

Emerging Trends in Information Technology

Saleena E.C.
Assistant Professor in Retail Management
MES KEVEEYAM College, Valanchery

Introduction

- **Information is the central to every aspect of life**
- **The volume of information available to an average individual today is mind boggling**
- **More amazing**
 - **The technology or technologies that drive the generation, processing , storage and dissemination in **developing** countries**

Emerging Trends in IT



EDI



Mobile computing



SMS



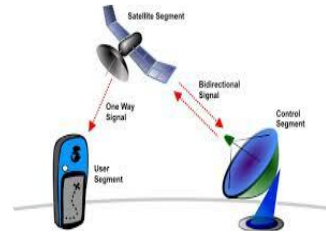
MMS



Wireless
Applications



Bluetooth



Global Positioning
system



Infrared
communication



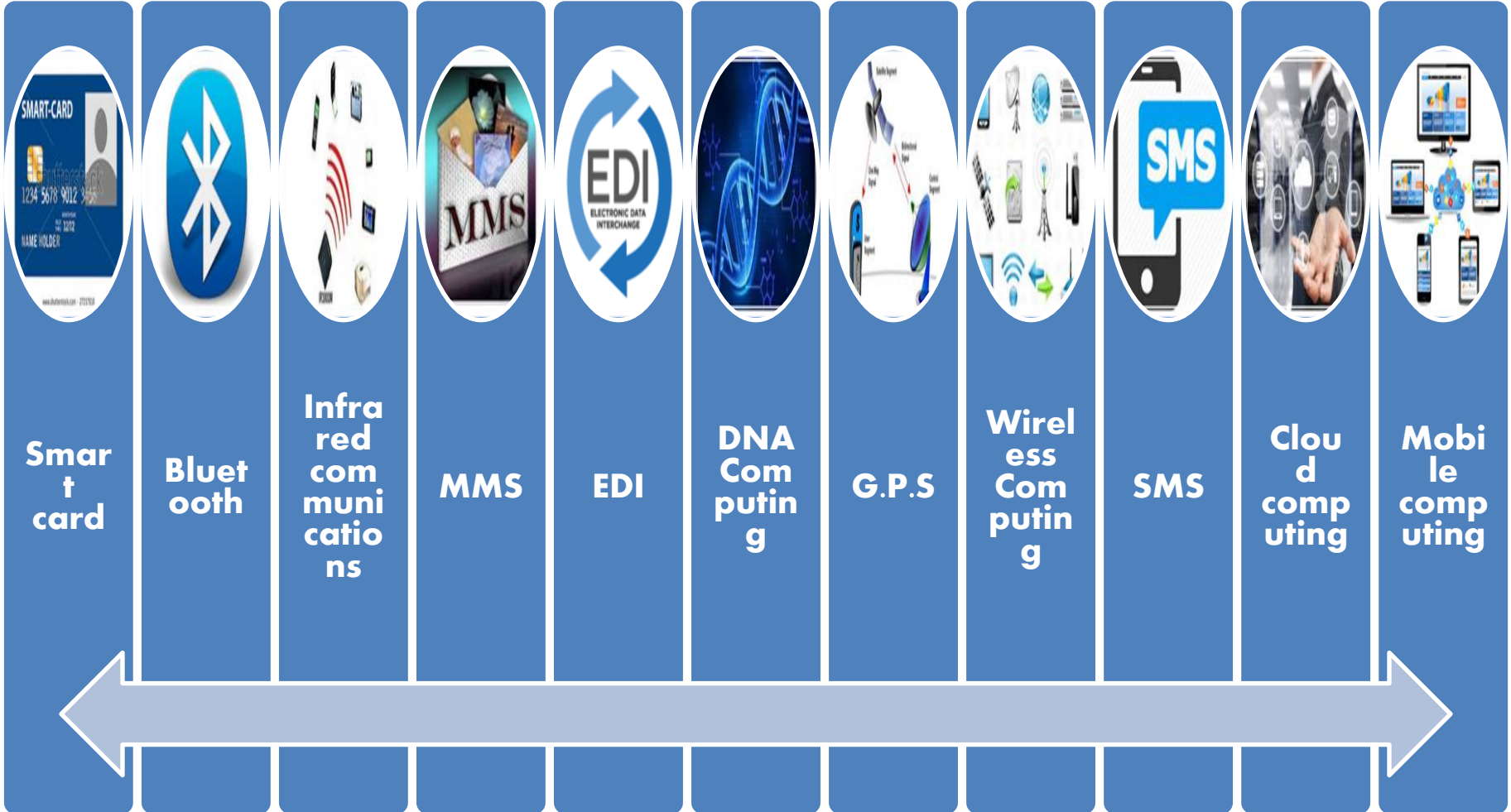
Smart card



DNA Computing



Cloud computing





BLUETOOTH

INTRODUCTION

Bluetooth is a short-range wireless data network originally proposed as an alternative to the messy tangle of computer accessory wires. In addition to reducing desktop clutter, Bluetooth allows hands-free operation for cell phones in vehicles. You can also use Bluetooth to connect a few computers, cell phones and other devices to sync and swap files. Although most mobile devices and many PCs today support Bluetooth.

ADVANTAGES

- Bluetooth devices are wireless.
- Technology is inexpensive.
- Bluetooth is automatic .
- Low energy consumption.
- Shares voice and data.

DISADVANTAGES

- It can be hacked.
- Viruses can be entered into the device.
- It only allows only short range communication.
- It can only connect two devices at a time.
- It can lose connection in certain conditions.

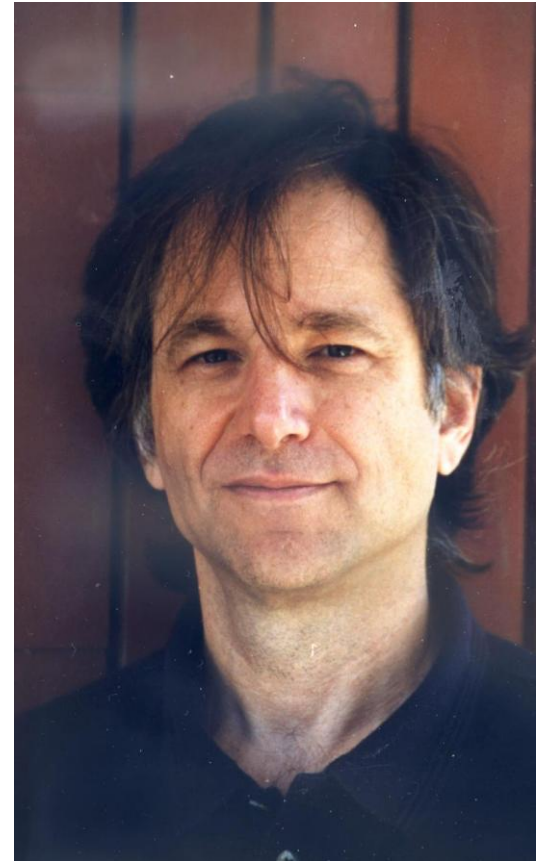
DNA COMPUTING



“DNA computing is the branch of computing which uses DNA(Deoxyribose Nucleic Acid), biochemistry, and molecular biology hardware, instead of the silicon based computer technologies. Research and development in this area concerns theory, experiments and applications of DNA computing”

Leonard Adleman

The developer of DNA
computing





Why DNA computing **High information**



1 bit can be stored in approximately one cubic
nanometer.



Operations on DNA are massive parallel

A test tube of DNA can contain trillions of strands. Each operation on a test tube of DNA is carried out on all strands in the tube in parallel

Advantages



fundamentally similar to parallel computing



It offers much lower power consumption than traditional computers.



DNA computers are faster and smaller than any other computer so far.



Minimal storage requirement.



Clean, cheap and available.



Suitable for combinatorial problems



Disadvantages



Occasionally slow



Hydrolysis – the DNA molecules can fracture



Information Untransmittable



Reliability problems

ELECTRONIC DATA INTERCHANGE

Definition of EDI

- Exchange of electronic data between companies using precisely defined transactions
- Set of hardware, software, and standard that accommodate the EDI process
- Direct computer to computer transfer of business information between two business that uses a standard format

Benefits of EDI

- Reduction of employees hours involved in creation and handling of paper document
- Reduction in the cost of fund transfer
- Reduction in the cost of storage space
- No mailing cost
- Forwarding of document is much faster than mail
- It minimize the need for rekeying information
- Speed up communication enhances intercompany just in time operation
- Information is less susceptible to interception and falsification

Importance of EDI

- Need for timely reliable data exchange in response to rapidly change in markets
- Emergence of standard and guideline
- Spread of information into many organizational unit
- Greater reliability of IT
- Globalization of organization

Barriers to adoption

- Trading partners not knowing benefits
- Hardware costs
- Interfacing translator ,software costs
- Need for software modifications
- Network[VAN]service charges
- Costs and effort for trading partner conversion

How does EDI work?

- Suppliers proposal sent electronically to purchasing organization
- Electronic contract approved network
- Supplier manufactures and packages goods attaching shipping data recorded on a bar code
- Quantities shipped and prices entered in system and flowed to invoicing program ;invoices transmitted to purchasing organization
- Manufacturer ships order
- Shipment notice EDI transaction sent
- Purchasing organization receives packages ,scans bar code ,and compares data to invoices actual items received
- Payment approval transferred electronically
- Bank transfers fund from purchaser to suppliers account using electronic fund transfer[EFT]

EDI on the web

ADVANTAGES WEB EDI

- Lower cost
- More familiar software
- World wide connectivity

DISADVANTAGES

- Low speed
- Poor security

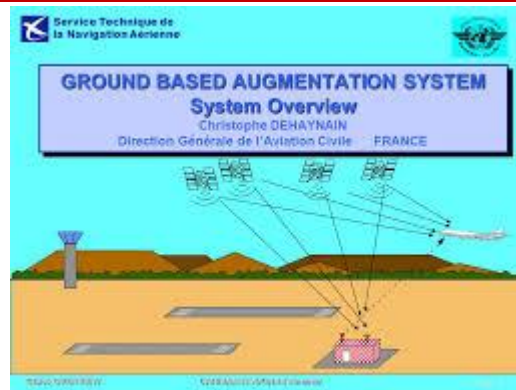
GPS

GLOBAL POSITIONING SYSTEM



INTRODUCTION

The GPS is a satellite based navigation system that was developed by the us department of defense in early 1970s



WHY USE GPS ?

How GPS Works

Uses measurements from 4+ satellites

Distance = travel time x speed of light



GPS APPLICATION

- GPS for utility industry
- GPS for forestry and natural resources
- GPS for precision farming
- GPS for open pit mining
- GPS for sea-floor mapping

ADVANTAGES

- 24 satellite,orbit the earth twice a day at an altitude of 10800 miles
- Atleast 6 satellite above the horizone
- EASE OF NAVIGATION
- SEARCH NEAR BY AREA
- WEATHER INFORMATIONS
- TRACKING

DISADVANTAGES

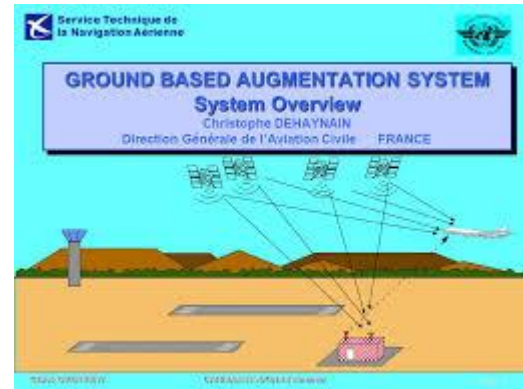
- BATTERY LIFE
- INACCURACY
- obstacles of like building and trees deflect the signal
- GPS MAY FAIL DUE TO CERTAIN REASON

OTHER SATELLITE NAVIGATION SYSTEMS

1. GLONASS satellite system



2. REGIONAL AUGEMENTATIONS



3.Future European Global Satellite navigation system(GALILEO SYSTEM)



Infrared *communication*

FEATURES

Infrared technology allows computing devices to communicate via short Range wireless signals. with infrared, computers can transfer files and other Digital data bidirectionally. the infrared transmission technology used in Computers is similar to that used in consumer product remote control units. Many product having infrared functions, such as mobile communication, note Book, PDAs, digital cameras etc.

Computer infrared network adaptors both transmit and receive data through Ports on the rear or side of a device. Infrared adapters are installed in many Laptops and hand held personal devices. In microsoft windows, infrared Connections can be created through the same method as other local area Network connections. it designed to support direct two computer connections only, created temporarily as the need arises.

ADVANTAGES

- The devices are very cheap
- The devices are compact, light weight and consume low power
- The technology based devices are easy to use
- It is non interfering from waves
- It is more secure

DISADVANTAGES

- It requires both transmitter and receiver to be in line of sight
- Device can not move around while transmission is in progress
- Used for very short distance application

INTRODUCTION

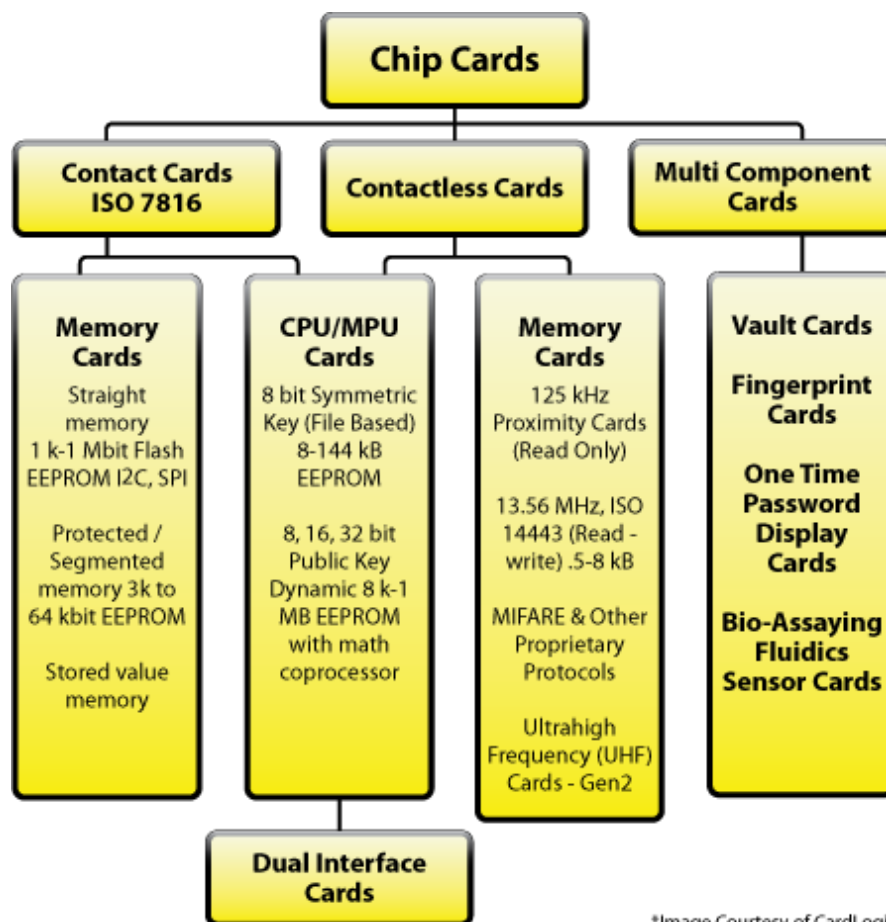
Infrared communication is a common , inexpensive , and easy to use wireless Technology.infrared light is very similar to visible light, except that it has a Slightly longer wavelength.this communication is undetectable to the human Eye-perfect for wireless communication

SMART CARD

Introduction

- A smart card , a type of chip card is a plastic card embedded with a computer chip that stores and transacts data between users . smart cards are used for health care , banking, entertainment and transportation .

Types of smart card



*Image Courtesy of CardLogix

Features

- Authentication
- Secure data storage
- Encryption
- Strong device security
- Secure communication
- Biometrics
- Personal devices

Advantages

- More secure
- Safe to transport
- Double as an ID card
- Prevents fraud

Disadvantages

- Easily lost
- Security
- Slow adoption
- Possible risk of identity theft

SMS

INTRODUCTION

SMS is a technology that enable the sending and Receiving of messages between mobile phones.

As suggested by the name the data that can be held by an SMS is very limited.

SHORT MESSAGE SERVICE (SMS)

- Sending and receiving of messages between mobile phones.
- First appeared in Europe-1990
- At beginning included in the GSM
- Later ported to wireless technologies like CDMA and TDMA

SPECIAL FEATURES

- 160 Characters , if 7 bits character encoding is used which is suitable for encoding English alphabets
- 70 characters if 16 bits Unicode is used and works fine with all International languages

DRAWBACKS OF SMS

- ❑ SMS message can only carry a very limited amount of data
- ❑ SMS message cannot include rich-media content such as pictures , animation etc

BENEFITS OF SMS

- ✓ Delivery of notification and alerts
- ✓ Guaranteed message delivery
- ✓ E-mail generation
- ✓ Creation of user groups
- ✓ Ability to screen messages
- ✓ Delivery of messages to multiple subscribers at a time

CONCLUSION

- SMS is a technology which is not more widely used. Because of this special features. But SMS as more advantages than its limitations.

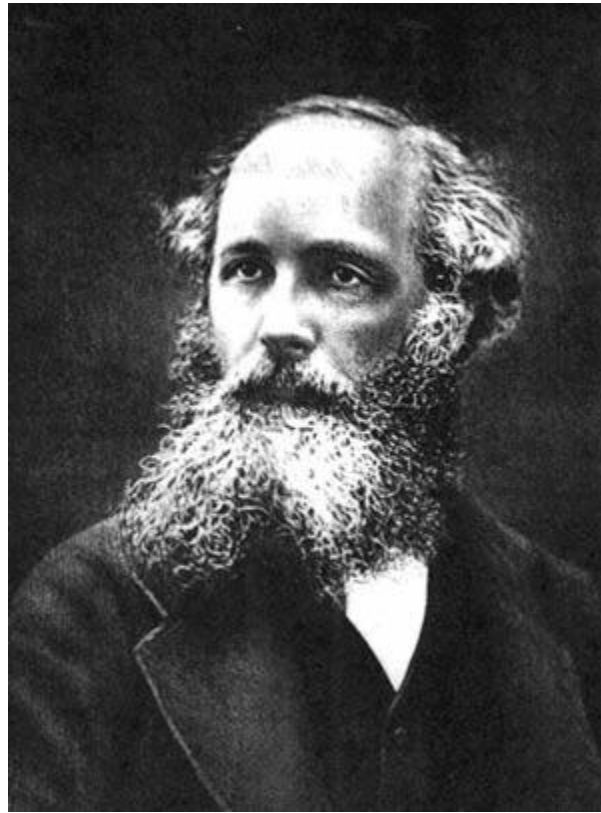
WIRELESS COMMUNICATION

INTRODUCTION

Wireless means transmitting signals over invisible radio waves instead of wires .Wireless communication is the transfer of information over a distance without the use of enhanced electrical conductors or wires .

Garage door opener and television remote control where the 1st wireless devices to become a part of life

JAMES CLERK MAXWELL



Why wireless communication

- Freedom from wires
- Global coverage
- Stay connected
- Flexibility

Advantages

- Save money and time
- Easy to connect
- Conduct daily chores effortlessly
- Easy to install and maintain

Disadvantages

- High cost
- Relay client and server application
- Easy to hack
- Limited range
- No capacity to access quick information
- need many application