

MIS Question List

1. What is system? Explain different entities of a system with proper example.

- I A set of interrelated components
- I With a clearly defined boundary
- I Working together
- I To achieve a common set of objectives

Different entity:

- I Input : Capturing and assembling elements that enter the system to be processed
- I Processing : Transformation process that converts input into output
- I Output : Transferring transformed elements to their ultimate destination

Example:

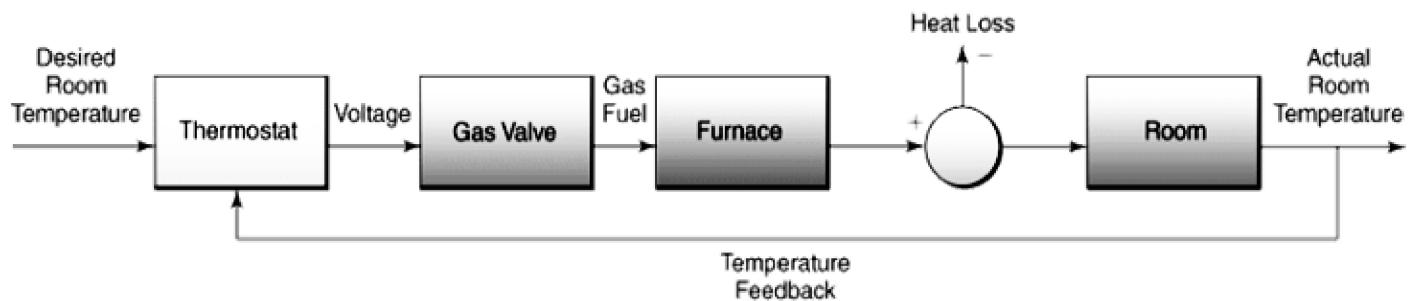


Fig: Different entities of a system

2. Explain different component of information system.

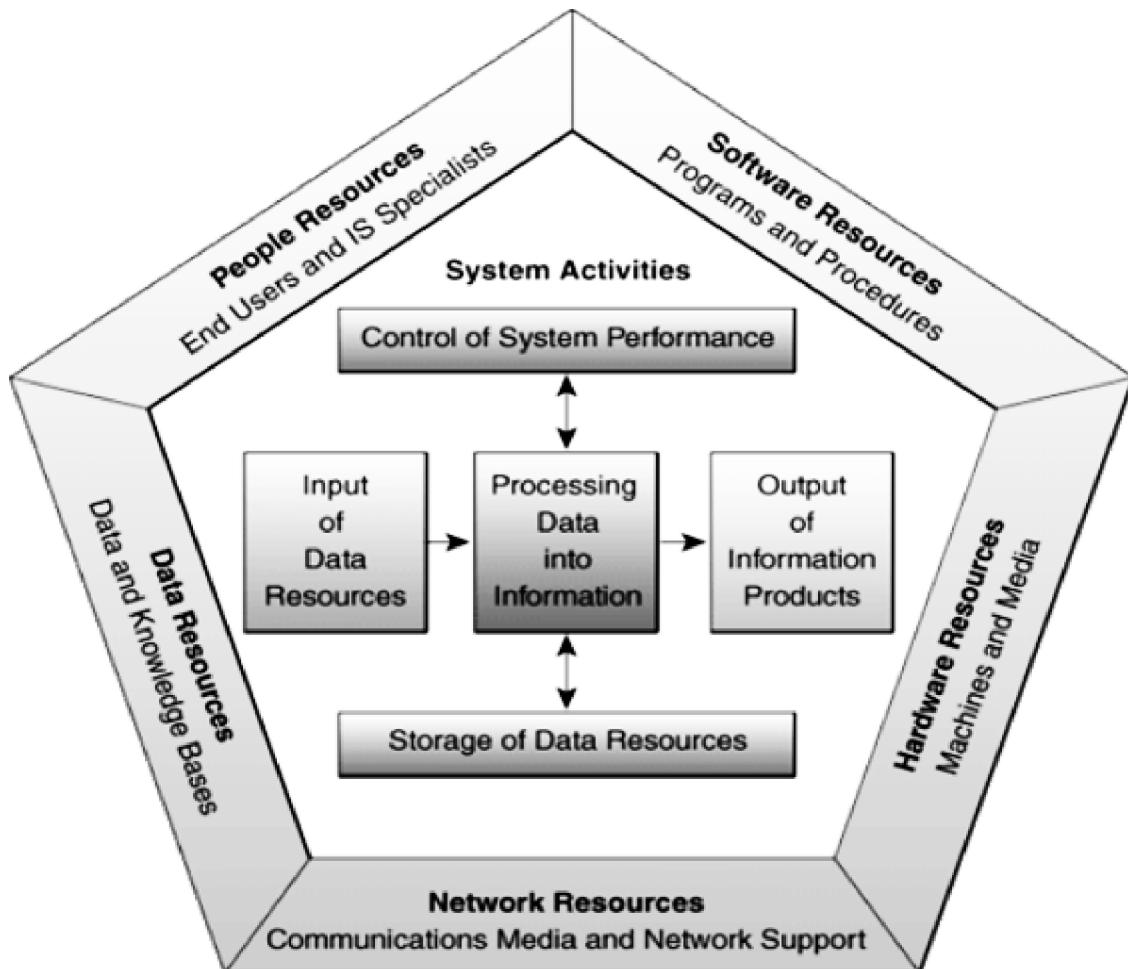


Fig: Different Components of a n Information System

People Resources

- I Specialists
- I End users

Hardware Resources

- I Machines
- I Media

Software Resources

- I Programs
- I Procedures

Data Resources

- I Product descriptions, customer records, employee files, inventory databases

Network Resources

- I Communications media, communications processors, network access and control software

Information Resources

- I Management reports and business documents using text and graphics displays, audio responses, and paper forms

3. Explain different attribute of information quality.

1) Timeliness

Timeliness means that information must reach the recipients within the prescribed time frame. Timely information can ensure correct executive action at an early stage. The characteristic of timeliness, to be effective, should also include current information.

2) Accuracy

Accuracy is another key-attribute of management information. It means that information is free from mistakes and errors, is clear and accurately reflects the meaning of data on which it is based. It conveys an accurate picture to the recipient, who may require a presentation in graphical form rather than tabular form.

3) Relevance

Relevance is yet another key attribute of management information. Information is said to be relevant if it answers specifically for the recipient what, why, where, who and why? In other words, the MIS should serve reports to managers, which are useful, and the information helps them make decisions.

4) Adequacy

Adequacy means information must be sufficient in quantity. MIS must provide reports containing information, which is required in deciding processes of decision-making.

5) Completeness

The information, which is provided to a manager, must be complete and should meet all his needs. Incomplete information may result in wrong decisions and thus may prove costly to the organization.

6) Explicitness

A report is said to be of good quality if it does not require further analysis by the recipient for decision-making. Thus the reports should be such that a manager does not waste any time on the processing of the report, rather he should be able to extract the required information directly.

7) Exception based.

Top managers need only exception reports regarding the performance of the organization. Exception reporting principle states that only those items of information, which will be of particular interest to a manager, are reported. This approach results in saving precious time of the top management and enables the managers to devote more time in pursuit of alternatives for the growth of the organization.

4. Define & explain an e-business enterprise model.

Using Internet technologies to empower

- I Business processes
- I Electronic commerce
- I Collaboration within a company
- I Collaboration with customers, suppliers, and other business stakeholders
- I In essence, an online exchange of value

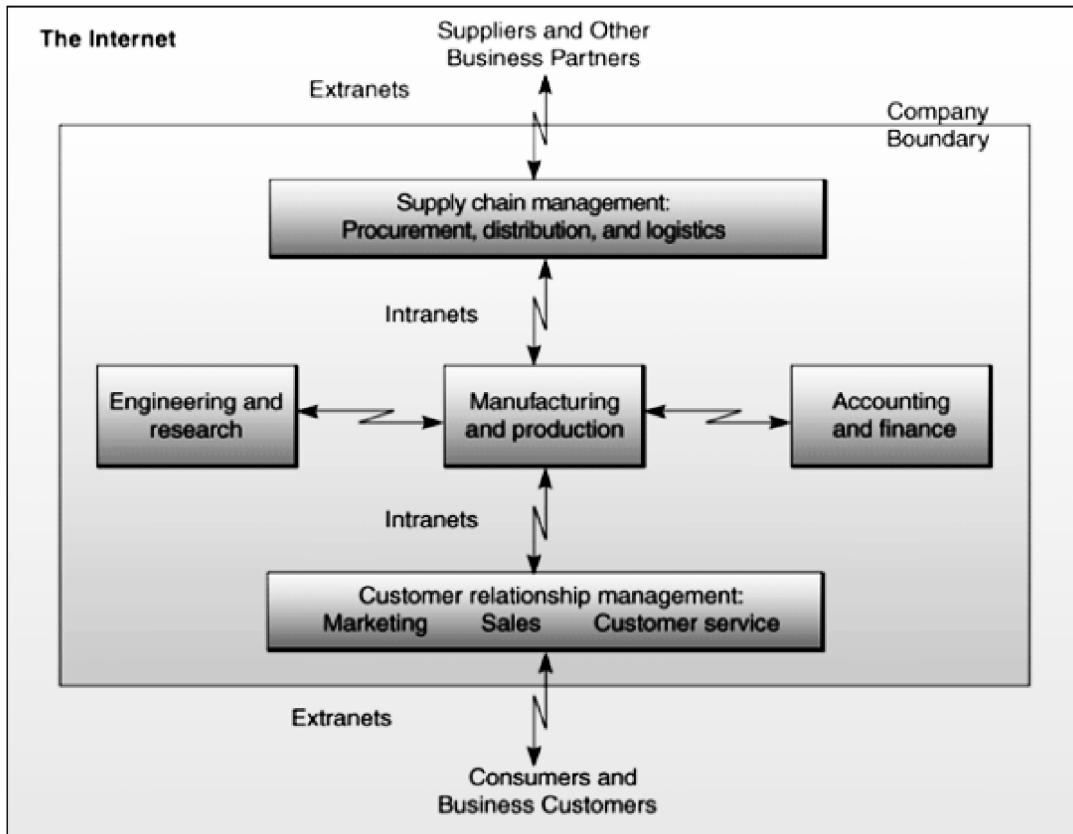


Fig : e-business enterprise model.

- I Re engineering
- I Internal business processes

Enterprise collaboration systems

- I Support communications, coordination and coordination among teams and work groups

Electronic commerce

- I Buying, selling, marketing, and servicing of products and services over networks

5. What is Cybernetic system? Explain with proper example.

- All systems have input, processing, and output
- A cybernetic system, a self-monitoring, self-regulating system, adds feedback and control:
- Feedback is data about the performance of a system
- Control involves monitoring and evaluating feedback to determine whether a system is moving toward the achievement of its goal

Examples

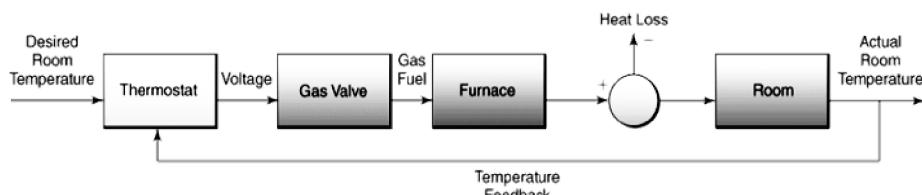


Fig: Cybernetic System

6. What is Information System? What is the difference between information and data with example.

An information system is an organized combination of

- People
- Hardware and software
- Communication networks
- Data resources
- Policies and procedures

This system

- Stores, retrieves, transforms, and disseminates information in an organization

Difference between information and data with example.

- **Data** are raw facts about physical phenomena or business transactions
- **Information** is data that has been converted into meaningful and useful context for end users

► Data	► Information
1. Data are simply raw facts and figures.	1. Information is the processed form of data.
2. Data is act as a Input	2. Information is act as a Output
3. Data is unorganized information	3. Information is organized
4. Data cannot add any knowledge to user.	4. But Information will enhance the knowledge of the user.
5. Data does not contain an element of surprise.	5. Information contains the element of surprise.
6. Data is unrelated & uninterrupted.	6. Information is related and interrupted.
7. Data cannot lead to any action.	7. Information can lead to action.

Examples:

- Sales data is names, quantities, and dollar amounts
- Sales information is amount of sales by product type, sales territory, or salesperson

7. Describe different components of an information system in brief.

5

Data	Input that the system takes to produce information
Hardware	A computer and its peripheral equipment: input, output, and storage devices; hardware also includes data communication equipment
Software	Sets of instructions that tell the computer how to take data in, how to process it, how to display information, and how to store data and information
Telecommunications	Hardware and software that facilitate fast transmission and reception of text, pictures, sound, and animation in the form of electronic data
People	Information systems professionals and users who analyze organizational information needs, design and construct information systems, write computer programs, operate the hardware, and maintain software
Procedures	Rules for achieving optimal and secure operations in data processing; procedures include priorities in dispensing software applications and security measures

8. What sorts of information system are required at different levels of management to support an organization? Discuss in brief.

5

- I Management information systems
- I Decision support systems
- I Executive information systems

Management Information Systems (MIS)

- I Reports and displays
- I Example: daily sales analysis reports

Decision Support Systems (DSS)

- I Interactive and ad hoc support
- I Example: a what-if analysis to determine where to spend advertising dollars

Executive Information Systems (EIS)

- I Critical information for executives and managers
- I Example: easy access to actions of competitors

Expert Systems

- I Provide expert advice
- I Example: credit application advisor

Knowledge Management Systems

- I Support creation, organization, and dissemination of business knowledge throughout company
- I Example: intranet access to best business practices

Strategic Information Systems

- I Help get a strategic advantage over customer
- I Examples: shipment tracking, e-commerce Web systems

Functional Business Systems

- I Focus on operational and managerial applications of basic business functions
- I Examples: accounting, finance, or marketing

11. Write the applications of MIS.

3

An MIS can be defined as a system that processes information input in the form of data (the raw material) and helps support the management in decision-making and strategic planning. Management information systems been implemented in areas of:

- i. Transportation
- ii. Finance and Accounting
- iii. Laboratories
- iv. Trafficking Systems
- v. Graphic Design
- vi. Geographic Information System (GIS)
- vii. Telecommunication
- viii. Satellite Imaging
- ix. Healthcare etc.

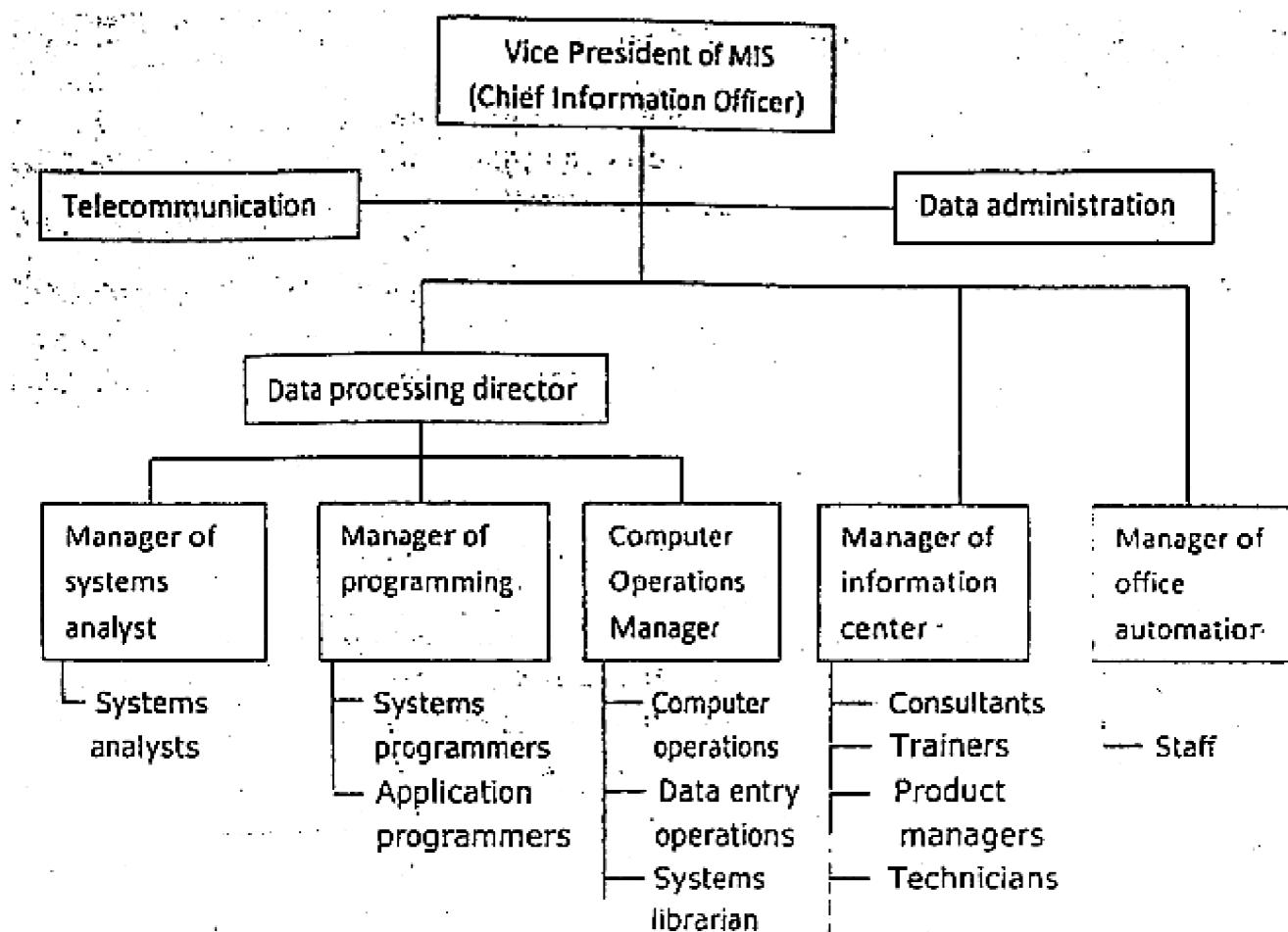


Fig: An organizational chart showing common MIS jobs and typical relationship among them in a structured MIS structure

- The hierarchy of MIS function in an organization has five principal areas as:
 - Information center
 - Office automation
 - System development
 - Programming
 - Computer operations
- The hierarchy of MIS function in an organization has two staff functions as:
 - Data administration
 - Telecommunication
- MIS line managers, especially data processing managers had the limelight all of themselves. They have to share it with the information center, the office automation group, and other areas that cater to the needs of users.
- The migration of the transaction processing and the other key applications from mainframes to LAN and distributed processing environments has also eroded the traditional power base data processing managers.
- The increased importance of networking has enhanced the power and clout of business telecommunications managers in many organizations.

10. How diversification impact on MIS?

4

Diversification: A risk management technique that mixes a wide variety of investments within a portfolio. The rationale behind this technique contends that a portfolio of different kinds of investments will, on average, yield higher returns and pose a lower risk than any individual investment found within the portfolio.

Diversification is a form of growth marketing strategy for a company. It seeks to increase profitability through greater sales volume obtained from new products and new markets.

Diversification can occur either at the business unit or at the corporate level. At the business-unit level, it is most likely to expand into a new segment of an industry in which the business is already involved. At the corporate level, it is generally and its also very interesting entering a promising business outside of the scope of the existing business unit.

Impact of diversification in MIS: Diversification may impact on MIS in any of the following ways:

- ① **The first one relates to the nature of the strategic objective:** diversification may be defensive or offensive. Defensive reasons may be spreading the risk of market contraction, or being forced to diversify when current product or current market orientation seems to provide no further opportunities for growth. Offensive reasons may be conquering new positions, taking opportunities that promise greater profitability than expansion opportunities, or using retained cash that exceeds total expansion needs.
- ② **The second dimension involves the expected outcomes of diversification:** management may expect great economic value (growth, profitability) or first and foremost great coherence and complementarities with their current activities (exploitation of know-how, more efficient use of available resources and capacities). In addition, companies may also explore diversification just to get a valuable comparison between this strategy and expansion.

13. What is the importance of Decision Support System.

4

Importance of DSS:

- i. Improves personal efficiency
- ii. Speeds up the process of decision making
- iii. Increases organizational control
- iv. Encourages exploration and discovery on the part of the decision maker
- v. Speeds up problem solving in an organization.
- vi. Facilitates interpersonal communication
- vii. Promotes learning or training
- viii. Generates new evidence in support of a decision
- ix. Creates a competitive advantage over competition
- x. Reveals new approaches to think about the problem space
- xi. Helps automate managerial processes
- xii. Creates innovative ideas to speed up the performance

12. What is virtual reality? Discuss about the application of CAD and CAM.

6

Virtual reality is a computer-simulated reality

- | Fast-growing area of artificial intelligence
- | Originated from efforts to build natural, realistic, multi-sensory human-computer interfaces
- | Relies on multi-sensory input/output devices
- | Creates a three-dimensional world through sight, sound, and touch
- | Also called telepresence

Computer Aided Design (CAD) is defined as the application of computer and graphics software to aid the product design from conceptualization to documentation.

Computer Aided Manufacturing (CAM) is defined as the effective use of computer in manufacturing planning and control.

Applications :-

- | - Engineering and Machining
- | - Automated Machining
- | - Tool making
- | - High speed machining etc.
- | - Transport Industry
- | - Plastics & Packaging
- | - Footwear and Consumer products
- | - Dental and Orthotics
- | - Reverse Engineering and Rapid Prototyping
- | - Photo realistic rendering
- | - Superimposition of objects
- | - Product data analysis
- | - Large project planning

14. Define CASE tool. List three advantages of CASE tools. Explain forward and reverse engineering with appropriate diagrams.

5

CASE Tools

A CASE (Computer Aided Software Engineering) tool is a combination of many programming tools into a single application with a common interface. It is used in different stages of the system development process.

Advantages of CASE Tools

- i. Increases speed
- ii. Increases accuracy in system works
- iii. Reduces lifetime maintenance
- iv. Provides better documentation
- v. Reduce maintenance cost
- vi. System complexity decreases
- vii. Makes it easy to create prototypes
- viii. Makes it easy to change in system design

Forward engineering is the process of building from a high-level model or concept to build in complexities and lower-level details. This type of engineering has different principles in various software and database processes.

Explanation

Generally, forward engineering is important in IT because it represents the 'normal' development process. For example, building from a model into an implementation language. This will often result in loss of semantics, if models are more semantically detailed, or levels of abstraction.

Forward engineering is thus related to the term 'reverse engineering,' where there is an effort to build backward, from a coded set to a model, or to unravel the process of how something was put together.

Reverse engineering, in computer programming, is a technique used to analyze software in order to identify and understand the parts it is composed of. The usual reasons for reverse engineering a piece of software are to recreate the program, to build something similar to it, to exploit its weaknesses or strengthen its defenses.

Explanation:

Because closed, proprietary software never comes with documentation that reveals the source code used to create it, people use reverse engineering whenever they want to understand the software's inner workings.

Some hackers use reverse engineering to find weak points of programs which they can exploit.

Other hackers use reverse engineering to locate weak points with the intention of strengthening the defenses there.

Software companies with competing products reverse engineer their competitors' programs to find out where and how improvements can be made on their own products. Some companies use reverse engineering when they don't have similar products yet, to create products of their own.

Those who intend to build their own product based on an existing one often prefer reverse engineering over creating from scratch because once the parts and the dependencies are identified, the process of reconstructing tends to be much easier.

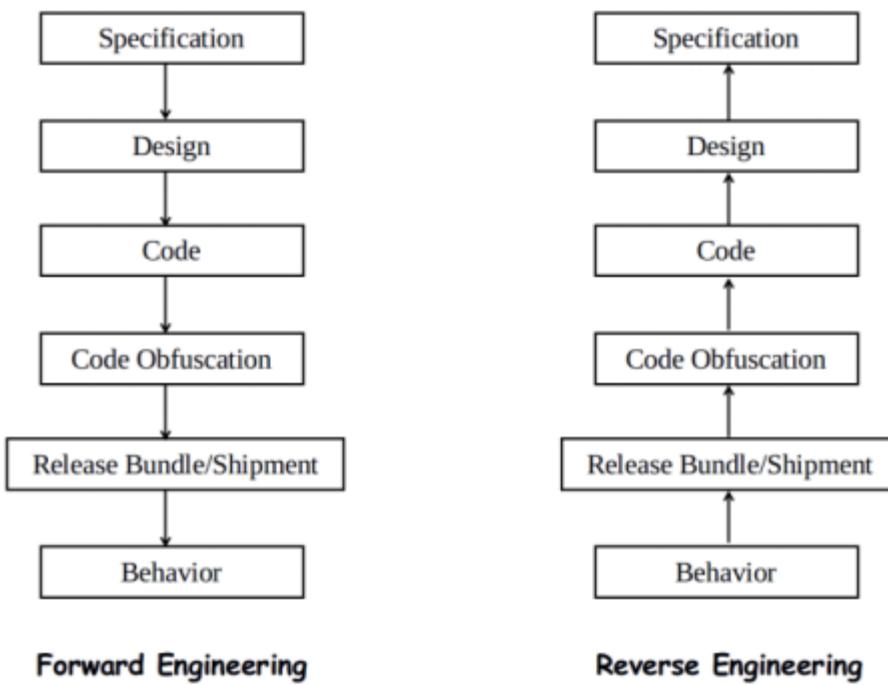


Fig: Forward and Reverse Engineering

15. List and explain at least five considerations of output for the system design.

5

Example: Inventory and Product Management System for Meena Bazaar

16. Explain how telecommunication policy is related to issues faced by managers.

5

17. What are some of the ways information system can improve the capacity, consistency, productivity, cycle time, flexibility and security of communication and decision making

5

(conceptual Broad question about MIS, in every aspect).

18. Discuss briefly the major components and activities of management information systems.

7

The basic MIS components include:

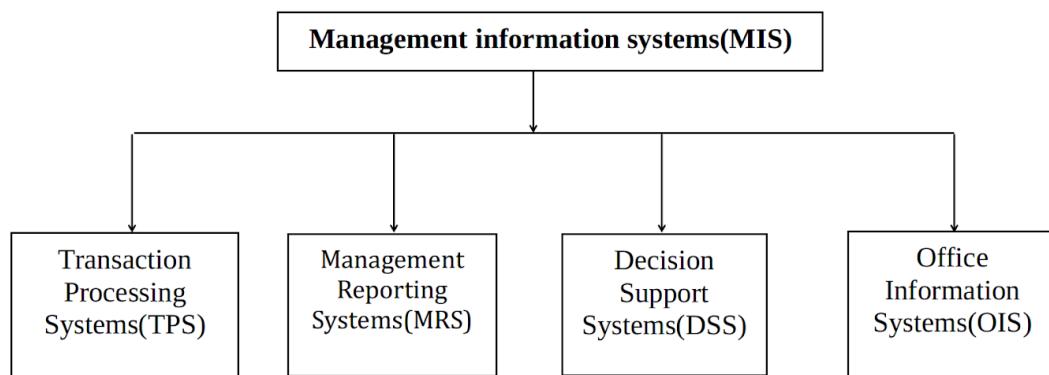


Fig: MIS Components/Subsystems

Transaction Processing Systems(TPS) : A transaction processing systems (TPS) transaction processing Monitor (TPM) is a set of information which process the data transaction in database systems of MIS that monitors transaction programs.data must be left in a consistent stage and none at all.

Management Reporting systems(MRS) : An MRS generates the preplanned reports for decision making purposes. Reports produced through an MRS are commonly by products database assemble by TPS. Typically, the facts contained in these reports consist of routine summary and exception information about organizational.

Decision Supports systems(DSS): Decision supports systems (DSS) are a specific class of computerized information system that supports business and organizational decision making activities. A properly designed DSS is an interactive software-based system, such raw data, documents, personal knowledge and make decisions.

Decision support application:

- | An inventory of all of your current information assets.
- | Comparative sales figures between one week and the next
- | Projectors revenue figures based on new products sales assumptions
- | Different decision alternatives

Office Information Systems (OIS) : OIS include the use of such computer based office oriented technologies as word processing desktop publishing electronic mail, video conferencing and so on.

19. Why are information systems essential in a business today.

3

- I 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.
- I New product services and business models – I.S systems play a major role for businesses 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.
- I Customer and Supplier intimacy – the better services a company provides its consumers with 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.
- I Improved decision making – I.S systems make it possible 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.
- I Competitive advantage – if companies achieve any of these 6 reasons to use I.S they will generally create a competitive advantage over their rivals.
- I Day to Day survival – business invest in these systems to make their jobs as easy as possible. An example is Citibank introduced the first ATM machine to make it easier for customers to access their money and to cut down queues in their banks.

20. Describe the characteristics of MIS.

3

I System approach:

MIS follows the system approach, which implies a step by step approach to the study of system and its performance in the light of the objective for which it has been constituted. It means taking an inclusive view at sub-systems to operate within an organization.

I Management-oriented:

The management-oriented characteristic of MIS implies that top-down approach needs to be followed for designing MIS. A top-down method says the initiation of system development determines management requirements as well as business goals. MIS implies the management dynamically to the system development towards the completion of management decision.

I As per requirements:

The design and development of MIS should be as per the information required by the managers. The required design and development information is at different levels, viz., strategic planning, management control and operational control. It means MIS should cater to the specific needs of managers in the hierarchy of an organization.

I Future-oriented:

The design and development of MIS should also be future purpose so that the system is not restricted to provide only the past information.

I Integrated:

A complete MIS is a combination of its multiple sub-components to provide the relevant information to take out a useful decision. An integrated system, which blends information from several operational areas, is a necessary characteristic of MIS.

I Common data flows:

This concept supports numerous basic views of system analysis such as avoiding duplication, combining similar functions and simplifying operations. The expansion of common data flow is a cost-effectively and logical concept.

I Long-term planning:

MIS should always develop as a long term planning because it involves logical planning to get success of an organization. While developing MIS, the analyst should keep future oriented analysis and needs of the company in mind.

I Relevant connection of sub-system planning:

The MIS development should be decomposing into its related subsystems. These subsystems must be meaningful with proper planning.

I Central database:

It contains data in tabular form. The database is responsible to operations like insertion, deletion, updation of records. This database covers information related to inventory, personnel, vendors, customers, etc. the data stored in the database.

I Relevance

I Accuracy

I Usefulness

I Timeliness

I Completeness

21. Explain briefly the phases of decision making.

5

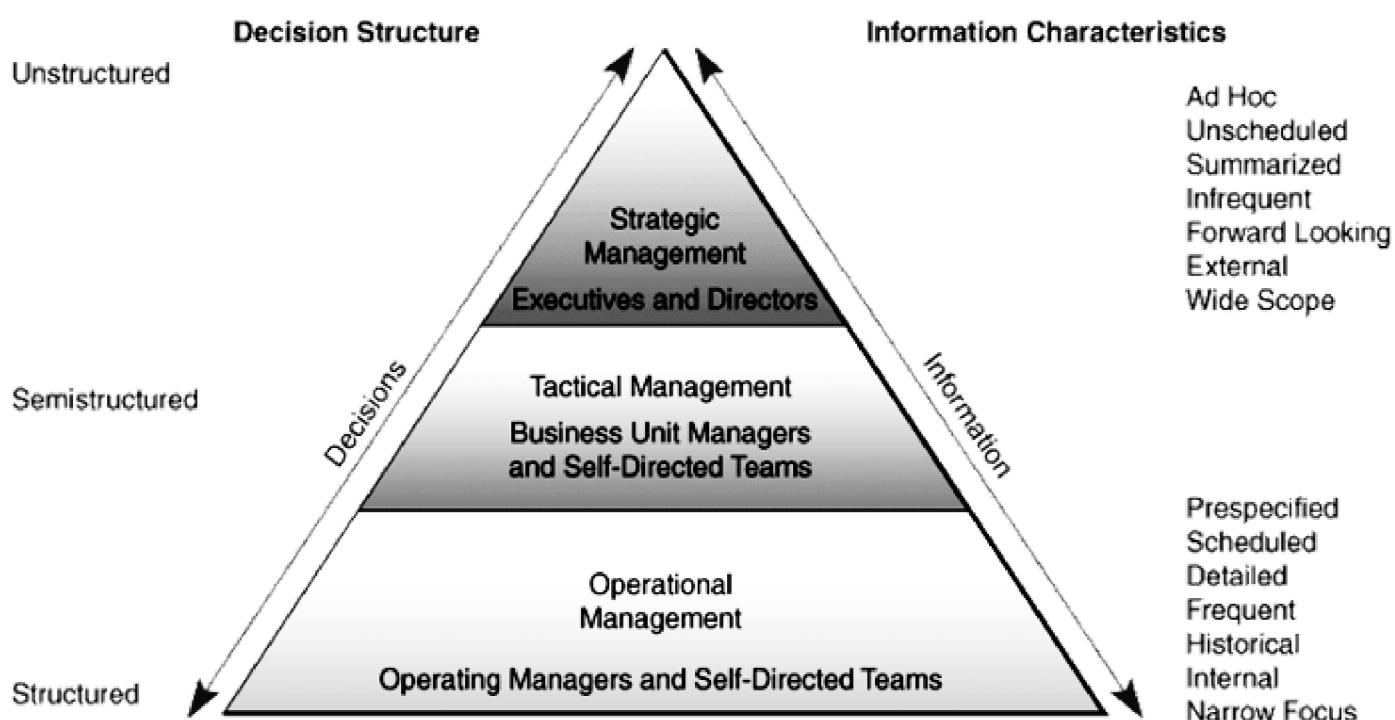


Fig: Phases of Managerial Decision Making

22. What are the common limitations and problems in decision making.

2

The various administrative problems and limitations that are faced by the management in the process of decision-making are as follows:

- i. **Correctness of decision:** Correctness of decision is a very important problem of management. Correctness depends on several factors such as sophistication of the decision-maker, accuracy of

information and ability of the decision-maker to visualise all possible alternative courses of action available in a given situation

ii. The decision environment: The environment, organisational as well as physical that is prevailing in the enterprise, influences the nature of the decision taken. If the general environment is satisfactory, there will be mutual confidence among managers, and also wholehearted cooperation by the subordinates for implementing the decision effectively. Further, there will be great scope for conducting research and analysis of the factors that have a bearing on the decision. Again, a good environment encourages managers to take decisions with confidence instead of avoiding them.

iii. Timing of decisions: In decision-making, timing is an important factor. The problem is not merely taking a decision, but when to take it. If the decisions are not taken at the right time, they will not serve any purpose. For example, if the management has to decide the time of introducing a new product in the market, and if the decision taken in his respect is not correct, it may lose the market to its competitors. Thus, timing of decision plays an important role.

iv. Effective communication of decision: Another important administrative problem is the effective communication of decisions to those for whom they are meant. The decision should be communicated in a simple language and without any ambiguity, if the decisions are properly communicated, the implementation would not be difficult.

v. Participation in decision-making: Employees who are likely to be affected by a decision should be encouraged to take part in arriving at the final decision so that their wholehearted cooperation will be available for the effective implementation of decision. However, the extent of participation depends on the nature of organisation. If it is an authoritarian organisation in which the executives feel that decision-making is their monopoly, the extent of participation is at a minimum and if it is a "democratic organisation", the extent of participation is great.

vi. Implementation of decision: After taking a decision, the problem that has to be faced is its effective implementation. For implementation, not merely effective communication but also good incentives and motivation of subordinates are essential. The management should create such an environment that would help the subordinates perform their jobs better and more easily.

23. Explain the necessity of long range plan for MIS. How is it linked with the business plan of the organization.

5

A management information system needs good planning. This system should deal with the management information not with data processing alone. It should provide support for the management planning, decision making and action. It should provide support to the changing needs of business management. A long range MIS plan provides direction for the development of the system and provides a basis for achieving the specific targets or tasks against time frame.

It is necessary to develop the goal and objectives for the MIS which will support the business goals. The MIS goals and objectives will consider management philosophy, policy constraints, Business risk, internal and external environment of the organization and business. The goals and objectives of the MIS would be so stated that they can be measured. The typical statements of the goals can be providing online information on the stock and market; the query processing should not exceed more than three seconds and the like.

Strategy for Plan Achievement: The designer has to take a number of strategic decisions for the achievement of MIS goals and objectives. They are:

- i. **Development Strategy** : Ex. an online, batch , a real time.
- ii. **System Development Strategy** : Designer selects an approach to system development like operational verses functional, accounting verses analysis.
- iii. **Resources for the Development** : Designer has to select resources. Resources can be in-house verses external, customized or use of package.
- iv. **Manpower Composition** : The staff should have the staffs of an analyst, and programmer.

The Architecture of MIS : The architecture of the MIS plan provides a system and subsystem structure and their input, output and linkage. It spells out in details the subsystem from the data entry to processing, analysis to modeling and storage to printing.

The System Development Schedule : A schedule is made for development of the system. While preparing a schedule due consideration is given to importance of the system in the overall information requirements. This development schedule is to be weighed against the time scale for achieving certain information requirements.

Hardware and Software Plan : Giving due regards to the technical and operational feasibility, the economics of investment is worked out. Then the plan of procurement is made after selecting the hardware and software. One can take the phased approach of investing starting from the lower configuration of hardware going to the higher as development take place. The process needs matching the technical decisions with the financial decisions.

24. Discuss prototype and life-cycle approaches (SDLC) for the development of MIS system/software. 5
(gather prototyping process or development process data)

27. What is a customer Decision Support System. 2

Customer Decision Support System

Customers might be confused by a proliferation of brands and models that fill their needs, and so may be looking for a good reason to buy one of them. Helping them make their buying decisions, either in a store or on a website, can make the difference in whether a business prospers or fails. A good consumer decision support system is vital for a business.

What Customer DSS Does

An example of a consumer DSS can be seen in user reviews that appear in many online store catalogs. They often contain star ratings, which are then tabulated to show the products in order of how many stars they received from users. Some rating systems are driven by short questionnaires asking people who have bought a product how it fit with what they expected in terms of size, color, performance and price value. Others rely on comments.

25. What is a decision support system? How does it differ from a management information system.

3

A decision support system (DSS) is an information system that supports business or organizational decision-making activities. DSSs serve the management, operations and planning levels of an organization (usually mid and higher management) and help people make decisions about problems that may be rapidly changing and not easily specified in advance—i.e. unstructured and semi-structured decision problems.

Decision support systems use the following to support the making of semi-structured business decisions

- | Analytical models
- | Specialized databases
- | A decision-maker's own insights and judgments
- | An interactive, computer-based modeling process

DSS systems are designed to be ad hoc, quick-response systems that are initiated and controlled by decision makers.

DIMENSION	DSS	MIS
FOCUS	Analysis, decision Support	Information processing
TYPICAL USERS SERVED	Analysts, professions, managers (via intermediaries)	Middle, lower levels, sometime senior executives
IMPETUS	Effectiveness	Efficiency
APPLICATION	Diversified Areas where Managerial Decisions are made	Production control, sales forecasts, financial analysis, human resource management
DATABASE(S)	Special	Corporate
DECISION SUPPORT CAPABILITIES	Supports semi-structured and unstructured decision making; mainly ad-hoc, but sometimes repetitive decisions	Direct or indirect support, mainly structured routine problems, using standard operations, research and other models
TYPE OF INFORMATION	Information to support specific situations	Scheduled and demand reports; structured flow, exception reporting mainly internal operations
PRINCIPAL USE	Planning, Organizing, staffing and control	Control
ADAPTABILITY TO INDIVIDUAL USER	Permits individual judgment, what-if capabilities, some choice of dialogue style	Usually none, standardized
GRAPHICS	Integrated part of many DSS	Desirable
USER FRIENDLINESS	A must where no intermediaries are used	Desirable
TREATMENT OF	Information provided by the	Information is provided to a

26. Briefly discuss the basic components of a DSS.

5

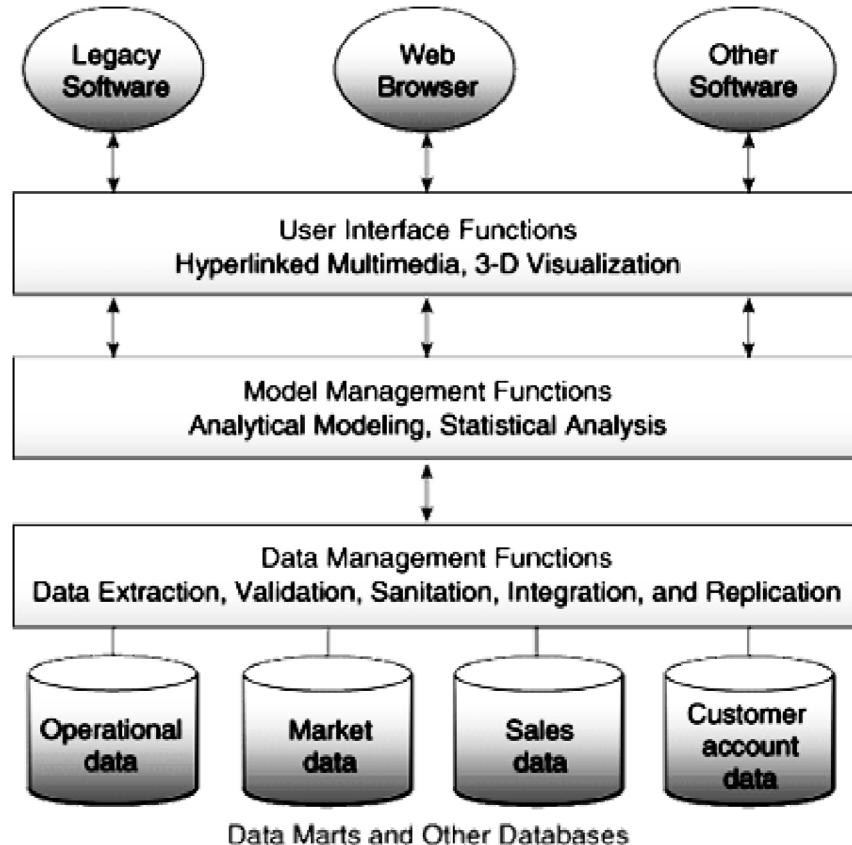


Fig : Components of a DSS

28. State the technologies, which have enabled e-business, with example. How can you use the concept of MIS?

4

O'brian Book, Fig. 9.3 (Ecommerce Technologies) (example – case study)

33. Discuss elaborately the fundamental roles of Management information system with example.

5

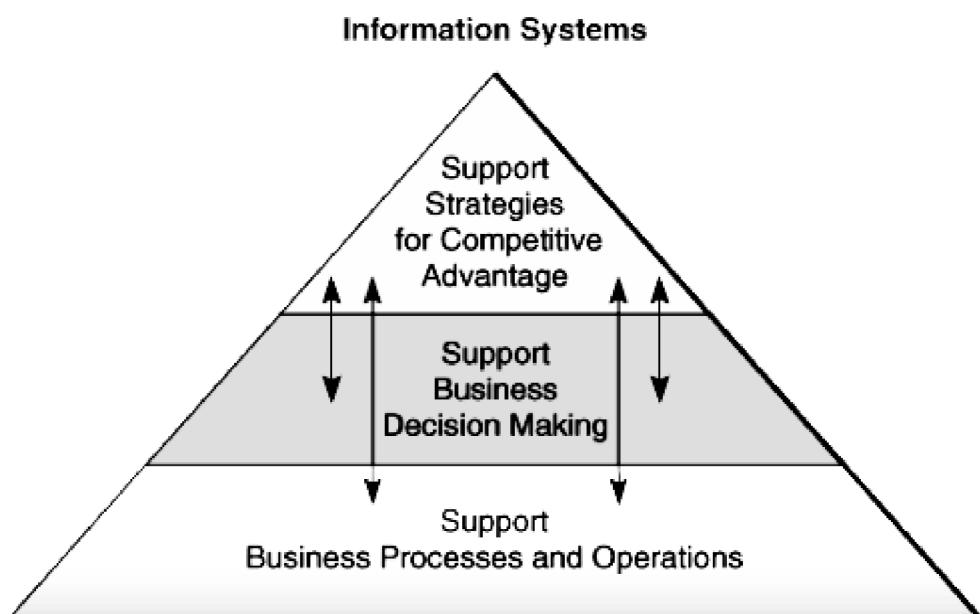


Fig: Fundamental roles of MIS

34. Diagrammatically show the framework for Business end user of Information System

5

Framework of major areas:

- **Foundation Concepts** – fundamental behavioral, technical, business, and managerial concepts about information systems
- **Information Technologies** – major concepts, developments, and management issues in IT
- **Business Applications** – major uses of IS for operations, management, and competitive advantage
- **Development Process** – how an IS is planned, developed, and implemented to meet business opportunities
- **Management Challenges** – effectively and ethically managing IT at the end-user, enterprise, and global levels of a business

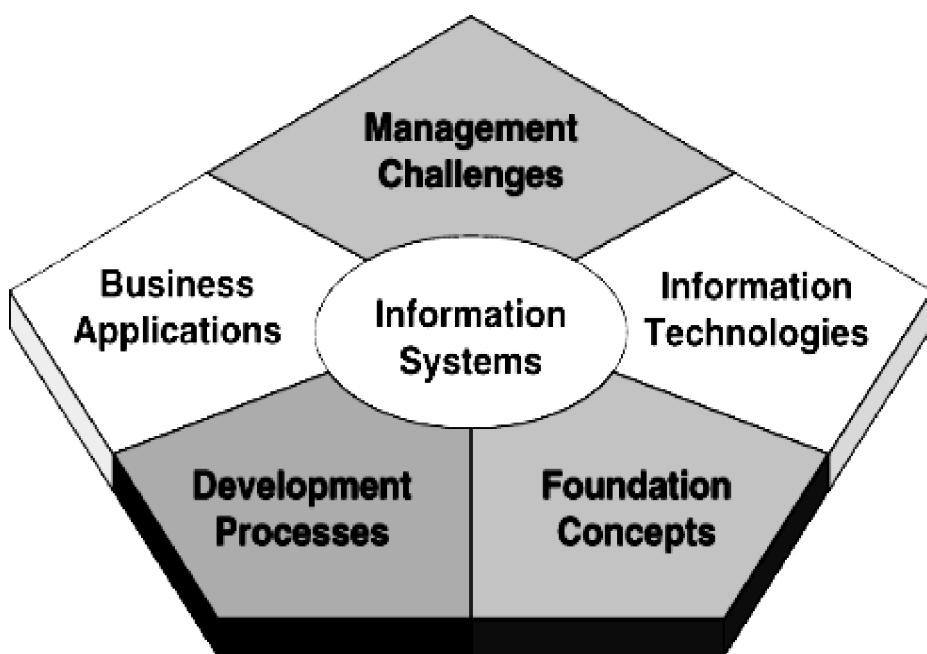


Fig: Framework for Business end user of Information System

A Framework for Business End Users

The useful conceptual framework that organizes the knowledge in this outlines what end users need to know about information systems. It emphasizes that you should concentrate your efforts in 5 areas of knowledge:

- I Fundamental, behavioral and technical concepts that will help you understand how information systems can support that business operations, managerial decision-making and strategic advantage of business firms and other organizations.
- I Major concepts, developments, and management issues in information technology.
- I The major uses of information systems for the operations, management, and competitive advantage of an enterprise.
- I How end users or information specialists develop information systems solutions to business problem using fundamental problem-solving and developmental methodologies.
- I The challenges of effectively and ethically managing the resources and business strategies involved in using information technology at the end users, enterprise, and global levels of a business.

5 Types of Information Systems**i. Transaction Processing Systems**

A transaction processing system provides a way to collect, process, store, display modify or cancel transactions. Most of these systems allow multiple transactions to take place simultaneously. The data that this system collects is usually stored in databases which can be used to produce reports such as billing, wages, inventory summaries, manufacturing schedules, or check registers.

ii. Management Information Systems

A management information system is an information system that uses the data collected by the transaction processing system and uses this data to create reports in a way that managers can use it to make routine business decisions in response to problems. Some of the reports that this information system creates are summary, exception and ad hoc reports. All this is done to increase the efficiency of managerial activity.

iii. Decision Support Systems

A decision support system helps make decisions by working and analyzing data that can generate statistical projections and data models. This system gives support rather than replacing a manager's judgment while improving the quality of a manager's decision. A DSS helps solve problems while using external data.

iv. Expert Systems and Neutral Networks

An expert system, also known as a knowledge-based system, is a computer system that is designed to analyze data and produce recommendations, diagnosis and decisions that are controlled. A neutral system uses computers to foster the way a human brain may process information, learn and remember that information.

v. Information Systems in Organizations

This information system collects, stores and processes data to give an organization real time useful and accurate information. This information system encompasses data gathering information from the people and machines that collect, process, output and store data. Also in the networks that transmit and receive data and the procedures that govern the way data is handled.

35. Discuss the concept “Prototype Process” for designing Information System of any business Enterprise.

Prototype : A working model of some aspects of an information system

Prototyping : Prototyping is the process of building a model of a system. In teams of an information system, prototypes are employed to help system designers build an information system that is intuitive and easy to manipulate for end users.

Prototyping is an integral part of the

- I Analysis phase
- I Systems development life cycle

• The prototyping process

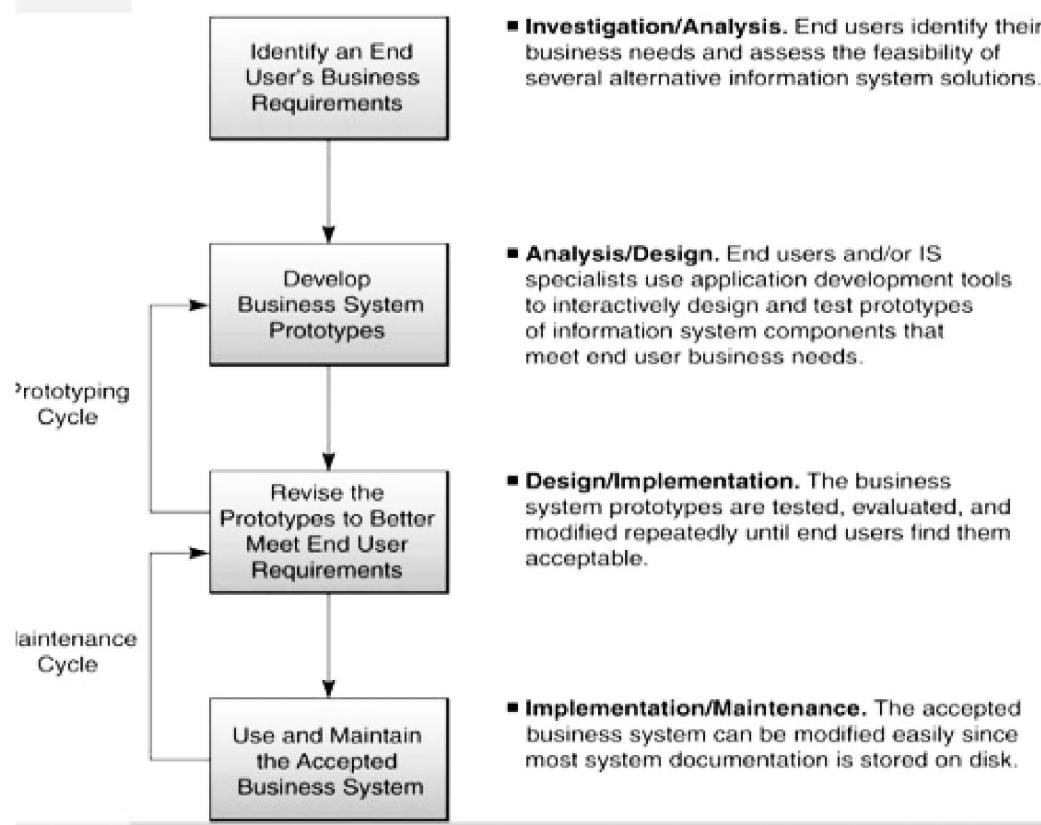


Fig : Prototyping process

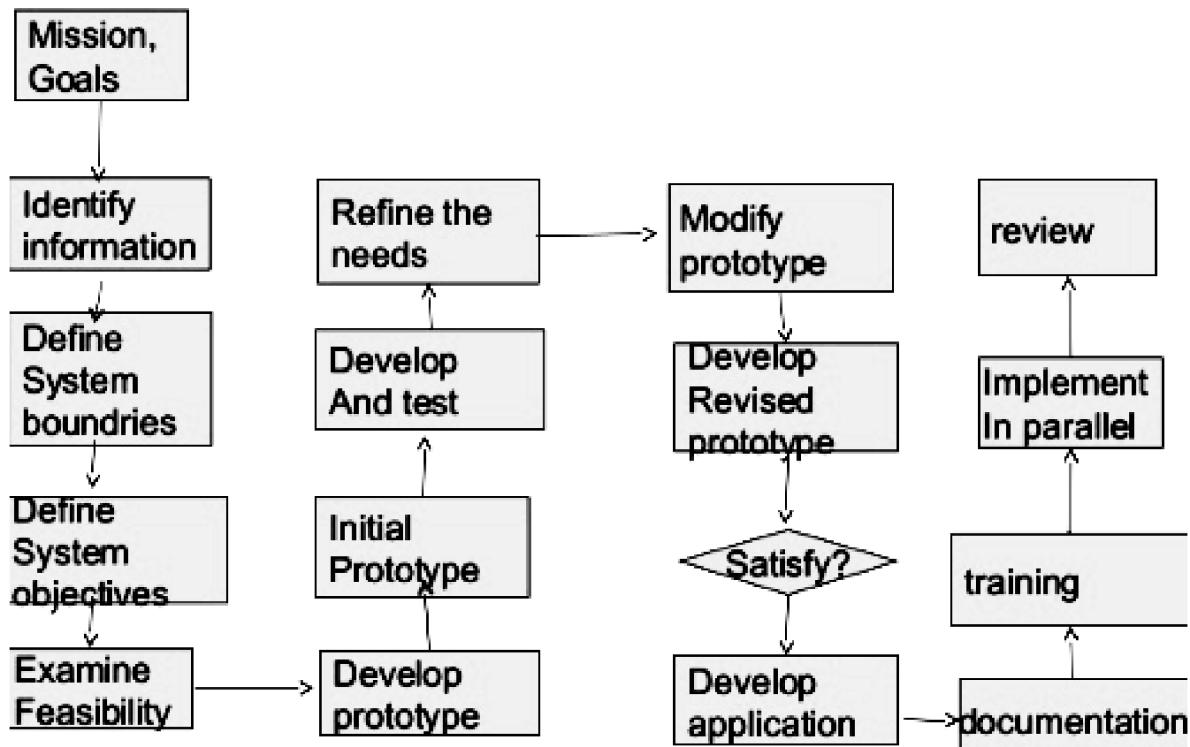


Fig : Development model of prototype process

36. What do you mean by business Re-engineering Process? Discuss with example

5

Business Re-engineering Process : Business Reengineering Process (BRP) is an approach aiming at improvements by means of elevating efficiency and effectiveness of the business process that exist within and across organizations. The key to BRP is for organizations to look at their business processes from a “clean slate” perspective and determine how they can best construct these processes to improve how they conduct business.

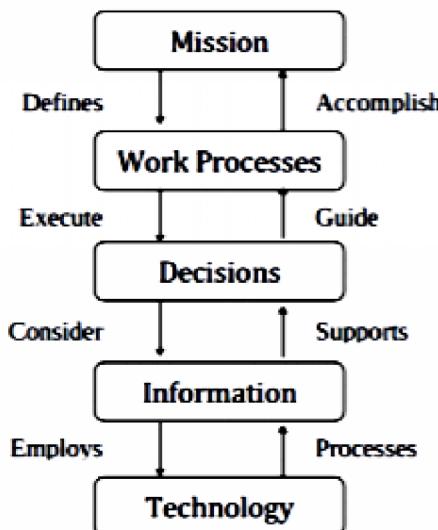


Fig: Business Reengineering Process

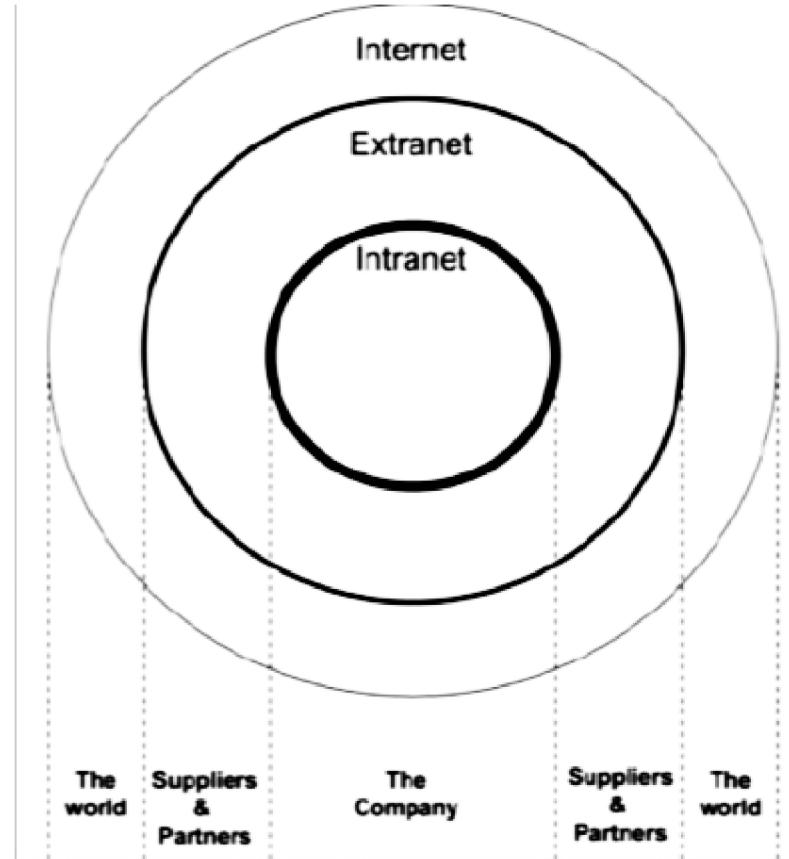
Example : ??? -- case study

38. Discuss the business value of the Telecommunication in e-commerce

5

Strategic Capabilities	e-Business Examples	Business Value
Overcome geographic barriers: Capture information about business transactions from remote locations	Use the Internet and extranets to transmit customer orders from traveling salespeople to a corporate data center for order processing and inventory control	Provides better customer service by reducing delay in filling orders and improves cash flow by speeding up the billing of customers
Overcome time barriers: Provide information to remote locations immediately after it is requested	Credit authorization at the point of sale using online POS networks	Credit inquiries can be made and answered in seconds
Overcome cost barriers: Reduce the cost of more traditional means of communication	Desktop videoconferencing between a company and its business partners using the Internet, intranets, and extranets	Reduces expensive business trips; allows customers, suppliers, and employees to collaborate, thus improving the quality of decisions reached
Overcome structural barriers: Support linkages for competitive advantage	Business-to-business electronic commerce websites for transactions with suppliers and customers using the Internet and extranets	Fast, convenient services lock in customers and suppliers

39. Design the relationship of a company's intranets to its extranets and the internet 5



40. What is the importance of decision support system

4

- Improves personal efficiency
- Speed up the process of decision making
- Increases organizational control
- Encourages exploration and discovery on the part of the decision maker
- Speeds up problem solving in an organization
- Facilitates interpersonal communication
- Promotes learning or training
- Generates new evidence in support of a decision
- Creates a competitive advantage over competition
- Reveals new approaches to thinking about the problem space
- Helps automate managerial processes
- Create Innovative ideas to speed up the performance

41. Short Note:

4X4=16

a) Knowledge-Based System.

A knowledge-based system (KBS) is a computer program that reasons and uses a knowledge base to solve complex problems. A more specific definition of the domain restricts it to expert systems (ES) (frequently called knowledge-based systems). Although the terms sound very general, actually they have acquired a very technical, restricted meaning of referring to narrow set of computer systems fulfilling quite rigid conditions. Such definition is not representative of cornucopia of knowledge

intensive applications and technologies flooding the digital world. A more general view regards KBS as an area of engineering dealing with digitizing knowledge and building knowledge intensive systems in general, beyond more conservative ES. The more general view extends and generalizes the definition of knowledge-based systems.

b) Management report system.

A management reporting system is a part of a management control system that provides business information. This information can be in the form of reports and/or statements. The system is designed to assist members of the management by providing timely pertinent information.

Management reporting systems help in capturing data that is needed by managers to run an effective business. Data could range from financial data, employee headcount, client, accounts, products, client assets in custody, investment performance, etc. The scope of a management reporting system is wide. However, here are the six reasons why an enterprise needs an effective management reporting system:

- | Constant need of reports for decision making and analysis of trends
- | Reports being unavailable with the right stakeholders at the right time
- | Lack of visibility and a single holistic view of the enterprise performance
- | Data redundancy, duplication of data leading to data management and quality issues leading to error prone reports
- | High value resources
- | Changing a global report to fit local needs

c) Value of information

Value of information (VOI or Vol) is the amount a decision maker would be willing to pay for that information prior to making a decision.

VoI is sometimes distinguished into value of perfect information, also called value of clairvoyance (VoC), and value of imperfect information. They are closely related to the widely known expected value of perfect information and expected value of sample information. Note that VoI is not necessarily equal to "value of decision situation with perfect information" - "value of current decision situation" as commonly understood.

Consider the decision situation with one decision, for example deciding on a 'Vacation Activity'; and one uncertainty, for example what will the 'Weather Condition' be? But we will only know the 'Weather Condition' after we have decided and begun the 'Vacation Activity'.

The Value of perfect information on Weather Condition captures the value of being able to know Weather Condition even before making the Vacation Activity decision. It is quantified as the highest price the decision-maker is willing to pay for being able to know Weather Condition before making the Vacation Activity decision.

The Value of imperfect information on Weather Condition, however, captures the value of being able to know the outcome of another related uncertainty, e.g., Weather Forecast, instead of Weather Condition itself before making Vacation Activity decision. It is quantified as the highest price the decision-maker

is willing to pay for being able to know Weather Forecast before making Vacation Activity decision. Note that it is essentially the value of perfect information on Weather Forecast.

d) Enterprise management system

Enterprise Management Systems (EMS) are large scale application software packages that support business processes, information flows, reporting, and data analytics in complex organizations.

Components of an EMS:

- i. ERP (Enterprise Resource Planning)
- ii. CAD/CAM/CAE (Computer Aided Design /Manufacturing /Engineering System)
- iii. AMS (Attendance Management System)
- iv. DMS (Document Management System)
- v. CMS (Communication Management System)
- vi. SMS (Security Management System)

e) CAD and CAM

Computer-aided design (CAD) is a computer technology that designs a product and documents the design process. CAD may facilitate the manufacturing process by transferring detailed diagrams of a product's materials, processes, tolerances and dimensions with specific conventions for the product in question. It can be used to produce either two-dimensional or three-dimensional diagrams, which can then be rotated to be viewed from any angle, even from the inside looking out. A special printer or plotter is usually required for printing professional design renderings.

The concept of designing geometric shapes for objects is very similar to CAD. It is called computer-aided geometric design (CAGD).

CAD is also known as computer-aided design and drafting (CADD).

CAD is used as follows:

- i. To produce detailed engineering designs through 3-D and 2-D drawings of the physical components of manufactured products.
- ii. To create conceptual design, product layout, strength and dynamic analysis of assembly and the manufacturing processes themselves.
- iii. To prepare environmental impact reports, in which computer-aided designs are used in photographs to produce a rendering of the appearance when the new structures are built.

CAD systems exist today for all of the major computer platforms, including Windows, Linux, Unix and Mac OS X. The user interface generally centers around a computer mouse, but a pen and digitizing graphic tablet can also be used. View manipulation can be accomplished with a spacemark (or spaceball). Some systems allow stereoscopic glasses for viewing 3-D models.

Most U.S. universities no longer require classes for producing hand drawings using protractors and compasses. Instead, there are many classes on different types of CAD software. Because hardware and software costs are decreasing, universities and manufacturers now train students how to use these high-level tools. These tools have also modified design workflows to make them more efficient, lowering these training costs even further.

Computer-aided manufacturing (CAM) is an application technology that uses computer software and machinery to facilitate and automate manufacturing processes.

- CAM is the successor of computer-aided engineering (CAE) and is often used in tandem with computer-aided design (CAD).
- In addition to materials requirements, modern CAM systems include real-time controls and robotics.
- CAM reduces waste and energy for enhanced manufacturing and production efficiency via increased production speeds, raw material consistency and more precise tooling accuracy.
- CAM uses computer-driven manufacturing processes for additional automation of management, material tracking, planning and transportation. CAM also implements advanced productivity tools like simulation and optimization to leverage professional skills.

Depending on enterprise solution and manufacturer, CAM may present inadequacies in the following areas:

- Manufacturing process and usage complexity
- Product Lifecycle Management (PLM) and modern enterprise integration
- Machine process automation
- Modern CAM solutions are scalable and range from discrete systems to multi-CAD 3D integration.

CAM is often linked with CAD for more enhanced and streamlined manufacturing, efficient design and superior machinery automation.

f) Types of System.

Abstract and physical systems

An abstract or conceptual system is an orderly arrangement of interdependent ideas or constructs, which may or may not have any counterpart in the real world.

On the other hand, physical systems are generally concrete operational systems made up of people, materials, machines, energy and other physical things; Physical systems are more than conceptual constructs.

Deterministic and Probabilistic Systems

A deterministic system is one in which the occurrence of all events is known with certainty. A probabilistic system is one in which the occurrence of events cannot be perfectly predicted. Though the behavior of such a system can be described in terms of probability, a certain degree of error is always attached to the prediction of the behavior of the system.

Open and Closed Systems

An open system is one that interacts with its environment and thus exchanges information, material, or energy with the environment, including random and undefined inputs. Open systems are adaptive in nature, as they tend to react with the environment in such a way, so as to favor their continued existence. Such systems are 'self organizing', in the sense that they change their organisation in response to changing conditions.

A closed system is one, which does not interact with its environment. Such systems in business world, are rare, but relatively closed systems are common. Thus, the systems that are relatively isolated from the environment but not completely closed, are termed closed system.

User Machine Systems

Most of the physical systems are user-machine (or human -machines) systems It is difficult to think of a system composed only of people who do not utilize equipment of some kind to achieve their goals. In user-machine systems, both, i.e. human as well as machine perform some activities in the accomplishment of a goal (e.g. decision-making). The machine elements (may be computer hardware and software) are relatively closed and deterministic, whereas the human elements of the system are open and probabilistic.

g) Virtual Reality

Virtual reality refers to computer-generated environments or realities that are designed to simulate a person's physical presence in a specific environment that is designed to feel real. The purpose of VR is to allow a person to experience and manipulate the environment as if it were the real world. The best virtual realities are able to immerse the user completely. Virtual reality should not be confused with simple 3D environments like those found in computer games, where you get to experience and manipulate the environment through an avatar, rather than personally becoming part of the virtual world.

There is no concrete definition of what a virtual reality experience entails, so opinions differ depending on the field in question and the mode used to achieve virtual reality. That said, virtual reality does follow a few accepted guidelines.

The environment must be made up of images that appear life-sized according to the perspective of the user/viewer unless the desired effect deviates from this.

The system responsible for running the virtual environment must be able to track the user's motions, especially the eye and head movements, so that it can react and change the images on the display or initiate any related events.

In order to immerse the user fully, Jonathan Steuer, a Ph.D. in communication theory and research, proposed two components.

Depth of Information: Refers to the quality and amount of data the user is fed by the virtual environment itself. This could be achieved through the display resolution, graphics quality and complexity of the environment, sound quality, haptic feedback and the like.

Breadth of Information: Refers to how many senses are being stimulated by the virtual environment. The most basic of these should be audio and visual, while the most advanced systems should include stimulation of all five senses in order to enhance immersion.

h) Influence of COMPUTERS in MIS

The effect of applying computer technology to information system can be listed as below:

Speed of processing and retrieval of data increases:

Computers help in processing data with speed which in turn help in timely information. Efficient storage devices and databases help in fast and easy retrieval of information as per management requirements.

Scope of use of information system has expanded:

Timely and accurate information increases the confidence of managers for decision making process and in-turn they rely more and more on information system for decision making processes.

Scope of analysis widened:

Computers help in extracting and generating multiple type of information accurately and in no time for decision makers. This helps in widening analysis of problems.

Complexity of system design and operation increased:

Use of computers require proper design and implementation of information systems, this in turn requires lot of hardware and software integration which is a complex task.

Integrates the working of different information sub-systems:

MIS allows a smooth and timely flow of information between various sub-systems of business organization, which helps in integration of business functions for achieving objectives of the organization.

Increases the effectiveness of information systems:

The use of computer has increased the effectiveness of information systems also.

More comprehensive information:

The use of computer for MIS enabled system experts to provide more comprehensive information to executives on business matters.

i) Cybernetic system. - see question no. 5**j) System acquisition.**

In management information system, system acquisition may refer to three terms:

- | To integrate two or more systems to build another large system.
- | To acquire and integrate another system into current system to enhance its features.
- | To execute a complete re-engineering of the business.

Important Topics From Fahad Vai

i. System:

A system is a set of interrelated components with a clearly defined boundary working together to achieve a common set of objectives

ii. MIS

A management information system (MIS) is a broadly used and applied term for a three-resource system required for effective organization management. The resources are people, information and technology, from inside and outside an organization, with top priority given to people. The system is a collection of information management methods involving computer automation (software and hardware) or otherwise supporting and improving the quality and efficiency of business operations and human decision making.

As an area of study, MIS is sometimes referred to as information technology management (IT management) or information services (IS). Neither should be confused with computer science.

It is important to note that a management information system should not only indicate the status of a business's conditions, but also indicate why the conditions are improving or deteriorating. For example, an MIS should report performance relative to cost and profitable or unprofitable projects, while identifying individual accountability – both current and past. This can be done only if such reports are based on constantly updated information accessible to those in authority who are responsible for assessing and assuring it is used for timely decision-making.

Examples of the broad scope and varied contexts of MISs are:

- | Decision support systems
- | Enterprise resource planning (ERP)
- | Supply chain management
- | Customer relationship management (CRM)
- | Project management
- | Executive information systems (EIS)

iii. DSS - See question 25

iv. KMS (knowledge management system)

- | A major strategic use of IT
- | Manages organizational learning and know-how
- | Helps knowledge workers create, organize, and make available important knowledge
- | Makes this knowledge available wherever and whenever it is needed
- | Knowledge includes
- | Processes, procedures, patents, reference works, formulas, best practices, forecasts, and fixes

v. E-business

E-business or electronic business refers to use Internet technologies to empower...

- | Business processes
- | Electronic commerce
- | Collaboration within a company
- | Collaboration with customers, suppliers, and other business stakeholders
- | In essence, e-business is an online exchange of value.

How E-Business is Being Used

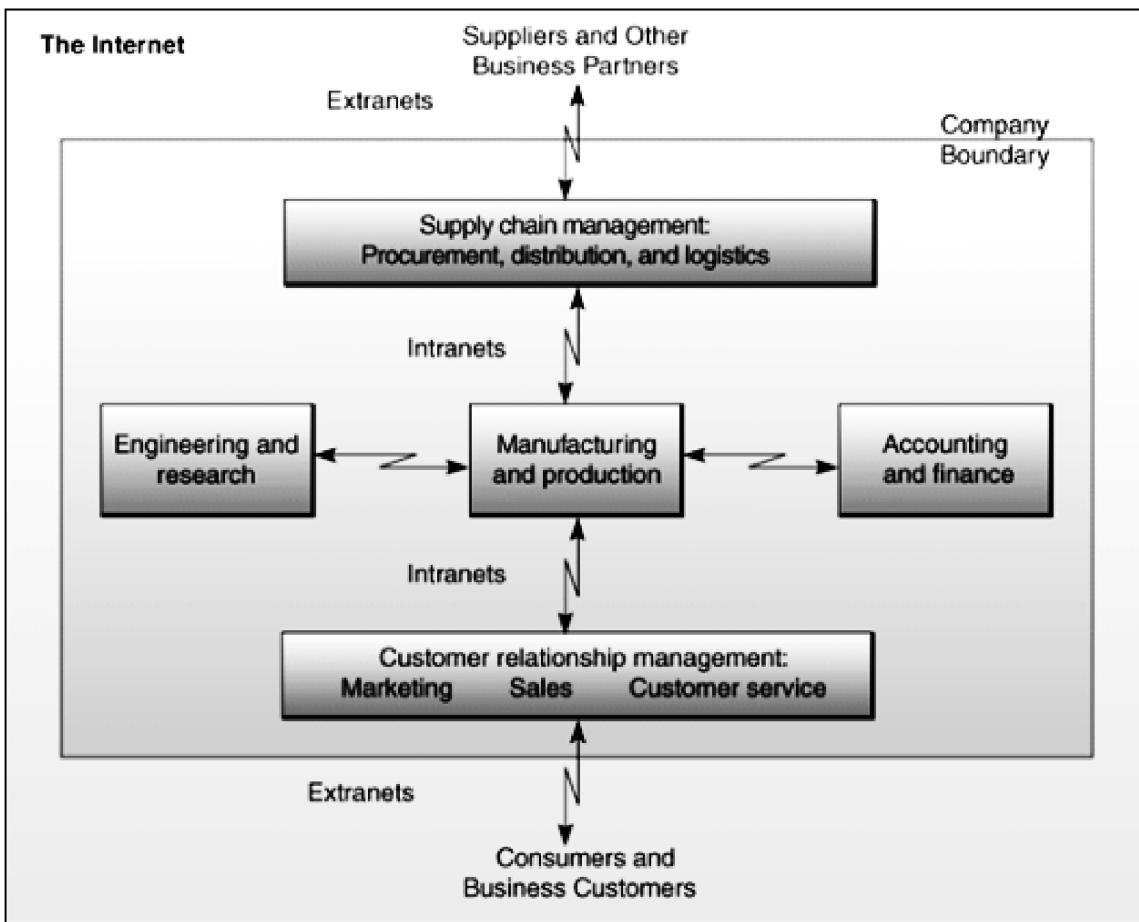


Fig: How E-Business is Being Used

vii. Supply Chain Management (SCM)

Supply chain management (SCM) is the management and oversight of a product from its origin until it is consumed.

SCM involves the flow of materials, finances and information. This includes product design, planning, execution, monitoring and control. The goal of this process is to reduce inventory, increase transaction speed and improve workflow with profit in mind.

Software application tools and modules enhance and ensure SCM efficiency. Managing this complexity requires strict adherence to the following activities:

- **I Strategic:** Ensures efficient product movement and communication.
- **I Tactical:** Determines transportation, production, scheduling and research processes.
- **I Operational:** Determines the rate of production material, supply consumption and flow of finished goods.

Supply chain management often involves the use of supply chain software applications, which has virtually revolutionized the old system.

vi. Enterprise Application Architecture

Enterprise application/software architecture refers to an architecture developed for the organized growth and development of an enterprise's information technology (IT). It focuses on the long-term evolution of IT systems, rather than simply on the procedures being used today. The quality of the enterprise software architecture implemented is vital in determining an organization's success.

Enterprise software architecture can be used to reduce system complexity, thereby increasing overall efficiency. Organizations that undertake the enhancement of significant IT systems search for specialized enterprise IT architects. By refactoring existing solutions, enterprise software architects consistently aim at increasing the agility of the system.

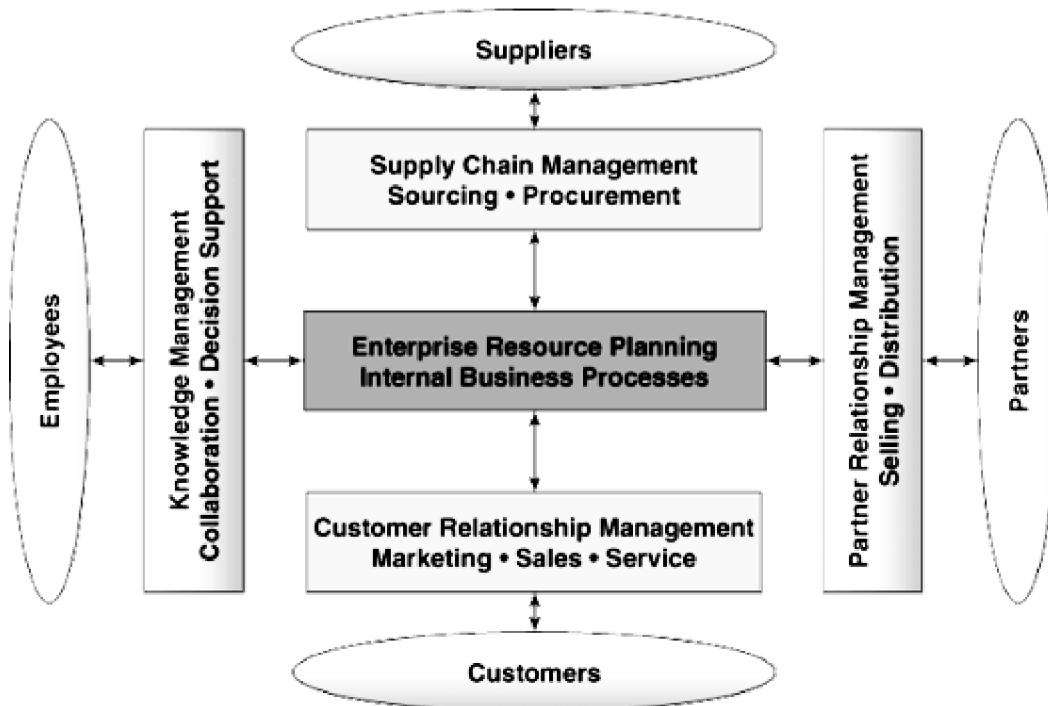


Fig: Enterprise Application Architecture

Enterprise software architecture is closely coordinated with an enterprise's internal organization, business model and processes. To enhance speed and functionality, enterprise software architecture should present the following characteristics:

- **I Simplicity:** It should be simple to facilitate effective communication among key team members. A lot of people with different viewpoints, skill sets and roles regarding the software are engaged in deciding the structure and specification of enterprise software.
- **I Overall Flexibility and Maintainability:** Each enterprise system should continuously adapt to the new demands caused by evolving markets, business reorganizations, or legal changes. So, the architecture must create a highly maintainable and flexible system. The architecture should define unique components that could be reconfigured or rearranged. The reconfiguration or rearrangement should be carried out in a flexible way so that the local modifications done in the system don't influence the global system.
- **I Reusability:** This can be done by developing an inventory of valuable building blocks and constantly reusing them. Reuse cuts down development and maintenance expenditure. This can be achieved by providing standard functionality in code libraries, which are used across various projects.

- **I Decoupling of Technology and Functionality:** An efficient architecture promotes technological independence. It should decouple the business application landscape's long life cycle from the underlying technology's smaller innovation cycles. In addition, architecture that's built to last must adapt not only to the changes that occur in technologies, but also to the real life cycles of the implemented technologies.

viii. CASE - see question 14

ix. Application Design (CAD and CAM) - see 43(e) (short note)

x. Forward and Reverse Engineering - see question 14

xi. Marketing Information System - MIS (Marketing)

A marketing information system (MKIS) is a management information system (MIS) designed to support marketing decision making. This can be explained as a "*system in which marketing data is formally gathered, stored, analysed and distributed to managers in accordance with their informational needs on a regular basis.*"

Developing a MKIS system is becoming extremely important as the strength of economies rely on services and to better understand the specific needs of customers. The main benefit of MkIS systems is to integrate market-monitoring systems with strategy development and the strategic implementation of policies and processes that help capture and act on customer management applications with marketing decision support systems. This area constitute Marketing intelligence that supports the analysis and market based activities that support customer relations and customer service with real time information with real time applications that support market based approaches.

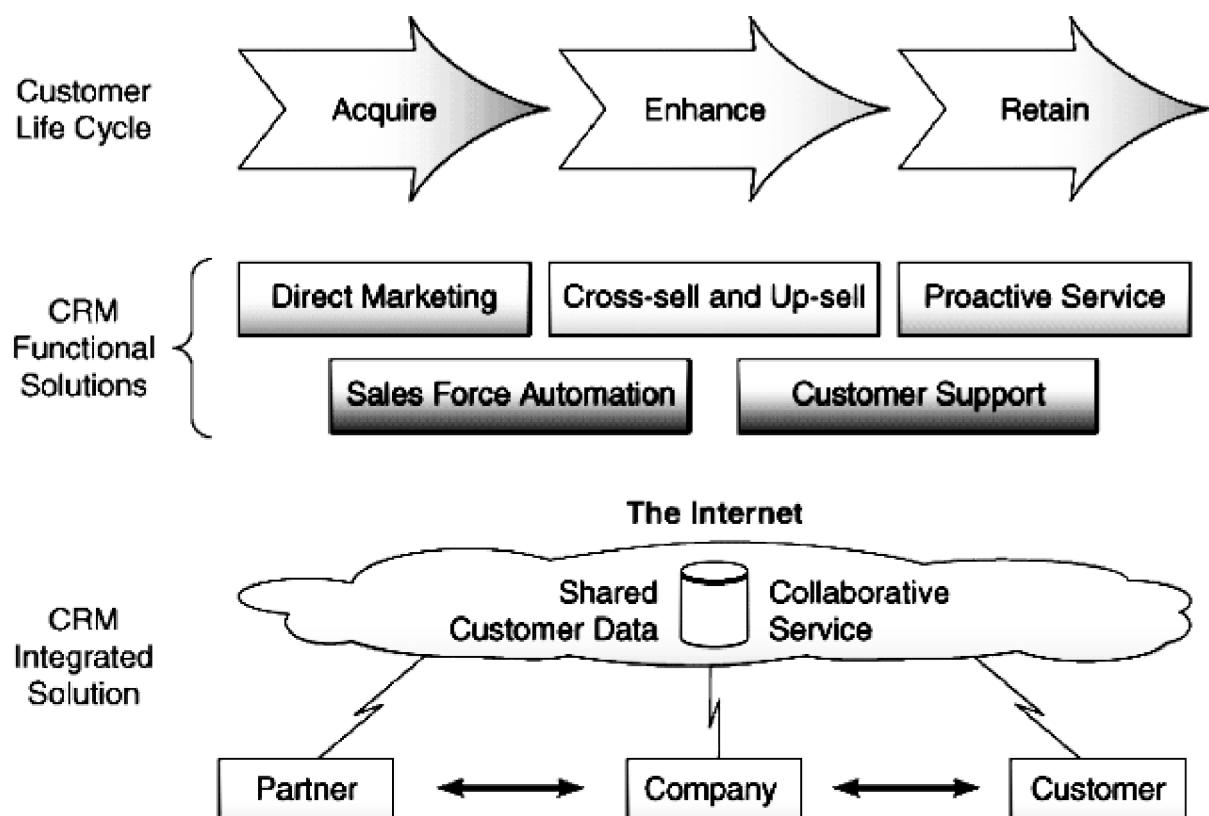


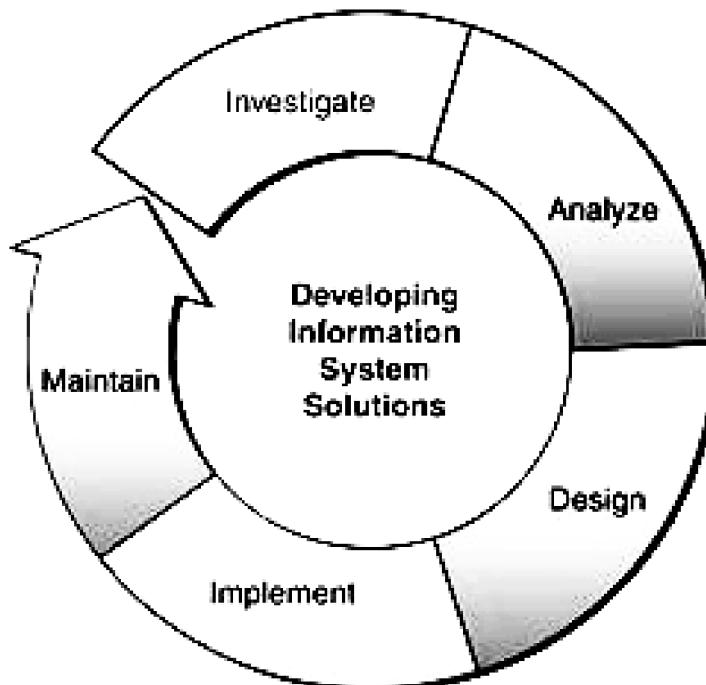
Fig: Marketing Information System

1. Explain development cycle Of Information System solution

5

Developing IS Solutions – an Information Systems is a Solution to a Business Problem

- ❖ **Investigate** (Plan) – recognize the problem exists
- ❖ **Analyze** – investigate the current system
- ❖ **Design** – designing the new system
- ❖ **Implement** – put the new system into effect
- ❖ **Maintain (Use)** – use, monitor, and maintain the new system



2. Describe different types of Management Support System with example

4

- **Management Information Systems (MIS)**
 - Provide reports and displays to managers
 - Example: daily sales analysis reports
- **Decision Support Systems (DSS)**
 - Provide interactive ad hoc support for decision making
 - Example: A what-if-analysis to determine where to spend advertising dollars
- **Executive Information Systems (EIS)**
 - Provide critical information for executives and managers
 - Example: easy access to actions of competitors

3. Describe Knowledge Management Techniques

4

- Successful knowledge management
- Creates techniques, technologies, systems, and rewards for getting employees to share what they know
- Makes better use of accumulated workplace and enterprise knowledge

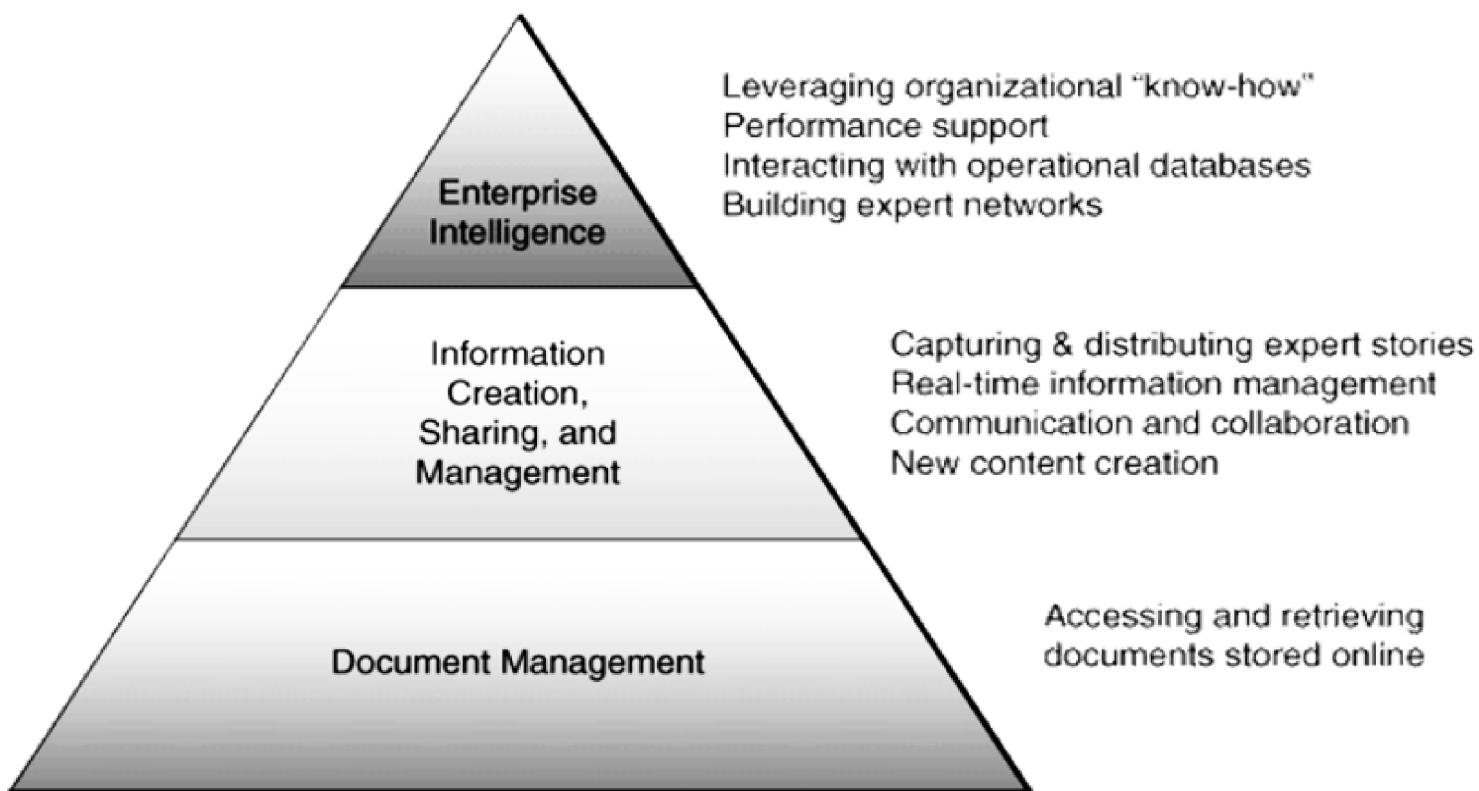


Fig : Knowledge Management Techniques

Knowledge management systems

- A major strategic use of IT
- Manages organizational learning and know-how
- Helps knowledge workers create, organize, and make available important knowledge
- Makes this knowledge available wherever and whenever it is needed

Knowledge includes

- Processes, procedures, patents, reference works, formulas, best practices, forecasts, and fixes

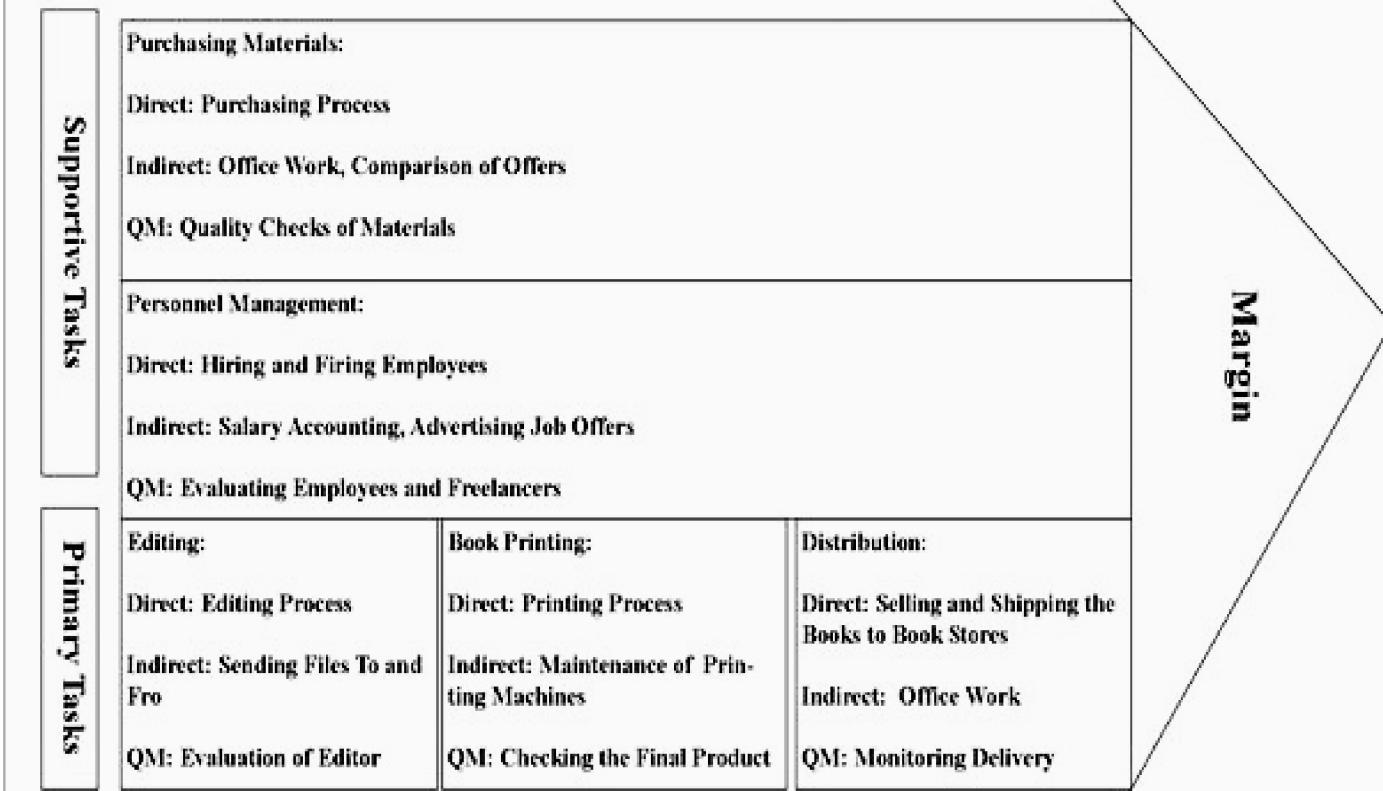
4. Describe Value Chain with proper example and Explain the implications of Information System in the Value chain

4

A value chain is a high-level model developed by Michael Porter used to describe the process by which businesses receive raw materials, add value to the raw materials through various processes to create a finished product, and then sell the finished product to customers. Companies conduct value-chain analysis by looking at every production step required to create a product and identifying ways to increase the efficiency of the chain. The overall goal is to deliver maximum value for the least possible total cost and create a competitive advantage.

Value Chain with proper example

Value Chain Example of Publishing Company



Information System in the Value chain

- View the firm as a chain of basic activities that add value to its products and services
- Primary processes directly relate to manufacturing or delivering products
- Support processes help support the day-to-day running of the firm and indirectly contribute to products or services
- Use the value chain to highlight where competitive strategies will add the most value

5. What is the relationship between Competitive Force and Strategies

3

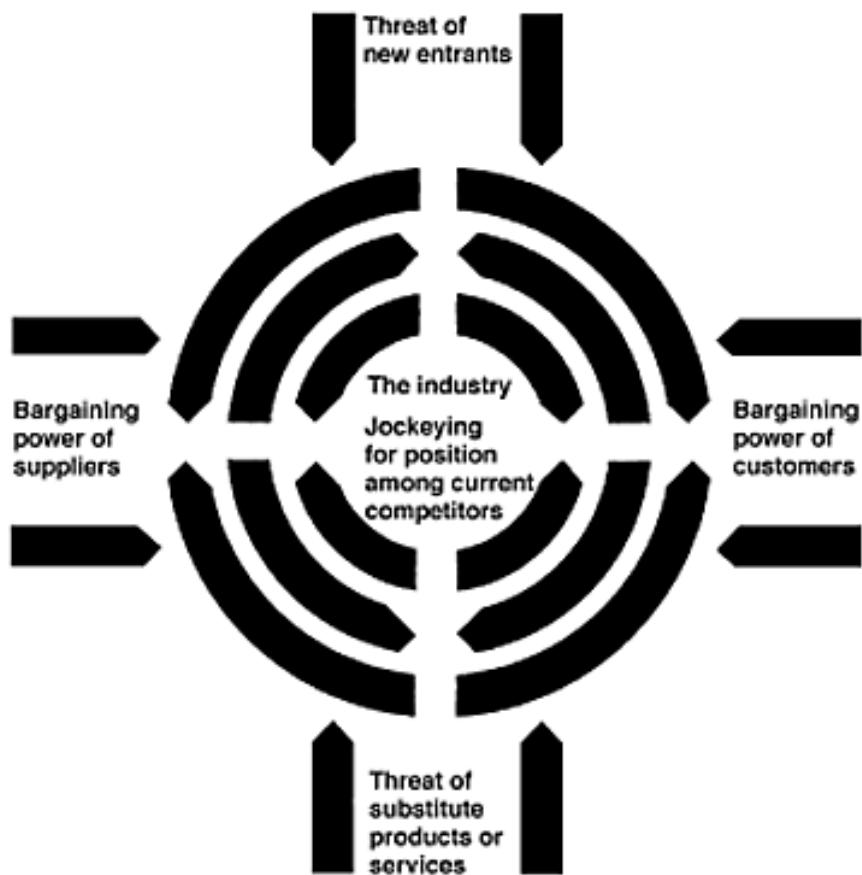
The essence of strategy formulation is coping with competition. Yet it is easy to view competition too narrowly and too pessimistically. While one sometimes hears executives complaining to the contrary, intense competition in an industry is neither coincidence nor bad luck.

Moreover, in the fight for market share, competition is not manifested only in the other players. Rather, competition in an industry is rooted in its underlying economics, and competitive forces exist that go well beyond the established combatants in a particular industry. Customers, suppliers, potential entrants, and substitute products are all competitors that may be more or less prominent or active depending on the industry.

The state of competition in an industry depends on five basic forces, which are diagrammed in the Exhibit. The collective strength of these forces determines the ultimate profit potential of an industry.

It ranges from intense in industries like tires, metal cans, and steel, where no company earns spectacular returns on investment, to mild in industries like oil field services and equipment, soft drinks, and toiletries, where there is room for quite high returns.

Exhibit Forces governing competition in an industry



6. Describe 5 Common Competitive Strategies with example

5

Five Competitive Strategies

Cost Leadership

- Become low-cost producers
- Help suppliers or customers reduce costs
- Increase cost to competitors
- **Example:** Priceline uses online seller bidding so the buyer sets the price

Differentiation Strategy

- Differentiate a firm's products from its competitors'
- Focus on a particular segment or niche of market
- **Example:** Moen uses online customer design

Innovation Strategy

- Unique products, services, or markets
- Radical changes to business processes
- **Example:** Amazon's online, full-service customer systems

Growth Strategy

- Expand company's capacity to produce
- Expand into global markets
- Diversify into new products or services
- **Example:** Wal-Mart's merchandise ordering via global satellite tracking

Alliance Strategy

- Establish linkages and alliances with customers, suppliers, competitors, consultants, and other companies
- Includes mergers, acquisitions, joint ventures, virtual companies
- **Example:** Wal-Mart uses automatic inventory replenishment by supplier

7. Explain Moore's Law with proper example

5

Moore's Law

Moore's Law is the observation made by Intel co-founder Gordon Moore that the number of transistors on a chip doubles every year while the costs are halved. In 1965, Gordon Moore noticed that the number of transistors per square inch on integrated circuits had doubled every year since their invention. Moore's law predicts that this trend will continue into the foreseeable future.

- A doubling in the number of transistors per integrated circuit every 18 to 24 months
- Originally observed in 1965, it holds true today
- Common corollary of Moore's Law...
- Computing prices will be cut in half every 18 to 24 months
- This has been consistently accurate
- Applies to cost of storage as well

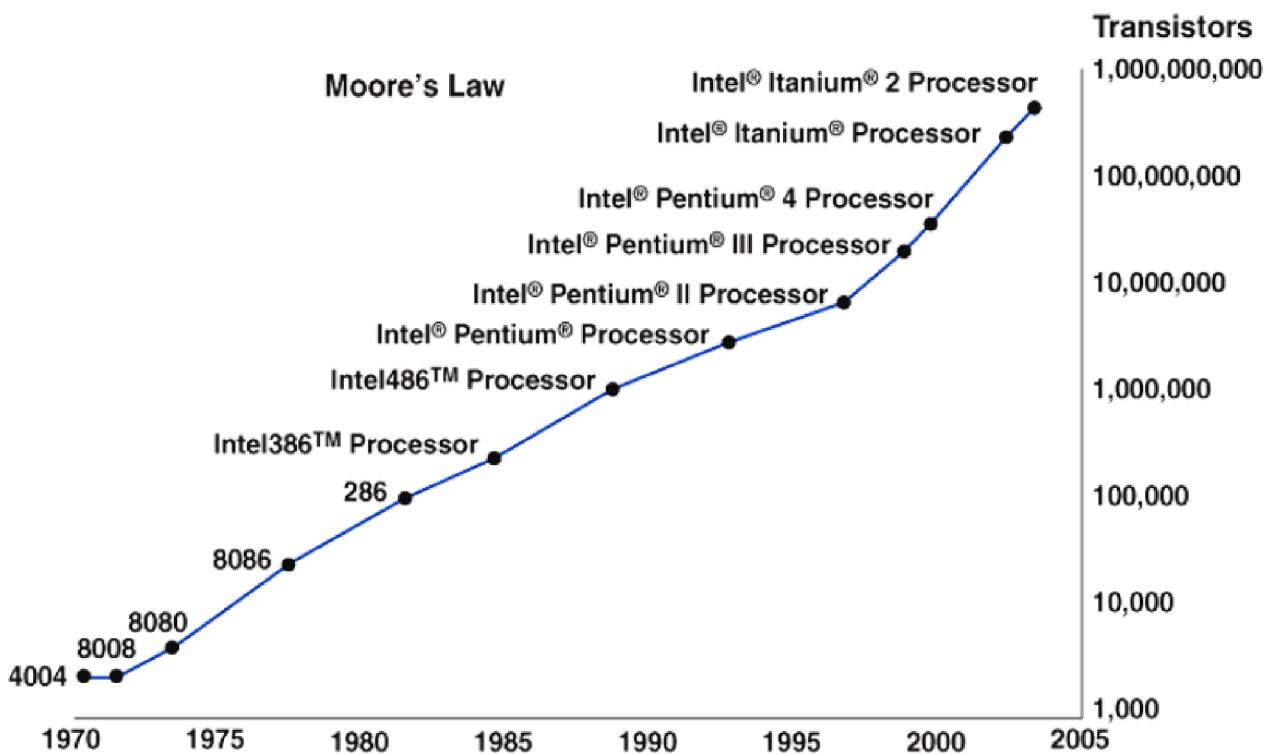
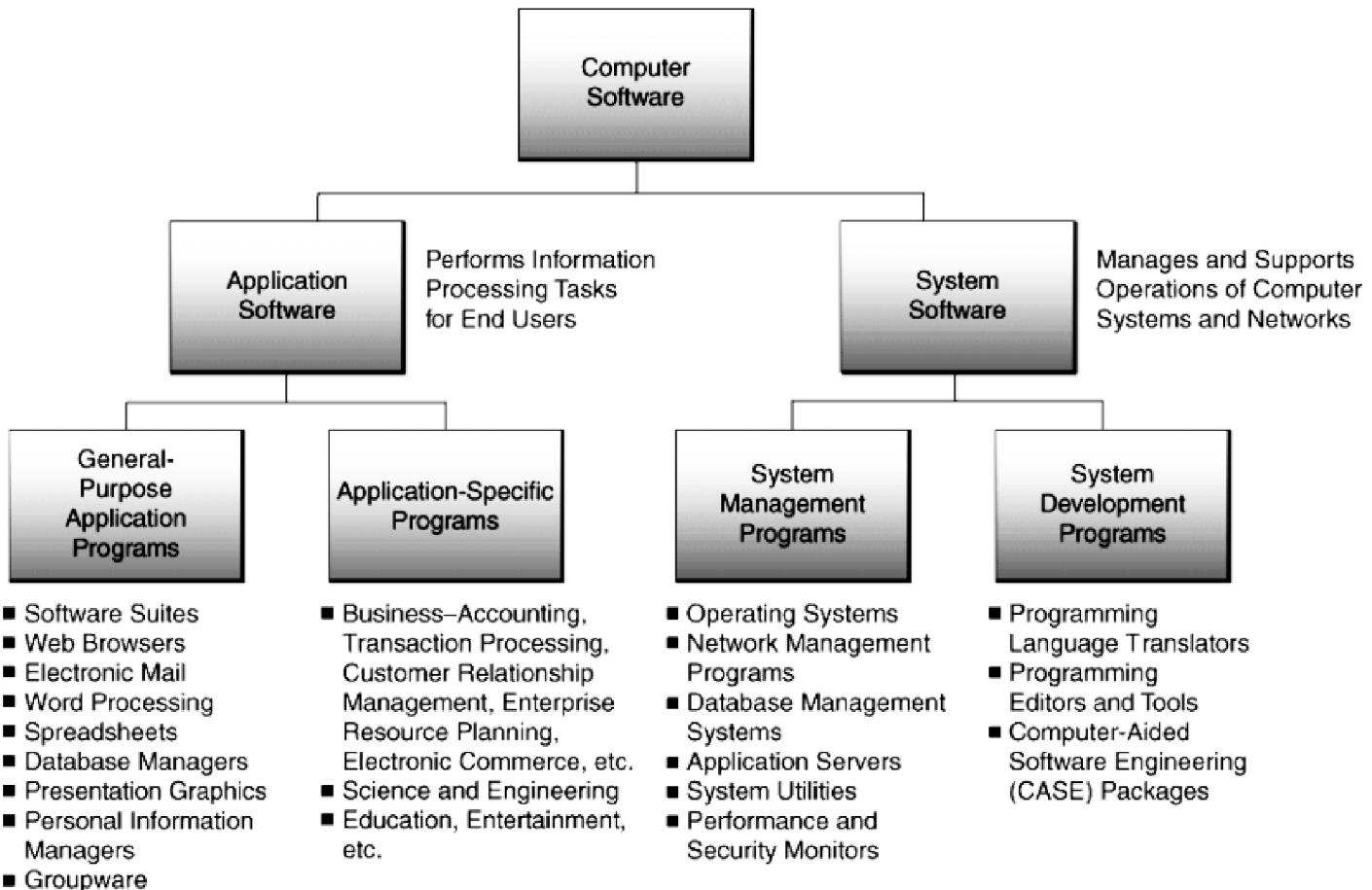


Fig : Moore's Law

8. Describe different types of Application and System Software of Management Information System

5



Application Software

- General Purpose
 - Programs that perform common information processing jobs for end users
 - E.g., word processing, spreadsheet
 - Also call productivity packages
- Custom Software
 - Software applications developed within an organization for use by that organization
- Commercial Off-the-Shelf (COTS)
 - Many copies sold
 - Minimal changes beyond scheduled upgrades
 - Purchasers have no control over specifications, schedule, or evolution, and no access to source code or internal documentation
 - Product vendor retains the intellectual property rights of the software
- Open-source Software
 - Developers collaborate on the development of an application using programming standards which allow anyone to contribute to the software
 - As each developer completes a project, the application code becomes available and free to anyone who wants it

Business Application Software

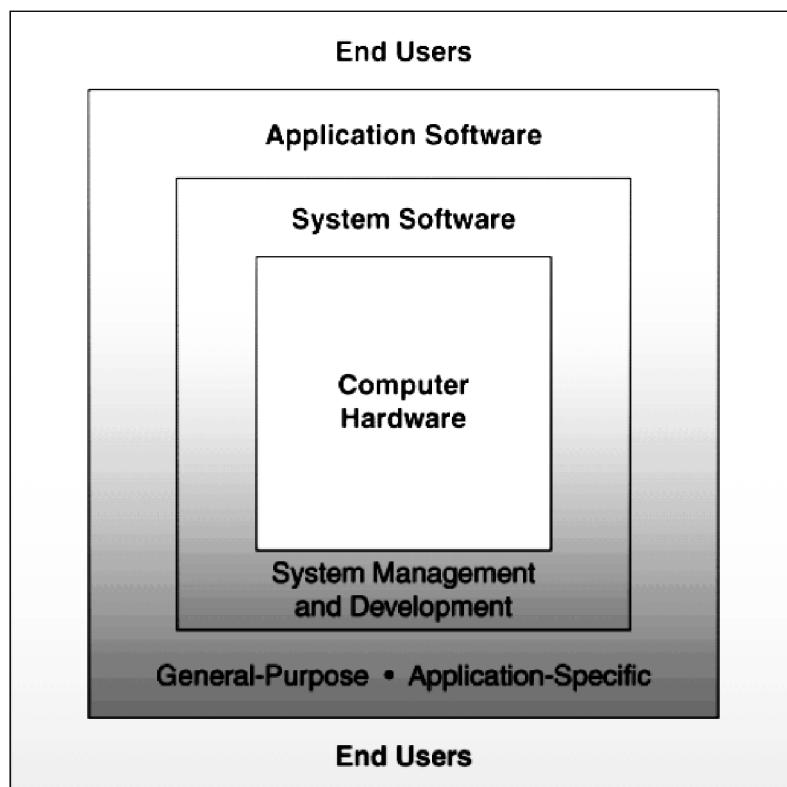
- Function-Specific Application Software
 - Thousands of these packages support specific applications of end users
 - Examples: customer relationship management, enterprise resource planning, supply chain management, Web-enabled electronic commerce

Software Suites, Integrated Packages

- Most widely used productivity packages are bundled together as software suites
- Advantages
 - Cost less than buying individual packages
 - All have similar GUI
 - Work well together
- Disadvantages
 - All features not used
 - Takes a lot of disk space (bloatware)

9. Define various level of Interface between END Users and computer system

3



10. What is Middleware ? Explain uses of middleware in management Information System 3

Middleware

- A general term for any programming that mediates between two separate programs
- Allows a particular database to access other databases without custom programming

Commonly known as the “plumbing” of an information system

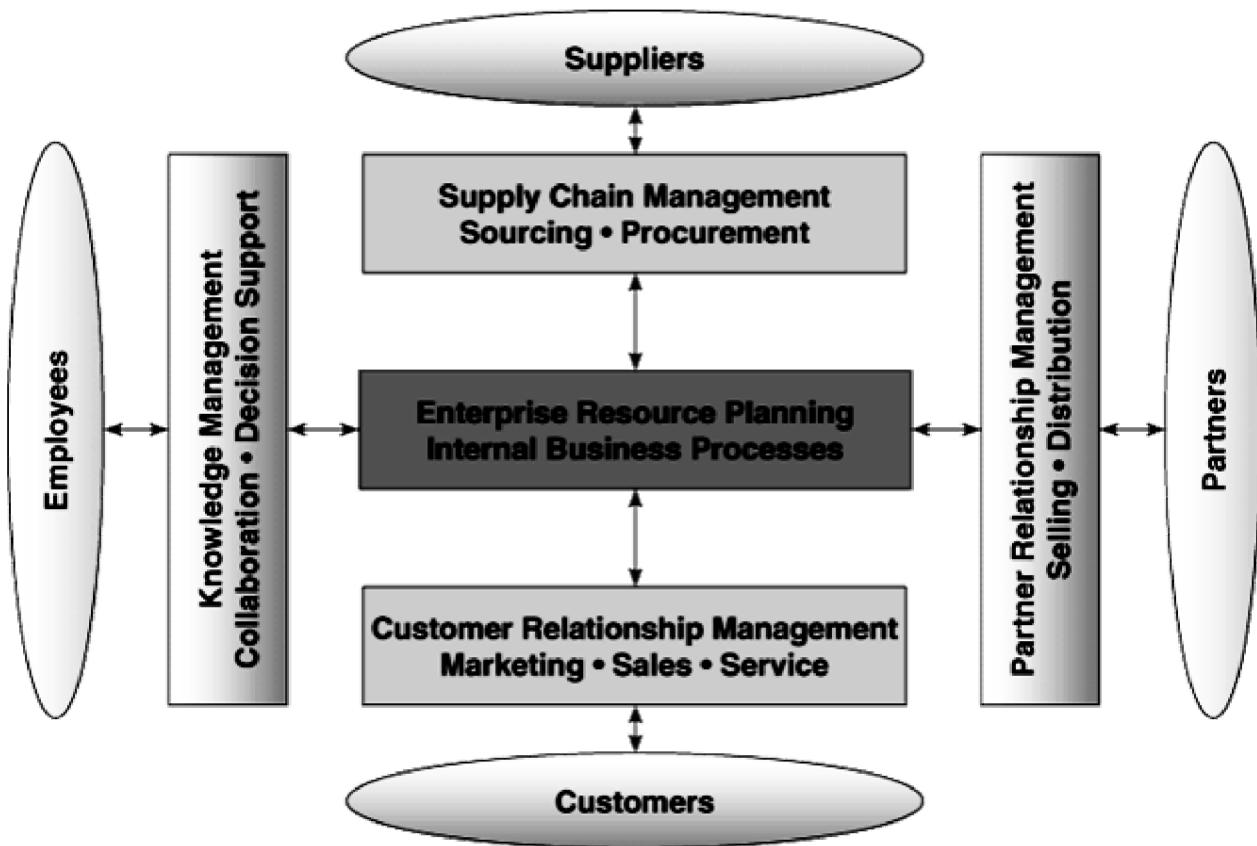
- It routes data and information between back-end data sources and end user applications
- An essential component of any IT infrastructure

Middleware in management Information System

Businesses frequently use middleware applications to link information from departmental databases, such as payroll, sales, and accounting, or databases housed in multiple geographic locations. In the highly competitive healthcare community, laboratories make extensive use of middleware applications for data mining, laboratory information system (LIS) backup, and to combine systems during hospital mergers. Middleware helps bridge the gap between separate LISs in a newly formed healthcare network following a hospital buyout.

11. Describe Enterprise Application Architecture

15



Provides a conceptual framework

- Helps visualize the basic components, processes, and interfaces of major e-business applications
- Focuses on accomplishing fundamental business processes in concert with
 - Customers
 - Suppliers
 - Partners
 - Employees

Enterprise Resource Planning (ERP)

- Concentrates on the efficiency of internal production, distribution, and financial processes

Customer Relationship Management (CRM)

- Focuses on acquiring and retaining profitable customers via marketing, sales, and services

Partner Relationship Management (PRM)

- Aims at acquiring and retaining partners who can enhance the selling and distribution of products and services

Supply Chain Management (SCM)

- Focuses on developing the most efficient and effective sourcing and procurement processes

Knowledge Management (KM)

- Focuses on facilitating internal group collaboration and decision support

12.Explain Metcalfe's Law with proper example

4

Metcalfe's Law

Metcalfe's law states the effect of a telecommunications network is proportional to the square of the number of connected users of the system (n^2). First formulated in this form by George Gilder in 1993 and attributed to Robert Metcalfe in regard to Ethernet.

The usefulness, or utility, of a network equals the square of the number of users

- The more users on a network, the more useful it becomes

Until critical mass is reached, a change in technology only affects the technology

- Once critical mass is attained, social, political, and economic systems change
- Example: The Internet is growing exponentially. We can expect more value, for less cost, virtually every time we log on.

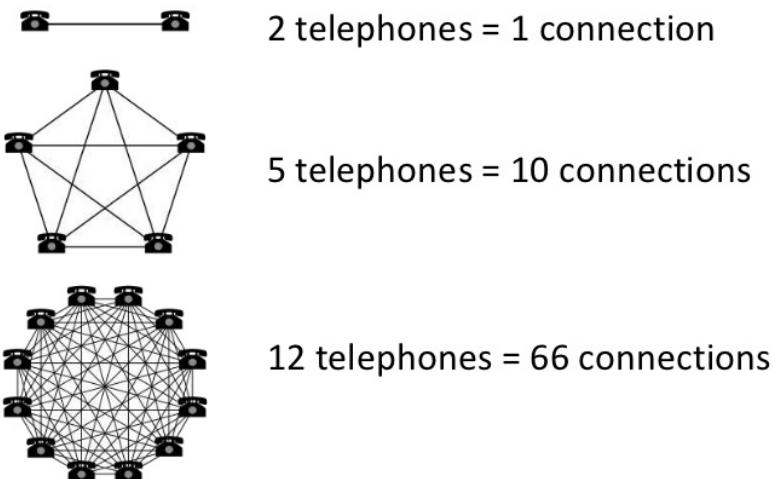
The usefulness, or utility, of a network equals the square of the number of users

- The more users on a network, the more useful it becomes

Until critical mass is reached, a change in technology only affects the technology

- Once critical mass is attained, social, political, and economic systems change
- Example: The Internet is growing exponentially. We can expect more value, for less cost, virtually every time we log on.

Metcalfe's Law:
Connections in a network = $n(n-1)/2$



13.Define Telecommunication Network Model and Value Of Telecommunication Networks 4

A **telecommunications network** is a collection of terminal nodes, links are connected so as to enable telecommunication between the terminals. The transmission links connect the nodes together. The nodes use circuit switching, message switching or packet switching to pass the signal through the correct links and nodes to reach the correct destination terminal.

Each terminal in the network usually has a unique address so messages or connections can be routed to the correct recipients. The collection of addresses in the network is called the address space.

Examples of telecommunications networks are

- computer networks
- the Internet
- the telephone network
- the global Telex network
- the aeronautical ACARS network

Value Of Telecommunication Networks

14. Elaborate the business values of the Internet with example

3

Importance of internet in business: You can understand the importance of the internet in business by the inventions of Digital Marketing, Internet banking and eCommerce business models. The Internet is providing great benefits for business communication. The Internet is the easiest way for a business to connect with customer and clients. The business organisation is using the high-speed internet to speed up the production.

Uses of the internet in business: Companies are getting customer data and buying habits and creating marketing strategies based on the analysis. New and innovative online business models are coming. Everyone is searching online business ideas. People are working from home for companies around the world. Business information is fastest than ever. So, you can see from all of this is that internet is now the backbone of offline business to sell online. And the internet is a heart for online business.

Inventions of new internet technologies for businesses: Internet technology invented new methods of doing business. Internet is important for business development. Internet technology provides powerful communication and marketing tools. The Internet is a new Bazaar in which you can find online shops, online degree programs and a lot more. You can browse various educational and business development websites, management service platforms anytime & anywhere.

Internet is in role of business successor: important to make business successful. Internet helps businesses to grow, achieve goals and become successful in this competitive market. Marketing is important in business and in this case internet is the first and most important marketing tool business owners are looking for. Internet provides great benefits for entrepreneurs to create business infrastructure based on customer's data and information.

Business success is impossible without internet in this modern era. Internet transformed the education, communication and methods of receiving and giving data. Internet technology provides great data management sources for businesses to launch unique and creative solutions for customers.

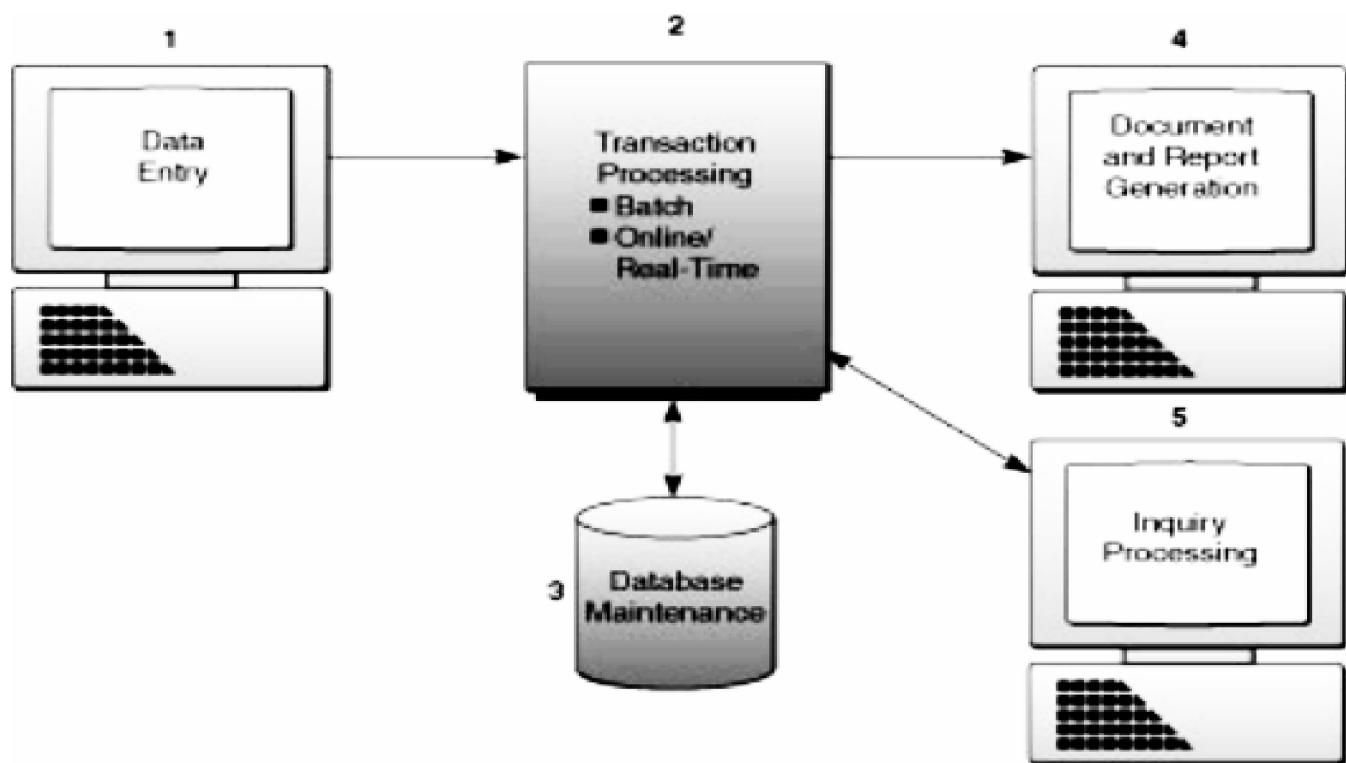
Email marketing, social media customer support, Google hangouts, Skype chats and VoIP applications etc. are providing great ROI (Return on Investment) for businesses. Doing a business without realising the importance of Internet marketing, communication and data management will make it tough to become successful businessmen in this century.

15. Define Transaction Processing Cycle with proper example

5

The Transaction Processing Cycle Basic Activities Transaction Processing Cycle

- **Data Entry:** To Capture of business Data. E.g POS, using . optical scanning of barcode reader & credit card or other business
- **Transaction Processing:** 1) Batch Processing: where transaction data are accumulated over a period of time 2) Online/Real-time: eg ATM ;recharge mobile card
- **Database Maintenance :** Database is updated to reflect changes in time-to-time business.eg customer account balance to be increase and the amount of inventory on hand to be decrease .
- **Document and Report Generation:** e.g purchase order, paychecks, sales receipts, invoices.
- 5)Inquiry Processing: e.g Inquiry of Stock amount, balance in account, sales order status



16. What is Target Marketing? Define different components Target marketing

3

Targeted marketing is the process of identifying customers and promoting products and services via mediums that are likely to reach those potential customers.

Targeted marketing classifies potential customers, discovers their preferred content delivery mode and digital hangouts and then builds a marketing strategy aimed at that specific group. Targeted marketing is generally limited in scope but is often more productive than broader types of marketing because it is designed around specific customer preferences.

Different components Target marketing

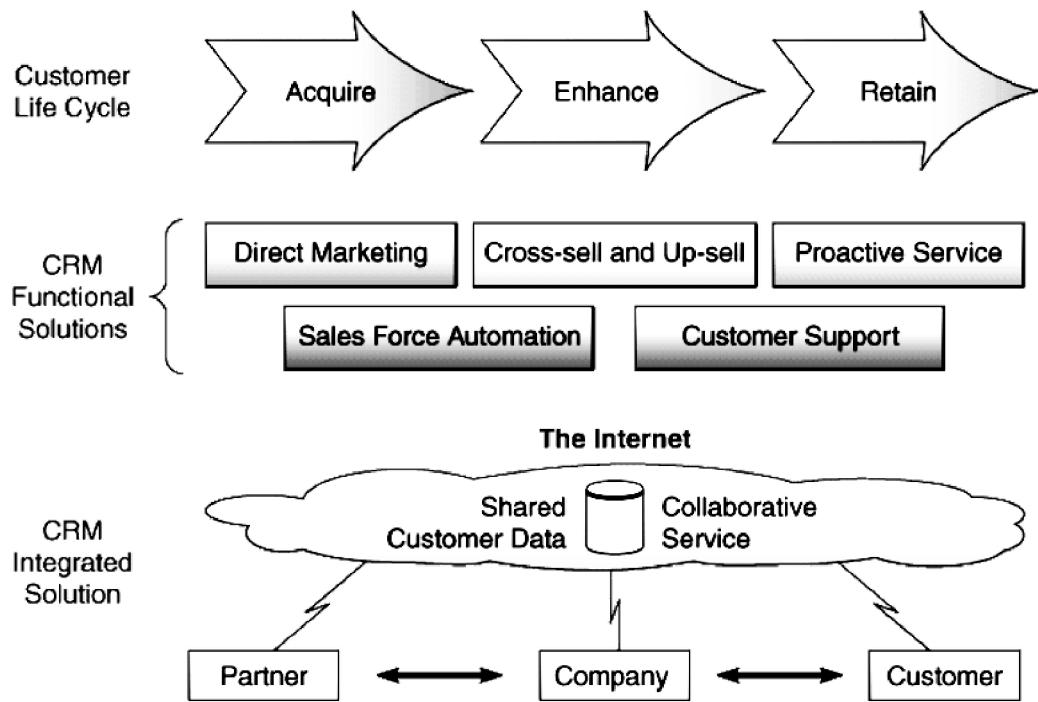
- Market research.
- Target market.
- Positioning
- Competitive analysis.
- Market strategy.
- Budget
- Metrics.

17.Explain Marketing Information Systems with example

5

Marketing systems are concerned with

- Planning, promotion, and sale of existing products in existing markets
- Development of new products and new markets
- Better attracting and serving present and potential customers



18.Mention different tools of ECS (Enterprise Collaboration Systems).

3

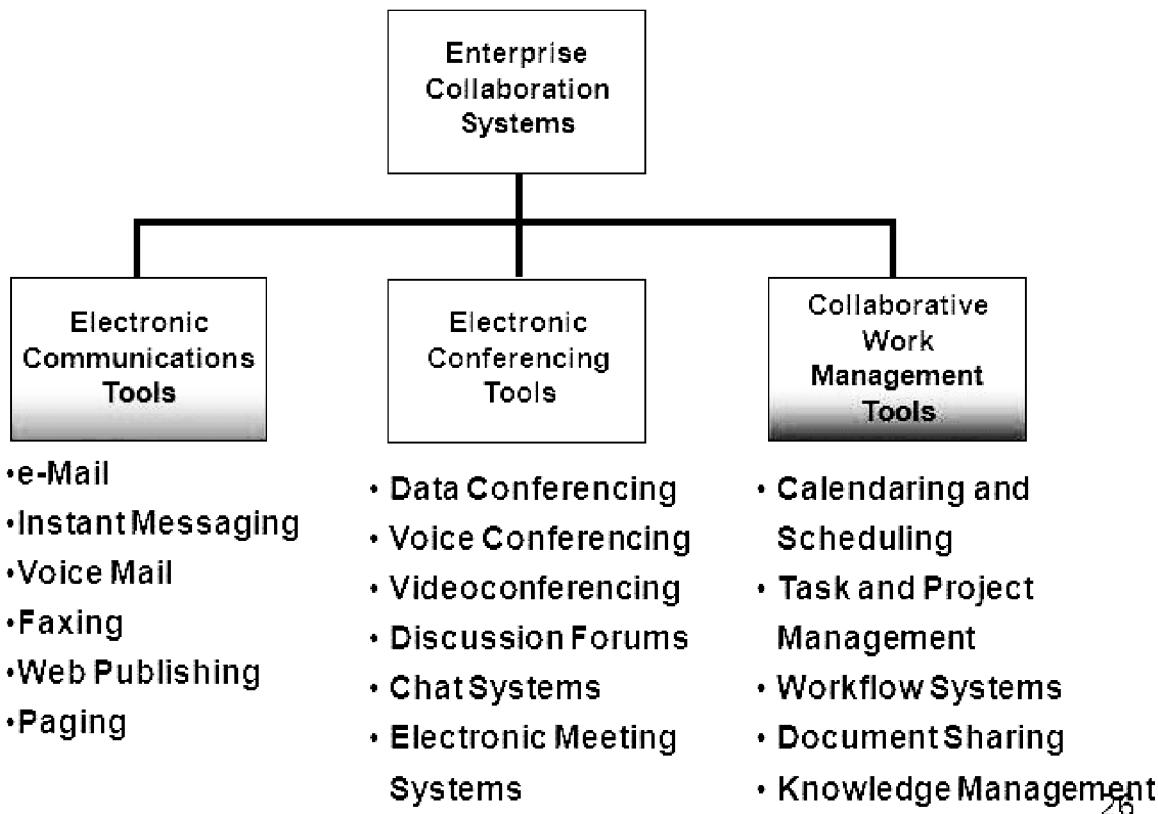


Fig: Tools for Enterprise Collaboration Systems

19.What is CRM? Explain the three Phases of CRM.

5

Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving customer service relationships and assisting in customer retention and driving sales growth. Tim Ehrens

CRM systems compile customer data across different channels -- or points of contact between the customer and the company -- which could include the company's website, telephone, live chat, direct mail, marketing materials and social media. CRM systems can also give customer-facing staff detailed information on customers' personal information, purchase history, buying preferences and concerns.

The three phases of CRM are:

Customer Acquisition

Acquiring customers has always been the first important step in establishing business relationships. With CRM, advanced software databases are used to capture key customer data at the point of first contact. Profile data includes a prospect's name, address, phone number, email address and sometimes social media accounts. Entering this data into a computer enables future and ongoing communication access.

The other major benefit of starting a formal relationship with new prospects and clients is the ability to track their behaviors through data analysis. As of 2015, many databases enable analytics, the automated analysis of data through programmed tools. Salespeople can identify at any point in time, for instance, what percentage of customers are at each stage of the opportunity pipeline, or sales process. This knowledge allows for optimized targeting to avoid bottlenecks and to facilitate relationship-building activities.

Customer Retention

The real purpose of gathering data on acquired customers is to improve retention rates. The typical customer attrition rate for companies is around 15 to 20 percent per year, but a 2013 Forbes article indicates that some industries experience significantly higher average rates. Effective data analysis, regular and systematic follow-up communication with contacts, and well-serviced accounts help you reduce your company's churn rate. Data analysis allows you to identify the traits of prospects and customers that offer the best lifetime earning potential as well, which enables greater focus on retaining core customers.

Customer Extension

The customer extension phase of CRM includes activities intended to draw out the length of typical customer relationships, enabling greater revenue. A simple perspective is that satisfying a customer during one buying experience increases the likelihood of a follow-up visit. Over time, delivering quality solutions, following through on commitments and addressing problems convert a buyer into a loyal customer. You also can enhance revenue through add-on product selling and cross-selling, which involves recommending unrelated solutions. Because of the high costs of customer acquisition, extending relationships with customers already captured is hugely valuable for a business.

20. Define Enterprise Resource Planning (ERP) and describe basic components of ERP application.

5

Enterprise resource planning (ERP) is business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services and human resources.

ERP software typically integrates all facets of an operation — including product planning, development, manufacturing, sales and marketing — in a single database, application and user interface.

Enterprise resource planning is a cross-functional enterprise system

- An integrated suite of software modules
- Supports basic internal business processes
- Facilitates business, supplier, and customer information flows

The Basic components of ERP application:



Fig: Basic components of ERP application

21. What is Supply Chain Management? Mention some basic goal of SCM.

3

Supply Chain Management (SCM), the management of the flow of goods and services, involves the movement and storage of raw materials, of work-in-process inventory, and of finished goods from point of origin to point of consumption.

Fundamentally, supply chain management helps a company

- Get the right products
- To the right place
- At the right time
- In the proper quantity
- At an acceptable cost

The goal of SCM is to efficiently:

- Forecast demand
- Control inventory
- Enhance relationships with customers, suppliers, distributors, and others
- Receive feedback on the status of every link in the supply chain

22. Define a basic e-commerce Architecture.

3

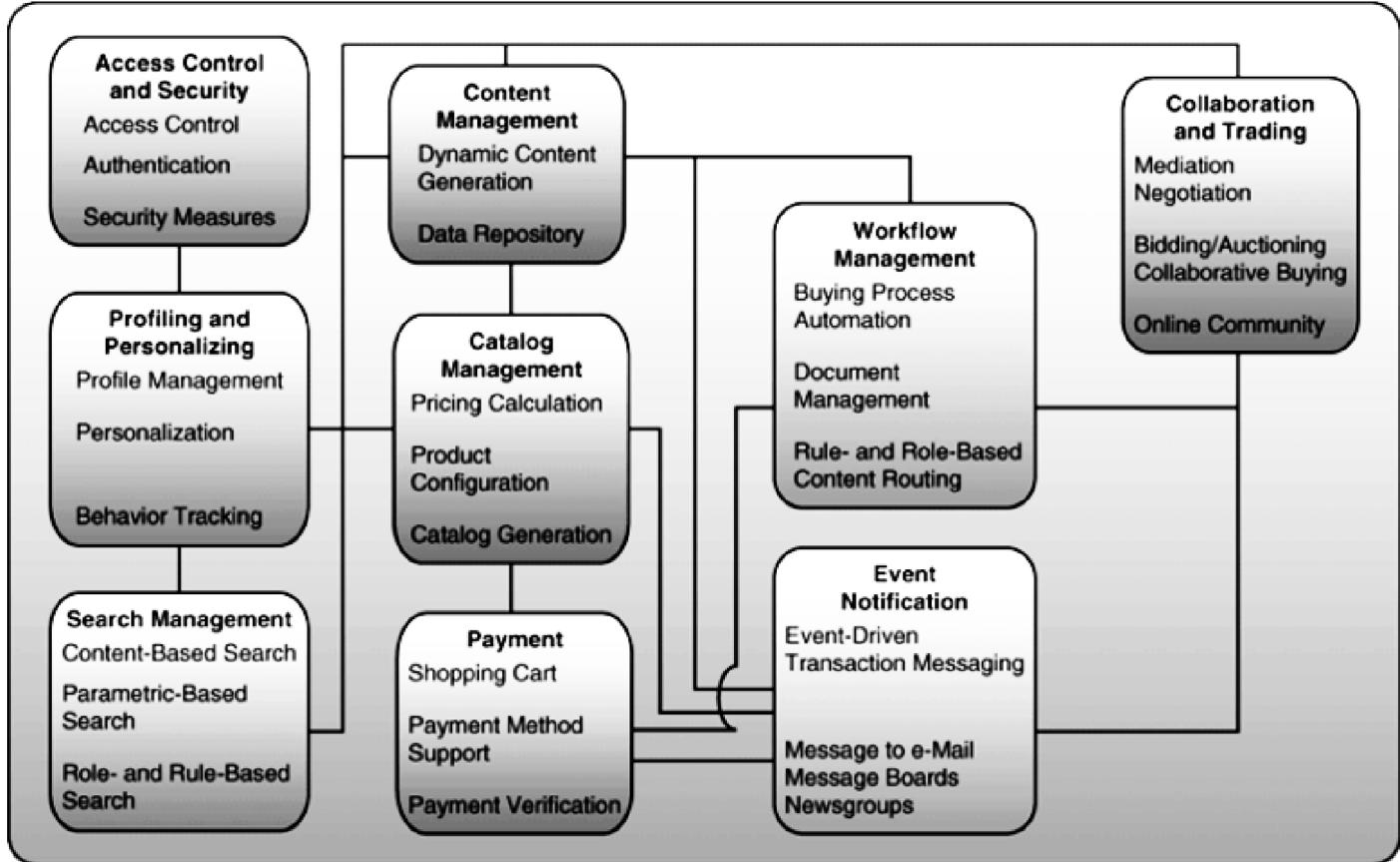


Fig: basic e-commerce Architecture

23. Write down short notes (Any four) of the following:

$$4 \times 4 = 16$$

a. Life Cycle of Supply Chain (SC)

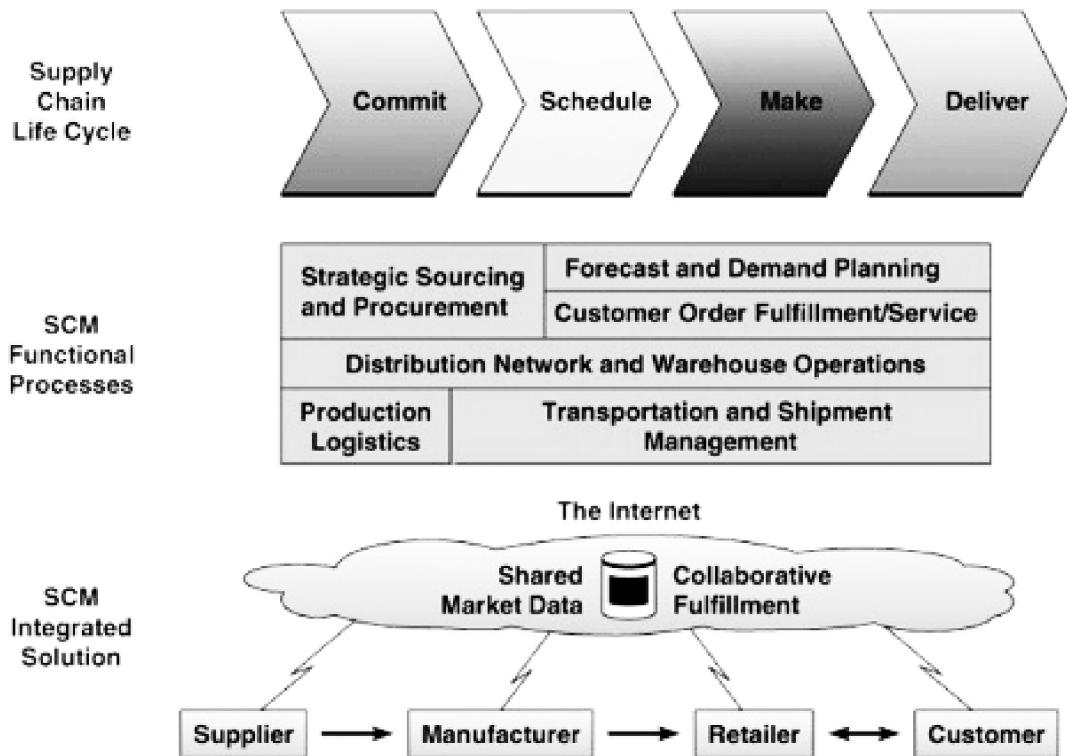


Fig: Supply Chain Life Cycle

b. Data Mining

Data mining is the process of analyzing hidden patterns of data according to different perspectives for categorization into useful information, which is collected and assembled in common areas, such as data warehouses, for efficient analysis, data mining algorithms, facilitating business decision making and other information requirements to ultimately cut costs and increase revenue.

Data mining is also known as data discovery and knowledge discovery.

The major steps involved in a data mining process are:

- Extract, transform and load data into a data warehouse
- Store and manage data in a multidimensional databases
- Provide data access to business analysts using application software
- Present analyzed data in easily understandable forms, such as graphs