Competency 12

Explores applicability of ICT to business organizations and the competitive marketplace

12.1 Explores the role of ICT in the world of business

Time: 4 periods

Learning Outcomes

- Defines digital economy
- Lists and describes new business methods in digital economy
- Identifies the concepts behind pure brick, brick and click, and pure click organizations
- Describes the role of ICT in business functions of an organization

Economy

An economy of a country is production, distribution, exchange, and consumption of goods and services. An economy consists of the labor, capital and land resources.

Digital Economy

Definition 1:

A digital economy is an economy that is based on electronic. The Goods and services produced by an electronic business and traded through electronic commerce.

Definition 2:

All organizations for profit, nonprofit, private sector, public sector in the twenty-first century operate in the digital economy, which is an economy based on digital technologies, including digital communications networks (the Internet, intranets), computers, software, and other related information technologies.

The digital economy is also sometimes called:

- The Internet economy
- The Web economy

With growing population and resource mobilization, digital economy is not limited to business trading and services, it encompasses every aspect of life from health to education and from business to banking. Further while everything is happening on digital medium and communication with government.

E-Government is already playing its part in this digital economy by providing eservices through various ministry/department to its e-Citizen.

New business methods in Digital Economy

- ✓ Reverse auction
- ✓ Group purchasing
- ✓ e-Marketplace

Auction

An **auction** is a process of buying and selling goods or services by offering them up for bid, taking bids, and then selling the item to the highest bidder. In economic theory, an auction may refer to any mechanism or set of trading rules for exchange.

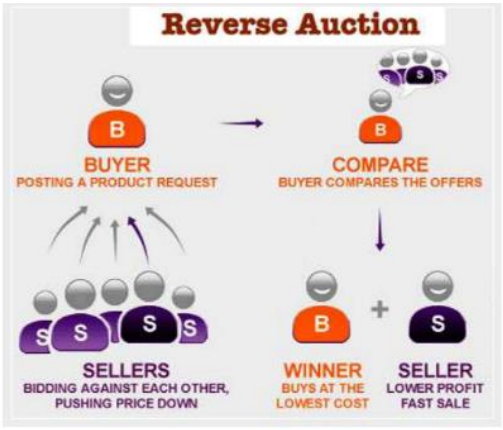
There are several variations on the basic auction form, including time limits, minimum or maximum limits on bid prices, and special rules for determining the winning bidder(s) and sale price(s). Participants in an auction may or may not know the identities or actions of other participants. Depending on the auction, bidders may participate in person or remotely through a variety of means, including telephone and the internet. The seller usually pays a commission to the auctioneer or auction company based on a percentage of the final sale price.

Reverse Auction

A **reverse auction** is a type of auction in which the roles of buyers and sellers are reversed. In an ordinary auction (also known as a forward auction), buyers compete to obtain a good or service, and the price typically increases over time. In a reverse auction, sellers compete to obtain business, and prices typically decrease over time.

In reverse auctions several sellers offer their items/service to a single buyer.

- The buyer creates an auction where he described his intent to purchase a relatively precise service or good.
- Each seller will then place their bid (offer), and compete against each other on prices but also on more immaterial aspects such as their location, reputation, etc.
- The buyer will compare each bids and select which one seems best fitted to his needs.
- In reverse auction the buyer will compare more than the price alone



Benefits of Online Reverse Auctions

- Significantly reduce the cost of the products
- Save substantial(large) amounts of time
- Competitors are required to disclose their prices to each other, which then contemplates multiple rounds of bidding
- It is quick (competitors normally have only minutes to do their bidding)
- It expects and even encourages competitors to focus on each other's pricing

Reverse Auctions Web Sites

www.ariba.com

www.hedgehog.com

www.sorcity.com

http://us.dubli.com

Group Purchasing

Using the concept of group purchasing, where the purchase orders of many buyers are aggregated, a small business, or even an individual, can get a discount.

Why Group Purchasing?

- Typically, companies pay less per unit when buying more units

- Electronic aggregators find individuals or small/medium enterprises that want to buy the same product, aggregate their small orders, and then negotiate (or conduct a bid) for the best deal.

- examples:
  - http://www.etrana.com/
  - http://usa-llc.com/USA/index.cfm/

E-marketplaces

E-marketplaces are markets in which buyers and sellers negotiate on-line.

Main Components of E-Marketplaces

Front end: The portion of an e-sellers business processes through which customers interact, including the sellers portal, electronic catalogs, a shopping cart, a search engine, and as payment gateway

Back end: The activities that support online order-taking. It includes fulfillment, inventory management, purchasing from suppliers, payment processing, packaging, and delivery

Examples are: http://www.amazon.com/ and http://www.ebay.com/

Types of business organizations in Digital Economy

- Pure bricks
- Brick and click
- Pure click

Pure Brick - Pure Brick is a business model by which a company runs the business only in offline (bricks) mode. Brick and Click)

Brick and Click - Brick and Click is a business model by which a company integrates both offline (bricks) and online (clicks) presences.
Pure Click)

Pure click - Pure click companies are the companies with virtual presence or present in the internet only. Search engines, Internet service providers, e-commerce site enablers, transaction sites etc., are the companies included in pure click company category.

Examples:

http://www.ebay.com/,http://amazon.com/ and
http://www.airasia.com/lk/en/home.page/

ICT Applications in Business Functions (The functions and the role of ICT in business)

ICT applications in business are diverse.

- On one hand, it could be in diverse industries including health, education, agriculture, banking and hospitality.
- On the other hand, it could be in business functions such as accounting, human resource management, production, sales, and marketing.
- Other than that, there are common ICT applications in supply chain management (SCM), customer relationship management (CRM) and business communication.

In any case, however,

ICT application involves building an information system which helps converting data to useful information and thereby helps managing a particular business process efficiently and effectively.

Furthermore, advancing the Internet of things (IoT) and mobile computing technologies as well as the pervasive (ubiquitous) use of smartphones enables smart systems which supports the foregoing of many industries.

- For example, smart classrooms, smart health systems, and smart agricultural systems extensively make use of such technologies to fulfill various objectives in respective industries.

Use of ICT in business functions as information systems could be broadly classified into two categories.

1. Transaction processing
2. Decision support.

- Transactions and ICT
- Accounting and ICT
- Human resource and ICT
- Production and ICT
- Marketing & sales and ICT
- Supply chain management and ICT
- Business communication and ICT

Transactions and ICT:

Transactions are elementary activities being recorded in organizations.

- For example
  - A sale taking place at a supermarket is a transaction.
  - A new delivery of stocks
  - Recruitment of a new employee
  - A cash withdrawal at an ATM by a customer
  - A book borrowed at a library
  - A new item manufactured at a factory

Every business function needs information systems to record such transactions for future use. Typically, Transaction Processing Systems (TPS) help keeping track of such transactions in business functions.

On the other hand, managers need information systems to help them to make decisions.

- For example, at the end of the day, some managers may need to know how much raw material stock is remaining to decide whether to make a raw material order or not.

- Another group of managers may want to forecast sales in the year to come by simulating sales patterns according to different market conditions.

- The most senior managers would need to know the overall health of the organizations to make strategies for a future couple of years.

- Organizations use management information systems (MIS), decision support systems (DSS) and executive support systems (ESS) for these purposes.

ICT enabled information systems are being used in every business function with unique objectives and characteristics.

Accounting and ICT:

Accounting is the practice and body of knowledge concerned primarily with methods for recording transactions, keeping financial records, performing internal audits, reporting and analyzing financial information to the management and advising on taxation matters.

Thus, it is the systematic process of dealing with incomes, expenditures, assets, and liabilities of an organization.

- For example, recording transactions pertaining to incomes and expenditures of a given period helps calculating the overall profit or loss during that period.

Accounting Information Systems help performing various accounting activities with the help of ICT.

- For example, handling accounts payable is an activity of the Accounts Department. It will handle payments to be made to the suppliers for items they supplied to the company such as raw materials. There, the system helps to keep track of purchase orders made to suppliers, inventory records on goods actually received (according to purchase orders) and the invoices received from suppliers pertaining to the purchase orders they completed.

- The system also helps to cross-check the purchase order details, inventory records and the details on the invoices and verify before authorizing payments. This could have been a tedious task if it was done manually but the ICT-based information systems make it accurate, efficient and fast.

Human Resources Management (HRM) and ICT:

Human resource management function deals with managing people of the organization.

Activities of the HRM function include:

- Recruitment
- Transfer
- Training
- Evaluation
- Maintaining attendance, etc.

HRM function to utilize ICT-based information systems for managing these activities.

- In fact, in modern human resource information systems (HRIS), there exist modules, which mean sub-systems, to deal with those activities separately, For example, the recruitment module will help to manage the recruitment process by keeping (transaction) data related to managing CVs, screening for interviews, interview results, recruitments, etc.
- Apart from these, some organizations provide self-service systems to employees to access their data related to salary, deductions, leaves, and attendance.
- This is typically done through a web portal in which the employees login to the system through a web interface.
- Once logged into the portal, employees can see the services made available to them through the system.

Production and ICT:

- According to Laudon and Laudon, production management is concerned with the planning and control of all those activities that transform inputs into outputs by adding some value to inputs.

- For example, in a soft drinks production plant, inputs such as sugar, flavors, water, etc. will be converted into soft drinks and come out in containers (bottles) as the output.

- In such a plant, the managers have to plan what to produce, when, in what quantities and where to distribute. If they produce the wrong product, that will be rejected by the consumers. If they produce more, excess stock will be remaining in the warehouses. If they produce less, there will be shortages in the market. This will make the consumers unhappy. Thus, there exist standard activities in production management such as product design, development, production planning, scheduling, etc.

- All these activities require data and, once again ICT-based information systems play a critical role in assisting managers to manage the production.

Sales and Marketing and ICT:

- No business can survive without winning the hearts of the customers.

- All companies try to make the right product available to customers through the right channel at the right price.

- Therefore, all successful firms attempt to understand their customers better and try to keep them satisfied and loyal to the company.

- ICT provides means for companies to understand their customers by segmenting them based on purchase data, knowing what items are usually bought together and also by predicting who will buy what, when and where.

- Furthermore, Web 2.0 technology, as well as the resulting social media platforms, has enabled the companies to listen to their customers in the form of ratings, feedbacks, status updates, blogs, comments, tags, etc.

- Analysis of these different types of data gives rich market insights to firms to compete better in the market.

Supply Chain Management and ICT:

- Supply chain links a firm with its external partners such as raw material suppliers, logistic companies and distributors.

- However, if the activities of these partners are not synchronized with the production activities of the firm, the end products cannot be successfully offered to the market.

- ICT-based supply chain management systems play a critical role here by automating the flow of information across organizational boundaries and thereby linking external actors in the supply chain with the firm.

- For example, supplier organizations can view production schedules of the firm (by connecting to the production management information system through a web interface) and accordingly adjust their production schedule, so that an uninterrupted row material supply is ensured.

Logistics refers to what happens within one company, including the purchase and delivery of raw materials, packaging, shipment, and transportation of goods to distributors, for example. While supply chain management refers to a larger network of outside organizations that work together to deliver products to customers, including vendors, transportation providers, call centers, warehouse providers, and others.

Procurement is the act of a business buying goods and/or services. Procurement is the fancy word for "purchasing."

Business Communication and ICT:

- ICT has changed the way communication happens in organizations.

- E_mail had been a popular mode of business communication for a couple of decades.

- With the development of broadband technologies, communication platforms such as Skype and Zoom became popular for video conferencing between employees and managers in geographically dispersed locations.

- As well as the pervasive use of mobile devices, has given rise to more mobile-based communication platforms such as Viber and WhatsApp. These mobile apps help taking voice and video, sharing documents, pictures, videos and other files, as well as instant messaging.

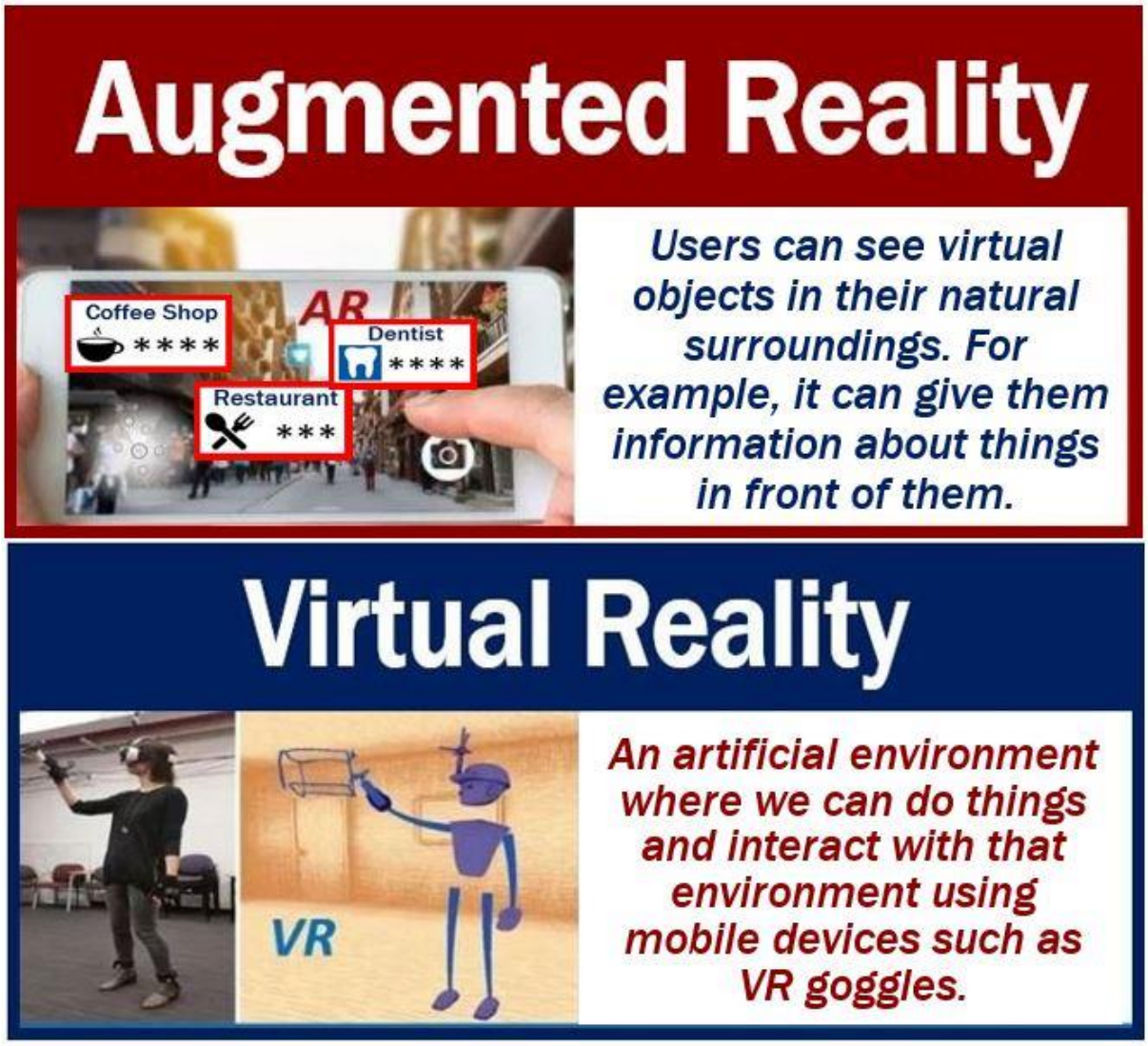
- Due to these changes in business communication enabled by ICT, it has even made it possible for employees to work from anywhere (teleworking, telecommuting)which is getting increasingly popular especially among people like freelancers and working mothers.

- Moreover, emerging technologies such as the Internet of Things (IoT), Big Data and Cloud Computing together with social computing has paved way for smarter systems to be increasingly applied in the context of business management and communication.

- For example, paradigms such as Industry 4.0 focuses on creating cyber-physical systems of automation and data exchange in manufacturing environments with the help of sensors, Internet-based communication links, and big data analytics.

- Smart systems are getting popular in industries such as agriculture, healthcare, education, logistics as well as hospitality.

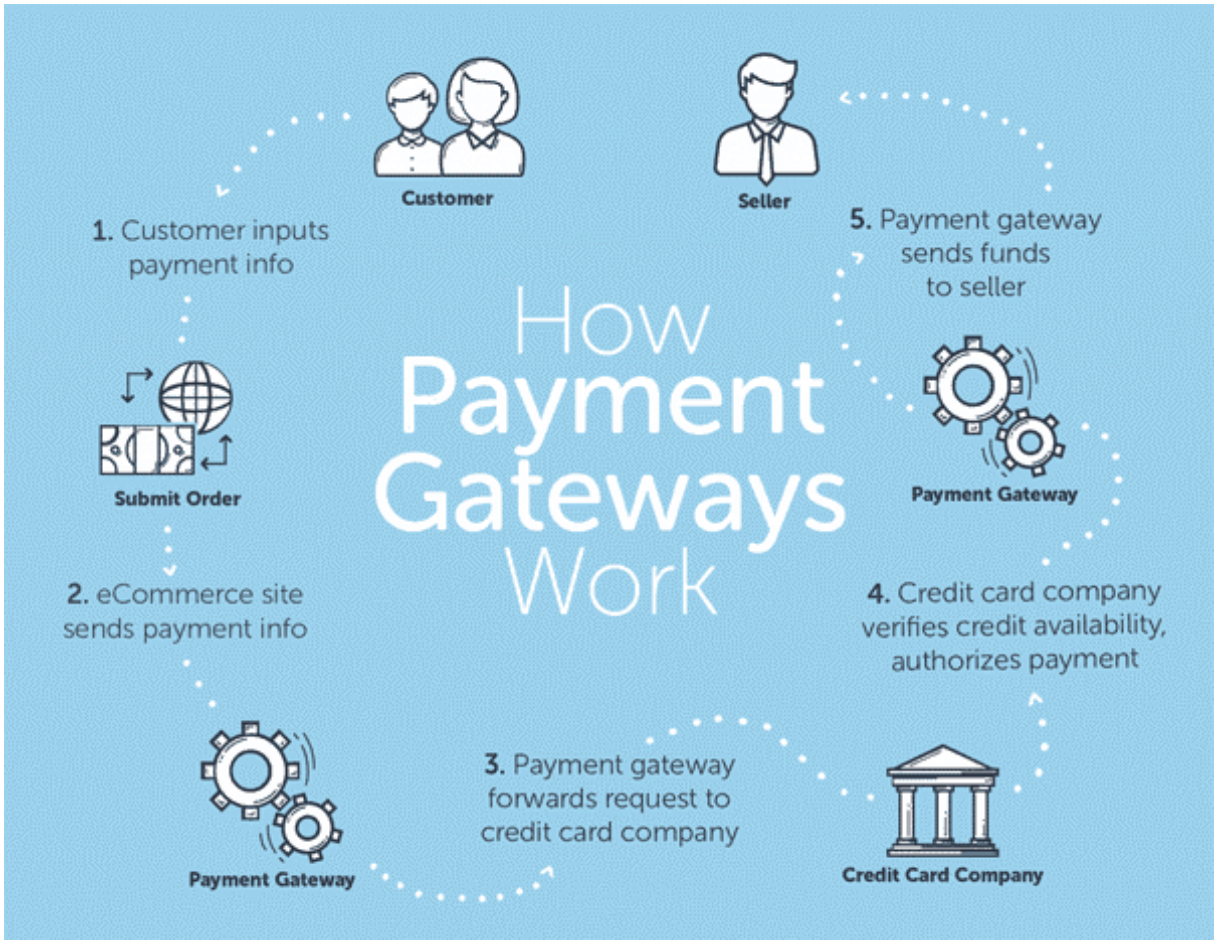
- For example, smart classrooms facilitate value-added learning for the learners whereas tour guide systems supported by augmented reality help tourists to have better experiences worldwide.



Secure payment mechanisms

Payment gateways

A payment gateway is a merchant service provided by an e-commerce application service provider that authorizes credit card or direct payments processing for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar (that offers products and services to its customers face-to-face in an office or store)



Secure credit card payments

- Payment using credit card is one of most common mode of electronic payment.

- Credit card is small plastic card with a unique number attached with an account.

- It has also a magnetic strip embedded in it which is used to read credit card via card readers.

- When a customer purchases a product via credit card, credit card issuer bank pays on behalf of the customer and customer has a certain time period after which he/she can pay the credit card bill.

- It is usually credit card monthly payment cycle.

Third party systems

PayPal etc

PayPal provides an easy and quick way to send and request money online. You can transfer money (abroad) to family, friends, online shops, and auction sites like eBay.

Mechanisms

Data encryption - Information should be encrypted and decrypted only by an authorized user. It is a very effective and practical way to protect the data being transmitted over the network. Sender of the information encrypts the data using a secret code and only the specified receiver can decrypt the data using the same or a different secret code.

Digital currency (Virtual and crypto currencies such as bit coin etc.)

It's only available in digital or electronic form and unlike a dollar or a coin, it is intangible. Digital currencies, which can only be owned and spent using electronic wallets or designated connected networks, are also commonly called digital money, or cyber cash.

Examples of virtual currencies include Bitcoin, Litecoin, and XRP. Digital currencies are stored in and managed through designated software, applications, and networks in digital form.


BITCOIN
(BTC)
Created in
2009
LITECOIN
(LTC)
Created in
2011
RIPPLE
(XRP)
Created in
2013
DOGECOIN
(DOGE)
Created in
2013
PEERCOIN
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Created in
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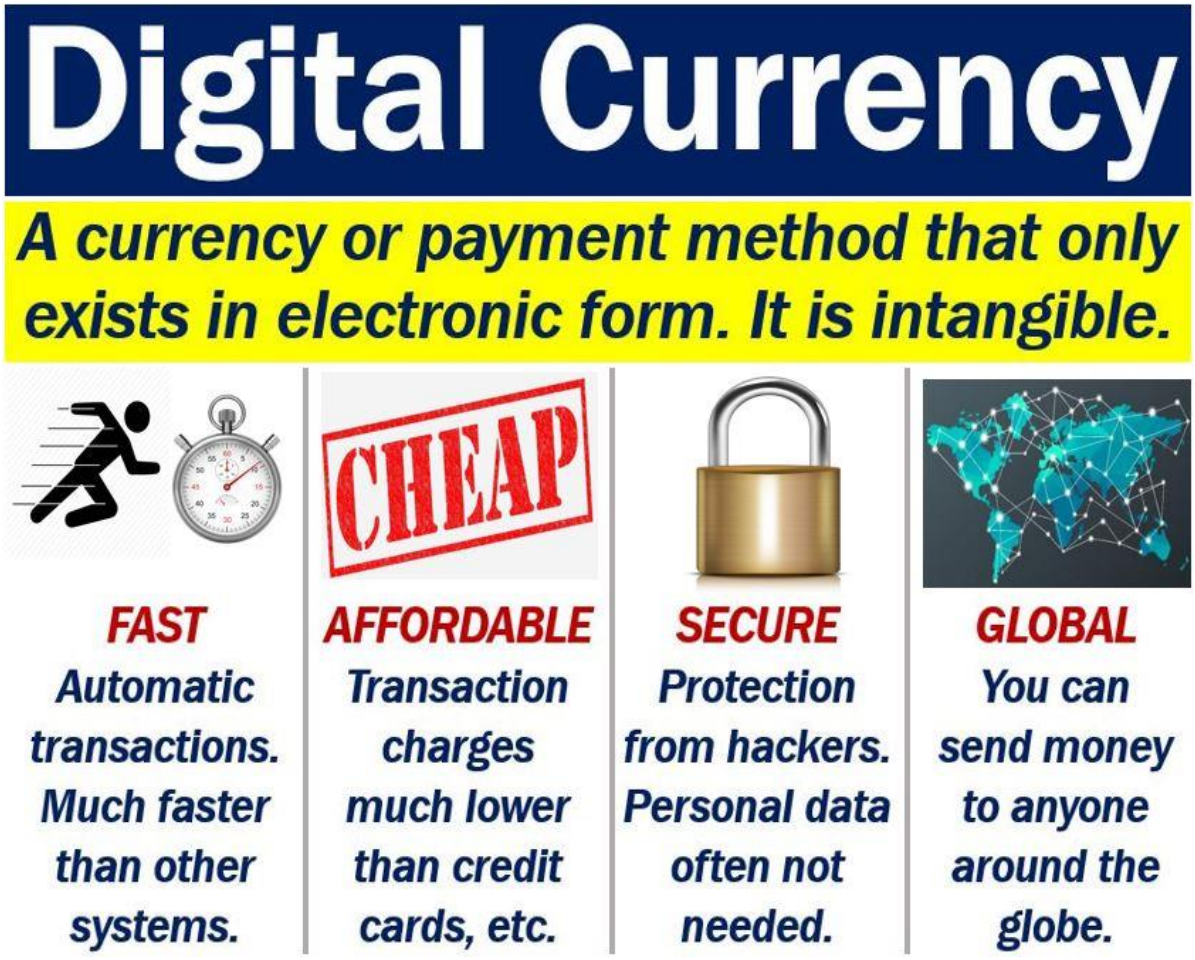
Digital Currency
A currency or payment method that only exists in electronic form. It is intangible.
CHEAP
FAST
Automatic transactions. Much faster than other systems.
AFFORDABLE
Transaction charges much lower than credit cards, etc.
SECURE
Protection from hackers. Personal data often not needed.
GLOBAL
You can send money to anyone around the globe.


E-Commerce
Advantages
Faster Buying Process
Eliminates Operating Cost
Personalize Shopping Experience
Available 24×7
Connects far and wide
Detailed Product Information
Retargets the Customers
Disadvantages
Lack of Personal Touch
No Guarantee about Product Quality
Security Issues
Long Delivery Period
Cannot try before Buying

The recent trends in e-commerce