MOCK TEST PAPER – 1

INTERMEDIATE (IPC): GROUP – II

PAPER – 7: INFORMATION TECHNOLOGY AND STRATEGIC MANAGEMENT

SECTION – A: INFORMATION TECHNOLOGY

SUGGESTED ANSWERS/HINTS

1. (i) Business Process Management (BPM): BPM may be defined as: "The achievement of an organization's objectives through the improvement, management and control of essential business processes". This refers to the closed loop, iterative management of business processes over their complete lifecycle. In simple terms, BPM is about the management of business processes with the organization being the primary focus. It is the methodology used by enterprises to improve end-to-end business processes in various stages and aim to grow revenues quickly while controlling resource costs.

(ii) Input Devices: Input devices are devices through which we interact with the systems and include devices like Keyboard, Mouse and other pointing devices, Scanners and Bar Code, Magnetic Ink Character Recognition (MICR) readers, Webcams, Microphone and Stylus/ Touch Screen. Keyboard helps users with text based input, mouse helps us in position based input, scanners and webcams help in image based input and microphone helps us in voice based input.

(iii) Decentralized Computing: Decentralized computing is the allocation of resources, both hardware and software, to each individual workstation, or office location. In contrast, centralized computing exists when most functions are carried out, or obtained from a remote centralized location. A collection of decentralized computers systems are components of a larger computer network, held together by local stations of equal importance and capability and can run independently of each other. Decentralized systems enable file sharing and all computers can share peripherals such as printers and scanners as well as modems, allowing all the computers in the network to connect to the internet.

(iv) Customer Relationship Management (CRM): CRM may be defined as a business process in which client relationships; customer loyalty and brand value are built through marketing strategies and activities. CRM allows businesses to develop long-term relationships with established and new customers while helping modernize corporate performance. CRM incorporates commercial and client-specific strategies via employee training, marketing planning, relationship building and advertising.

(v) Database Controls: The Database subsystem is responsible for defining, creating, modifying, deleting and reading data in an information system. It maintains declarative data, relating to the static aspects of real-world objects and their associations, and procedural data, relating to the dynamic aspects of real-world objects and their associations. Database Controls protect the integrity of a database when application software acts as an interface to interact between the user and the database.

2. (a) Auditors in their various roles use and embrace technology to perform their jobs effectively and efficiently. They deal with data in myriad forms for analysis and decision-making. The location of digital data could be traced to computers and servers either at identified offices of clients or vendors.

The increasing digitization of data leads to an increasing impact and exerts continuing pressure on Auditors to expand their skills beyond traditional roles of using IT for office automation to providing innovative services harnessing the power of technology. The dynamic changes in IT create challenges in not only enterprises but also accountants and auditors in their professionals' capacity.

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The traditional core competencies of auditors need to be enhanced with increased understanding of technology systems and there is urgent need to develop the ability to process and integrate information among various areas of business practice. Auditors of the future will be called upon to provide solutions to complex issues by integrating specialized technology with their extensive experience to create new strategic business processes.

Auditors will have to provide assurance on the security, effectiveness, and reliability of information, applications, and new and effective business practices and processes. As IT increasingly becomes a key enabler in enterprises of all types and sizes; and there is transformation from "Technology Oriented" to "Business and Technology Oriented".

(b) Distribution Resource Planning (DRP): It is a method used in business administration for planning orders within a supply chain. It is one of the stage during Enterprise Resource Planning (ERP) implementation that enables the user to set certain inventory control parameters (like a safety stock) and calculate the time-phased inventory requirements. This process is also commonly referred to as distribution requirements planning. The objectives of Distribution Resource Planning (DRP) in the SAP R/3 System are:

- To improve customer service levels by anticipating customer demand at distribution centers and providing finished products at the correct location when customer needs arise.
- To provide accurate requirements plan for manufacturing.

To optimize the distribution of available stock in the distribution network using the deployment function.

3. (a) Topology: The term 'Topology' defines the physical or logical arrangement of links in a network. It is the geometric representation of the relationship of all the links and linking devices (usually called Nodes) to each other. There are several basic types of network topologies, or structures, in telecommunications networks.

(i) Star Network: The star network, a popular network configuration, involves a central unit that has several terminals tied into it. The characteristics of a star network are:

- It ties end user computers to a central computer.
- The central unit in the star network acts as the traffic controller among all the other computers tied to it. The central computer is usually a mainframe (host), which acts as the file server.
- A star network is well suited to companies with one large data processing facility shared by a number of smaller departments. Many star networks take the form of hierarchical networks with a centralized approach.

Advantages of the star network include the following:

- Several users can use the central unit at the same time.
- It is easy to add new nodes and remove existing nodes.
- A node failure does not bring down the entire network.
- It is easier to diagnose network problems through a central hub.

Disadvantages of the star network are as follows:

- The whole network is affected if the main unit "goes down," and all communications stop.
- Considered less reliable than a ring network, since the other computers in the star are heavily dependent on the central host computer. If it fails, there is no backup processing and communications capability and the local computers will be cut off from the corporate headquarters and from each other.

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- Cost of cabling the central system and the points of the star network together are very high.

(ii) **Bus Network:** In a bus network, a single length of wire, cable, or optical fiber connects several computers. The features of a bus network are as follows:

- All communications travel along this cable, which is called a bus.
- Bus networks have a decentralized approach.

Advantages of bus network include the following:

- There is no host computer or file server, which makes bus network reliable as well as easy to use and understand.
- If one of the microcomputers fails, it will not affect the entire network.
- Requires the least amount of cable to connect the computers together and therefore is less expensive than other cabling arrangements.
- Is easy to extend. Two cables can be easily joined with a connector, making a longer cable for more computers to join the network.
- A repeater can also be used to extend a bus configuration.

Disadvantages of bus network include the following:

- Heavy network traffic can slow a bus considerably since any computer can transmit at any time. But networks do not coordinate when information is sent. Computers interrupting each other can use a lot of bandwidth.
- Each connection between two cables weakens the electrical signal.
- The bus configuration can be difficult to troubleshoot. A cable break or malfunctioning computer can be difficult to find and can cause the whole network to stop functioning.

(b) Output Controls: Output controls ensure that the data delivered to users will be presented, formatted and delivered in a consistent and secured manner. Whatever the type of output, it should be ensured that the confidentiality and integrity of the output is maintained and that the output is consistent. Output controls have to be enforced both in a batch-processing environment as well as in an online environment.

- **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.

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4. (a) For any information system to qualify as a Transaction Processing System (TPS), transactions made by the system must pass the ACID Test. The ACID Test refers to the following four prerequisites as discussed below:

- **Atomicity:** This means that a transaction is either completed in full or not at all. TPS systems ensure that transactions take place in their entirety. For example, if funds are transferred from one account to another, this only counts as a bona-fide transaction if both the withdrawal and deposit take place. If one account is debited and the other is not credited, it does not qualify as a transaction.
- **Consistency:** TPS systems exist within a set of operating rules (or integrity constraints). If an integrity constraint states that all transactions in a database must have a positive value, any transaction with a negative value would be refused.
- **Isolation:** Transactions must appear to take place in seclusion. For example, when a fund transfer is made between two accounts the debiting of one and the crediting of another must appear to take place simultaneously. The funds cannot be credited to an account before they are debited from another.
- **Durability:** Once transactions are completed they cannot be undone. To ensure that this is the case even if the TPS suffers failure, a log will be created to document all completed transactions.

(b) Working of a Client/Server Network is as follows:

- Servers are typically powerful computers running advanced network operating systems. Servers can host e-mail; store common data files and serve powerful network applications such as Microsoft's SQL Server. As a centerpiece of the network, the server validates login to the network and can deny access to both networking resources as well as client software.
- End user Personal Computer or Network Computer workstations are the Clients.
- Clients are interconnected by local area networks and share application processing with network servers, which also manage the networks. Client and Server can operate on separate computer platforms.
- Either the client platform or the server platform can be upgraded without having to upgrade the other platform.
- The server can service multiple clients concurrently; in some client/server systems, clients can access multiple servers.
- Action is usually initiated at the client end, not the server end.
- The network system implemented within the client/server technology is commonly called by the computer industry as Middleware. Middleware is all the distributed software needed to allow clients and servers to interact. General Middleware allows for communication, directory services, queuing, distributed file sharing, and printing.

5. (a) In Conversion under System Implementation phase of SDLC, there are following major activities:

- **Direct Changeover:** The user stops using the old system one particular day and starts using the new system from thereon, usually over a weekend or during a slack period.
- **Parallel Conversion:** The old system continues alongside the new system for a few weeks or months.
- **Phased Conversion:** Used with larger systems that can be broken down into individual modules which can be implemented separately at different times.
- **Pilot Conversion:** New system will first be used by only a portion of the enterprise, for example at one branch or factory.

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(b) To develop security architecture, following constraints are taken from the characteristics of grid environment and application.

- **Single Sign-on:** A user should authenticate once and they should be able to acquire resources, use them, and release them and to communicate internally without any further authentication.
- **Protection of Credentials:** User passwords, private keys, etc. should be protected.
- **Interoperability with local security solutions:** Access to local resources should have local security policy at a local level. Despite of modifying every local resource, there is an inter-domain security server for providing security to local resource.
- **Exportability:** The code should be exportable i.e. they cannot use a large amount of encryption at a time. There should be a minimum communication at a time.
- **Support for secure group communication:** In a communication, there are number of processes which coordinate their activities. This coordination must be secure and for this there is no such security policy.
- **Support for multiple implementations:** There should be a security policy which should provide security to multiple sources based on public and private key cryptography.

6. (a) Business functions of the Value Chain are as follows:

- Research and Development;
- Design of products, services, or processes;
- Production;
- Marketing and Sales;
- Distribution; and
- Customer Service

(b) **Object-Oriented Database Management System (OODBMS):** An Object-Oriented Database Management System (OODBMS) helps programmers make objects created in a programming language behave as a database object. Object-oriented programming is based on a series of working objects. Each object is an independently functioning application or program, assigned with a specific task or role to perform. An object-oriented database management system is a relational database designed to manage these independent programs, using the data produced to quickly respond to requests for information by a larger application.

(c) **Network Management:** Telecommunications software packages provide a variety of communication support services. For example, they work with a communications processor to connect and disconnect communications links and establish communications parameters such as transmission speed, mode, and direction. Examples of major network management functions include:

- **Traffic management:** manages network resources and traffic to avoid congestion and optimize telecommunications service levels to users.
- **Security:** provides authentication, encryption, and auditing functions, and enforces security policies.
- **Network monitoring:** troubleshoot and watch over the network, informing network administrators of potential problems before they occur.
- **Capacity planning:** surveys network resources and traffic patterns and users' needs to determine how best to accommodate the needs of the network as it grows and changes.

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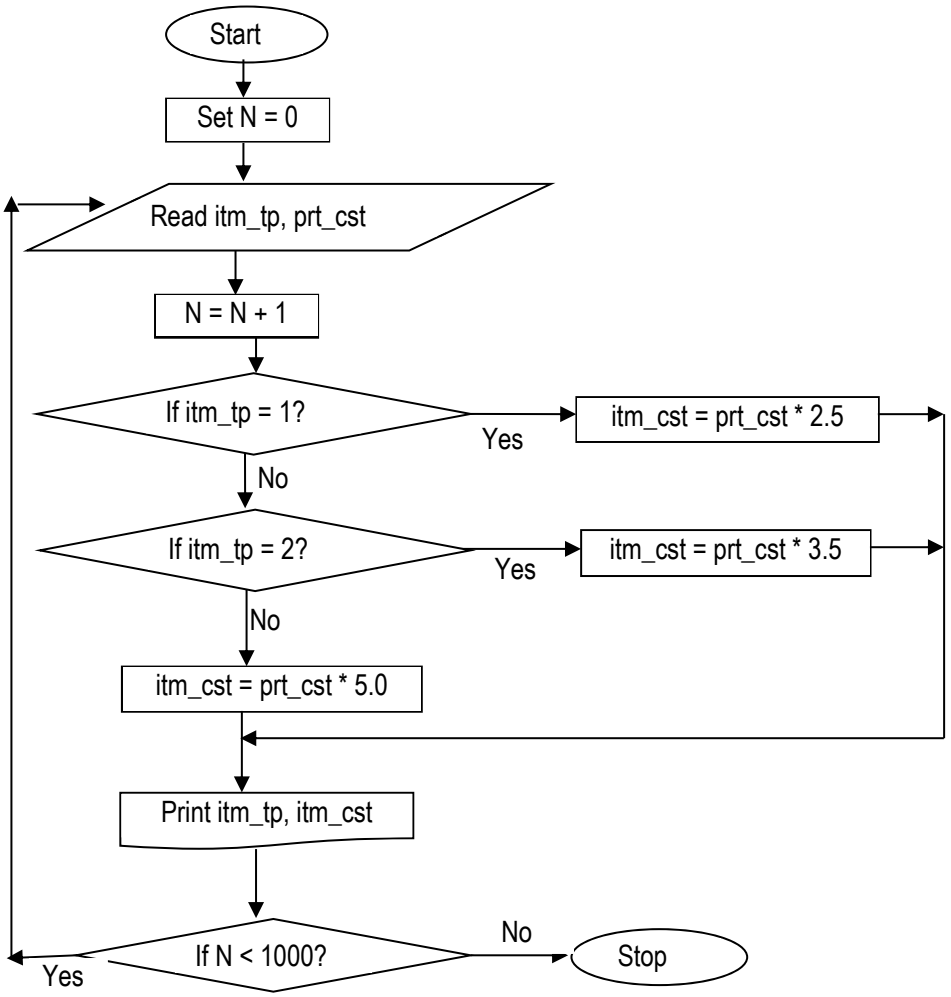
(d) Data Mining or Statistical Analysis: This involves using statistical, artificial intelligence, and related techniques to mine through large volumes of data and providing knowledge without users even having to ask specific questions. The objective is to provide interesting and useful information to users by design even without their querying. Data Mining involves data analysis for discovering useful patterns that are "hidden" in large volume of diverse data. For Example: Market segmentation identifies common characteristics of customers who buy same products. OLAP (Online Analytical Processing) is a multi-dimensional analytical tool typically used in data mining that gathers and process vast amounts of information into useful packets.

(e) MS Office Applications: These are various office automation systems made available by Microsoft Corporation which include MS Word, MS Excel, MS PowerPoint, MS Access, etc. Each of this software help to achieve automation of various tasks in the office. It has features such as customized ribbon, backstage view, built-in graphics toolset, enhanced security, excel spark lines, pivot for Excel, PowerPoint broadcast, Power Point compression, paste, preview and outlook conversation view.

7. Let us define the variables first:

itm_tp = Item Type; Part Cost = prt_cst; itm_cst = Item Cost; N = counter

The required flowchart is available on the next page.



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SECTION – B: STRATEGIC MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (a) Organizational environment consists of both external and internal factors. Environment must be scanned so as to determine development and forecasts of factors that will influence organizational success. The factors that need to be considered are explained below:

Events: Events are important and specific happenings in the internal or external organisational environment which can be observed and tracked.

Trends: Trends are grouping of similar or related events that tend to move in a given direction, increasing or decreasing in strength of frequency of observation.

Issues are the current concerns that arise in response to events and trends. Identifying an emerging issue is more difficult.

Expectations are the demands made by interested groups in the light of their concern for issues.

(b) A business organization is a part of overall structure of society and functions within wide external environmental factors. It draws its resources from its external environment, processes them and provides output in the form of goods and services. Therefore, it is correct to say that a business enterprise should focus on external perspective to define its mission although enterprise's internal situation cannot be delinked while doing so. Bringing an external perspective justifies the very existence of company. The mission statement is a message designed to be inclusive of the expectations of all stakeholders for the performance of an enterprise / company over the long run. Some of the questions addressed by mission statement are: Why is the firm in business? What are the economic goals? What is the operating philosophy in terms of quality, firm's image and self-concept? What are the core competencies and competitive advantages? What customers do and can a company serve? How does enterprise / company view its responsibilities to stockholders, employees, communities, environment, social issues or competitors?

(c) A strategic group consists of those rival firms with similar competitive approaches and positions in the market. Companies in the same strategic group can resemble one another in any of the several ways. An industry contains only one strategic group when all sellers pursue essentially identical strategies and have comparable market positions. The steps for constructing a strategic group map and deciding which firms belong in which strategic group are as follows:

- Identify the competitive characteristics that differentiate firms in the industry. The typical variables are price/quality range (high, medium, low); geographic coverage (local, regional, national, global); degree of vertical integration (none, partial, full); product-line breadth (wide, narrow); use of distribution channels (one, some, all); and degree of service offered (no-frills, limited, full).
- Plot the firms on a two-variable map using pairs of these differentiating characteristics.
- Assign firms that fall in about the same strategy space to the same strategic group.
- Draw circles around each strategic group making the circles proportional to the size of the group's respective share of total industry sales revenues.

(d) A bakery normally is a small organization that produces and sells flour-based food baked in an oven. Typically, a bakery produces breads, cakes, cookies, pastries, pies, etc. A bakery that is hitherto not into producing pastries starts producing them and other similar products is following concentric diversification which is basically related diversification.

In this form of diversification, the new business is linked to the existing businesses through existing systems such as processes, technology or marketing. The new product is a spin-off from the existing facilities and products/processes. There are benefits of synergy with the current

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operations. The most common reasons for pursuing a concentric diversification are that opportunities in existing line of business are available.

(e) Successful strategy implementation often requires additional capital. Besides net profit from operations and the sale of assets, two basic sources of capital for an organization are debt and equity. Being a financial manager to determine an appropriate mix of debt and equity in a firm's capital structure can be vital to successful strategy implementation. Fixed debt obligations generally must be met, regardless of circumstances. This does not mean that stock issuances are always better than debt for raising capital. If ordinary stock is issued to finance strategy implementation; ownership and control of the enterprise are diluted. This can be a serious concern in today's business environment of hostile takeovers, mergers, and acquisitions.

The major factors regarding which strategies have to be made by a financial manager are: capital structure; procurement of capital and working capital borrowings; reserves and surplus as sources of funds; and relationship with lenders, banks and financial institutions. Strategies related to the sources of funds are important since they determine how financial resources will be made available for the implementation of strategies. Organizations have a range of alternatives regarding the sources of funds. While one company may rely on external borrowings, another may follow a policy of internal financing.

2. (a) (i) **Incorrect:** Strategy formulation is primarily an intellectual process and strategy implementation is primarily an operational process. Strategy formulation is based on strategic decision-making which requires analysis and thinking while strategy implementation is based on strategic as well as operational decision-making which requires action and doing.

(ii) **Incorrect:** Benchmarking relates to setting goals and measuring productivity based on best industry practices. The idea is to learn from competitors and others to improve their own performance. On the other hand, business process reengineering relates to analysis and redesign of workflows and processes both within and between the organizations.

(b) (i) A joint venture is a business agreement in which parties agree to develop, for a finite time, a new entity and new assets by contributing equity. They exercise control over the enterprise and consequently share revenues, expenses and assets.

(ii) The changes in the environmental forces often require businesses to make modifications in their existing strategies and bring out new strategies. Strategic change is a complex process and it involves a corporate strategy focused on new markets, products, services and new ways of doing business.

(iii) Customers and suppliers must work together in the product development process. Right from the start the partners will have knowledge of all Involving all partners will help in shortening the life cycles. Products are developed and launched in shorter time and help organizations to remain competitive.

3. (a) Production system is concerned with the capacity, location, layout, product or service design, work systems, degree of automation, extent of vertical integration, and such factors. Strategies related to production system are significant as they deal with vital issues affecting the capability of the organisation to achieve its objectives.

Strategy implementation would have to take into account the production system factors as they involve decisions which are long-term in nature and influence not only the operations capability of an organisation but also its ability to implement strategies and achieve objectives.

(b) Network structure is a newer and somewhat more radical organizational design. The network structure could be termed as 'non-structure' as it virtually eliminates in-house business functions and outsource many of them. A corporation organized in this manner is a virtual organization because it is composed of a series of project groups or collaborations linked by constantly changing non-hierarchical, cobweb-like networks.

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(c) Value chain refers to separate activities which are necessary to underpin an organization's strategies and are linked together both inside and outside the organization. Organizations are much more than a random collection of machines, money and people. Value chain of a manufacturing organization comprises of primary and supportive activities. The primary ones are inclusive of inbound logistics, operations, outbound logistics, marketing and sales, and services. The supportive activities relate to procurement, human resource management, technology development and infrastructure.

Value chain analysis helps in maintaining the long-term competitive position of an organization to sustain value for-money in its products or service. It can be helpful in identifying those activities which the organization must undertake at a threshold level of competence and those which represent the core competences of the organization.

4. In a highly competitive marketplace, companies can operate successfully by creating and delivering superior value to target customers and also learning how to adapt to a continuously changing business environment. So to meet changing conditions in their industries, companies need to be farsighted and visionary, and must have a system of managing strategically.

Strategic management starts with developing a company mission (to give it a direction), objectives and goals (to give it means and methods for accomplishing its mission), business portfolio (to allow management to utilise all facets of the organisation), and functional plans (plans to carry out daily operations from the different functional disciplines).

The overall objective of strategic management is two fold:

- To create competitive advantage, so that the company can outperform the competitors in order to have dominance over the market.
- To guide the company successfully through all changes in the environment.

The following are the benefits of strategic approach to managing:

- Strategic management helps organisations to be more proactive instead of reactive in shaping its future. Organisations are able to analyse and take actions instead of being mere spectators. Thereby they are able to control their own destiny in a better manner. It helps them in working within vagaries of environment and shaping it, instead of getting carried away by its turbulence or uncertainties.
- Strategic management provides framework for all the major business decisions of an enterprise such as decisions on businesses, products, markets, manufacturing facilities, investments and organisational structure. It provides better guidance to entire organisation on the crucial point - what it is trying to do.
- Strategic management is concerned with ensuring a good future for the firm. It seeks to prepare the corporation to face the future and act as pathfinder to various business opportunities. Organisations are able to identify the available opportunities and identify ways and means as how to reach them.
- Strategic management serves as a corporate defence mechanism against mistakes and pitfalls. It help organisations to avoid costly mistakes in product market choices or investments. Over a period of time strategic management helps organisation to evolve certain core competencies and competitive advantages that assist in its fight for survival and growth.

5. The term business is wide and amenable to different usages. A business for our purposes can be any activity consisting of purchase, sale, manufacture, processing, and/or marketing of products and/or services. It is said that a business exists for profits. Profit, as a surplus of business, accrues to the owners. It is their share, just as wages are the share of workers. People invest in business for getting return. For business enterprises, profit is often regarded as the overall measure of performance. Business efficiency is often expressed in terms of percentage of profit to sales volume, to capital

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employed, to market value of corporate shares and so on. Outside investors also equate profit with the degree of business efficiency and managerial competence and commit their funds in light of such equation and other related assessments.

Peter F Drucker has drawn two important conclusions about what is a business that are useful for an understanding of the term business. The first thing about a business is that it is created and managed by people. There will be a group of people who will take decisions that will determine whether an organization is going to prosper or decline, whether it will survive or will eventually perish. This is true of every business. The second conclusion drawn is that the business cannot be explained in terms of profit.

The economic criterion of maximising profits for a firm has little relevance in the present times. Profit maximization, in simple terms is selling at a higher price than the cost. Profit maximization has been qualified with the long-term perspective and has been modified to include development of wealth, to include several non-financial factors such as goodwill, societal factors, relations and so on.

A business has some purpose. A valid purpose of business is to create customers. It is for the businesses to create a customer or market. It is the customer who determines what a business is. The customer is the foundation of business and keeps it in existence. Organisations seek to balance the objectives in an appropriate manner. Some of the objectives of business are:

1. Survival
2. Stability
3. Growth
4. Efficiency
5. Profitability

6.

Strategy	Meaning	Example
(i) Forward Integration	Gaining ownership or increased control over the next level in the value chain (Manufacturing or intermediaries)	Reliance Industries (owning refineries) diversified into petrol pumps
(ii) Backward Integration	Gaining ownership or increased control over the previous level in the value chain (Manufacturing or suppliers)	An automobile manufactures diversifying into tyre production.
(iii) Horizontal Integration	Seeking ownership or increased control of a firm's competitors	ICICI Bank taking over Bank of Rajasthan
(iv) Conglomerate Diversification	Adding new, unrelated products or services	Yash Birla Group (auto & engineering) decides to enter wellness, solar power and schools.
(v) Divestment	Divestment strategy involves the sale or liquidation of a portion of business, or a major division, profit centre or SBU.	Godrej Group's withdrawal from the JV with Sara Lee from Africa
(vi) Liquidation	Liquidation strategy is an extreme and unattractive strategy as it involves closing down a firm and selling its assets. It is considered as the last resort when all other options fail.	Those companies whose products are no more in demand sell all their assets.

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(vii) Concentric Diversification	In concentric diversification, the new business are added that are linked to the existing businesses through process, technology or marketing.	Kotak Mahindra Bank gets into insurance and asset management businesses.

7. **Meaning of Six Sigma**: Primarily Six sigma means maintenance of the desired quality in processes and end products. It means taking systemic and integrated efforts toward improving quality and reducing cost.

It is a highly disciplined process that helps in developing and delivering near-perfect products and services. It strives to meet and improve organizational goals on quality, cost, scheduling, manpower, new products and so on. It works continuously towards revising the current standards and establishing higher ones. Six sigma has its base in the concept of probability and normal distribution in statistics. Six sigma strives that 99.99966% of products manufactured are defect free.

Six sigma efforts target three main areas:

- Improving customer satisfaction
- Reducing cycle time
- Reducing defects

Six sigma and other quality programs

Six sigma is improvement over other quality programmes:

(i) Six sigma is customer focused. It strives to provide better satisfaction to the customer owning the product.

(ii) Six sigma is a total management commitment and philosophy of excellence, process improvement and the rule of measurement.

(iii) Six sigma induces changes in management operations - new approaches to thinking, planning and executing to achieve results.

(iv) Six sigma combines both leadership and grassroots energy and involvement for its success.

Six themes of six sigma

The critical elements of six sigma can be put into six themes as follows:

- ***Theme one*** *– genuine focus on the customer:* Companies launching six sigma often to find that how little they really understand about their customers. In six sigma, customer focus becomes the top priority. For example, the measures of six sigma performance begin with the customer. Six sigma improvements are defined by their impact on customer satisfaction and value.
- ***Theme two*** *– data and fact-driven management:* Six sigma takes the concept 'of "management by fact" to a new, more powerful level. Despite the attention paid in recent years to improved information systems, knowledge management, and so on, many business decisions are still being based on opinions, assumptions and gut feeling. Six sigma disciplines begins by clarifying what measures are key to gauging business performance and then gathers data and analyzes key variables. Problems are effectively defined, analyzed, and resolved. Six sigma also helps managers to answer two essential questions to support data-driven decisions and solutions.
  - What data/information is really required?
  - How to use the data/information for maximum benefit?
- ***Theme three*** *– processes are where the action is* Designing products and services, measuring performance, improving efficiency and customer satisfaction and so on. Six sigma positions the process as the key vehicle of success. One of the most remarkable breakthroughs in Six Sigma

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efforts to date has been convincing leaders and managers. Process may relate to build competitive advantage in delivering value to customers.

- ***Theme four*** *– proactive management:* In simple terms, being proactive means acting in advance of events rather than reacting to them. In the real world, though, proactive management means making habits out of what are, too often, neglected business practices: defining ambitious goals and reviewing them frequently, setting clear priorities, focusing on problem prevention rather than fire-fighting, and questioning why we do things instead of blindly defending them.

  Far from being boring or overly analytical, being truly proactive is a starting point for creativity and effective change. Six sigma, encompasses tools and practices that replace reactive habits with a dynamic, responsive, proactive style of management.

- ***Theme five*** *– boundaryless collaboration:* "Boundarylessness" is one of Jack Welch's mantras for business success. Years before launching six sigma, GE's chairman was working to break barriers and to improve teamwork up, down, and across organizational lines. The opportunities available through improved collaboration within companies and with vendors and customers are huge. Billions of dollars are lost every day because of disconnects and outright competition between groups that should be working for a common cause: providing value to customers.

- ***Theme six*** *– drive for perfection; tolerate failure:* Organizations need to make efforts to achieve perfection and yet at the same time tolerate failure. In essence, though, the two ideas are complementary. No company will get even close to six sigma without launching new ideas and approaches-which always involve some risk. Six sigma cannot be implemented by individuals who are overly cautious and are scared of making mistakes.

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