

Sessional Assignment
INFORMATION SYSTEM AND DATA
PROCESSING

BS(se)

Section B

ID:13206

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Question 1:

Define organization; also explain the structure of an organization by giving an example of a well known organization. (Note: every student should take the example of different organization from another).

ANSWER:

An organization is an entity such as a company, an institution, or an association, comprising one or more people and having a particular purpose. An organized group of people with a particular goal to achieve.

ORGANIZATION STRUCTURE:

An organizational structure defines how activities such as task allocation, coordination, and supervision are directed toward the achievement of organizational aims. Organizational structure affects organizational action and provides the foundation on which standard operating procedures and routines rest.

Example :

ORGANIZATION STRUCTURE OF STARBUCKS:

Starbucks has a **matrix organizational structure**, which is a hybrid mixture of different features from the basic types of organizational structure. In this case, the structural design involves intersections among various components of the business. For example, the company's product-based divisions intersect with functional groups and geographic divisions, which in turn intersect with other parts of the organization. The following are the main features of Starbucks Coffee's corporate structure.

1. Functional hierarchy
2. Geographic divisions
3. Product-based divisions
4. Teams

Functional Hierarchy.

The functional hierarchy feature of Starbucks Coffee's organizational structure refers to grouping based on business function. For example, the company has an HR department, a finance department and a marketing department. These departments are most pronounced at the top levels of Starbucks's corporate structure, such as at the corporate headquarters. This characteristic is hierarchical. For example, the corporate HR department implements policies applicable to all of the company's cafés. The functional hierarchy of the corporate structure facilitates top-down monitoring and control, with the CEO at the top. Functional groups are responsible for the organization-wide development and implementation of [Starbucks Corporation's generic competitive strategy and intensive growth strategies.](#)

Geographic Divisions.

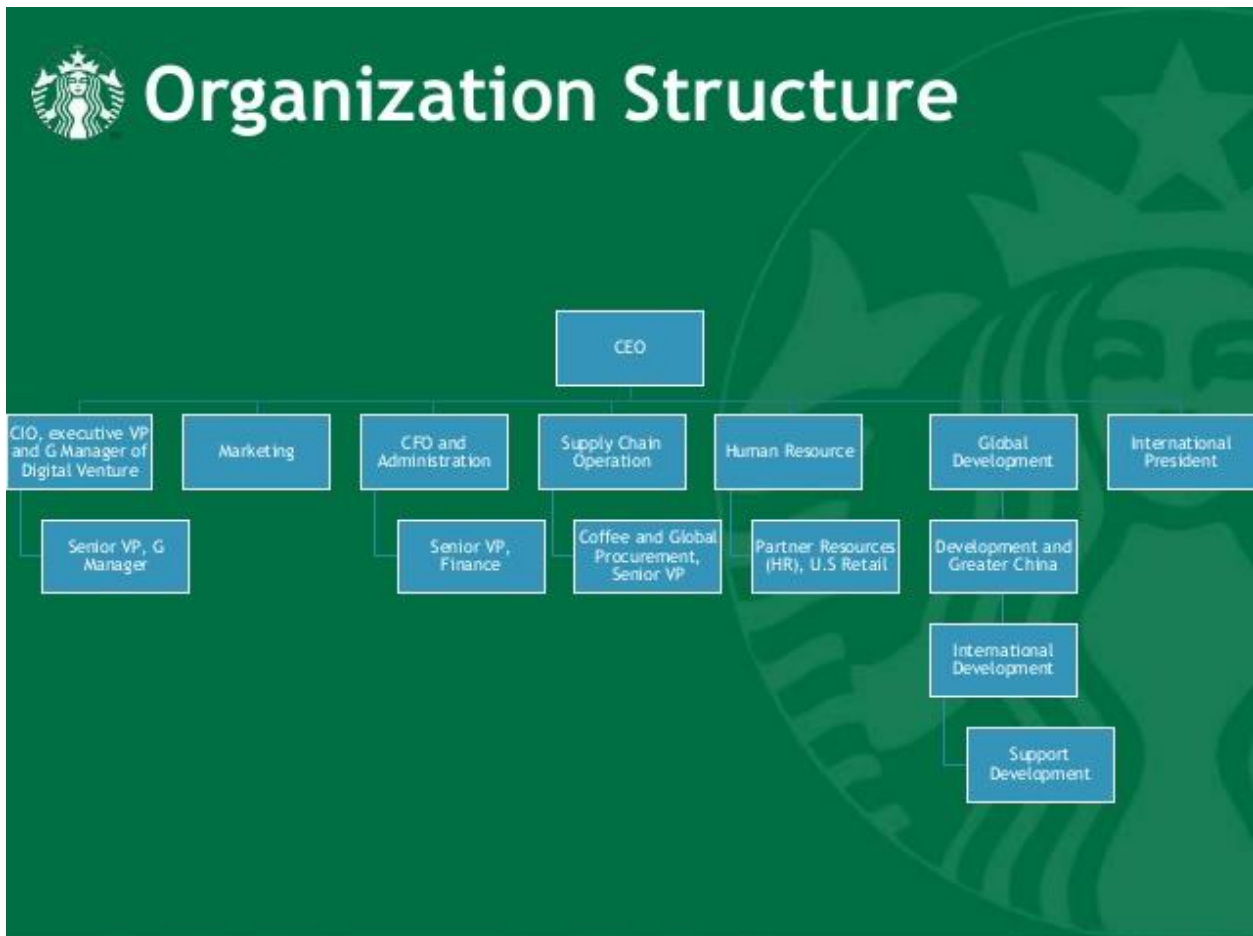
Starbucks Coffee's corporate structure involves geographic divisions, which are based on physical location of operations. The company has three regional divisions for the global market: (1) Americas, (2) China and Asia-Pacific, (3) Europe, Middle East, and Africa. Also, in the U.S. market, Starbucks Coffee's organizational structure involves further geographic divisions: (a) Western, (b) Northwest, (c) Southeast, and (d) Northeast. Each geographic division has a senior executive. In this way, each local manager reports to at least two superiors: the geographic head (e.g. President of Europe, Middle East, and Africa Operations) and the functional head (e.g. Corporate HR Manager). This feature of Starbucks's corporate structure enables closer managerial support for geographic needs. Each division head is given flexibility in adjusting strategies and policies to suit specific market conditions.

Product-based Divisions.

Starbucks has product-based divisions in its organizational structure. These divisions address product lines. For example, the company has a division for coffee and related products, another division for baked goods, and another division for merchandise like mugs. This feature of the corporate structure enables Starbucks to focus on product development. In this way, the company develops and innovates its products with support through its organizational structure. Such development provides competitiveness that the business needs, especially in considering the threats identified in the [SWOT analysis of Starbucks Corporation.](#)

Teams.

Teams are used in different parts of Starbucks Coffee's organizational structure. However, teams are most visible at the lowest organizational levels, particularly at the coffeehouses. For example, in each café, the company has teams organized to deliver goods and service to customers. This feature of Starbucks's corporate structure enables the business to provide effective and efficient service to consumers. Team effectiveness is a major determinant of the financial performance of franchised locations and company-owned coffeehouses. [Starbucks's corporate culture](#) influences how such team effectiveness is achieved. The company's development depends on team-based factors and associated human resource management strategies



Question 2

Explain System Development Life Cycle; also explain different types system development life cycle.

ANSWER:

In systems engineering, information systems and software engineering, the systems development life cycle, also referred to as the application development life-cycle, is a process for planning, creating, testing, and deploying an information system. System Development Life Cycle (SDLC) is a series of six main phases to create a hardware system only, a software system only or a combination of both to meet or exceed customer's expectations.

Types of Software developing life cycles (SDLC)

- Waterfall Model
- V-Shaped Model
- Evolutionary Prototyping Model
- Spiral Method (SDM)
- Iterative and Incremental Method
- Agile development

EXPLANTION:

Waterfall Model:

The Waterfall Model is a linear sequential flow. In which progress is seen as flowing steadily downwards (like a waterfall) through the phases of software implementation. This means that any phase in the development process begins only if the previous phase is complete. The waterfall approach does not define the process to go back to the previous phase to handle changes in requirement. The waterfall approach is the earliest approach and most widely known that was used for software development.

V-Shaped Model:

It is an extension of the waterfall model, Instead of moving down in a linear way, the process steps are bent upwards after the implementation and coding phase, to form the typical V shape. The major difference between the V-shaped model and waterfall model is the early test planning in the V-shaped model.

Prototyping Model:

It refers to the activity of creating prototypes of software applications, for example, incomplete versions of the software program being developed. It is an activity that can occur in software development and It used to visualize some component of the software to limit the gap of misunderstanding the customer requirements by the development team. This also will reduce the iterations may occur in

the waterfall approach and hard to be implemented due to the inflexibility of the waterfall approach. So, when the final prototype is developed, the requirement is considered to be frozen.

Evolutionary prototyping: prototypes that evolve into the final system through an iterative incorporation of user feedback.

Spiral Model (SDM)

It is combining elements of both design and prototyping-in-stages, in an effort to combine advantages of top-down and bottom-up concepts. This model of development combines the features of the prototyping model and the waterfall model. The spiral model is favored for large, expensive, and complicated projects. This model uses many of the same phases as the waterfall model, in essentially the same order, separated by planning, risk assessment, and the building of prototypes and simulations.

Iterative and Incremental Model

It is developed to overcome the weaknesses of the waterfall model. It starts with an initial planning and ends with deployment with the cyclic interactions in between. The basic idea behind this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental), allowing software developers to take advantage of what was learned during the development of earlier parts or versions of the system. It can consist of mini waterfalls or mini V-Shaped model.

Question 3:

Explain Incremental model and Spiral; also explain main difference between spiral and incremental model

ANSWER:

INCREMENTAL MODEL:

Incremental Model is a process of software development where requirements are broken down into multiple standalone modules of software development cycle. Incremental development is done in steps from analysis design, implementation, testing/verification, maintenance.

SPIRAL MODEL:

Spiral model is one of the most important Software Development Life Cycle models, which provides support for Risk Handling. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. Each loop of the spiral is called a Phase of the software development process. The exact number of phases needed to develop the product can be varied by the project manager depending upon the project risks. As the project manager dynamically determines the number of phases, so the project manager has an important role to develop a product using spiral model. The Radius of the spiral at any point represents the expenses (cost) of the project so far, and the angular dimension represents the progress made so far in the current phase.

DIFFERENCE BETWEEN SPIRAL AND INCREMENTAL MODEL

Properties of Model	Incremental Model	Spiral Model
Planning in early stage	Yes	Yes
Returning to an earlier phase	Yes	Yes
Handle Large-Project	Not Appropriate	Appropriate
Detailed Documentation	Yes but not much	Yes
Cost	Low	Expensive
Requirement Specifications	Beginning	Beginning
Flexibility to change	Easy	Easy
User Involvement	Intermediate	High
Maintenance	Promotes Maintainability	Typical
Duration	Very long	Long
Risk Involvement	Low	Medium to high risk
Framework Type	Linear + Iterative	Linear + Iterative
Testing	After every iteration	At the end of the engineering phase
Overlapping Phases	Yes (As parallel development is there)	No
Maintenance	Maintainable	Yes
Re-usability	To some extent	To some extent

Time-Frame	Long	Long
Working software availability	At the end of every iteration	At the end of every iteration
Objective	Rapid Development	High Assurance
Team size	Not Large Team	Large Team
Customer control over administrator	Yes	Yes