

PAPER – 7: INFORMATION TECHNOLOGY AND STRATEGIC MANAGEMENT

SECTION – A: INFORMATION TECHNOLOGY

Question No. 1 is compulsory.

*Answer any **five** questions from the rest.*

Question 1

(A) *Explain the basic components of Decision Support System.* **(3 Marks)**

(B) *List out any two (02) advantages of using E-R Diagram.* **(2 Marks)**

Answer

(A) Decision Support System (DSS) has following basic components:

- (a) **The user:** The user is usually a manager with an unstructured or semi-structured problem to solve and may be at management - level of an organization.
- (b) **One or more databases:** Databases contain both routine and non-routine data from both internal and external sources.
- (c) **Model Base:** Model base is the brain of the DSS as it performs data manipulations and computations with the data provided to it by the user and the database.
- (d) **Planning Language:** The planning language in DSS allows the user to maintain a dialogue with the model base.

(B) Advantages of using Entity - Relationship Diagram are as follows:

- ER Modeling is simple and easily understandable. It is represented in business users' language and it can be understood by non-technical specialist.
- Intuitive and helps in Physical Database creation.
- Can be generalized and specialized based on needs.
- Can help in database design.
- Gives a higher-level description of the system.

Question 2

(A) *Output Controls ensure that the data delivered to users will be presented, formatted and delivered in a consistent and secured manner. It should be ensured that the Confidentiality and Integrity of the output is maintained. As a consultant of this enterprise, you are required to explain any Six (06) output controls of Application controls of Business Process Automation.* **(6 Marks)**

(B) *Explain any four (04) types of server based on the nature of service they provide.*

(4 Marks)

Answer

(A) Various Output Controls of Application Controls of Business Process Automation are as follows:

- **Storage and Logging of Sensitive and Critical Forms:** Pre-printed stationery should be stored securely to prevent unauthorized destruction or removal and usage. Only authorized persons should be allowed access to stationery supplies such as security forms, negotiable instruments etc.
- **Logging of Output Program Executions:** When programs, used for output of data, are executed, they should be logged and monitored.
- **Controls over Printing:** It should be ensured that unauthorized disclosure of information printed is prevented.
- **Report Distribution and Collection Controls:** Distribution of reports should be made in a secure way to avoid unauthorized disclosure of data. A log should be maintained as to what reports were generated and to whom it was distributed.
- **Retention Controls:** Retention controls consider the duration for which outputs should be retained before being destroyed. Consideration should be given to the type of medium on which the output is stored.
- **Existence/Recovery Controls:** These controls are needed to recover output in the event that it is lost or destroyed. If the output is written to a spool of files or report files and has been kept, then recovery is easy and straight-forward.

(B) Some different types of servers based on the nature of service they provide are as follows:

- **File Server:** This is a computer and storage device dedicated to storing files. Any user on the network can store files on the server.
- **Print Server:** This is a computer that manages one or more printers.
- **Network Server:** This is a computer that manages network traffic.
- **Database Server:** This is a computer system that processes database queries.
- **Application Server:** This is a program that handles all application operations between users and an enterprise's backend business applications or databases.
- **Web Server:** Web server is a computer that delivers (serves up) web pages. Every web server has an IP address and possibly a domain name.
- **Mail Server:** Mail server moves and stores mail over corporate networks.

Question 3

(A) *Accounting Information System (AIS) is a system of collection, storage and processing of financial and accounting data that is used by decision makers. XYZ Pvt. Ltd. decides to*

implement AIS in its organization. Being an IT advisor, explain any Six (06) key components that compose the Accounting Information System. (6 Marks)

- (B) *The payment mechanism moves money between accounts in a fast, paperless way. In this context explain the Electronic Fund Transfer and also explain any three (03) examples of Electronic Fund Transfer system in operation. (1 + 3 Marks)*

Answer

- (A) The key components of Accounting Information System (AIS) are as follows:

- **People:** AIS helps various system users that include accountants, consultants, business analysts, managers, Chief Financial Officers and auditors etc. from different departments within a company to work together. With well-designed AIS, everyone within an organization who is authorized to do so can access the same system and get the same information. AIS also simplify getting information to people outside of the organization when necessary.
- **Procedure and Instructions:** These include both manual and automated methods for collecting, storing, retrieving and processing data.
- **Data:** This refers to the information pertinent to the organization's business practices that may include sales orders, customer billing statements, sales analysis reports, purchase requisitions, vendor invoices, check registers, general ledger, inventory data, payroll information, timekeeping, tax information etc. This data can then be used to prepare accounting statements and reports such as accounts receivable aging, depreciation/amortization schedules, trial balance, profit and loss, and so on.
- **Software:** These are the computer programs that provide quality, reliability and security to the company's financial data that may be stored, retrieved, processed and analyzed. Managers rely on the information it outputs to make decisions for the company, and they need high-quality information to make sound decisions.
- **Information Technology Infrastructure:** This includes hardware such as personal computers, servers, printers, surge protectors, routers, storage media, and possibly a backup power supply used to operate the system. The hardware selected for AIS must be compatible with the intended software.
- **Internal Controls:** These are the security measures such as passwords or as complex as biometric identification to protect sensitive data against unauthorized computer access and to limit access to authorized users. Internal controls also protect against computer viruses, hackers and other internal and external threats to network security.

- (B) **Electronic Funds Transfer (EFT)** represents the way the business can receive direct deposit of all payments from the financial institution to the company bank account. Once the user Signs Up, Money comes to him directly and sooner than ever before. EFT is fast,

safe, and means that the money will be confirmed in user's bank account quicker than if he had to wait for the mail, deposit the cheque, and wait for the funds to become available.

Some examples of EFT systems in operation are as follows:

- ◆ **Automated Teller Machines (ATMs):** Consumers can do their banking without the assistance of a teller, or to make deposits, pay bills, or transfer funds from one account to another electronically. These machines are used with a debit or EFT card and a code, which is often called a personal identification number or "PIN."
- ◆ **Point-of-Sale (PoS) Transactions:** Some debit or EFT cards/check cards can be used when shopping to allow the transfer of funds from the consumer's account to the merchant's account. To pay for a purchase, the consumer presents an EFT card instead of a cheque or cash. Money is taken out of the consumer's account and put into the merchant's account electronically.
- ◆ **Preauthorized Transfers:** This is a method of automatically depositing to or withdrawing funds from an individual's account when the account holder authorizes the bank or a third party (such as an employer) to do so. For example, consumers can authorize direct electronic deposit of wages, social security, or dividend payments to their accounts. Or they can authorize financial institutions to make regular, ongoing payments of insurance, mortgage, utility, or other bills.
- ◆ **Telephone Transfers:** Consumers can transfer funds from one account to another through telephone instructions rather than traditional written authorization or instrument. The accounts being debited can be checking or savings, for example—or can order payment of specific bills by phone.

Question 4

- (A) *The goal of Business Process Management is to improve products and services. As a consultant, you have to implement Business Process Management (BPM) in an organization. In this context, list out the name of any Six (06) key practices of BPM.*

(6 Marks)

- (B) *The cloud computing environment can consist of multiple types of clouds based on their deployment and usage. In this context explain the different cloud types in cloud computing environment.*

(4 Marks)

Answer

- (A) Key practices of Business Process Management (BPM) are as follows:

- Process-oriented organizational structure
- Appoint Process Owners
- Top-Down Commitment, Bottom - Up Execution
- Use Information Technology (IT) to Manage Processes

- Collaborate with Business Partners
- Continuous Learning and Process Improvement
- Align Employee Bonuses and Rewards to Process Performance
- Utilize Business Process Reengineering (BPR), Total Quality Management (TQM) and other process improvement Tools.

(B) Different types of Clouds in Cloud Computing Environment are as follows:

- **Public Clouds:** The public cloud is made available to the general public or a large industry group. They are administrated by third parties or vendors over the Internet, and services are offered on pay-per-use basis. It is widely used in the development, deployment and management of enterprise applications, at affordable costs. It allows organizations to deliver highly scalable and reliable applications rapidly and at more affordable costs.
- **Private Clouds:** This cloud computing environment resides within the boundaries of an organization and is used exclusively for the organization's benefits. These are also called internal clouds. They are built primarily by IT departments within enterprises who seek to optimize utilization of infrastructure resources within the enterprise by provisioning the infrastructure with applications using the concepts of grid and virtualization. The benefit of a Private Cloud is that it enables an enterprise to manage the infrastructure and have more control, but this comes at the cost of IT department creating a secure and scalable cloud.
- **Community Clouds:** This is the sharing of computing infrastructure in between organizations of the same community. For example, all Government organizations within India may share computing infrastructure on the cloud to manage data. The risk is that data may be stored with the data of competitors.
- **Hybrid Clouds:** It is maintained by both internal and external providers. It is a composition of two or more clouds (Private, Community or Public). They have to maintain their unique identity, but are bound together by standardized data and application portability. With a hybrid cloud, organizations might run non-core applications in a public cloud, while maintaining core applications and sensitive data in-house in a private cloud.

Question 5

- (A) *Software and System are used by employees in an organization. From a security perspective this software & system are target for a large number of possible security attacks. In this context, explain the vulnerability and find the facts that are responsible for occurrence of vulnerabilities in the software.* (2 Marks)
- (B) *Write the names of phases of Program Development Life Cycle.* (2 Marks)
- (C) *Write a short note on Bluetooth.* (2 Marks)

OR

Write the any two (02) difference between Random Access Memory (RAM) and Read Only Memory (ROM).

Answer

- (A) **Vulnerability:** Vulnerability is an inherent weakness in the design, configuration, or implementation of a network or system that renders it susceptible to a threat.

The facts responsible for occurrence of vulnerabilities in the software are as follows:

- ◆ **Software Bugs** - Software bugs are so common that users have developed techniques to work around the consequences, and bugs that make saving work necessary every half an hour or crash the computer every so often are a normal part of computing. For example - buffer overflow, failure to handle exceptional conditions, access validation error, input validation errors are some of the common software flaws.
- ◆ **Timing Windows** - This problem may occur when a temporary file is exploited by an intruder to gain access to the file, overwrite important data, and use the file as a gateway for advancing further into the system.
- ◆ **Insecure default configurations** - Insecure default configurations occur when vendors use known default passwords to make it as easy as possible for consumers to set up new systems. Unfortunately, most intruders know these passwords and can access systems effortlessly.
- ◆ **Trusting Untrustworthy information** - This is usually a problem that affects routers, or those computers that connect one network to another. When routers are not programmed to verify that they are receiving information from a unique host, bogus routers can gain access to systems and do damage.
- ◆ **End users** - Generally, users of computer systems are not professionals and are not always security conscious. For example, when the number of passwords of a user increases, user may start writing them down, in the worst case to places from where they are easy to find. In addition to this kind of negligence towards security procedures users do human errors, for example save confidential files to places where they are not properly protected.

- (B) Various phases of Program Development Life Cycle are as follows:

- Planning
- Design
- Coding

- Testing
- Operation and Maintenance

(C) **Bluetooth** is a wireless technology standard for exchanging data over short distances up to 50 meters (164 feet) from fixed and mobile devices, creating Personal Area Networks (PANs) with high levels of security. It is a feature which is used every day through number of compatible devices.

Bluetooth is really like a very low-power, short-range radio signal. Bluetooth signals are secure from the moment they are sent, so unlike any other wireless network we don't have to worry about turning on security. Few devices that utilize Bluetooth technology are Keyboards and mice, Printers, Cellphones and headsets, PDAs (Personal Digital Assistants), Desktop and laptop computers, Digital cameras, and Remotes.

Using a mobile phone with Bluetooth enabled in them, we can send pictures, videos, exchange business cards and transfer files to our PC. Both data and voice transmissions can be sent and received using short-range networks.

OR

Random Access Memory (RAM)	Read Only Memory (ROM)
This is volatile in nature means Information is lost as soon as power is turned off.	This is non-volatile in nature (contents remain even in absence of power). Usually, these are used to store small amount of information for quick reference by CPU.
Information can be read as well as modified.	Information can be read not modified.
This is Read Write memory wherein information can be read as well as modified.	Information can be read not modified. Generally used by manufacturers to store data and programs like translators that is used repeatedly.

SECTION –B: STRATEGIC MANAGEMENT

Question No. 6 is compulsory

*Answer any **four** questions from the rest.*

Question 6

A startup company is thinking of launching of a low cost detergent powder in the market. The market of the said product is already dominated by a big FMCG player.

*You are advised to put forward your suggestions to the management of the company to deal with the problems of 'Entry Barrier' while launching the low cost detergent powder. **(5 Marks)***

Answer

There are number of factors that can act as entry barrier for the start-up company. An FMCG, big in size, is already dominating the market space and will act as a strong deterrent for the new start-up. The following will be some suggestions to the management of the start-up to deal with the problem of entry barriers:

1. The company is working on producing low cost detergent. Keeping other expenses also on the lower side the management can create price advantage that is competitive to the existing established players including the large FMCG.
2. The company focussing on single product in comparison to multiple products of an FMCG can develop competencies to produce and sell the low cost detergent that are difficult to deploy by the FMCG by its strategy that addresses needs of multiple products.
3. The start-up needs to have strong financial strength to sustain the onslaught from the dominant FMCG and other players. The start-up can identify sources of capital well in advance and be able to use it judiciously to their advantage.
4. The start-up should identify the customer segments that are likely to switch to the product well in advance so as to target the same and generate the initial hold on the market. Once the product gets some hold and their brands get some identity, the market can be further developed to address other customers.
5. The start-up should identify the environmental factors that go to their advantage. These may include special scheme of the government to encourage entrepreneurs, tax holiday, low interest rates, advantages available to small and medium sized enterprises alike.
6. It has to create an image in the market that its products are qualitative and 'Made in India' to attract a particular segment of customers.
7. They need to have a team of experts and dedicated management professionals who can implement strategies formulated by top management.

Question 7

(A) *Successful organizations need to understand the business environment for formulating an effective strategy. Explain the important characteristics of business environment.*

(5 Marks)

(B) *Objectives and Goals are synonymous in strategic management. Explain it. Also outline the characteristics to be possessed by Objectives.*

(5 Marks)

Answer

(A) To be successful, businesses have to recognise different elements of the environment. They have to also respect, adapt to or have to manage and influence them. Businesses must continuously monitor and adapt to the environment to survive and prosper. Business environment exhibits many characteristics as follows:

- **Environment is complex:** The environment consists of a number of factors, events, conditions and influences arising from different sources and is complex because it is somewhat easier to understand in parts but difficult to grasp in totality.
- **Environment is dynamic:** The environment is constantly changing in nature. Due to the many and varied influences operating; there is dynamism in the environment causing it to continuously change its shape and character.
- **Environment is multi-faceted:** What shape and character an environment assumes depends on the perception of the observer. A particular change in the environment, or a new development, may be viewed differently by different observers, i.e. as an opportunity for one company and a threat for another.
- **Environment has a far reaching impact:** The growth and profitability of an organization depends critically on the environment in which it exists. And thus, any environmental change has an impact on the organization in several different ways.

(B) The term objectives are synonymous with goals, however, some authors make an attempt to distinguish the two. Goals are open-ended attributes that denote the future states or outcomes. Objectives are close-ended attributes which are precise and expressed in specific terms. Thus, the Objectives are more specific and translate the goals to both long term and short term perspective.

However according to some theorists, Objectives are open- ended attributes that denote future status or outcome while goals are close-ended attributes which are precise and expressed in specific terms. Accordingly, both the terms can be used interchangeably.

Organizational objectives are performance targets-the result and outcomes it wants to achieve. They function as yardstick for tracking an organizations performance and progress. Objectives, to be meaningful to serve the intended role, must possess the following characteristics:

- Objectives should define the organization's relationship with its environment.

- Objectives should be facilitative towards achievement of mission and purpose.
- Objectives should provide the basis for strategic decision-making.
- Objectives should provide standards for performance appraisal.
- Objectives should be understandable.
- Objectives should be concrete and specific.
- Objectives should be related to a time frame.
- Objectives should be measurable and controllable.
- Objectives should be challenging.
- Different objectives should correlate with each other.
- Objectives should be set within constraints.

Question 8

- (A) *Developing and using logistic strategy is important in business operations. Elucidate the statement. Frame a questionnaire for developing an effective logistic strategy. (5 Marks)*
- (B) *"Projected financial statement analysis is a central strategy-implementation technique." Justify the statement. (5 Marks)*

Answer

- (A) Management of logistics is a process which integrates the flow of supplies into, through and out of an organization to achieve a level of service which ensures that the right materials are available at the right place, at the right time, of the right quality, and at the right cost. Organizations try to keep the cost of transporting materials as low as possible consistent with safe and reliable delivery.

The changes that affect logistics operations such as emerging technologies and industry initiatives, developing and using a formal logistics strategy is very important. For a business enterprise, effective logistic strategy will involve raising and finding solutions to the following questions:

- ◆ Which sources of raw materials and components are available?
- ◆ How many manufacturing locations are there?
- ◆ What products are being made at each manufacturing location?
- ◆ What modes of transportation should be used for various products?
- ◆ What is the nature of distribution facilities?

- ◆ What is the nature of materials handling equipment possessed? Is it ideal?
- ◆ What is the method for deploying inventory in the logistics network?
- ◆ Should the business firm own the transport vehicles?

(B) Projected financial statement analysis is a central strategy-implementation technique because it allows an organization to examine the expected results of various actions and approaches. This type of analysis can be used to forecast the impact of various implementation decisions. Nearly all financial institutions require a projected financial statement whenever a business seeks capital.

A projected income statement and balance sheet allow an organization to compute projected financial ratios under various strategy-implementation scenarios. When compared to prior years and to industry averages, financial ratios provide valuable insights into the feasibility of various strategy-implementation approaches.

A financial budget is also a document that details how funds will be obtained and spent for a specified period of time. Fundamentally, financial budgeting is a method for specifying what must be done to complete strategy implementation successfully.

Financial budgeting is a method for obtaining the most productive and profitable use of an organization's resources. Financial budgets can be viewed as the planned allocation of a firm's resources based on forecasts of the future.

Question 9

- (A) *Explain briefly the primary activities that are grouped into five main activities under Value chain analysis.* (5 Marks)
- (B) *Explain the TOWS matrix. How the TOWS matrix has a wider scope in comparison to SWOT analysis? Explain in brief.* (5 Marks)

Answer

- (A) The primary activities of the organization are grouped into five main areas: inbound logistics, operations, outbound logistics, marketing and sales, and service.
- ◆ **Inbound logistics** are the activities concerned with receiving, storing and distributing the inputs to the product/service. This includes materials handling, stock control, transport etc.
 - ◆ **Operations transform these inputs into the final product or service:** machining, packaging, assembly, testing, etc.
 - ◆ **Outbound logistics** collect, store and distribute the product to customers. For tangible products this would be warehousing, materials handling, transport, etc. In the case of services, it may be more concerned with arrangements for bringing customers to the service, if it is a fixed location (e.g. sports events).

- ♦ **Marketing and sales** provide the means whereby consumers/users are made aware of the product/service and are able to purchase it. This would include sales administration, advertising, selling and so on. In public services, communication networks which help users' access a particular service are often important.
- ♦ **Service** are all those activities, which enhance or maintain the value of a product/service, such as installation, repair, training and spares.

(B) TOWS Matrix

The TOWS Matrix is a relatively simple tool for generating strategic options. Through TOWS matrix four distinct alternative kinds of strategic choices can be identified.

SO (Maxi-Maxi): SO is a position that any firm would like to achieve. The strengths can be used to capitalize or build upon existing or emerging opportunities.

ST (Maxi-Mini): ST is a position in which a firm strives to minimize existing or emerging threats through its strengths.

WO (Mini-Maxi): The strategies developed need to overcome organizational weaknesses if existing or emerging opportunities are to be exploited to maximum.

WT (Mini-Mini): WT is a position that any firm will try to avoid. An organization facing external threats and internal weaknesses may have to struggle for its survival.

The matrix is outlined below:

		Internal Elements	
		Organizational strengths	Organizational weaknesses
External Elements	Environmental opportunities (and risks)	SO Maxi-Maxi	WO Mini-Maxi
	Environmental threats	ST Maxi-Mini	WT Mini-Mini

Through SWOT analysis, organisations identify their strengths, weaknesses, opportunities and threats. While conducting the SWOT Analysis managers are often not able to come to terms with the strategic choices that the outcomes demand. Heinz Weirich developed a matrix called TOWS matrix by matching strengths and weaknesses of an organization with the external opportunities and threats. The incremental benefit of the TOWS matrix lies in

systematically identifying relationships between these factors and selecting strategies on their basis. TOWS analysis is an action tool whereas SWOT analysis is a planning tool.

Question 10

(A) *What do you mean by divestment strategy? State the reasons forcing to adopt such strategy.* (5 Marks)

(B) *Write a brief note on the following:*

Stages in Framework of Strategic Process. (5 Marks)

OR

Elements of Benchmarking Process.

Answer

(A) Divestment strategy involves the sale or liquidation of a portion of business, or a major division, profit centre or SBU. Divestment is usually a part of rehabilitation or restructuring plan.

A divestment strategy may be adopted due to various reasons:

- ◆ When a turnaround has been attempted but has proved to be unsuccessful.
- ◆ A business that had been acquired proves to be a mismatch and cannot be integrated within the company.
- ◆ Persistent negative cash flows from a particular business create financial problems for the whole company.
- ◆ Severity of competition and the inability of a firm to cope with it.
- ◆ Technological upgradation is required if the business is to survive but where it is not possible for the firm to invest in it.
- ◆ A better alternative may be available for investment.

(B) The basic framework of strategic process can be described in a five stages sequence:

- **Stage one** - Where are we now? (beginning): Initially, the firm must find out its relative market position, corporate image, its strength and weakness and also environmental threats and opportunities.
- **Stage two** - Where we want to be? (ends): This is a process of goal setting for the organization after it has finalised its vision and mission.
- **Stage three** - How might we get there? (means): Here the organization deals with the various strategic alternatives it has.
- **Stage four** - Which way is best? (evaluation): Out of all the alternatives generated in the earlier stage the organization selects the best suitable alternative.

- **Stage five** - How can we ensure arrival? (control): This is an implementation and control stage of a suitable strategy. Here again the organization continuously does situational analysis and repeats the stages again.

Or

Some of the common elements of benchmarking process are as under:

- **Identifying the need for benchmarking:** This step will define the objectives of the benchmarking exercise. It will also involve selecting the type of benchmarking. Organizations identify realistic opportunities for improvements.
- **Clearly understanding existing decisions processes:** The step will involve compiling information and data on performance.
- **Identify best processes:** Within the selected framework best processes are identified. These may be within the same organization or external to them.
- **Comparison of own process and performance with that of others:** Benchmarking process also involves comparison of performance of the organization with performance of other organization. Any deviation between the two is analysed to make further improvements.
- **Prepare a report and implement the steps necessary to close the performance gap:** A report on benchmarking initiatives containing recommendations is prepared. Such a report also contains the action plans for implementation.
- **Evaluation:** Business organizations evaluate the results of the benchmarking process in terms of improvements vis-à-vis objectives and other criteria set for the purpose. It also periodically evaluates and reset the benchmarks in the light of changes in the conditions that impact the performance.