ITM

Unit 1

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Q1) Explain the role of computers in modern business.

Information technology has become a vital and integral part of every business plan. From multi-national corporations who maintain mainframe systems and databases to small business that own a single computer, IT plays a role. The reasons for the omnipresent use of computer technology in business can best be determined by looking at how it is being used across the business world.

Communication :- For many companies, email is the principal means of communication between employees, suppliers and customers. Email was one of the early drivers of the Internet, providing a simple and inexpensive means to communicate. Over the years, a number of other communication tools have also evolved, allowing staff to communicate using live chat systems, online meeting tools and video conferencing systems. Voice over Internet protocol (VOIP) telephones and smart-phones offer even more high-tech ways for employees to communicate.

Inventory Management :- When it comes to managing inventory, organizations need to maintain enough stock to meet demand without investing in more than they require. Inventory management systems track the quantity of each item a company maintains, triggering an order of additional stock when the quantities fall below a pre-determined amount. These systems are best used when the inventory management system is connected to the point-of-sale (POS) system. The POS system ensures that each time an item is sold, one of that item is removed

from the inventory count, creating a closed information loop between all departments.

Data Management :- The days of large file rooms, rows of filing cabinets and the mailing of documents is fading fast. Today, most companies store digital versions of documents on servers and storage devices. These documents become instantly available to everyone in the company regardless of their geographical location. Companies are able to store and maintain a tremendous amount of historical data economically and employees benefit from immediate access to the documents they need.

Management Information Systems :- Storing data is only a benefit if that data can be used effectively. Progressive companies use that data as part of their strategic planning process as well as the tactical execution of that strategy. Management Information Systems (MIS) enable companies to track sales data, expenses and productivity levels. The information can be used to track profitability over time, maximize return on investment and identify areas of improvement. Managers can track sales on a daily basis, allowing them to immediately react to lower-than-expected numbers by boosting employee productivity or reducing the cost of an item.

Customer Relationship Management :- Companies are using IT to improve the way they design and manage customer relationships. Customer Relationship Management (CRM) systems capture every interaction a

company has with a customer, so that a more enriching experience is possible. If a customer calls a call center with an issue, the customer support representative will be able to see what the customer has purchased, view shipping information, call up the training manual for that item and effectively respond to the issue. The entire interaction is stored in the CRM system, ready to be recalled if the customer calls again. The customer has a better, more focused experience and the company benefits from improved productivity.

Q2] Current Trends in I.T :-

1] Internet of Things (IOT) :- One of the biggest tech trends to emerge in recent years is the Internet of Things. Simply put, the Internet of Things is the idea that all technological devices can be connected to the internet and to each other in an attempt to create the perfect marriage between the physical and digital world. For eg, for those who work in marketing, advertising, media or business management, IOT could provide a wealth of information on how consumers engage with products by tracking their interactions with digital devices. In turn, this data could be used to optimize marketing campaigns and user experiences.

2] Machine learning :- Another exciting emerging technology is machine learning, which is essentially a computer's ability to learn on its own by analyzing data and

tracking repeating patterns. For example, social media platforms use machine learning to get a better understanding of how you're connected with those in your social network. They do this by analyzing your likes, shares and comments and then prioritizing content from your closest connections, serving you that content first.

3) Blockchain :- The use of Bitcoin and the revitalization of peer-to-peer computing has been essential for the adoption of blockchain technology in a broader sense. We can predict that there is increased expansion of companies delivering blockchain products and even IT heavyweights entering the market and consolidating the products.

4) Cloud Computing :- One of the most talked about concept in information technology is the cloud computing. Cloud computing is defined as utilization of computing services i.e. software as well as hardware as a service over a network. Cloud computing reduces IT infrastructure cost of the company. Cloud computing promotes the concept of virtualization, which enables server and storage device to be utilized across organization. Cloud computing makes maintenance of software and hardware easier as installation is not required on each end users computer.

5) Mobile Application :- Another emerging trend within information technology is mobile applications (software applications

on Smart phone, tablet, etc). Mobile application or mobile app has become a success since its introduction. They are designed to run on Smartphone, tablets and other mobile devices. They are available as a download from various mobile operating systems like Apple, Blackberry, Nokia, etc. Some of the mobile app are available free whereas some involve download cost. The revenue collected is shared between app distributor and app developer.

6) Business In Digital Economy :- Digital Economy refers to an economy that is based on digital technologies. Conducting business in the digital economy means using web-based systems on the internet and other electronic networks to do transactions electronically. It is sometimes called the Internet Economy, the New Economy or the Web Economy.

Major IT characteristics in the Digital Economy :-

1) Globalization :- Global communication and collaborations, global electronic marketplaces, Global customers, suppliers.

2) Digital System :- From TV to telephones and instrumentation, analog systems are being connected to digital ones.

3) Speed :- A move to real-time transactions, digitized documents, products and services. ~~Many business processes~~

4) Information Overload :- Although the amount of information generated is accelerating, intelligent search tools can help find what they need.

5) Markets :- Markets are moving online. Physi-

cal markets are being replaced by electronic markets.

c) Digitization :- Music, books, pictures, movies and more are digitized for fast and inexpensive distribution.

d) Business models and processes :- New and improved business models and processes provide opportunities to new companies and industries.

e) Innovation :- Digital and internet based innovations continue at a rapid pace.

f) Wars :- Conventional wars are changing to cyberwars.

g) Organizations :- Many companies are attempting to move to a full digital status.

Q4) Explain Information Technology and what are the capabilities of I.T?

Information Technology is the use of computers and software to manage the information. Computers play the important role in information technology. We can say I.T is a technology to maximize the efficiency and production and improves working efficiency. The world has become a global hub due to development of I.T. I.T would be responsible for protecting information, processing the information, transmitting the information and retrieving the information.

Capabilities of I.T :- a) Perform high-speed, high-volume, numerical computations.

b) Provide fast, accurate, reliable and inexpensive communication within and between organizations, any time and any place.

3) Store huge amounts of information in an easy-to-access, yet small space.
4) Allow quick and inexpensive access to vast amounts of information worldwide at any time.
5) Enable collaboration anywhere, any time.
6) Increase the effectiveness and efficiency of people working in groups in one place or in several locations.
7) Facilitate work in hazardous environments.
8) Automate manually done tasks.
9) Facilitate global trade.
10) Enable automation of routine decision making and facilitate complex decision making.
11) Can be wireless; thus supporting applications anywhere.

These capabilities support the following 5 business objectives.

1) Improving productivity
2) Reducing costs
3) Improving decision making
4) Enhancing customer relationships
5) Developing new strategic applications.

Unit II

* 1) Role of IT in E-Commerce :- Electronic commerce, commonly known as e-commerce which consists of the buying and selling of products or services over electronic systems such as the internet and other computer networks.

The 3 major types of EC are :-

1) Business-to-Consumer (B2C)

2] Business-to-business (B2B)
3] Consumer-to-consumer (C2C)

1] B2B ecommerce is simply defined as e-commerce between companies. This is the type of e-commerce that deals with relationships between and among businesses. About 80% of e-commerce is of this type. ALIBABA.COM is the best example of B2B E-commerce where a business organisation can buy from another business organisation in bulk.
It is the largest form of todays commerce. In this form the buyers and sellers are both business entities and does not include individual consumer.
2] Business-to-consumer e-commerce or commerce between companies and consumers, involves customers gathering information, purchasing physical goods or information goods and receiving products over an electronic network. It is the second largest and the earliest form of e-commerce. Eg of B2C ecommerce is FLIPKART.COM and EBAY.IN (B2C) E-commerce transaction process:-
1] Customer identifies a need. 2] Searches for the product or services to satisfy the need 3] Selects a vendor and negotiates a price. 4] Receives the product or services. 5] Makes payment. 6] Gets services and warranty claims
3] C2B E-commerce :- It enables buyers to name their own price, often binding for a specific good or services generating demand. A consumer posts his project with a set

budget online and within outs, companies review the customers requirements and bids out the project. Then the customers will review the bids and selects the company that will complete the project Eg :- Stock market. Generally, in C2B ecommerce, the customes requests a specific service from the business. Reverseauction.com, priceline.com are websites engaged in C2B E-commerce.

iii) C2C E-commerce :- It facilitates the online transaction of goods or services between two peoples. However, there is not visible intermediary involved, but the parties cannot carry out the transactions without the platform, which is the provided by the online market such as eBay, OLX and Quikr.com

5) Peer-to-Peer (P2P) e-commerce :- It is a technology in itself that helps people to directly share computer files and computer resources without having a central web server. To use this, both the peers should have to install the software so that they can communicate on the common platform. Eg :- Sharing of musics, videos and other digital files electronically.

*Q2) Role of IT in M-Commerce :- It refers to the use of mobiles devices for conducting the transactions. The mobile device holders can connect each other and can conduct the business. Now people can shop and pay directly from their phone rather than using a laptop or pc.

E-Government :- In E-Government a governm-

ent department buys or sells goods, servic or information to business i.e (G2B) or to the individual citizens (G2C) or to other government entity (G2G) in E-Government instants, extranets and the internet all are applied eg:- filing returns through net

E-learning:- When educations, training or examination are provided online, it is call E-learning. It is practiced in Universities and organizations, government departments EDUCOMP SMARTCLASS is an eg of E-learning website where students can learn and underst and more effectively.

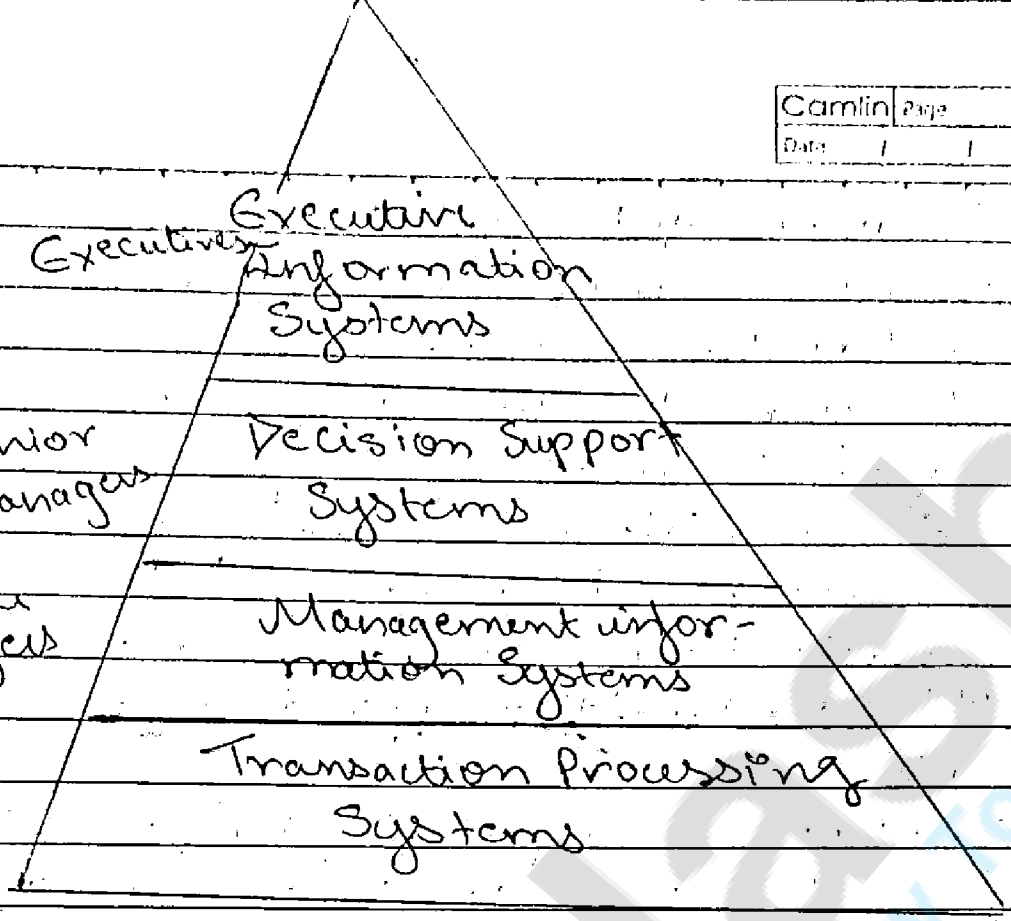
Content and location-based services:- For checking travel information, schedules, news, movie times weather forecasts etc.

Banking and financial services:- For checking accounts balances, transferring funds, paying bills.

Games and entertainment:- Games and entertainment have been developed for use on smartphones and other mobile entertainment platforms. Content such as streaming digital games, movies, TV shows, music and ringtones are available for download.

Wireless advertising and retailing has allowed advertisements to be available on smartphones.

3) What are the classification and types of IS?



Information Systems can be classified as
1) Transaction Processing Systems
2) Management Information Systems
3) Decision Support Systems
4) Executive Information Systems

1) Transaction Processing Systems are operational. They record and process data resulting from business transactions, update operational databases and produce business documents. Transaction Processing Systems are designed to process routine transactions efficiently and accurately. The different types of TPS used in business are:- 1) Billing systems to send invoices to customers. 2) Systems to calculate the weekly and monthly payroll and tax payments 3) Production and purchasing systems to calculate raw material requirements. 4) Stock control systems to process all movements into, within and out of the business.

2) Management Support System:- Managers require precise information in a specific format to undertake an organizational decision. Management information system provides information to managers facilitating the routine decision-making process. Decision support system provides information to managers facilitating specific issue related solution. MIS are built on the data provided by the TPS.

3) Decision Support Systems:- A Decision Support System can be seen as a knowledge based system, used by senior managers, which facilitates the creation of knowledge and allows its integration into the organization. This systems are often used to analyze existing structured information and allow managers to project the potential effects of their decisions into the future. Such systems are usually interactive and are used to solve all structured problems. DSS manipulate and build upon the information from a MIS and/or TPS to generate insights and new information.

4) Executive Information Systems:- An executive support system (ESS) is a decision support system (DSS) used to assist senior executives in the decision-making process. It does this by providing easy access to important data needed to achieve strategic goals in an organization. An EIS (dashboard) normally features graphic displays on an easy-to-use interface.

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(Q4) Role of IS in business today.

1) Operational Excellence:- businesses can constantly improve their efficiency of their operations in order to achieve higher profitability. They can do this by constantly having the correct amount of stock in store so consumers can always get what they want.

2) New product services and business models:- I.S systems play a major role for business in creating new products and services. New business models can be created and these can describe how a company produce, create and sell their products

3) Customer and Supplier intimacy:- the better services a company provides its consumers with the more likely they are to come back to them and as a result the more they will buy off the supplier therefore creating a good relationship with both parties.

4) Improved decision making:- I.S systems make it possibly for managers to use real time data when making a decision to therefore make better decisions and not have to waste time looking for information.

5) Competitive advantage:- if ~~cost~~ Implementing effective and efficient I.S.s, can allow a company to charge less for superior products, adding up to higher sales and profits than their competitors

6) Day to day survival:- business invest in these systems to make their jobs as easy as possible. Eg:- Citibank introduced the first ATM machine to make it easier for customers to access

their money and to cut down queuing times in their banks.

7) Automation of Manual tasks :- Information systems architecture can assist an organization in automating manual tasks. Automation can save time, money and resources and enhance organizational workflow.

Unit 3

* Q1) Acquisition of I.T :- Technology acquisitions involve bringing in new technologies from external sources rather than using the firm's own internal research and development activities. Specialist technical expertise and capabilities are often difficult to obtain and a firm may not have the ability - or wish to commit the resources - to develop a technology internally. Bringing in new technologies can provide the company with the opportunity both to develop new products and to enter new markets. Technology can be acquired in a number of ways. Understanding the various options available and deciding which might be best in particular circumstances can be challenging.

Steps involved in technology acquisitions :- The process of technology acquisition requires :-

1) Identification of attractive technologies or partners with technological capabilities.

2) Assessment of these opportunities, selection of the most promising ones and consideration of the terms of the acquisition.

3] Negotiation of the terms of acquisition between acquires and sellers.
4] Transfer of the technology to the acquiver, if these negotiations have been successful.
The assessment and negotiation stages form a cycle as it is expected that the terms discussed during negotiations will need to be re-assessed before acceptance.
The report sections of the assessment process are structured around the following 3 stages:-
1] Acquisition Context:- Understanding and defining the issues that need to be considered. This section leads to the definition of a detailed framework for the acquisition, including the acquisition motives, the different types of partners that should could be involved, the desired technology readiness level and an overview of the most likely technology acquisition scenarios.
2] Acquisition Evaluation:- Assessing whether a potential acquisition is a good match. Involves assessing the match between technological capabilities and market opportunities, as well as the capability of the firm to absorb and make good use of the technologies that other firms are developing. Provides a checklist of questions to evaluate the partner-technology-absorptive capacity combination.
3] Acquisition Options:- If the evaluation of a potential acquisition has yielded a positive result, the next step is to consider the detailed terms of the acquition. Provides guidance to evaluate the different options associated

with such issues as future technological development, protection strategies, the type of contract governing the relationship and the transaction currency. Provides open ended questions and case study examples to support evaluation of the advantages and disadvantages of each strategic option. It is recommended that the possible options are discussed widely within the company involving as many roles as possible, including innovations and R&D managers, IP and legal officers and product, business and finance managers. Before Before making any decisions in relation to a proposed technology acquisition it is essential to consider the context in which it is taking place and to identify the key issues involved. A structured approach will help to reduce the complexity to all the possible scenarios and ensure that those involved remain objective and focused on the most important questions.

1) Why do we want to acquire the technology?
2) Who are we going to acquire the technology from?
3) How mature is the technology and how might this affect our acquisition options?

* Q2) Why do we want to acquire technology?
An organizations motive for wanting to acquire a technology will affect the kind of technology they are looking for, the partners from whom they decide to acquir

it and the process they follow to make the acquisition. There are a wide variety of motivations which can be broadly classified into 4 categories:

1) Developing new technological capabilities
2) Increasing strategic options
3) Gaining efficiency improvements
4) Responding to the competitive environment.

1) Developing Technological Capabilities :- One of the fundamental motivations for the acquisition of external technologies is the need to develop new technological capabilities and to fill gaps in the Research & Development base. The objective of these acquisitions is either to fill holes in an existing product line or to create and establish a brand new product. This need may arise because specialist technical expertise and capabilities are often difficult to obtain and firms may not have the ability to develop these valuable knowledge-based resources internally. This may be the case, for instance, when the technological knowledge of a firm is close to exhaustion and most of the possible technological combinations have already been tried.

2) Increasing strategic options :- Acquisitions can enable a firm to improve its strategic flexibility. Increasing its internal technological capabilities, can give the company more strategic options, allowing it to select the best available technology. for Eg:-

1) Acquisitions can encourage innovation, countering inertia and rigidity and increasing R&D productivity. Relying on incremental

improvements to existing technologies may limit a firm's potential. Experimenting with new and emerging technologies can provide opportunities for more radical innovations.

2] Acquisition can open new markets, allowing the knowledge of new customers, channels, inputs, processes and markets to be exploited.

3] Acquisitions may help to deal with uncertainty and risk. Companies operating in high-tech industries are often dependent on uncertain future outcomes or developments. In such cases, managers are more likely to avoid risky internal investments in R&D with long-term payback periods, investing instead in external technologies as a way of keeping their options open until the risk and uncertainty diminish.

3] Gaining Efficiency Improvements :- The need to innovate more rapidly is another motivation for technological acquisition as it can reduce the time. The internal development of new capabilities may take too long or be too costly. Technology acquisition can create these more quickly so that the firm can be more responsive to market demands. There are often cost advantages to acquiring technologies externally : firms substitute fixed investment costs with variable acquisition costs which can be recovered via profits from new businesses that follow a partnership-based strategy.

4] Responding to the competitive Environment

firms are more likely to consider technology acquisitions as environments become more hostile, when there is rapid technological change and fast-moving competition in their market area. Acquiring technologies helps the firm to feel less vulnerable and more competitive. In such an environment it is likely there will be a greater use of partnerships, collaborations and outsourcing as a suitable substitute for in-house activities.

Q3) Who are we going to acquire the technology from?

Technology can be acquired from a number of different kinds of sources including private companies, universities and government agencies. It may be acquired from a single organization, or more than one can be involved, sometimes in the form of a consortium. It is important to understand the characteristics of your potential partners as these will determine their expectations and behavior during collaborations. Examples of the different perspectives and characteristics of some of the organizations that may be involved are:-

1) Universities
2) Start-up companies
3) Consortia

Universities:- Universities are increasingly interested in the commercialization of research but are generally inexperienced. Regulations regarding ownership of academic research outputs vary from country to country. An element

of tension exists between academics who wish to publish results and industry which prioritizes the filling of patents. An additional issue is that high turnover of people in academia might lead to information leaks.

Start-up Companies :- Start-ups can be important source of ideas for larger companies. However, they are typically lacking in resources and business knowledge and are often subject to the influence of their investors. They may be more flexible but also more volatile than established firms. They may own only one technology and the fear of losing control over it might lead to over protective attitudes. Partnerships between start-ups and established firms can be mutually beneficial as there are ways to increase the chances of success.

Consortia :- A firm gets together with other types of organizations typically to tackle complex technological issues which would be difficult to deal with in isolation. They are more common in industries with long technology life cycles such as pharmaceuticals. This industry requires access to a wider set of competences beyond the ~~main~~ traditional areas of chemistry and pharmacology - such as molecular, biological, nanotechnology and computational science - to guarantee future innovation.