KALPAVRUKSHA MODEL SCHOOL

Notes

Class: IX **Sub: Information Technology**

Topic: Introduction to IT and ITeS Industry

INTRODUCTION TO IT – ITES INDUSTRY

- ICT -> Information and Communication Technology
- IT -> Information Technology
- ITeS -> Information Technology enabled Services

Information Technology (IT):

Definition: Information Technology (IT) means creating, managing, storing and exchanging information.

- IT includes all types of technology used to deal with information, such as computer hardware and software technology used for creating, storing, and transferring information.
- Computer takes data as input, processes it and produces the results as output.
- The information is the result of data processing. Data refers to the facts or raw material, which are processed to get the information.

Information Technology enabled Services (ITeS):

- Information Technology that enables the business by improving the quality of service is Information Technology enabled Services (ITeS).
- ITeS is defined as outsourcing of processes that can be enabled with information technology and covers diverse areas like finance, HR, administration, health care, telecommunication, manufacturing, etc.
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BPO Services:

Definition: Business Process Outsourcing (BPO) services means performing business operations through an outside service provider.

Some of the BPO services are as follows:

(a) Financial and Accounting Services
(b) Taxation and Insurance Services
(c) E-Publishing and Web Promotion
(d) Legal Services and Content Writing
(e) Multimedia and Design Services
(f) Document Management Services
(g) Software Testing Services
(h) Health Care Services

Reasons for Booming BPO Services in India :

BPO Service Industry is doing exceptionally well in India because of the following advantages..

(a) BPO service providers in India invest in hi-tech hardware and software to deliver the best of services. They follow quality checks to ensure error free and exceptional service.

(b) Government of India is encouraging the BPO Industry in India by providing necessary infrastructure And logistical support.

(c) BPO Industry in India is highly developed and capable of delivering numerous types of BPO services in exceptional quality.

BPM industry in India:

Definition: Business Process Management (BPM) is mean to study, Identify, change and monitor business processes.

- The IT-BPM industry has almost doubled in terms of revenue and contribution to India's GDP over the last decade.

What is Revenue?

Ans: In accounting, revenue is the income that a business has from its normal business activities, usually from the sale of goods and services to customers. Revenue is also referred to as sales or turnover.

What is GDP?

Ans: Gross Domestic Product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.

Structure of the IT-BPM industry

The organizations within the IT-BPM industry are categorized along the following parameters:

- Sector the organization is serving
- Type as well as range of offering the organization provides
- Geographic spread of operations
- Revenues and size of operations

There are four sub-sectors within the IT-BPM Industry:

1) IT Services
2) Business Process Management
3) Software Products
4) Engineering Research and Development

(a) Multinational Companies (MNCs):

- MNCs have their headquarters outside India but operate in multiple locations worldwide including those in India. They cater to external clients (both domestic and/or global).
- Ex: Intel, Microsoft, Oracle, IBM etc

(b) Indian Service Providers (ISPs):

- ISPs started with their operations in India. Most of these organizations have their headquarters in India while having offices in many international locations. While most have a client base, which is global as well as domestic, there are some that have focused on serving only the Indian clients.
- Ex: TCS, Infosys, Wipro, Emphasis, HCL

(c) Global In-house Centers (GIC):

- GIC organizations cater to the needs of their parent company only and do not serve external clients.
- This model allows the organization the option to keep IT Operations in-house and at the same time take advantage of expanding their global footprint and offering opportunities for innovation in a cost-effective manner.
- Ex: Bain & Company

Information Technology Applications (IT Applications)

- IT in home Computing
- IT in Everyday Life
- IT in library
- IT at workplace
- IT in education
- IT in entertainment
- IT in communication
- IT in business
- IT in science and engineering
- IT in banking
- IT in insurance
- IT in marketing
- IT in health care
- IT in the government and public service

IT in home Computing:

A personal computer (PC) is used to work at home, to do household accounts, play games, surf the web, use e-mail, create music, and pursue a range of other hobbies. PC is also used to play games. It includes action games, role playing games, puzzles and many more. A PC with a CD-ROM drive, sound card, and speakers can play audio CD. A computer can be used from home to study a wide range of online training courses. Computers and digital devices are now used for online shopping and e-commerce.

IT in Everyday Life:

In our daily life, we use washing machines, microwave oven and many other products using which have embedded software. We can store all the information about our important work, appointments schedules and list of contacts in a computer. Computer is, therefore, playing a very important role in our lives and now we cannot imagine the world without computers.
Ex: washing machines, microwave oven, TV, mobile phones, Laptop and computer etc…

IT in library:

Nowadays many libraries are computerised. Each book has a barcode associated with it. This makes it easier for the library to a keep track of books and the availability of a specific book. Computer software is used to issue and return the book. Each book in the library has a magnetic strip attached to it that is deactivated before the book can be borrowed.

IT at workplace:

In the office environment, computers and computer applications are used to perform office work more effectively.
In assembly-line industries, where attention to detail, speed and efficiency are important, automation is becoming more and more common. Internet and Office applications form the basis of modern business.

IT in education:

Computers and Information Technology are extensively used in education for teaching-learning and assessment. The software and hardware technology is used for creation and transmission of information in various forms including still pictures, audio, video and animation to the learners. The learning becomes easy and accessible through IT. A lot of teaching resources are available for teachers to teach in a better way. Online assessment helps to assess the students without any biasness. The students, teachers and educational administrators and every stakeholder in the education sector has benefitted with the integration of IT in education.

(a) ICT in the classroom

There are many ways in which the ICT is used for education in the classroom, such as

- e-learning classrooms;
- smart-board presentations;
- videos on experiments;
- creation of images and video;
- desktop publishing of magazines, letters and documents;
- educational games;
- learning using the CD-ROM media; and
- gathering educational information on the Internet.

(b) Education — anywhere anytime

Any student in India can access the NCERT book online through the website www.epathshala.nic.in or mobile app. Apart from this there are a variety of websites and mobile apps to access educational resources on any topic. You can also contact a teacher or a trainer via Internet to use WBT (Web-based Training). In this way education has reached the far flung areas by reaching the unreached.

(c) Teaching aids and media

ICT is used mostly as a teaching aid in schools to

- use pictures, animations and audio-visuals to explain subjects that are difficult to explain.
- make the lessons interesting using presentations.
- organise lessons using the computer.
- obtain the information relevant to the subjects.

(d) Learning Management System (LMS)

A Learning Management System (LMS) is being used by many countries to manage school systems. A student or teacher can register himself/herself on the official website to access LMS and can get many services from LMS. The student can be benefited by using LMS, as it can be used to

- learn lessons anytime and anywhere.
- submit queries, getting replies and submit comments through forums.
- participate in the co-curricular activities via video.
- monitor the progress of their children (by parents).

IT in entertainment:

Information Technology has had a major impact on the entertainment industry. Internet is a major source of entertainment. One can download and view movies, play games, chat, use multimedia, incorporate visual and sound effects using computers, etc. Digital broadcasting has changed the way we experience television, with more interactive programming and participation.

IT in communication:

Communication is used to convey messages and ideas, pictures, or speeches. A person who receives this must understand clearly and correctly. Modern communication makes use of the computer system. We use computers for email, chatting, FTP, telnet and video conferencing.

IT in business:

Computers are used in business organisations for payroll calculation, budgeting, sales analysis, financial forecasting, managing and maintaining stocks. A lot of business transactions happen through Internet called e-commerce. IT facilitates marketing, customer visit, product browsing, shopping basket checkout, tax and shopping, receipt and process order. E-commerce offers services pertaining to processing inventory management, transactions, documentation, presentations, and gathering product information. Smart cards, such as credit cards and debit cards are used in shops. These cards have a metallic strip on which the user's Personal Identification Number (PIN), and account number is stored and can be read when it is passed through a special reader. Airlines use large-scale computer applications for their reservations system, both in the airports and in central reservations call-centers. Other businesses that have large-scale computing requirements are insurance claims systems and online banking, which both have large numbers of users and operators interacting across one system.

IT in science and engineering :

Scientists and engineers use computers for performing complex scientific calculations, Computer Aided Design (CAD) or Computer Aided Manufacturing (CAM) applications are used for drawing, designing and for simulating and testing the designs. Computers are used for storing large amount of data, performing complex calculations and for visualizing 3-dimensional objects. Complex scientific applications like rocket launching, space exploration, etc., are not possible without the computers.

IT in banking:

Computer is an essential part of the modern banking system. Every activity of a bank is now online. The customer's data and transactions are recorded by computers. Recurring deposits (e-RD), Fixed deposits (e-FD), money transfer from one account to

another (NEFT, RTGS), online transactions are done using Internet. Capital market transactions, financial analysis and related services are available in online platforms. Bank customers use Automated Teller Machines (ATM) for cash deposits and withdrawal, or to view current balance.

IT in insurance:

Insurance companies keep all records up to date with the help of computer database. Procedures for continuation of policies, starting date, date of next installment, maturity date, interest dues, survival benefits, and bonus are declared by using computers in insurance companies. Many online policies are also available which can be purchased by using the website of insurance companies.

IT in marketing:

In marketing, computers are used for advertising of products, by using arts and graphics facility it is possible to create interesting advertisements of various products so that the goal of selling can be achieved. Using e-commerce websites, people can purchase items even sitting at home.

IT in health care:

ICT is used in the health sector in numerous ways. Hospital Management System is used to maintain and manage patients' records as well as various activities pertaining to hospital administration.

The computerized machines are used for ECG, EEG, Ultrasound and CT Scan.

The variety of measuring instruments and surgical equipment are used to monitor patients' conditions during complex surgery.

(a) Use of ICT in diagnosis

With the advancements in computer hardware and software technology, various high-tech machines are used in the diagnosis and treatment of critical diseases. Using expert system, diseases can be diagnosed at the early stages and the patients can be given treatment accordingly. Some of these machines are:

(i) Computerised Axial Tomography Machine(CAT): Using this machine three-dimensional (3D) images of different parts of the body can be made. These images are helpful in the diagnosis of diseases.

(ii) MRI (Magnetic Resonance Imaging Machine):MRI machines are used to give the digital impression of internal organs of the body by using strong magnetic fields and radio waves. The digital images are very helpful in the detection and in deciding the treatment of diseases.

(iii) Electrocardiogram (ECG) Machine: The ECG machine is used to monitor the heartbeat. When the heart pumps blood to different parts of the body some electrical impulses are produced. This machine records the electrical impulses and shows it in the form of a graph.

(iv) Cardiac Screening Machine: This machine displays the physiology of the heart and it displays the movements inside the heart. Through this machine it is possible to diagnose problems of the heart, such as thinning of veins and then recommend treatment.

(v) EEG (Electro -encephalography) Machine: This machine is used to record the activities of the brain. The small electrical probes attached to the head receive the electrical impulses of the brain and display them on a computer screen. This device can retrieve the data in both states where a patient is awake or asleep.

(vi) Blood Sugar Testing Machine: This device analyses a sample of blood and determines the blood glucose level.

(vii) Blood Pressure Measuring Machine: This device which is worn as a wrist band can measure the blood pressure of a person at rest or when he/she is involved in some physical activity.

IT in the government and public service:

The government uses large-scale computer applications in its daily operations and is actively encouraging e-governance practices. Digital India and e-governance initiative of Government of India are best examples of this. Government and Non-Governmental Organizations (NGOs) as well as International Government Agencies use ICT applications to communicate and provide various services to the people and is called as e-governance. There are various official web portals of the Government of India for e-governance. There are various advantages of e-governance.

The Income tax department, sales tax department, preparations of voters list, preparation of PAN card makes use of the computer system. Many government services are available online. Electricity bills can now be paid online.

The government uses electronic voting for elections, by replacing the traditional voting slip and ballot box. People can enroll themselves in the electoral roll through the State Election Commission portal. Computers are common-place in modern society, and tend to make previously laborious manual tasks of data entry much simpler and quicker.

Advantages and Disadvantages of information & communication technology(ICT)

Advantages/Pros

- Reach most friends, family and business contacts in seconds.
- Develop a business line without needing a real office.
- Fast development and less time to market.
- Lower prices on communications to consumers.
- Real-time interaction with other information systems.
- Home and daily tasks automation.
- Asking questions with a million people willing to help out.

Disadvantages/Cons:

- No reliable trusted sources. Information might not be accurate.
- Communicating over a distance might degrade the human approach to relations
- The mind has become lazy, not reading the entire page but going straight to the interesting part.
- Reduced privacy
- A faster world based on technology reduces the amount of time to be with ourselves.

Following precautions are required to ensure that ICT use is safe:

- Patch, Patch, PATCH! ...
- Install protective software. ...
- Choose strong passwords. ...
- Back up on a regular basis. ...
- Control access to your machine. ...
- Use email and the internet **safely**. ...
- Use **secure** connections. ...
- Protect sensitive data.