entrepreneurs to participate in auctions for coal, scrap, or agricultural produce, ensuring fair pricing.

Recap

- ◊ E-governance refers to the use of Information and Communication Technology (ICT) to improve government administration, service delivery, transparency and interaction with citizens and businesses.
- ◊ G2C e-governance enables citizens to access government services such as online applications, bill payments, certificates and welfare schemes through digital platforms.
- ◊ G2B e-governance facilitates digital interaction between government departments and businesses through services such as tax filing, e-tendering and online compliance.
- ◊ G2G e-governance enables different government departments and agencies to share information and coordinate their activities electronically for better administrative efficiency.
- ◊ ICT strengthens e-governance by improving communication, information sharing, transparency, accountability, citizen participation and public service delivery.
- ◊ The major models of e-governance discussed in the unit are the Broadcasting Model, Comparative Analysis Model, Critical Flow Model, E-Advocacy Model and Interactive Service Model.
- ◊ Kerala's Akshaya Project, launched in 2002, is an important e-governance initiative that promoted digital literacy and provided citizens with access to various government e-services.
- ◊ Successful initiatives in other Indian states include Andhra Pradesh's MeeSeva, Karnataka's Bhoomi, Gujarat's e-Gram Vishwagram and Madhya Pradesh's MPOnline Portal.
- ◊ E-citizen, e-service, e-filing, e-society, e-tender and e-auction are important components of e-governance that improve accessibility, transparency, efficiency and digital inclusion for citizens and entrepreneurs.

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Objective Questions

1. What is e-governance?
2. What is G2C e-governance?
3. What is G2B e-governance?
4. What is G2G e-governance?
5. What is the role of ICT in e-governance?
6. What is the Broadcasting Model?
7. What is the Critical Flow Model?
8. What is an e-citizen?
9. What is e-filing?
10. What is e-tendering?
11. What is e-auction?

Answers

1. E-governance is the use of ICT, particularly digital technologies and the internet, to improve government administration and service delivery.
2. G2C e-governance refers to the digital delivery of government services directly to citizens, such as certificates, bill payments and welfare schemes.
3. G2B e-governance refers to online interaction between government departments and businesses through services such as tax filing and e-tendering.
4. G2G e-governance refers to electronic communication, information sharing and coordination among different government departments and agencies.
5. ICT enables faster communication, efficient information sharing, transparent administration and improved delivery of government services.
6. The Broadcasting Model uses ICT to disseminate government information, rules, policies and reports to a wide audience.
7. The Critical Flow Model focuses on making important or sensitive information available to relevant citizens, institutions and authorities to promote accountability.

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8. An e-citizen is an individual who uses digital platforms to access government services, information and opportunities and participate in governance.
9. E-filing is the electronic submission of official documents, applications or tax returns instead of using paper-based procedures.
10. E-tendering is the electronic process of inviting, submitting and evaluating bids for government contracts through digital platforms.
11. E-auction is an online auction process that enables participants to bid electronically for goods, services or assets through digital platforms.

Self Assessment Questions

1. Define e-governance and explain its major objectives.
2. Describe the different types of interactions in e-governance with suitable examples.
3. List and explain the major models of e-governance discussed in the unit.
4. Apply the concept of G2C e-governance to explain how a rural citizen can access government services without visiting government offices.
5. Explain the concept of e-governance and discuss how ICT supports modern government administration.
6. Explain the advantages and disadvantages of e-governance in the context of public service delivery.
7. Explain the four pillars of e-governance and discuss the importance of each pillar.
8. Demonstrate how e-filing, e-tendering and e-auction can simplify business interactions with government.
9. Analyse the major risks of e-governance and explain how digital literacy, cybersecurity and infrastructure influence its effectiveness.
10. Analyse the E-Advocacy Model and Interactive Service Model with reference to citizen participation and democratic governance.
11. Analyse the role of ICT in promoting good governance, accountability, citizen empowerment, welfare, democracy and economic growth.
12. Evaluate the effectiveness of e-governance initiatives such as MeeSeva, Bhoomi, e-Gram Vishwagram and MPOnline in improving public service delivery.

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Assignments

1. Explain the meaning and significance of G2C, G2B and G2G models of e-governance with suitable examples.
2. Evaluate the contribution of Kerala's Akshaya Project to digital inclusion and citizen-oriented governance.
3. Using a suitable example, demonstrate how ICT can improve transparency and accountability in government administration.
4. Analyse the differences between traditional governance and e-governance with reference to efficiency, transparency and citizen participation.
5. Compare the Broadcasting Model, Comparative Analysis Model and Critical Flow Model of e-governance.
6. Illustrate how e-governance can be applied to improve services for nano entrepreneurs and small businesses.
7. Design a suitable e-governance framework for a rural area that integrates e-citizen, e-service, e-filing, e-tender and e-auction services for citizens and nano entrepreneurs.

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Unit 2 E-Business Strategy and Implementation

Learning Outcomes

After completing this unit, the learners will be able to:

- ◊ explain the key concepts of E-Business strategies, implementation, and assessment to demonstrate foundational understanding
- ◊ analyse infrastructural requirements and the processes involved in initiating digitalisation of business operations
- ◊ apply inclusive measures in E-Business by designing approaches that ensure accessibility, equity, and participation across diverse stakeholders
- ◊ assess the legal, ethical, and social dimensions of E-Business to identify challenges and propose responsible solutions
- ◊ integrate knowledge of strategy, infrastructure, inclusivity, and ethics to formulate comprehensive E-Business models suitable for realworld application

Prerequisite

Reliance Retail, India's largest retail chain, strategically launched JioMart in 2020 to integrate traditional retail with digital commerce. The initiative aimed to create an omnichannel platform that connected local kirana stores with consumers through mobile applications and web portals. By leveraging Reliance Jio's telecom infrastructure, the company ensured seamless connectivity, digital payments, and logistics support, thereby laying the foundation for a robust E-Business strategy.

The effectiveness of this strategy was assessed through customer acquisition rates, transaction volumes, and vendor participation. Within a short span, JioMart expanded to hundreds of cities, onboarding thousands of kirana stores. This assessment revealed significant improvements in customer convenience, supply chain efficiency, and market penetration, particularly in semiurban and rural regions.

To support this transformation, Reliance invested in cloud infrastructure, data centres, and AIdriven analytics. The digitalisation process included training shopkeepers to use mobile apps for inventory and billing, integrating UPI and wallet systems for cashless transactions, and strengthening lastmile deliv-

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ery networks. These infrastructural measures ensured scalability and resilience in handling millions of daily transactions.

A distinctive feature of JioMart's model was its inclusive approach. Instead of displacing kirana stores, it empowered them by digitising their operations and connecting them to a wider customer base. Reliance also introduced training programmes and financial support to enhance digital literacy among small entrepreneurs, thereby promoting inclusivity in the E-Business ecosystem.

The initiative, however, had to navigate legal, ethical, and social dimensions. Compliance with India's Consumer Protection (ECommerce) Rules, 2020, and emerging data privacy regulations was essential. Ethical concerns included fair pricing and avoiding monopolistic practices, while socially, the project helped bridge the urbanrural digital divide. At the same time, debates emerged around data ownership and the growing dominance of large corporations in India's retail sector.

This unit shows how Indian businesses can strategically implement E-Business models by combining infrastructure, inclusivity, and ethical responsibility, while demonstrating the transformative potential of digitalisation in retail.

Keywords

E-Business Strategy, Digitalisation, Digital Infrastructure, Cost Leadership Strategy, Differentiation Strategy, Omnichannel Strategy, Inclusive E-Business

Discussion

2.2.1 E-Business Strategies

An E-Business strategy is essentially a longterm plan that guides how a business uses digital technologies and the internet to achieve its goals. It guides entrepreneurs in identifying target customers, streamlining operations, increasing sales, strengthening customer relationships, and building a competitive advantage through online platforms. In today's digital economy, such strategies are vital because they help businesses adapt to rapid changes in technology and consumer behaviour.

For nano entrepreneurs, E-Business strategies are particularly valuable. They allow small businesses to operate with low investment, reach wider markets, reduce operational costs, and engage customers more effectively. Even a homebased enterprise can compete with larger firms by using digital tools such as ecommerce websites, social media platforms, online payment systems, and digital marketing campaigns. This means small businesses can gain visibility and grow without the heavy expenses associated with traditional business models.

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According to Dave Chaffey (2019), "E-Business strategy is the definition of the approach by which an organisation will use digital technologies to support its business objectives." In simple terms, it is a systematic plan for using internet technologies, digital platforms, and electronic communication to conduct business activities efficiently and profitably.

Examples

In India, E-Business strategies have transformed industries:

- ◊ Flipkart and Amazon India use strategies that combine ecommerce platforms, logistics, and digital marketing to reach millions of customers.
- ◊ Paytm and PhonePe have enabled even small vendors to accept digital payments, making transactions faster and safer.
- ◊ Nykaa has built its success by focusing on digital marketing and online sales in the beauty sector.
- ◊ For nano entrepreneurs, strategies may include selling handicrafts through Government eMarketplace (GeM), promoting products via Instagram Shops, or accepting payments through UPI apps like Google Pay.

2.2.2 Objectives of E-Business Strategy

1. The objective of an E-Business strategy is to increase sales through online channels by reaching customers directly via websites, apps, and social media platforms.
2. It aims to reach national and international customers by using digital platforms that connect businesses with buyers across India and abroad.
3. It helps to reduce operational costs by replacing traditional methods with online systems such as digital payments, automated inventory, and online marketing.
4. It seeks to improve customer satisfaction by offering faster service, home delivery, and easy communication through online support.
5. It works to enhance brand awareness by promoting products and services through digital campaigns and social media presence.
6. It strives to increase business efficiency by streamlining processes with technology and reducing delays in operations.
7. It focuses on building longterm customer relationships through loyalty programmes, personalised offers, and consistent service.
8. It supports innovation and business growth by encouraging entrepreneurs to adopt new technologies and creative digital solutions.

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9. It helps to improve decisionmaking using digital data by analysing customer behaviour, sales trends, and market information.

10. It aims to create sustainable competitive advantage by combining cost efficiency, innovation, and customer loyalty in the digital marketplace.

2.2.3 Need for E-Business Strategy

1. Businesses need an E-Business strategy because customers expect online information, digital payments, home delivery, and quick service in today's digital economy.

2. For nano entrepreneurs, it helps them expand beyond local markets by selling products nationally and internationally through ecommerce platforms.

3. It allows them to operate with minimal investment by using free or lowcost digital tools instead of expensive physical infrastructure.

4. It enables them to compete with established businesses by offering unique products and personalised services online.

5. It helps them reach customers through smartphones, which are widely used across India for shopping and payments.

6. It supports them to increase profits through online sales by reducing intermediaries and selling directly to customers.

7. It strengthens customer loyalty by providing consistent service, digital engagement, and easy communication.

8. It gives access to governmentsupported digital initiatives such as the Digital India programme and platforms like GeM (Government eMarketplace).

9. It allows them to use social media for business promotion, reaching large audiences at low cost.

2.2.4 Importance of E-Business Strategy

1. Global Market Access: An E-Business strategy allows firms to sell products and services worldwide without opening physical branches, giving even small businesses access to international customers. Example: A Kerala spice producer can receive orders not only from Delhi but also from Dubai or London through an online store, expanding their reach far beyond local markets.

2. Lower Business Costs: Digital tools reduce expenses by replacing traditional methods of marketing, communication, and transactions. Example: A textile

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entrepreneur in Tamil Nadu can use online advertising instead of costly newspaper ads, share digital catalogues instead of printing brochures, and send emails instead of postal letters, saving high costs.

3. Better Customer Experience: Customers benefit from convenience as they can browse products anytime, compare prices, read reviews, place orders instantly, and track deliveries. This improves satisfaction and loyalty. Example: Platforms like Flipkart and Amazon India let customers check reviews, compare prices, and track deliveries in real time, making shopping easier and more reliable.

4. Faster Business Operations: Digital systems speed up processes such as orders, billing, payments, inventory management, and customer support. Example: BigBasket uses automated inventory and billing systems to process thousands of orders daily, ensuring quick service for customers.

5. Competitive Advantage: Businesses using modern technologies can respond faster to customer needs and market changes, gaining an edge over rivals. Example: Reliance Jio gained competitive advantage by offering lowcost data services and quickly adapting to customer demand, forcing competitors to follow.

6. DataBased Decision Making: Digital platforms provide sales reports, customer behaviour insights, website analytics, and purchase history, helping entrepreneurs make informed decisions. Example: Nykaa analyses customer browsing and purchase data to design personalised marketing campaigns, increasing sales and customer loyalty.

7. Business Continuity: Online platforms allow businesses to continue operations even during disruptions such as natural disasters or pandemics. Example: During the COVID19 lockdown, many small food vendors and homebased entrepreneurs in India survived by selling through Swiggy, Zomato, and WhatsApp Business, ensuring continuity despite physical restrictions.

2.2.5 Components of an E-Business Strategy

1. **Business Vision:** Every entrepreneur must clearly define their business goals, mission, longterm objectives, and target market. This vision guides all digital activities.

Example: A Kerala handloom weaver may set a vision to preserve traditional weaving, target ecoconscious customers, and aim to expand sales globally through online platforms.

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Fig. 2.2.1 Components of an E-Business Strategy

2. **Digital Infrastructure:** Strong infrastructure is essential and includes a website, mobile app, internet connection, cloud storage, digital payment gateway, and cybersecurity measures.

Example: A small spice seller in Kochi can build a simple website, use UPI payment systems like Google Pay, and store customer data securely on cloud platforms.

3. **Customer Strategy:** Businesses must identify target customers, their needs, buying behaviour, and customer service methods. This ensures products and services match customer expectations.

Example: A nano entrepreneur selling handmade jewellery can study customer preferences on Instagram and provide personalised service through WhatsApp.

4. **Marketing Strategy:** Digital marketing includes SEO, social media campaigns, email marketing, content creation, online ads, and influencer partnerships.

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Example: A homebased bakery in Bengaluru can use Instagram reels, collaborate with local food bloggers, and run Facebook ads to attract customers.

5. **Operations Strategy:** Operations cover inventory management, supply chain, billing, order processing, and delivery systems. Digital tools make these faster and more reliable.

Example: A nano entrepreneur selling organic honey can track stock using Google Sheets, process orders online, and deliver through India Post.

6. **Financial Strategy:** Financial planning involves digital payments, pricing, online accounting, investment planning, and cost control.

Example: A small textile unit in Tamil Nadu can use UPI for payments, maintain accounts with Tally software, and plan investments for expanding production.

7. **Technology Strategy:** Technology decisions include adopting cloud computing, AI, CRM software, ERP systems, data analytics, and mobile commerce tools.

Example: A nano entrepreneur running a coaching centre can use CRM software to manage student records and mobile apps for online classes.

8. **Risk Management Strategy:** Businesses must prepare for risks such as cyber-attacks, data theft, payment fraud, privacy issues, and system failures.

Example: A small online clothing seller in Kerala can protect customer data by using secure payment gateways and antivirus software to prevent cyber threats.

2.2.6 Types of E-Business Strategies

1. **Cost Leadership Strategy:** This strategy focuses on becoming the lowestcost producer by using digital technologies to cut expenses. Methods include online ordering, automated billing, digital marketing, and cloudbased operations.

Example: A small online grocery store in Kerala can reduce costs by accepting orders through WhatsApp, sourcing directly from wholesalers, and delivering locally without maintaining expensive retail outlets.

2. **Differentiation Strategy:** Here, businesses aim to provide unique products or services that stand out from competitors. Differentiation can be achieved through handmade items, personalised gifts, organic food, ecofriendly packaging, or premium customer service.

Example: A nano entrepreneur selling handmade jewellery in Jaipur can differentiate by offering customised designs with ecofriendly packaging, attracting customers who value uniqueness and sustainability.

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3. **Focus Strategy:** This strategy involves concentrating on a specific customer group or niche market instead of targeting everyone.

Examples include organic baby food, handmade jewellery, ecofriendly products, or pet accessories. Example: A homebased food business in Bengaluru may focus only on organic baby food, build expertise in that segment, and gain loyal customers who trust the brand.

4. **Innovation Strategy:** Entrepreneurs use digital technologies to introduce new products, services, or business models. Innovations may include AIbased customer support, virtual product demonstrations, subscription services, or online learning platforms.

Example: A nano entrepreneur running a coaching centre in Kerala can innovate by offering online learning through mobile apps, virtual classes, and subscriptionbased study materials.

5. **Customer Relationship Strategy:** This strategy emphasises customer
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Fig. 2.2.2 Types of E-Business Strategy

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Example: A small bakery in Chennai can build loyalty by sending personalised birthday offers via WhatsApp, maintaining a customer database, and offering discounts to repeat buyers.

6. **Omnichannel Strategy:** Businesses provide customers with a consistent experience across multiple channels, such as physical shops, websites, Instagram, WhatsApp, Facebook Marketplace, and mobile apps.

Example: A nano entrepreneur selling ecofriendly clothing in Kerala can run a small physical shop while also selling through Instagram, WhatsApp, and an online store, ensuring customers receive the same quality and service across all platforms.

2.2.7 Steps in Developing an E-Business Strategy

Step 1: Analyse the Business Environment

The first step is to study the overall environment in which the business operates, including customers, competitors, technology, market trends, and government policies.

Example: A nano entrepreneur selling spices in Kerala should analyse customer demand for organic spices, check competitors on Amazon India, study digital payment trends, and consider government initiatives like Digital India or GeM.

Step 2: Set Business Objectives

Clear objectives must be set, such as increasing online sales, reaching a specific number of customers, reducing costs, or improving satisfaction. These should follow the SMART principle (Specific, Measurable, Achievable, Relevant, Timebound).

Example: A homebased bakery in Bengaluru may aim to increase online cake orders by 30% within six months using Instagram promotions.

Step 3: Identify Target Customers

Entrepreneurs must understand their customers' age, income, preferences, buying behaviour, and location to design suitable products and services.

Example: A handmade jewellery seller in Jaipur may target young urban women who prefer ecofriendly and customised accessories.

Step 4: Select Appropriate Digital Platforms

Choosing the right platforms is essential, such as websites, mobile apps, Instagram, Facebook, WhatsApp Business, or online marketplaces.

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Fig. 2.2.3 Steps in developing an E-Business Strategy

Example: A nano entrepreneur selling handicrafts in Kerala can use WhatsApp Business for local customers and Etsy India for international buyers.

Step 5: Develop Digital Marketing Plan

Marketing should include SEO, content creation, social media campaigns, paid ads, and email marketing to attract and retain customers.

Example: A small organic honey producer in Tamil Nadu can run Facebook ads, share blogs about health benefits, and send email newsletters to loyal buyers.

Step 6: Implement Secure Payment Systems

Businesses must provide safe and convenient payment options such as UPI, debit/credit cards, net banking, and digital wallets.

Example: A nano entrepreneur selling ecofriendly clothing can accept payments through Google Pay, PhonePe, and Paytm to make transactions easy for customers.

Step 7: Monitor Performance

Finally, businesses should measure performance using website traffic, conversion rates, customer satisfaction, sales growth, and return on investment (ROI).

Example: A homebased spice seller in Kochi can track how many visitors come to their website, how many buy, and whether sales grow month by month.

2.2.8 E-Business Strategies for Nano Entrepreneurs

1. **Social Commerce Strategy:** Nano entrepreneurs can sell products directly through social media platforms such as Instagram, Facebook, and WhatsApp Business. These channels are simple, affordable, and effective for reaching customers.

Example: A home baker in Kerala takes cake orders through Instagram and WhatsApp, shares pictures of her products, and receives payments instantly via UPI.

2. **Marketplace Strategy:** Selling through established ecommerce marketplaces like Amazon, Flipkart, Meesho, and Etsy helps small businesses access readymade infrastructure, secure payment systems, and reliable delivery services.

Example: A handicraft seller in Jaipur lists products on Meesho and Etsy, allowing customers across India and abroad to buy easily while the platform manages logistics.

3. **Local Digital Marketing Strategy:** Nano entrepreneurs can attract nearby customers using Google Business Profile, local SEO, WhatsApp marketing, and community social media groups.

Example: A small tailoring shop in Kochi promotes services through local Facebook groups and Google Maps listings, helping nearby customers find and contact them quickly.

4. **Content Marketing Strategy:** Creating useful content such as product demonstration videos, blogs, customer testimonials, and educational posts helps build trust and encourages repeat purchases.

Example: A nano entrepreneur selling organic skincare products can post short videos showing how to use the products and share customer reviews to attract new buyers.

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Fig. 2.2.4 E-Business Strategies for Nano Entrepreneurs

5. **Mobile Commerce Strategy:** Since most customers shop using smartphones, businesses should have mobilefriendly websites, QR code payments, WhatsApp communication, and simple mobile checkout processes.

Example: A homebased spice seller in Kerala can create a mobilefriendly online store and use QR codes for quick payments, making shopping easy for customers.

6. **DataDriven Strategy:** Entrepreneurs should use customer data to identify bestselling products, plan inventory, personalise offers, and improve customer retention.

Example: A small jewellery business in Chennai can analyse which designs sell most online and use that data to plan future collections and send personalised offers to loyal customers.

2.2.9 Barriers to Effective E-Business Execution

1. **Cybersecurity Threats and Online Fraud:** One of the biggest challenges for nano entrepreneurs is protecting their business from cyber-attacks and online fraud. Hackers may try to steal customer data or payment information.

Example: A small online clothing seller in Kerala must use secure payment gateways and strong passwords to prevent unauthorised access to customer details.

2. **Limited Digital Literacy Among Entrepreneurs:** Many small business owners lack technical knowledge about websites, social media marketing, or online payments. This limits their ability to use digital tools effectively.

Example: A handicraft seller in rural Tamil Nadu may need training to manage online orders and digital advertising efficiently.

3. **High Competition in Online Markets:** The internet allows thousands of sellers to offer similar products, making it difficult to stand out.

Example: A homebased jewellery maker in Jaipur competes with large brands and other small sellers on platforms like Meesho and Etsy, so she must focus on unique designs and customer service.

4. **Logistics and Delivery Issues in Remote Areas:** Delivering products to customers in distant or rural locations can be slow or expensive due to limited courier services.

Example: A spice seller in Wayanad may face delays in shipping orders to northern India because of poor transport connectivity.

5. **Dependence on Internet Connectivity:** E-Business relies heavily on stable internet access. Poor connectivity can disrupt communication, payments, and order processing.

Example: A nano entrepreneur in a village near Kollam may struggle to update her online store or respond to customers during network outages.

6. **Rapid Technological Changes:** Technology evolves quickly, and small businesses often find it hard to keep up with new tools and platforms.

Example: A local bakery using Facebook ads may need to learn new features like Instagram Reels or WhatsApp Business updates to stay competitive.

7. **Customer Concerns About Privacy and Data Security:** Customers worry about how their personal and payment information is handled online. Businesses must ensure transparency and security.

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Example: A nano entrepreneur selling organic cosmetics should clearly state privacy policies and use trusted payment systems like Paytm or Razorpay to build customer confidence.

8. **Difficulty in Retaining Customers Due to Many Alternatives:** With so many online options, customers can easily switch to other sellers. Retaining loyalty requires consistent quality and engagement.

Example: A homebased candle maker in Kerala can retain customers by offering personalised scents, loyalty discounts, and regular WhatsApp updates.

2.2.10 E-Business Implementation

E-Business implementation is the process of turning a planned digital strategy into actual business operations by carefully managing people, technology, organisational structures, business processes, and financial resources so that the business objectives are achieved in practice. It involves allocating resources, adopting suitable technologies, training employees, and managing change to ensure that the strategy moves from paper into reality. Implementation ensures that all components of the E-Business system, such as websites, mobile applications, payment systems, logistics, digital marketing, and customer service, work together to deliver results.

For example, a small bakery in Kerala that decides to sell cakes online must design a simple online store, integrate secure UPI and card payment systems, train staff to handle digital orders, arrange delivery through local couriers, and promote products through Instagram and WhatsApp. Only after these activities are completed does the E-Business strategy become operational, bridging the gap between planning and execution and helping the entrepreneur achieve growth and efficiency in the digital marketplace.

2.2.10.1 Objectives of E-Business Strategy Implementation

◊ **To increase business efficiency through digital technologies:** Implementation aims to make business operations faster and smoother by using digital tools.

Example: A nano entrepreneur running a tailoring shop in Kochi can use online order forms and digital billing to reduce manual work and save time.

◊ **To improve customer experience:** Digital systems help businesses provide better service, convenience, and satisfaction to customers.

Example: A homebased organic soap seller in Bengaluru can allow customers to browse products online, place instant orders, and track deliveries easily.

◊ **To reduce operational costs:** By using affordable digital platforms, businesses can cut down expenses on marketing, communication, and paperwork.

Example: A small stationery seller in Chennai can share digital catalogues through WhatsApp instead of printing brochures, saving money.

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◊ **To increase online sales and market reach:** Implementation helps businesses expand beyond local boundaries and attract more customers through online channels.

Example: A handloom weaver in Kerala can sell products on Flipkart or Etsy, reaching buyers across India and even abroad.

◊ **To improve communication with customers and suppliers:** Digital tools make communication faster and more reliable, strengthening relationships.

Example: A nano entrepreneur selling homemade pickles in Hyderabad can use WhatsApp Business to update customers and coordinate with suppliers.

◊ **To automate business processes:** Automation reduces manual effort and errors by handling tasks like billing, inventory, and order processing digitally.

Example: A small organic honey producer in Tamil Nadu can use Google Sheets or simple ERP software to automatically track stock and sales.

◊ **To improve competitiveness:** Digital strategies help small businesses compete with larger firms by offering better services and faster responses.

Example: A nano entrepreneur selling ecofriendly bags in Delhi can compete with big brands by promoting unique designs through Instagram ads.

◊ **To support business growth and innovation:** Implementation encourages entrepreneurs to adopt new technologies and creative approaches for expansion.

Example: A local coaching centre in Kerala can grow by offering online classes through mobile apps and introducing subscriptionbased learning packages.

2.2.10.2 Steps in Implementing an E-Business Strategy

1. **Setting Clear Business Objectives:** The first step is to define measurable goals that match the overall mission and vision of the business. Objectives may include increasing online sales, improving customer satisfaction, reducing costs, or expanding into new markets.

Example: A pottery seller in Gujarat sets a goal to increase online sales by 25% within one year by selling through Flipkart and Instagram.

2. **Developing an Implementation Plan:** An implementation plan outlines activities, timelines, budgets, responsibilities, and resources needed for execution. It includes project schedules, technology requirements, risk management, and performance indicators.

Example: A nano entrepreneur running a tailoring unit in Lucknow prepares a plan with a budget for digital ads, a timeline for launching a website, and clear roles for staff handling online orders.

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3. **Selecting Appropriate Technology:** Technology is the backbone of ebusiness, and entrepreneurs must choose tools that fit their size, budget, and customer needs. Options include websites, ecommerce platforms, mobile apps, payment gateways, cloud computing, CRM, ERP, and cybersecurity solutions.

Example: A homemade pickle seller in Hyderabad may use WooCommerce for online sales and WhatsApp Business for smallscale customer communication.

4. **Resource Allocation:** Proper allocation of financial, technological, and human resources ensures smooth implementation. This includes investment capital, internet access, marketing budgets, software subscriptions, and customer support staff.

Example: A toy maker in Pune allocates funds for a Shopify subscription, hires one assistant for packaging, and sets aside money for Facebook ads.



Fig. 2.2.5 Steps in Implementing an E-Business Strategy

5. **Employee Training and Skill Development:** Employees must be trained to use digital tools effectively. Training may cover website management, digital payments, customer communication, social media marketing, and data security.

Example: Workers in a small grocery shop in Coimbatore learn to process UPI payments, manage online orders, and respond to customer queries via WhatsApp.

6. **Website and ECommerce Development:** Businesses should build userfriendly platforms with attractive design, product catalogues, secure payment gateways, and mobile compatibility. Easy navigation encourages repeat purchases.

Example: A handmade footwear seller in Rajasthan develops a simple ecommerce site with product images, shopping cart, and order tracking features.

7. **Digital Marketing Implementation:** After building platforms, businesses must promote products using SEO, social media, content marketing, email campaigns, influencer partnerships, and online ads.

Example: A nano entrepreneur selling terracotta jewellery in West Bengal runs Instagram ads during festive seasons and collaborates with local influencers.

8. **Supply Chain and Logistics Integration:** Efficient logistics ensure timely delivery and customer trust. Businesses should partner with courier services for packaging, shipping, delivery tracking, and returns.

Example: A spice seller in Kerala's Wayanad district partners with India Post and Delhivery to ensure smooth nationwide deliveries.

9. **Customer Service Management:** Strong customer service retains buyers and builds loyalty. Support can be offered through live chat, WhatsApp, email, phone calls, FAQs, or AI chatbots.

Example: A nano entrepreneur selling ecofriendly stationery in Delhi provides WhatsApp support and responds quickly to customer queries.

10. **Monitoring the Implementation Process:** Continuous monitoring helps identify problems and make improvements. Businesses should track website performance, sales reports, customer feedback, marketing results, and employee productivity.

Example: A homebased organic tea seller in Assam reviews monthly sales data and customer reviews to adjust marketing campaigns and improve service.

2.2.10.3 Success Factors for Effective Implementation

◊ **Strong Leadership:** Effective implementation requires strong leadership to guide the business and motivate employees. Leaders must set clear goals and inspire confidence.

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- ◊ **Employee Commitment:** Employees must be dedicated to supporting digital transformation and adapting to new systems. Their commitment ensures smooth operations.
- ◊ **CustomerFocused Approach:** Businesses must prioritise customer needs and satisfaction to succeed in ebusiness. A customeroriented approach builds loyalty and trust.
- ◊ **Adequate Financial Resources:** Sufficient funds are needed to invest in technology, marketing, and logistics. Without financial support, implementation may fail.
- ◊ **Continuous Training:** Employees must receive ongoing training to use digital tools effectively and adapt to new technologies.
- ◊ **Reliable Technology:** Stable and secure technology is essential for smooth operations, including websites, payment systems, and communication tools.
- ◊ **Effective Communication:** Clear communication between employees, suppliers, and customers ensures coordination and reduces confusion.
- ◊ **Regular Monitoring:** Monitoring performance helps identify problems early and make improvements. Businesses must track sales, customer feedback, and website activity.
- ◊ **Innovation and Adaptability:** Entrepreneurs must be open to innovation and adapt quickly to market changes and new technologies.

2.2.10.4 Challenges in Implementing E-Business Strategies

- ◊ Technological Challenges: Many small businesses struggle because they do not have the right hardware, software, or stable internet connections. Without these, online operations become slow and unreliable.
- ◊ Financial Constraints: Small businesses often have limited budgets, making it difficult to invest in advanced technology or digital platforms.
- ◊ Employee Resistance: Employees may resist adopting new technologies because they fear change or feel uncomfortable with digital tools.
- ◊ Cybersecurity Risks: Online businesses face risks such as hacking, phishing, ransomware, and data theft, which can damage trust and cause financial loss.
- ◊ Lack of Digital Skills: Business owners and employees may not have enough technical knowledge to manage websites, online marketing, or digital payments.
- ◊ Integration Problems: Integrating new digital systems with existing business processes can be difficult, especially for small businesses with limited resources.

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2.2.11 E-Business Assessment

E-Business assessment, also called evaluation, is the continuous process of measuring and reviewing the performance of an online business to check whether it is meeting its objectives. It is not done only once after implementation, but is an ongoing activity throughout the strategy. Managers regularly assess results, identify strengths and weaknesses, and make improvements to ensure growth and competitiveness. This process helps businesses remain sustainable in the fastchanging digital environment.

Example: A nano entrepreneur running an online handicraft store in Jaipur should keep checking whether social media promotions and website campaigns are bringing more visitors, increasing sales, and improving customer satisfaction. If sales start to decline, the entrepreneur must analyse the reasons, such as poor advertising, weak delivery service, or lack of product updates, and then adjust the strategy to regain performance.

2.2.11.1 Objectives of E-Business Assessment

- ◊ The purpose of E-Business evaluation is to measure whether the business is achieving its goals such as sales growth, customer satisfaction, or cost reduction.
- ◊ It helps managers compare actual performance with the planned targets, ensuring that the business is on track with its objectives.
- ◊ Evaluation allows businesses to identify strengths and weaknesses in their operations, so they can build on what works well and correct what is failing.
- ◊ The process is designed to improve organisational efficiency by streamlining systems and reducing waste.
- ◊ Assessment also supports better managerial decisionmaking, as managers can rely on accurate data rather than assumptions.
- ◊ A key objective is to achieve longterm competitive advantage, ensuring the business remains strong against competitors in the digital marketplace.
- ◊ Evaluation helps to monitor changes in the business environment, such as new technologies, customer preferences, or market trends.
- ◊ Finally, it ensures continuous improvement, encouraging businesses to adapt, innovate, and grow steadily over time.

2.2.11.2 The E-Business Evaluation Process

1. **Setting Objectives:** The first step is to establish clear business objectives that the organisation wants to achieve. These could include increasing online sales by a certain percentage, reducing customer complaints, or improving website traffic.

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Example: An online grocery company may set the objective of delivering all customer orders within 24 hours.

2. **Setting Performance Standards:** Managers then define measurable standards against which performance can be judged. These standards should be realistic, specific, and achievable, such as monthly online sales, number of website visitors, customer satisfaction scores, delivery times, or profit margins.

Example: An ecommerce clothing brand may set a standard of achieving at least 10,000 website visitors and 1,000 online sales each month.

3. **Measuring Actual Performance**: The next step is to measure how the business is actually performing. This is done using both quantitative indicators like revenue, profit, website visits, conversion rates, and market share, and qualitative indicators such as customer satisfaction, employee morale, innovation, and brand reputation.

Example: A streaming platform may measure monthly subscriptions, track viewer ratings, and analyse customer feedback to evaluate its performance.

4. **Comparing Performance with Standards:** Once actual performance is measured, it is compared with the planned standards. Results may exceed, meet, or fall below expectations. Managers then analyse the reasons for differences and identify areas that need improvement.

Example: A food delivery service compares its average delivery time with the target of 30 minutes. If deliveries are slower, managers investigate whether traffic, poor logistics, or staff shortages are causing delays.

5. **Taking Corrective Action:** If performance is unsatisfactory, corrective steps must be taken. This may involve modifying strategies, improving website design, training employees, investing in better technology, or revising organisational goals. In some cases, performance standards themselves may need adjustment if market conditions change.

Example: An online electronics retailer notices declining sales and decides to redesign its website for easier navigation, launch new promotional campaigns, and train staff to improve customer support.

2.2.11.3 Comprehensive Assessment of EBusiness

a. **Financial Assessment:** Financial evaluation measures the overall financial health of an ebusiness. Managers examine cash flow, assets, liabilities, customer payments, supplier payments, stock levels, and profitability. The two main financial statements used are the balance sheet and the income statement. Important ratios include the current ratio (liquidity), gearing ratio, gross profit

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margin, net profit margin, return on investment (ROI), and return on capital employed (ROCE).

Example: An online electronics retailer compares this year's profit with last year's to check whether its digital marketing campaigns have improved profitability.

b. Technology Assessment: Technology forms the backbone of ebusiness, so managers must continuously evaluate whether it supports business goals. Key criteria include capability (speed, storage, processing power), cost (purchase, installation, maintenance, and operation), reliability, obsolescence, scalability, and risk. Software is also assessed for quality, security, efficiency, flexibility, connectivity, and documentation.

Example: An online food delivery company upgrades its servers before a festive season to handle higher order volumes.

c. Human Resource Assessment: Employees remain vital even in digital businesses. Human resource evaluation includes reviewing HR policies, recruiting skilled staff, conducting performance appraisals, and gathering

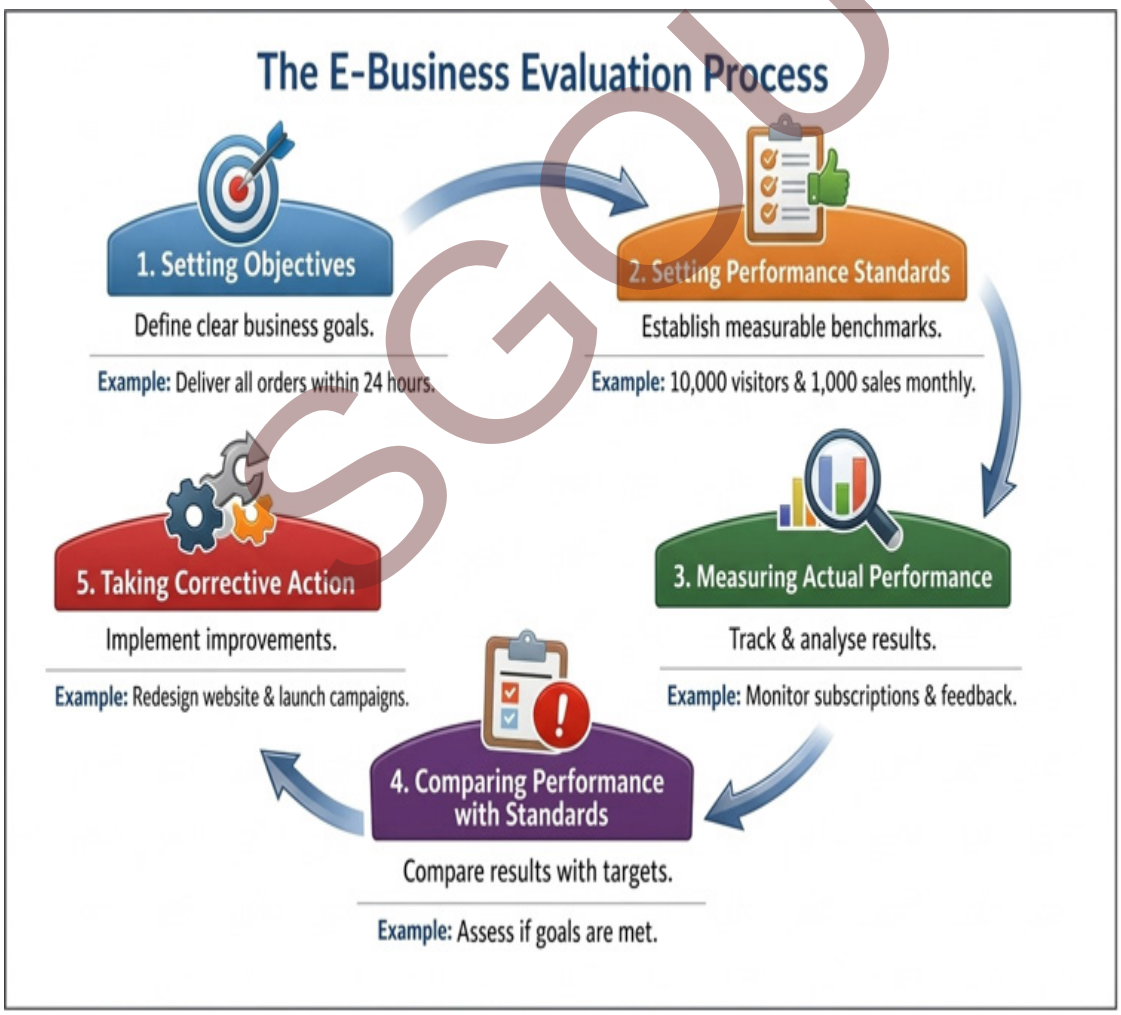


Fig. 2.2.6 E-Business Evaluation Process

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employee feedback. Performance is measured through customer service quality, response time, productivity, and innovation. Feedback is collected through surveys and digital communication systems.

Example: A large ecommerce company collects employee opinions through online surveys to improve organisational performance.

d. **Website Assessment:** The website is the most important digital asset in ebusiness. Managers evaluate design (attractive, userfriendly, secure, and fastloading) and performance indicators such as visitor numbers, time spent on site, products viewed, conversion rate, sales generated, repeat customers, and customer demographics. Customer feedback is also gathered through surveys and market research.

Example: A clothing retailer analyses visitor behaviour and redesigns product pages to increase online sales.

e. **Business Model Assessment:** The business model defines how value is created, and revenue is earned. Managers evaluate revenue generation, cost efficiency, customer value, sustainability, and competitive advantage. This helps determine whether the model needs modification.

Example: A subscriptionbased online learning platform reviews whether subscription income is sufficient to cover operational expenses.

f. **E-Business Strategy Assessment:** The final stage is to evaluate whether the overall E-Business strategy is achieving longterm objectives. Managers assess market share growth, technological leadership, customer satisfaction, profit targets, product innovation, delivery performance, strategic implementation, and resource utilisation. They also check whether strategies were communicated properly, resources were allocated effectively, alternatives were considered, and results were monitored.

Example: An online retail company evaluates whether its expansion into international markets has increased revenue and improved customer satisfaction.

2.2.11.4 Benefits of E-Business Assessment

- ◊ Regular assessment improves decisionmaking because managers can rely on accurate data rather than assumptions when planning strategies.
- ◊ It enhances operational efficiency by identifying areas where processes can be streamlined and resources used more effectively.
- ◊ Continuous evaluation helps identify business risks early, allowing organisations to take preventive measures before problems grow.
- ◊ Assessment improves customer satisfaction by monitoring feedback and ensuring that services meet customer expectations.
- ◊ It strengthens financial performance by keeping track of profitability, cash flow, and cost management.

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Fig. 2.2.7 Comprehensive E-Business Assessment

- ◊ Regular review encourages innovation, as businesses can spot opportunities to introduce new products, services, or technologies.
- ◊ It supports continuous improvement by ensuring that organisations keep adapting and refining their strategies over time.
- ◊ Finally, assessment builds longterm competitive advantage by helping businesses remain strong and responsive in a fastchanging digital marketplace.

2.2.12 Infrastructural Requirements and Process of Initiating Digitalisation of Business

2.2.12.1 Digitalisation of Business

Digitalisation of business refers to the process of using modern digital technologies to transform traditional business activities into efficient, technologyenabled operations. It is more than converting physical information into digital form; it changes how businesses function, interact with customers, and create value. Digitalisation involves integrating computers, the internet, mobile applications, cloud services, digital payment systems, and online communication into every part of business operations. In today's competitive environment, digitalisation is no longer optional but a necessity. It helps businesses improve productivity, reduce costs, increase customer satisfaction, expand market reach, and make better data-driven decisions.

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For small enterprises, digitalisation is especially important because they often operate with limited capital, fewer employees, and local markets. By adopting affordable digital tools, they can reach customers across regions, automate routine tasks, accept online payments, and compete with larger businesses. Government initiatives such as Digital India, Startup India, and the Udyam Registration Portal have further encouraged small businesses to embrace digital transformation by providing infrastructure, training, and financial support. Example: A homebased spice manufacturer in Kerala who earlier sold only to nearby customers adopted digitalisation by creating a Facebook page, using WhatsApp Business, accepting UPI payments, and registering on an online marketplace. This allowed the business to receive orders from across India, increasing sales and customer satisfaction without significantly raising operating costs.

2.2.12.2 Importance of Digitalisation for Nano Entrepreneurs

Digitalisation is especially important for nano entrepreneurs who run small businesses with limited resources. It provides affordable technological solutions that allow them to compete in the digital marketplace. Through online marketing, digital payments, and ecommerce platforms, they can reach a wider customer base without incurring high costs for physical infrastructure.

Digital tools also simplify tasks such as record-keeping, inventory management, customer communication, and financial transactions. This reduces administrative burdens and allows entrepreneurs to focus more on improving products and services.

Another benefit is that digitalisation improves business resilience. It enables entrepreneurs to continue operations even during disruptions such as natural disasters or public health emergencies. Online systems make it possible to maintain customer contact and sales despite external challenges.

Digitalisation also provides better access to government services, financial institutions, and online learning resources. This support helps entrepreneurs grow their businesses and ensures longterm sustainability.

Example: A tailor who previously relied solely on walkin customers can now use Instagram to showcase designs, WhatsApp Business to receive orders, and Google Pay to collect payments. This digital approach attracts more customers and increases revenue.

2.2.12.3 Infrastructural Requirements for Digitalisation of Business

Successful digitalisation requires strong infrastructure to support digital operations. This infrastructure includes technological, financial, organisational, and human resources.

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1. **Reliable Internet Connectivity:** Internet connectivity is the foundation of every digital business. A stable and highspeed connection enables communication, online transactions, cloud computing, video conferencing, and digital marketing. Businesses need uninterrupted internet access to run websites, update product information, process customer orders, and manage online payments. In rural areas, businesses may use broadband, fibre-optic, or mobile internet, depending on availability.

Example: An online bakery in Bengaluru depends on Jio Fibre to receive customer orders, update delivery schedules, and coordinate with delivery partners.

2. **Computer Hardware and Digital Devices:** Businesses require suitable hardware to carry out digital operations effectively. Essential devices include desktop computers, laptops, tablets, smartphones, barcode scanners, printers, and PointofSale (POS) systems. Smartphones are especially valuable because they let business owners manage operations from anywhere. Modern hardware enables faster information processing and improves productivity.

Example: A retail shop in Delhi uses POS machines provided by Paytm to process digital payments quickly.

3. **Software Applications:** Software provides the capability to manage different business activities. Depending on size and needs, businesses may use accounting software, inventory management systems, billing software, Customer Relationship Management (CRM) systems, Enterprise Resource Planning (ERP) software, payroll applications, and office productivity tools. Cloudbased software is increasingly popular because it reduces installation costs and allows remote access.

Example: A grocery store in Mumbai uses Tally ERP for accounting and GoFrugal software for inventory management.

4. **Business Website or E-Commerce Platform:** A professional website acts as the digital identity of the business. It allows customers to view products, compare prices, place orders, and contact the organisation. Ecommerce platforms further support online buying and selling by integrating catalogues, shopping carts, payment gateways, and order tracking systems. An effective website should be userfriendly, mobileresponsive, secure, and regularly updated.

Example: A handloom cooperative in Varanasi lists products on Amazon India to reach customers nationwide.

5. **Digital Payment Infrastructure:** Cashless payment systems are essential for digital businesses. Multiple payment options such as UPI, debit cards, credit

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cards, internet banking, QR codes, mobile wallets, and payment gateways should be integrated. Digital payments speed transactions, reduce cash-handling risks, and improve customer convenience.

Example: A handicraft seller in Jaipur accepts payments through Google Pay and UPI QR codes, making transactions faster and safer.

6. **Cloud Computing Infrastructure:** Cloud computing allows businesses to store and access data online instead of relying only on physical storage devices. It provides flexibility, scalability, and costeffectiveness while reducing the need for expensive IT infrastructure. Cloud services also support remote working, online collaboration, and automatic data backup, protecting important documents from loss due to hardware failures or disasters.

Example: An IT startup in Hyderabad uses AWS cloud to store project files and collaborate with clients remotely.

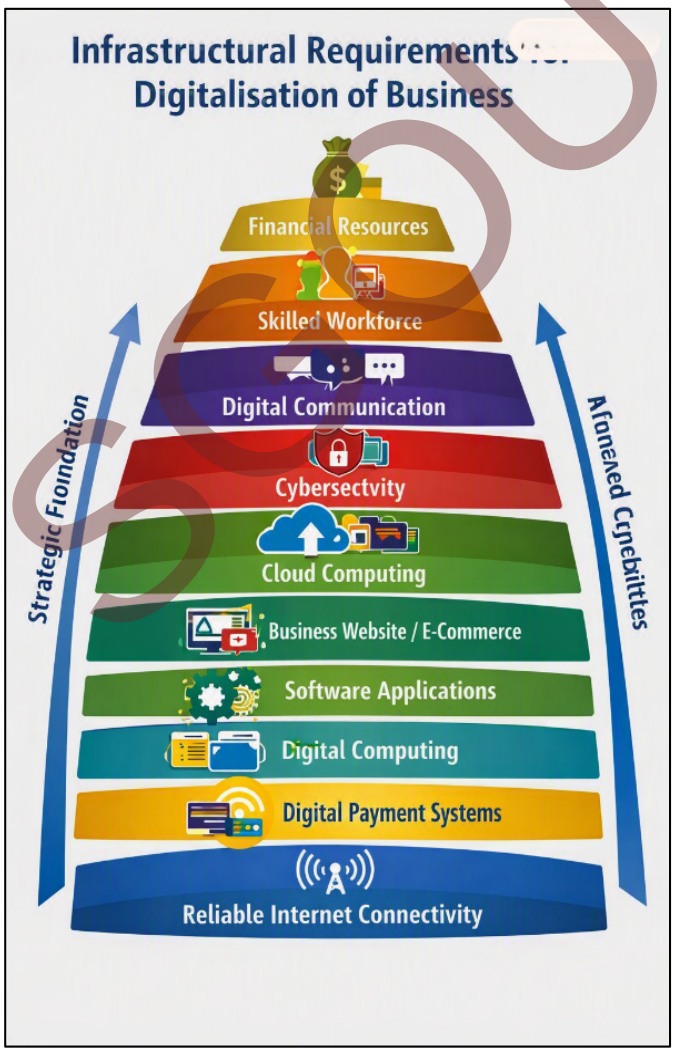


Fig. 2.2.8 Infrastructural Requirements for Digitalisation of Business

7. **Cybersecurity Infrastructure:** As businesses depend more on digital technologies, protecting sensitive information becomes critical. Cybersecurity infrastructure includes antivirus software, firewalls, encryption, secure passwords, multifactor authentication, and regular updates. These measures prevent cyberattacks, unauthorised access, and data breaches. Employees should also be trained in safe online practices to reduce risks.

Example: An online clothing store in Chennai secures customer transactions with SSL encryption and the Paytm payment gateway.

8. **Digital Communication Systems:** Efficient communication is vital for smooth operations. Businesses use email, instant messaging, video conferencing, social media, and customer support systems to stay connected with customers, suppliers, and employees. Digital communication improves response times, customer satisfaction, and organisational coordination.

Example: A restaurant chain in Kochi uses WhatsApp Business to take orders and Zoom meetings to coordinate with staff.

9. **Human Resource Capability:** Technology alone cannot ensure success. Employees and business owners must have adequate digital skills to operate software, manage online transactions, analyse data, and communicate effectively. Continuous training and skill development help staff adapt to new technologies and maintain efficiency.

Example: A pharmacy in Pune trains staff to use its digital billing and order-management systems and to manage digital payments securely.

10. **Financial Resources:** Digitalisation requires investment in technology, software, internet connectivity, employee training, cybersecurity, and marketing. Businesses should prepare realistic budgets and explore financial assistance through banks, government schemes, and startup support organisations.

Example: A small enterprise in Gujarat receives financial support under the Mudra Loan Scheme to invest in digital tools and expand its online presence.

2.2.12.4 Process of Initiating Digitalisation of Business

Digitalisation should be introduced through a systematic process so that risks are minimised and benefits are maximised. Each step plays an important role in ensuring smooth transformation.

Step 1: Assess the Current Business Situation: The first step is to carefully evaluate how the business currently operates. Entrepreneurs should review sales, inventory, accounting, customer service, and marketing systems to identify inefficiencies and areas for improvement.

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Example: A retail shop in Delhi realises that manual billing causes delays and frequent inventory errors, making digital billing necessary.

Step 2: Define Digitalisation Objectives: Clear objectives guide the digitalisation process. These objectives should follow the SMART principle, specific, measurable, achievable, relevant, and timebound. Goals may include increasing online sales, reducing billing time, improving customer response, or expanding into new markets.

Example: An online bookstore in Mumbai sets the objective of increasing online sales by 25% within six months.

Step 3: Prepare a Digitalisation Plan: A structured plan outlines activities, timelines, budgets, technology requirements, employee responsibilities, and expected outcomes. It also identifies risks and strategies to overcome them. This ensures smooth and organised implementation.

Example: A restaurant chain in Bengaluru prepares a plan to introduce online ordering, allocate funds for website development, and train staff for digital customer service.

Step 4: Select Appropriate Digital Technologies: Businesses must choose technologies that match their needs and financial capacity. Selection should consider scalability, ease of use, customer requirements, technical support, and future expansion potential.

Example: A clothing retailer in Jaipur begins with WhatsApp Business for orders and later expands to a full ecommerce website.

Step 5: Develop Digital Infrastructure: Before launching operations, businesses should establish the required hardware, software, internet connectivity, payment systems, and cybersecurity measures. Proper infrastructure reduces disruptions and ensures reliability.

Example: A supermarket in Hyderabad installs POS systems, integrates UPI payments, and sets up secure WiFi for smooth digital transactions.

Step 6: Digitise Business Information: Business records such as customer databases, supplier details, inventory records, invoices, and employee information should be converted into digital formats. This improves accuracy, accessibility, and security.

Example: A pharmaceutical distributor in Chennai digitises supplier and customer records to track orders more efficiently.

Step 7: Train Employees: Employees must be trained to use digital tools, software applications, online customer service systems, and cybersecurity practices. Continuous training builds confidence and productivity.

Example: A bank in Kerala trains staff to handle online loan applications and digital payment systems.

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Fig 2.2.9 Process of Initiating Digitalisation of Business

Step 8: Launch Digital Operations: Once infrastructure and training are complete, businesses can launch digital services such as websites, social media pages, online payments, and customer support channels. Marketing campaigns should inform customers about these new services.

Example: A food delivery service in Pune launches a mobile app and promotes it through social media advertisements.

Step 9: Monitor Performance: After implementation, businesses must regularly monitor performance using indicators such as website traffic, online sales, customer satisfaction, delivery times, and operational efficiency. Monitoring helps identify problems and opportunities for improvement.

Example: An electronics retailer in Kolkata tracks website visits and conversion rates to measure the success of its online campaigns.

Step 10: Continuous Improvement: Digitalisation is not a onetime activity but an ongoing process. Businesses should update software, strengthen cybersecurity, adopt new technologies, and respond to changing customer expectations. Continuous innovation ensures longterm competitiveness.

Example: A travel agency in Goa regularly upgrades its booking platform and introduces AIbased chatbots to improve customer service.

2.2.12.5 Challenges in Initiating Digitalisation

Here are the common challenges faced by entrepreneurs when starting digitalisation:

- ◊ **Limited financial resources** – Small businesses often struggle to invest in technology, software, and training due to budget constraints.
- ◊ **Poor internet connectivity in remote areas** – Weak or unstable internet access makes it difficult to run online operations smoothly.
- ◊ **Lack of digital literacy** – Many entrepreneurs and employees do not have sufficient knowledge or skills to use digital tools effectively.
- ◊ **Resistance to technological change** – Some people prefer traditional methods and hesitate to adopt new technologies.
- ◊ **Cybersecurity threats** – Risks such as hacking, phishing, and data theft can affect trust and security in digital operations.
- ◊ **Difficulty in selecting appropriate technology** – Choosing the right digital tools that match business needs and budgets can be challenging.
- ◊ **Integration of new systems with existing processes** – Connecting digital systems with traditional business practices often creates complications.
- ◊ **Shortage of skilled personnel** – Businesses may lack employees with the expertise to manage digital platforms and systems.
- ◊ **High maintenance costs** – Technology requires regular updates, support, and maintenance, which can be expensive.
- ◊ **Rapid technological changes** – Constant advancements in technology force businesses to adapt quickly to remain competitive.

2.2.12.6 Role of Government in Promoting Business Digitalisation

The Government of India plays a vital role in encouraging digital adoption among small businesses. Initiatives such as Digital India promote digital infrastructure and E-Governance, while Startup India supports innovation and entrepreneurship. Udyam Registration simplifies registering micro, small, and medium enterprises

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(MSMEs) online. The Government eMarketplace (GeM) allows businesses to sell goods and services directly to government departments.

Another important initiative is the Open Network for Digital Commerce (ONDC), which expands digital market access for sellers. Alongside these, digital payment systems such as the Unified Payments Interface (UPI) make transactions faster, cheaper, and more convenient. Together, these programmes help entrepreneurs reduce transaction costs, access wider markets, and improve operational efficiency.

2.2.13 Inclusive Measures in E-Business, Legal, Ethical and Social Dimensions

E-Business has transformed the way organisations operate by integrating digital technologies into buying, selling, marketing, customer service, communication, and overall management. However, the benefits of E-Business must be accessible to everyone, regardless of their economic background, physical ability, gender, age, education level, or geographical location. To achieve this, businesses must adopt inclusive measures that ensure equal access to digital products and services. This means designing platforms that are userfriendly, multilingual, accessible to people with disabilities, and affordable for customers from different income groups. Inclusion ensures that digitalisation does not create barriers but instead empowers all sections of society.

At the same time, businesses must comply with legal requirements. This includes following laws related to online transactions, consumer protection, data privacy, intellectual property, and taxation. Legal compliance builds trust and protects both the business and its customers from disputes or penalties.

Equally important are the ethical principles that guide ebusiness. Ethical behaviour involves honest advertising, transparent pricing, fair dealings with customers and suppliers, and responsible handling of customer data. Businesses that act ethically gain respect and loyalty from their customers.

E-Business also carries social responsibilities. Organisations are expected to contribute positively to society by promoting sustainability, reducing environmental impact, supporting local communities, and ensuring fair treatment of employees. Social responsibility strengthens reputation and creates goodwill among customers.

For nano entrepreneurs, understanding these inclusive, legal, ethical, and social dimensions matters because their businesses depend heavily on customer trust, digital platforms, and online transactions. A business that respects laws, protects customer information, promotes fairness, and contributes to society is more likely to enjoy strong customer loyalty, a positive reputation, and longterm sustainability.

Example: A homebased organic food business in Kerala creates a website that is available in both English and Malayalam so that customers from different language backgrounds can access information easily. The business also provides

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multiple digital payment options to make transactions convenient and secure. At the same time, it keeps customer data private and confidential, which builds trust. The company offers clear, transparent pricing so buyers know exactly what they are paying for, with no hidden charges. In addition, it uses ecofriendly packaging to reduce environmental impact and promote sustainability. Together, these practices highlight inclusion, compliance with legal standards, ethical conduct, and social responsibility in ebusiness.

2.2.13.1 Meaning of Inclusive E-Business

Inclusive E-Business refers to the practice of designing and operating digital businesses in such a way that all sections of society can access, use, and benefit from online products and services without facing discrimination. It focuses on removing barriers that may arise due to disability, income level, education, gender, language, age, or geographical location. The aim is to create equal opportunities to participate in the digital economy by ensuring technology is accessible, affordable, user-friendly, and available to diverse customer groups.

Inclusive E-Business is not only about providing services but also about making sure that no group is excluded from the advantages of digitalisation. This includes developing easy-to-navigate websites, offering multilingual content, ensuring affordable services, and designing platforms that people with different abilities can use.

For nano entrepreneurs, inclusiveness matters because it helps them expand their customer base beyond local boundaries. By adopting inclusive practices, they can reach a wider audience, build stronger customer relationships, and contribute to social and economic development. Inclusiveness also strengthens trust and loyalty, which are essential for longterm sustainability in the digital marketplace.

2.2.13.2 Objectives of Inclusive E-Business

Here are the major objectives explained in detail:

- ◊ To ensure equal access to digital business services - Inclusive E-Business aims to make sure that all customers, regardless of their background, can use and benefit from online platforms without facing barriers.
- ◊ To bridge the digital divide - It works to reduce the gap between people who have access to digital technologies and those who do not, ensuring fairness in opportunities.
- ◊ To improve digital literacy among users - Inclusive practices help customers learn how to use digital tools effectively, giving them confidence to participate in the digital economy.
- ◊ To promote financial inclusion through digital payments - By encouraging cashless transactions such as UPI, mobile wallets, and online banking, inclusive E-Business allows more people to access financial services easily.

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- ◊ To support women, rural entrepreneurs, and marginalised communities - It provides opportunities for groups that are often left behind, helping them grow and compete in the digital marketplace.
- ◊ To improve accessibility for persons with disabilities - Inclusive E-Business ensures that websites, apps, and platforms are designed to be userfriendly for people with different abilities.
- ◊ To encourage sustainable and equitable economic development - It promotes growth that benefits society fairly, while also supporting environmentally responsible practices.
- ◊ To increase customer satisfaction by serving diverse customer needs - By offering products and services that meet the expectations of different groups, inclusive E-Business builds trust and loyalty among customers.

2.2.13.3 Importance of Inclusive E-Business

Inclusive E-Business is important because it benefits businesses, customers, and society as a whole. It expands market opportunities by reaching often underserved groups, such as rural consumers, senior citizens, and persons with disabilities. By adopting inclusive practices, businesses improve customer trust and satisfaction, since users feel valued and respected. Organisations that follow inclusive approaches also contribute to social justice, digital empowerment, and national economic development.

For nano entrepreneurs, inclusion is particularly valuable because it allows them to access new markets without making large investments in physical infrastructure. Digital platforms enable small businesses to connect directly with customers across different regions, reducing their dependence on intermediaries and increasing efficiency.

2.2.13.4 Inclusive Measures in E-Business

1. **Digital Accessibility:** Digital platforms should be designed so that all users, including persons with disabilities, can access services easily. This involves features such as screen reader compatibility, voice navigation, adjustable font sizes, high-contrast displays, captions for videos, and keyboard navigation. These practices align with the Web Content Accessibility Guidelines (WCAG 2.1), the international standard for accessible design. In the Indian context, the Rights of Persons with Disabilities Act, 2016 and its Rules mandate that websites and mobile applications be accessible, ensuring that no customer is excluded due to physical limitations. Thus, accessibility is not only a matter of inclusivity but also a statutory obligation.
2. **Multilingual Support:** Businesses should provide information in multiple languages to serve customers from different linguistic backgrounds. Local

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language interfaces improve understanding and encourage wider participation in ebusiness.

3. **Affordable Digital Services:** Digital products and services should be affordable and accessible through lowcost smartphones and limited internet connectivity. Simple website designs that use less data make it easier for rural customers to participate in online commerce.

4. **MobileFriendly Platforms:** Since many customers, especially in developing countries, access the internet mainly through smartphones, websites must be optimised for mobile devices. Fast loading, simple navigation, and responsive design improve customer experience and increase online sales.

5. **Digital Literacy Support:** Businesses should help customers learn about online purchasing, digital payments, cybersecurity, and safe internet practices. Tutorials, demonstration videos, helplines, and training sessions build user confidence and encourage them to use digital services.

6. **Financial Inclusion:** Multiple payment options such as UPI, debit cards, credit cards, internet banking, mobile wallets, and cashondelivery should be offered. Flexible payment methods ensure that customers with different financial preferences can participate in online commerce.

7. **Rural Connectivity:** Businesses should extend digital services to rural and remote areas by partnering with logistics providers and using digital communication technologies. This increases business opportunities and supports balanced economic development.

8. **Gender Inclusion:** Women entrepreneurs and women consumers should be given equal opportunities to participate in digital business. Safe online environments, encouragement of women's entrepreneurship, and elimination of discriminatory practices strengthen inclusion.

9. **Customer Support Services:** Accessible customer service should be provided through multiple channels such as telephone, email, live chat, WhatsApp Business, and social media. Prompt and reliable support improves customer confidence and satisfaction.

10. **Inclusive Product Design:** Products and services should be designed to meet the needs of diverse groups, including children, senior citizens, persons with disabilities, and economically weaker sections. Inclusive design increases market reach and builds customer loyalty.

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2.2.13.5 Benefits of Inclusive E-Business

Here are the major benefits explained in detail:

- ◊ **Expands customer base:** Inclusive E-Business allows companies to reach a wider range of customers, including rural populations, senior citizens, and persons with disabilities. By removing barriers, businesses can attract more people and grow their market reach.
- ◊ **Improves customer satisfaction:** When customers feel valued and respected through inclusive practices such as multilingual support or accessible platforms, their satisfaction increases. This leads to stronger customer loyalty and repeat purchases.
- ◊ **Increases brand reputation:** Businesses that adopt inclusive approaches are seen as fair, responsible, and socially aware. This improves their reputation in the market and builds trust among customers and society.
- ◊ **Promotes digital equality:** Inclusive E-Business ensures that everyone, regardless of background, has equal access to digital services. This reduces inequality and supports balanced participation in the digital economy.
- ◊ **Enhances financial inclusion:** By offering multiple payment options such as UPI, mobile wallets, and internet banking, inclusive businesses make financial services accessible to more people, especially those who are new to digital transactions.
- ◊ **Encourages innovation:** Inclusive practices often lead businesses to design creative solutions, such as mobilefriendly platforms or affordable services, which improve accessibility and attract diverse customer groups.
- ◊ **Supports sustainable development:** Inclusive E-Business contributes to social and economic progress by empowering marginalised communities, promoting ecofriendly practices, and ensuring fair opportunities for all.
- ◊ **Improves longterm business growth:** By building trust, expanding markets, and encouraging fairness, inclusive E-Business strengthens longterm sustainability and competitiveness in the digital marketplace.

2.2.14 Legal Dimensions of E-Business

2.2.14.1 Meaning of Legal Dimensions

The legal dimensions of E-Business refer to the laws, regulations, and policies that govern online business activities. These frameworks are designed to protect businesses, customers, employees, and society by ensuring fair practices, secure transactions, consumer protection, and responsible use of digital technologies. In India, compliance is not optional, every E-Business must follow statutory requirements under laws such as the Information Technology Act, 2000, the Indian Contract Act, 1872, the Consumer Protection Act, 2019, and the Digital Personal Data Protection Act, 2023, among others.

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2.2.14.2 Importance of Legal Compliance

Legal compliance is essential because it protects both businesses and customers. It builds trust in online transactions, safeguards intellectual property, ensures data privacy, prevents cybercrime, and supports fair competition. In India, compliance is a mandatory duty under specific statutes (e.g., IT Act for electronic records/signatures, DPDP Act for data privacy, GST laws for taxation). Beyond statutory obligations, businesses are also encouraged to adopt good practices such as transparent communication, strong cybersecurity, and employee awareness programmes, which strengthen longterm sustainability.

2.2.14.3 Major Legal Issues in E-Business

1. **Electronic Contracts:** Electronic contracts form the foundation of online transactions. Governed by the Indian Contract Act, 1872, these contracts are legally valid if they meet the essential requirements of consent, lawful consideration, and legal purpose. In practice, electronic contracts are created when customers digitally accept terms and conditions before completing a purchase. For example, a customer buying a laptop online agrees to the seller's terms and conditions before finalising the transaction, thereby creating a binding contract.

2. **Electronic Signatures:** Electronic signatures are another critical aspect of ebusiness. Recognised under the Information Technology Act, 2000, digital signatures authenticate electronic records and verify signatories. They have full legal recognition subject to statutory requirements and are widely used in government services, banking, taxation, and ecommerce. Their application ensures authenticity and trust in digital transactions, making them indispensable for secure online dealings.

3. **Consumer Protection:** Consumer protection is a major legal issue in ebusiness, governed by the Consumer Protection Act, 2019 and the Consumer Protection (E-Commerce) Rules, 2020. These frameworks require businesses to provide accurate product information, transparent pricing, clear return policies, warranty details, and effective grievance redressal mechanisms. Misleading advertisements or unfair trade practices violate consumer rights. For instance, an online clothing retailer must clearly state its return policy and refund customers for defective items, thereby ensuring fairness and transparency in transactions.

4. **Intellectual Property Rights (IPR):** Intellectual property rights (IPR) are also crucial in the digital environment. Businesses must respect intellectual property under the Copyright Act, 1957, Patents Act, 1970, Trade Marks Act, 1999, and related laws. Protecting trademarks, copyrights, patents, trade secrets,

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and industrial designs is mandatory. Copying software, logos, photographs, or digital content without permission can lead to serious legal consequences, making compliance with IPR laws essential for ebusinesses.

5. **Data Privacy and Protection:** Data privacy and protection have gained prominence with the enactment of the Digital Personal Data Protection Act, 2023 and the forthcoming DPDP Rules, 2025. These laws require businesses to collect customer information lawfully, store it securely, and use it only for authorised purposes. Customers must be informed about how their data is handled. While statutory compliance is mandatory, good practices such as strong cybersecurity measures and transparent communication further build consumer trust.

6. **Cybercrime Prevention:** Cybercrime prevention is another area of concern. The IT Act, 2000 criminalises hacking, phishing, identity theft, ransomware attacks, online fraud, and unauthorised access to systems. Businesses are legally obliged to prevent such crimes, but beyond compliance, they are encouraged to adopt preventive measures such as firewalls, encryption, antivirus software, and employee awareness programmes. These practices reduce risks and strengthen the resilience of digital platforms.

7. **Taxation in E-Business:** Taxation in E-Business is governed by Goods and Services Tax (GST) laws, which require businesses to collect and pay applicable taxes, maintain financial records, and file statutory returns. Compliance with taxation laws is mandatory, while adopting robust accounting systems is good practice that makes tax compliance easier and more reliable.

8. **Employment Laws:** Employment laws apply equally to digital businesses. They must comply with statutes such as the Factories Act, 1948, the Payment of Wages Act, 1936, the Code on Wages, 2019, and various socialsecurity provisions. These laws regulate employee wages, working conditions, occupational safety, social security benefits, and nondiscrimination. While adherence to these laws is mandatory, businesses are also encouraged to go beyond statutory requirements by ensuring fair workplace policies and promoting inclusivity, thereby protecting employee rights and fostering a positive organisational culture.

2.2.15 Ethical Dimensions of E-Business

2.2.15.1 Meaning of Ethics in E-Business

Ethics refers to the moral principles that guide responsible behaviour in business. In the context of ebusiness, ethical practices promote honesty, transparency,

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fairness, accountability, and respect for customer rights, going beyond what is legally required. Acting ethically strengthens customer trust and enhances the reputation of the business.

2.2.15.2 Importance of Ethical Practices

Ethical conduct matters because it helps businesses build long-term customer relationships, improve employee morale, reduce the risk of legal disputes, enhance corporate reputation, and support sustainable growth. Companies that consistently follow ethical principles are more likely to attract loyal customers and investors, which ensures stability and success in the digital marketplace.

2.2.15.3 Major Ethical Issues in E-Business

1. **Honest Advertising:** Businesses should always present truthful information about their products and avoid misleading claims, manipulated images, or exaggerated promises.

Example: An organic food company clearly lists the actual ingredients of its products instead of making false health claims.

2. **Protection of Customer Privacy:** Respecting customer privacy is essential. Businesses should disclose or share personal data only on a lawful basis and in accordance with applicable data-protection requirements, while providing individuals with the rights and controls required by law.

Example: An online shopping platform ensures that customer details are not shared with third parties without permission.

3. **Transparency:** All important details such as pricing, delivery charges, return policies, warranties, and product specifications should be communicated clearly. Transparency reduces confusion and dissatisfaction among customers.

Example: An electronics retailer clearly mentions delivery charges and warranty terms on its website.

4. **Fair Pricing:** Businesses should avoid exploiting customers through hidden charges, excessive pricing during emergencies, or discriminatory pricing practices. Fair pricing builds trust and prevents customer exploitation.

Example: A pharmacy maintains reasonable prices for medicines even during a health crisis.

5. **Ethical Use of Artificial Intelligence:** As businesses increasingly use AI for customer service, product recommendations, and decisionmaking, AI systems must operate fairly, avoid discrimination, and protect customer privacy.

Example: An ecommerce platform uses AI to recommend products but ensures

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that suggestions are unbiased and respect customer preferences.

6. **Responsible Data Usage:** Customer data should only be used for legitimate business purposes and must not be sold without permission. Responsible data management strengthens customer confidence and prevents misuse.

Example: A digital payment app uses customer transaction data only for improving services and does not sell it to advertisers.

7. **Fair Competition:** Businesses should compete honestly without spreading false information about competitors or engaging in unfair market practices. Fair competition encourages innovation and benefits customers.

Example: A clothing brand promotes its products based on quality rather than making false claims about rival companies.

2.2.16 Social Dimensions of E-Business

2.2.16.1 Meaning of Social Dimensions

The social dimension of E-Business refers to the way digital business activities affect individuals, communities, and society as a whole. Businesses are expected not only to generate profit but also to contribute positively to social welfare while reducing any negative impacts. In today's world, social responsibility has become essential to sustainable business development, ensuring businesses grow in harmony with society.

2.2.16.2 Social Responsibilities of E-Business

1. **Employment Generation:** Digital businesses create new job opportunities in areas such as software development, logistics, digital marketing, customer support, online education, and content creation. This helps reduce unemployment and supports economic growth. Example: A digital marketing company in India employs young graduates to manage social media campaigns for small businesses.

2. **Rural Development:** E-Business connects rural producers directly with urban and global markets, helping them earn better income and reducing their dependence on intermediaries. Example: Farmers selling spices through online marketplaces receive higher prices compared to traditional wholesale channels.

3. **Women's Empowerment:** Digital platforms enable women entrepreneurs to start homebased businesses with low investment while balancing family responsibilities. This promotes gender equality and financial independence. Example: A woman in Kerala runs an online boutique from home, selling

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handmade sarees through Instagram and WhatsApp.

4. **Environmental Sustainability:** Businesses should adopt ecofriendly practices such as paperless documentation, digital invoicing, recyclable packaging, and energyefficient technologies. These measures reduce environmental damage and promote sustainability. Example: An ecommerce company uses recyclable packaging materials to deliver products.

5. **Community Development:** Businesses can support education, healthcare, digital literacy programmes, and local entrepreneurship initiatives through corporate social responsibility (CSR) activities. This strengthens communities and improves social welfare. Example: A technology firm sponsors digital literacy workshops in rural schools.

6. **Digital Inclusion:** Businesses should actively work to reduce the digital divide by promoting digital literacy, offering affordable services, and ensuring equal access to technology. This helps all sections of society participate in the digital economy. Example: Telecom companies provide lowcost internet packages to rural areas, enabling wider access to online services.

7. **Consumer Education:** Businesses should educate customers about safe online shopping, cybersecurity, digital payments, and consumer rights. This empowers customers to make informed decisions and protects them from fraud. Example: An online grocery store conducts awareness sessions for senior citizens on how to use UPI payments safely.

2.2.17 Challenges in Maintaining Legal, Ethical, and Social Standards

Businesses often face several difficulties in maintaining legal, ethical, and social standards in the digital environment. One major challenge is rapidly changing technology, which requires constant updates and adaptation. Another issue is cyber threats, such as hacking, phishing, and data theft, which put both businesses and customers at risk. Companies also struggle with varying legal requirements across jurisdictions, since laws differ from one region to another, making compliance complex.

A further challenge is limited awareness of regulations, as many entrepreneurs may not fully understand the legal rules that apply to online businesses. Balancing profitability with ethical practices is also difficult, because businesses must ensure fairness and honesty while remaining competitive. Protecting customer data is another critical responsibility, as misuse or leaks can damage trust. Businesses must also work to prevent misinformation by ensuring advertisements, product details, and customer reviews are accurate. Finally, ensuring digital accessibility

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for all users, including persons with disabilities and rural populations, can be challenging due to financial and technical constraints.

Nano entrepreneurs, in particular, may face additional problems such as limited funds and lack of technical expertise when trying to implement secure and inclusive digital systems.

Recap

- ◊ An e-business strategy is a long-term plan that guides an organisation in using digital technologies and the internet to achieve its business objectives.
- ◊ E-business strategies help nano entrepreneurs reach wider markets, reduce operating costs, improve customer relationships and compete effectively through digital platforms.
- ◊ Cost leadership, differentiation, focus, innovation, customer relationship and omnichannel strategies are important types of e-business strategies.
- ◊ Developing an e-business strategy involves analysing the business environment, setting objectives, identifying target customers, selecting digital platforms, developing a digital marketing plan, implementing secure payments and monitoring performance.
- ◊ Social commerce, marketplace selling, local digital marketing, content marketing, mobile commerce and data-driven strategies are particularly useful for nano entrepreneurs.
- ◊ E-business implementation is the process of converting a planned digital strategy into actual business operations by coordinating people, technology, organisational structures, processes and financial resources.
- ◊ Effective implementation requires clear objectives, an implementation plan, appropriate technology, proper resource allocation, employee training, e-commerce development, digital marketing, logistics integration, customer service and continuous monitoring.
- ◊ Strong leadership, employee commitment, customer focus, adequate financial resources, continuous training, reliable technology, effective communication, regular monitoring and adaptability are important factors for successful e-business implementation.
- ◊ E-business assessment is a continuous process of measuring and reviewing online business performance to determine whether organisational objectives are being achieved.
- ◊ The e-business evaluation process involves setting objectives, establishing performance standards, measuring actual performance, comparing results with standards and taking corrective action.

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- ◊ Comprehensive e-business assessment examines financial performance, technology, human resources, website performance, the business model and the overall e-business strategy.
- ◊ Business digitalisation involves integrating digital technologies into business activities to improve efficiency, productivity, customer experience, decision-making and market reach.
- ◊ The major infrastructural requirements for business digitalisation include reliable internet connectivity, digital devices, software applications, websites or e-commerce platforms, digital payments, cloud computing, cybersecurity, communication systems, human resources and financial resources.
- ◊ The process of initiating digitalisation includes assessing the current business situation, defining objectives, preparing a plan, selecting technologies, developing infrastructure, digitising information, training employees, launching digital operations, monitoring performance and pursuing continuous improvement.
- ◊ Inclusive e-business aims to ensure that people from different economic, social, geographical, linguistic and physical backgrounds can access and benefit from digital business services without discrimination.
- ◊ Important inclusive measures include digital accessibility, multilingual support, affordable services, mobile-friendly platforms, digital literacy, financial inclusion, rural connectivity, gender inclusion, accessible customer support and inclusive product design.
- ◊ The legal and ethical dimensions of e-business require businesses to comply with laws concerning electronic contracts, electronic signatures, consumer protection, intellectual property, data privacy, cybercrime, taxation and employment while maintaining honesty, transparency, fairness and responsible data usage.
- ◊ The social dimensions of e-business include employment generation, rural development, women's empowerment, environmental sustainability, community development, digital inclusion and consumer education.

Objective Questions

1. What is an e-business strategy?
2. What is the main purpose of an e-business strategy?
3. What is cost leadership strategy?
4. What is differentiation strategy?
5. What is omnichannel strategy?
6. What is e-business implementation?

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7. What is e-business assessment?
8. What is business digitalisation?
9. What is digital infrastructure?
10. What is inclusive e-business?
11. What is data privacy in e-business?
12. What is cybersecurity?
13. What is digital inclusion?
14. What is the importance of ethical practices in e-business?
15. What are the social responsibilities of e-business?

Answers

1. An e-business strategy is a long-term plan for using digital technologies and the internet to achieve business objectives.
2. The main purpose of an e-business strategy is to improve business performance by increasing sales, reducing costs, reaching wider markets and improving customer relationships.
3. Cost leadership strategy aims to become a low-cost provider by using digital technologies to reduce operating and transaction costs.
4. Differentiation strategy focuses on offering unique products, services or customer experiences that distinguish a business from competitors.
5. Omnichannel strategy provides customers with a consistent business experience across multiple channels such as physical stores, websites, social media and mobile applications.
6. E-business implementation is the process of converting a planned digital strategy into actual business operations by coordinating people, technology, processes and resources.
7. E-business assessment is the continuous process of measuring and reviewing the performance of an online business against its objectives and standards.
8. Business digitalisation is the integration of digital technologies into business operations to improve efficiency, productivity, customer experience and decision-making.

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9. Digital infrastructure consists of the technological, communication, human and financial resources required to conduct business activities digitally.

10. Inclusive e-business ensures that people from diverse backgrounds can access, use and benefit from digital business products and services without discrimination.

11. Data privacy refers to the responsible collection, storage, protection and authorised use of customers' personal information.

12. Cybersecurity refers to the measures used to protect digital systems, networks and data from unauthorised access, cyberattacks and data breaches.

13. Digital inclusion is the process of ensuring that different sections of society have affordable access, skills and opportunities to participate in the digital economy.

14. Ethical practices help businesses maintain honesty, transparency, fairness and customer trust while supporting long-term sustainability.

15. The social responsibilities of e-business include employment generation, rural development, women's empowerment, environmental sustainability, community development and digital inclusion.

Self Assessment Questions

1. Define e-business strategy and explain its major objectives.
2. List and explain the major components of an e-business strategy.
3. Identify the major infrastructural requirements for digitalisation of business.
4. Explain the importance and need for an e-business strategy for nano entrepreneurs.
5. Explain the steps involved in developing an effective e-business strategy.
6. Explain the meaning, objectives and importance of e-business implementation.
7. Explain the concept of e-business assessment and discuss its major objectives.
8. Apply the concept of cost leadership strategy to develop a suitable e-business strategy for a small grocery business.
9. Develop an e-business strategy for a Kerala-based nano entrepreneur selling handmade products through digital platforms.

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10. Analyse the differences between e-business strategy development and e-business strategy implementation.
11. Analyse the major challenges faced by nano entrepreneurs in implementing e-business strategies and suggest suitable measures to overcome them.
12. Analyse the infrastructural requirements necessary for successful digitalisation of a small business.
13. Compare financial assessment, technology assessment, human resource assessment, website assessment and business model assessment in e-business.
14. Evaluate the effectiveness of different e-business strategies in creating sustainable competitive advantage for nano entrepreneurs.
15. Evaluate the importance of continuous e-business assessment in improving organisational performance and long-term competitiveness.

Assignments

1. Describe the different types of e-business strategies with suitable examples.
2. Explain the meaning of inclusive e-business and discuss its importance for businesses and society.
3. Apply the process of e-business assessment to evaluate the performance of an online home-based bakery.
4. Suggest suitable inclusive e-business measures for an online business serving rural customers and persons with disabilities.
5. Demonstrate how a small traditional business can initiate digitalisation using affordable digital technologies.
6. Analyse how digital accessibility, multilingual support, financial inclusion and rural connectivity contribute to inclusive e-business.
7. Analyse the legal, ethical and social issues that may arise when a business operates through digital platforms.
8. Assess the effectiveness of digitalisation in improving the productivity, market reach and resilience of nano and small businesses.
9. Evaluate the importance of legal compliance, ethical conduct and social responsibility in building customer trust and sustainable e-business growth.

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SET – 01

QP CODE: ……
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Reg. No :

Name :

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FIFTH SEMESTER BA NANO ENTREPRENEURSHIP EXAMINATION

SKILL ENHANCEMENT COURSE - **B23NE02SE**
NANO ENTREPRENEURSHIP
(CBCS - UG)

2024-25 - Admission Onwards

Time: 3 Hours Max Marks: 70

SECTION A

Objective Types Questions; Answer any Ten (1x 10=10)

1. What is E-banking?
2. What is Broadcasting Model?
3. What is B2B Business?
4. What are digital wallets?
5. Define E-business.
6. What do you mean by Cost Leadership Strategy?
7. What do you mean by Inclusive Business?
8. What is Search Engine Marketing?
9. What is differentiation strategy?
10. What is e-society?
11. What is omnichannel strategy?
12. What do you mean by digital inclusion?
13. What is e- advocacy model?
14. What is data privacy in e-business?
15. What is gig economy?
16. What do you mean by BPO?

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SECTION B

Very Short Answer Questions; answer any Five **(2x5=10)**

17. What do you mean by e-filing?
18. Differentiate between E-business and E-Commerce.
19. List any two limitations of e-governance.
20. What do you mean by social media marketing?
21. List any two types of digital products.
22. Explain Brokerage model.
23. What do you mean by digitalisation of business?
24. List the components of e-grocery business.
25. What do you mean by content marketing ?

SECTION C

Short Answer Questions; answer any five **(4x5=20)**

26. Differentiate between traditional business and e-business.
27. Define e-governance and explain its major objectives.
28. Explain the digitalisation of job market.
29. Briefly explain the process of e-shopping.
30. Explain the importance of e-business strategies.
31. Discuss the benefits of e-governance.
32. Discuss the e-business strategies for nano entrepreneurs
33. Explain the objectives of inclusive business.
34. Give an account of the major ethical issues in e- business.

SECTION D

Long answer Question; Answer any two **(15x2=30)**

35. .Discuss the benefits and limitations of e-business
36. Discuss the different e-business models.
37. Explain the major legal issues in E-business.
38. Give a detailed account on the successful e-governance initiatives in Kerala and other Indian States..

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SREENARAYANAGURU OPEN UNIVERSITY

QP CODE: ……
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SET – 02

Reg. No :

Name :

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FIFTH SEMESTER BA NANO ENTREPRENEURSHIP EXAMINATION

SKILL ENHANCEMENT COURSE - **B23NE02SE NANO ENTREPRENEURSHIP**
(CBCS - UG)
2024-25 - Admission Onwards

Time: 3 Hours Max Marks: 70

SECTION A

Objective Types Questions; Answer any Ten (1x 10=10)

1. What do you mean by C2B business?
2. What is e-tender?
3. What is SEO?
4. What do you mean by the term e-citizen?
5. Define E-Governance.
6. Who are e-grocers?
7. What is the Critical Flow Model?
8. What do you mean by E-business Strategies?
9. What is E-shopping?
10. What is KPO?
11. What is e-outsourcing?
12. What is Affiliate Marketing?
13. What is podcast?
14. What is G2C e-governance?
15. What is influencer marketing?
16. What do you mean by e-publishing?

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SECTION B

Very Short Answer Questions; answer any Five **(2x5=10)**

17. What is Business Process Outsourcing?
18. What is G2B e-governance?
19. List the different types of digital products.
20. Explain Brokerage model.
21. List any two objectives of e-governance.
22. What is e-auction?
23. What do you mean by virtual property tours?
24. Explain the term E-business Assessment.
25. List the social responsibilities of E-Business.

SECTION C

Short Answer Questions; answer any five **(4x5=20)**

26. Discuss the E-Business Imperatives.
27. Explain e-advocacy model of e-governance.
28. Elucidate the principles of e-business.
29. Briefly explain the components of e-shopping.
30. Elaborate the major forms of digital entertainment and media.
31. Discuss the importance of e-governance.
32. Give a detailed account on the four pillars of e – governance.
33. Explain the objectives of e-business strategies.
34. Explain the different models of E-Grocers.

SECTION D

Long answer Question; Answer any two **(15x2=30)**

35. Elucidate the different types of e-business.
36. Discuss the different types of e-business strategies and also discuss the different steps in developing an e-business strategy.
37. Discuss the Infrastructural Requirements for Digitalisation of Business
38. Explain the process of Initiating Digitalisation of Business

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SREENARAYANAGURU OPEN UNIVERSITY

Regional Centres

Kozhikode
Govt. Arts and Science College
Meenchantha, Kozhikode,
Kerala, Pin: 673002
Ph: 04952920228
email: rckdirector@sgou.ac.in

Thalassery
Govt. Brennen College
Dharmadam, Thalassery,
Kannur, Pin: 670106
Ph: 04902990494
email: rctdirector@sgou.ac.in

Tripunithura
Govt. College
Tripunithura, Ernakulam,
Kerala, Pin: 682301
Ph: 04842927436
email: rcedirector@sgou.ac.in

Pattambi
Sree Neelakanta Govt. Sanskrit College
Pattambi, Palakkad,
Kerala, Pin: 679303
Ph: 04662912009
email: rcpdirector@sgou.ac.in

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Sreenarayanaguru Open University
Kollam, Kerala Pin- 691601, email: info@sgou.ac.in, www.sgou.ac.in Ph: +91 474 2966841

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