**PROJECT PLANNING & MANAGEMENT FINAL EXAMINATION**

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**Qtn 1: what is project management?**

“Project management is application of knowledge, skills, tools, and techniques to project activities to meet the project requirements and it is accomplish through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing.

**Qtn 2: Bring out the responsibilities of project manager.**

Project manager responsibilities vary in their priority and number, also the set may depend on a business and its particular challenges. Below are responsibilities as outline.

To plan thoroughly all aspects of the project, soliciting the active involvement of all functional areas involved, in order to obtain and maintain a realistic plan that satisfies their commitment for performance.

To control the organization of manpower needed by the project.

To control the basic technical definition of the project, ensuring that "technical" versus "cost" trade-offs determine the specific areas where optimization is necessary.

To complete the project on schedule and within costs, these being the overall standard by which performance of the project manager is evaluated.

**Project planning** - a project manager should foresee all potential difficulties and obstacles on the way of project implementation to determine project phases and set deadlines, scope of work, allocate resources among others

**Managing a project team** is vital for project success and is responsible for putting together a team capable of successfully completing all consequent project stages.

**Risk management** is inherent to any process and should not be neglected. A skill to outline a clear plan of risk management in advance and having a plan-B up the sleeve.

**Time management** by Keeping track of time, analysis and optimization of time expenses based on time-tracking reports.

**Monitoring and permanent control** – to prevent things from falling into pieces and follow all pre-set progress metrics of a project.

**Meeting customer’s needs** – An ability to establish mutual understanding with the customers, manage their expectations and keep in touch. Attentive to any feedback and requests of the customer

**Reporting** – the Project Manager reports throughout the whole project life cycle to meet the requirements of precision and transparency. Reporting normally is the main way for the customer to ensure that things go in the right way.

**Qtn 3: How budgets are framed in projects?**

A project budget is the total sum of money allocated for the particular purpose of the project for a specific period of time.

Projects Budgets are framed after at the e initial stages of project planning and usually in parallel with the development of the project schedule. The steps associated with budgeting are highly dependent to both the estimated lengths of tasks and the resources assigned to the project.

Budgets are framed based on the applicable cost factors associated with project tasks identified. The development of costs for each task is directed toward both indirect and indirect cost such as the, labor, raw materials and other costs. The cost of performing a task is directly related to the personnel assigned to the task, the duration of the task, and the cost of any non-labor items required by the task.

**Qtn.4 Write a note on Break Down structure.**

The Work Breakdown Structure is the tool with which division of labor is deﬁned. It is comprehensive—that is, cover all the work content of the project and logical—to allow clear allocation of work to the participating individual and organizations as well as integration of the deliverables produced by the participants into the project-required deliverables .

Or it is a diagram which breaks down the overall project into smaller chunks and the process is called “decomposition” which compress of a work package of a small set of readily identifiable activities which can be assigned to one person or a very small group.

**Qtn 5. Explain the methods of scheduling projects.**

Scheduling in project management is the listing of activities, deliverables, and milestones within a project. A schedule also usually includes the planned start and finish date, duration, and resources assigned to each activity.

Effective project scheduling is a critical component of successful time management. However the following are the common methods of scheduling project.

PERT (Program Evaluation and Review Technique) is a graphical scheduling tool to show the project’s timeline. It was first developed by the United States Navy for the Polaris submarine missile program in the 1950s. With PERT the Project was finished 2 years in advance and this showed the importance of this scheduling technique. Program Evaluation and review Technique is an art tool for projects with high number of activities, data and dependencies and it shows dependencies between the activities though some time it take longer time to develop, not readable from everyone. (Experts only) and It facilitates the identification of the critical path and makes it visible. The lack of a timeframe makes it harder to show the development status

CPM (Critical Path Method) was created in 1957 from the DuPunt Company to have a specific scheduling tool to be able to improve the planning and the development of projects. A technique used to identify, within a network of activities, the activities that are critical for the completion of the project. In other words, the critical activities are the ones that if delayed, they delay the whole project. The advantageous in identifying critical activities is fundamental to be aware of possible delays. TIME=MONEY. This tool is useful for planners to forecast the length of the project taking into account that critical activities could delay it. However, for large projects it is difficult to handle the dependencies and calculating the slack. In this case, it is possible to use software that calculate everything. It makes dependencies visible.

Gantt chart was developed by Henry Gantt (American mechanical engineer and management consultant) in 1910's to display graphically the process of a project. Before him, during the 1890s, a Polish engineer named Karol Adamiecki, already used a sort of Gantt chart for the steelworks he was running. Gantt is one of the most used scheduling tool both for the operational and controlling phases. It can be represented by itself otherwise; it suits well together with the PERT Diagram. In the Gantt chart the correlations of the various activities aren't showed. However, it is possible to figure out when the activities are schedule (starting date and end date) but it is not possible to see from which activities one task depends on or which is the input for one activity .Effective tool for small projects, Simple: everyone can read it and make it. Easy to read from all the stakeholders. It could be used to show fragments/portions of big projects previously elaborated with PERT. Powerful visual communication tool. Short time to make.

These three techniques complete each other and offer a wide range of scenarios that could occur during the development of a project. The aim of scheduling techniques is to reach the goal on time without wasting precious and limited resources. On the other hand, it is important tool to prevent in advance future situations and to identify future issues that can compromise the success of the project.

**Qtn 6.What is expediting in project management?**

Expediting is an idea in buying project management for securing the quality and timely conveyance of merchandise and components. The department responsible for procurement or an external expeditor controls the process of assembling at the supplier concerning quality, packing, congruity with benchmarks and set courses of events.

Alternatively, in a project perspective it is concerned with everything in procurement chains of preparation of specification and inquiries, evaluating and selection of vendors and preparation of purchase orders, provision of technical information to vendors, approval scheduling vendors, procurement fabrication, assembly, test and shipping, measurement and reporting of vendor’s progress and arranging for remedial action.

**Qtn.7 Explain the methods of data collection.**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test

Hypotheses, and evaluate outcomes.

However, the following are the methods of data collection

**Interview:**

Interviews are used to record and analyses people’s opinions, experiences, beliefs and ideas on relevant topics. During the process the respondents are required to present information that is more detailed. This gives a deeper insight into the social phenomena, as compared to the quantitative methods such as surveys and questionnaires.

Interviews are also convenient to gather data when the research deals with more sensitive topics, about which the participants may not feel very comfortable to talk openly in a group environment (Gill, Stewart, Treasure, & Chadwick, 2008).

**Focus Groups**

This refers to a group of people who have been purposefully assembled at a place to take part in a discussion on a topic of relevance. The participants of a focus group are chosen keeping in view certain common characteristics that relate them to the topic of discussion. The environment in a focus

Group is open and interactive, so that the participants feel free to express their ideas and opinions. Focus groups provide a lighter and open arena for discussion, as compared to a personal interview. They are more similar to a semi-structured interview, but the objective is more than just collection of data from many respondents simultaneously.

**Questionnaire and Schedule:**

These are devices used to collect data through a series of questions and other similar prompts from a group of respondents. However, the questions are prepared keeping in mind the fact that the participants will have to fill the answers to questions themselves. It is feasible to even mail or email the questionnaire to the target group, or it can be given to them by hand and be collected after some time.

**Observation:**

Is defined as “the systematic description of events, behaviors, and artefacts in the social setting chosen for study” (Marshall &Ross man, 1989). Through the mode of observation, the researcher gets to describe situations as they exist, by making use of five senses, thus presenting a sketch of a situation under study (Erlandson, Harris, Skipper, & Allen, 1993).

Observation technique allows for noting people’s behavior when they are not aware of it (Cargan, 2007) and also lets the researcher to look for nonverbal cues about feelings, check the pattern of interaction (who talks to whom), observe how participants interact, and also record the time they spend in different activities (Schmuck, 1997).

**Case Study**

A case study is an in-depth investigation about a person, group, situation or occurrence. It involves collection of data from various sources employing a mix of different methods, whichever appropriate. Case studies are used in researches where a deep probe and understanding of the issue is required. This method is used widely in many social science studies, especially in conducting research on issues relating to “education ,sociology, and community based problems such as poverty, unemployment, drug addiction, illiteracy”, among others (Zainal, 2007). Advantages of using case studies are (McLeod, 2008): They give detailed information. Provide cues for further research, allow probing of situations which are difficult to investigate.

**Ethnography**

This is the study of societies and cultures in a systematic way. It observes, records and analyses people belonging to a society in their natural ‘environment’ settings or ‘fields’. The data is gathered by methods aimed to capture their regular activities and social meanings related to them.

Ethnography is one of the cheap methods used for collection of qualitative data in social sciences because it provide specific and in-depth accounts of the customs, traditions, habits, and mutual differences of different societies and cultures

**Oral History**

Oral history is the method of recording, preserving and interpreting historical information obtained from first-hand from people, from their past experiences and memories. People are interviewed and their accounts are documented, which are then preserved as an aural record for future. The researcher can make use of audio and video tapes, and transcriptions from interviews.

The interview is carried out by the researcher by spending extended time with the participant, listening to the accounts through storytelling and narration. Oral history, though seems to be similar to in-

**Qtn 8. What is Auditing?**

Auditing is the process of assessment and ascertaining of financial, operational, and strategic goals and processes in organizations to determine whether they are in compliance with the stated principles in addition to them being in conformity with organizational and more importantly, regulatory requirements.

**Qtn 9. List the types of organizational structure in project management**.

Line organizational structure.

Functional authority organizational structure.

Line and staff organizational structure.

Committee organizational structure.

Divisional organizational structure.

Project organizational structure.

Matrix organizational structure and

Hybrid organizational structure

**Qtn 10.Explain conflict management.**

Conflict refers to any situation in which there are incompatible Goals, Cognitions, or Emotions within or between individuals or groups that lead to opposition or antagonistic interaction.

The definition recognizes three basic types of conflict:

Goal conflict is situation in which desired end states or preferred outcomes appear to be incompatible.

Cognitive Conflict is a situation in which ideas or thoughts are inconsistent.

Affective Conflict is a situation in which feelings or emotions are incompatible; that is, people literally become angry with one another. Conflict is very common in organizational settings. This is not necessarily a negative feature; the resolution of conflict often leads to constructive problem solving.

Effective conflict management succeeds in (1) minimizing disruption stemming from the existence of a conflict, and (2) providing a solution that is satisfactory and acceptable. We describe efforts directed towards containing or limiting some aspects of behavior as strategies of conflict settlement and efforts directed towards the parties' attitudes, situations as well as behavior as strategies of conflict resolution. Skilled administrators are aware of these methods and techniques and know how to utilize them effectively

However, according to Vecchio (1995) there advanced five conflict management strategies. They are: forcing, collaborating, accommodating, avoiding and compromising. The forcing approach attempts to overwhelm an opponent with formal authority, threats, or the use of power.

The underlying features of this style are assertiveness and uncooperativeness. It is a dominating approach to conflict management which represents a maximum focus on meeting private concern and minimal focus on meeting the concerns of the other group.

The collaborating procedure is a combination of assertiveness and co-cooperativeness. Collaboration involves an attempt to satisfy the concerns of both parties through honest discussion. For this strategy to be successful, trust and openness are required of all participants.

Accommodating approach of conflict management combines unassertiveness and cooperativeness, and may involve giving in to the other party’s wishes. From the above source, it is further observed that accommodating behavior may be motivated by the desire to be charitable or pro-social and this approach appears to be the best for a party in a truly weak position.

Avoiding, is the combination of unassertiveness and uncooperativeness’ which leads to an avoiding style. This strategy assumes that a person will either improve or worsen a conflict situation

Some researchers suggest that negotiation/bargaining, mediation, arbitration, conciliation and strike can suffice in conflict management (Roberts, 1991). Of these factors, conciliation is singled out and defined as a process of peace making and a human institution that is useful in all fields of human activities: domestic, business, national and international political conflicts.

Conflict management can be perfected through preventive and control procedures. Preventive measures refer to procedures that are initiated in order to avert conflict. This is apparently the most suitable pattern of conflict management, which is in accordance with the maxim of ‘prevention is better than cure’. The control measure is a management function of monitoring, regulating and checkmating conflicts that have already occurred so as to prevent it from getting out of hand

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**Section B**

**Qtn 11. Describe the concept of work breakdown structure in project planning**.

The WBS is described as a hierarchical structure which is designed to logically subdivide all the work-elements of the project into a graphical presentation. The full scope of work for the project is placed at the top of the diagram, and then sub-divided smaller elements of work at each lower level of the breakdown. At the lowest level of the WBS the elements of work is called a work package where a list of project’s activities are developed from the work packages.

Effective use of the WBS will outline the scope of the project and the responsibility for each work package. Nevertheless there is not necessarily a right or wrong structure because what may be an excellent fit for one discipline may be an awkward burden for another.

The work breakdown structure (WBS) is the breakdown of the project into its component parts in a reasonable and methodical manner. It is a vital tool which helps in determining all the activities and putting them in order or a sequence. It also helps in effective planning and proper execution of the project, serves as an efficient planning and reporting tool in the area of project management (Phillips, 2003).

The structure explains the series of activities which are to be performed to complete the project successfully. A project manager can develop the project schedule and can identify the resource required in the project.

**Qtn 12. What do you mean by budget uncertainty? How risk is managed in projects**

An uncertainty budget is an itemized table of components that contribute to the uncertainty in measurement results. It reveals important information that identifies, quantifies, and characterizes each independent variable. With respect to measurement quality, it is an essential tool typically utilized by physicists, engineers, and metrologists to perform uncertainty analysis.

Risks are internal or external events that may occur during project implementation and could threaten the achievement of project objectives and the project as a whole. A risk could be, for example, a partner dropping out or a key change in policy that goes against what the project is trying to achieve. Identifying risks and outlining contingency measures for when they happen should be a task for every partnership, regardless of whether this is required by the programme or not. This process involves three steps:

**Identifying risks.**

To identify risks you can look at possible sources of risk or at the threats / problems that can become risks. Sources include the team members, stakeholders, sub-contractors, target groups, etc. Problems could be, for example, a change in the political environment or the loss of money through decommitment.

A good way to identify relevant risks and to managed best can be an open brain-storming session at one of the partner meetings either during the project development stage or very early on in the start-up phase on ‘What can go wrong?’’ All partners should be involved in this process to a) raise their awareness about possible risks, and b) to identify as many relevant risks as possible (especially with reference to different countries, legislations, sectors, and types of organizations involved).

**Assessing risks**

Once potential risks have been identified, they need to be qualified according to their impact on the project and their probability of occurring. As with most other aspects of planning, the assessment of probability can often only be based on assumptions and educated guesses. The impact, however, can often be estimated in relation to the budget and time lost or indicators not achieved. This assessment allows projects to priorities risks – the ‘high risk’ decisions and actions have to be taken first.

**Dealing with risks**

When a problem occurs it is often too late to take any preventive or alternative actions. The project manager and partners concerned have therefore to decide in advance how to handle each risk while there is sufficient time. Possible approaches are:

**Ignore the risk.**

This is sensible for risks with a low impact, or where the resources to develop alternatives would be greater than the impact of the problem, or if the probability is low but implications would be so substantial that the project cannot compensate for them anyway. Example: Natural disasters.

Identify alternative ways to remove the risk. This is usually the approach to take for risks with high impact and high probability. Example: The project success depends on political support in all participating regions. It is known that the regional government in one of the participating regions could lose the regional elections that will take place in the middle of the project implementation.

Have a contingency plan to reduce the impact of problems that do happen. This does not remove the risk but is a temporary solution. Example: The project developer has been the driving force behind developing the idea and bringing the partnership together. He/she is a key asset in the project. A plan must be made for the loss of this member of staff, ensuring that their knowledge and ideas are communicated to other people in the organization so the project can continue without them, if necessary.

**Qtn13. How resource loading and levelling are done in project resource allocation?**

Resource loading is the process of allocating resources that include the manpower or employee to planned project activities. With an aim of resource leveling is to allocate resource efficiently, so that the project can be completed in the given time period.

Resource loading is done in such a way that, each employee is assigned a task or a percentage of a project as 25% whole to complete. Then the employee is assigned other tasks until he or she reaches 100 percent booked. This would then mean that the employees cannot take on any additional work.

With resource loading, a project manager can predict an employee's hours for the year and see how tasks can be assigned. This also allows the project manager to decide whether or not additional employees or contractors are needed to complete the scheduled projects.

Resource loading increases the chance that a project will not be completed on time because employees are overloaded with projects.

Resource leveling generally breaks things down into two categories: time and available resources. Some projects need to be finished within a certain time frame. These projects will use all the available resources (money and manpower) to complete the project by a certain date

For resource leveling to take place, resources are delegated with tasks (deliverables), which needs execution. During the starting phase of a project, idealistically the roles are assigned to resources (human resources) at which point the resources are not identified.

**Qtn .14 explain the concepts Goldratt’s critical chain in project scheduling**

Critical Chain of project scheduling is a management approach that leads to a significant improvement in project performance. This is achieved by modifying team behavior to eliminate bad work habits. Other changes include the aggregation of safety in the form of buffers, which protect the project completion date.

According to Goldratt, delaying the work of the project to more closely follow the late schedule has the advantage of allowing the project team to learn from the experience and knowledge gained in doing other parts of the project?

But traditionally, project schedules have four dates associated with each activity: early start, early finish, late start, and late finish. Most project managers use the early schedule dates to schedule their projects. This means that if all the activity work takes place in the early starts and early finish dates, that work is done as soon as possible. It also means that if anything goes wrong, there will be the maximum amount of time available to do the work needed to recover from the problem.

To use Goldratt’s terminology, a project schedule has critical and noncritical chains of activities. The critical chain of activities is the traditional critical path but includes the effect of resources on the schedule. This means that the critical chain is the list of activities that have no float after any resource conflicts have been resolved. This is really the definition of the critical path as it is normally used. Though sometime it is misleading that nearly all of the examples, including ours, calculate the critical path without showing the effect of resource conflicts.

All the activities in the project that are not on the critical chain are, by definition, noncritical activities and have some float associated with them. In real projects these activities tend to group themselves together to form subprojects within the project.

**To set our schedule correctly, taking all of these factors into consideration, we need to do the following:**

Calculate the critical chain of the project after resolving resource conflicts and all of the resource and other schedule constraints.

Buffer the critical path by calculating a two standard deviation buffer and applying it by starting the project earlier than the early start date or promising the stakeholders a project completion date later than the early finish date of the project.

Group the feeder chain activities into feeder chains.

Calculate the two standard deviation buffer for the feeder chain and schedule the activities in the feeder chain according to their late schedule dates minus their buffer.

By scheduling this way the feeder chains has a greater probability of being completed within their buffered schedule and not affecting the critical chain activities. The critical chain activities are also buffered so that the probability of missing the buffered promise date of the project completion is 95 percent.

**Qtn15. How the projects are planned, monitored and controlled in cycle process?**

Project are planned in a such a way that you first have to be initiate and Identify or gather all relevant information or specific work to be performed and the goals that define the project, Provides documented estimates regarding schedule, resources and cost for planning, tracking, and controlling the project .Obtains organizational commitments that are planned, documented, and agreed upon ,Continues the development and documentation of project alternatives, assumptions, and constraints and establishes a baseline of the plan from which the project will be managed.

**Monitored**

Monitoring is a continuous process that tracks what is happening within a program and uses the data collected to inform program implementation and day-to-day management and decisions.

Project are monitored based on results/ impacts and this is where monitoring merges with evaluation to determine if the project is on target towards its intended results (outputs, outcomes, impact) and whether there may be any unintended impact (positive or negative). For example, a psychosocial project may monitor that its community activities achieve the outputs that contribute to community resilience and ability to recover from a disaster (IFRC, 2011, P.12)

Project are monitored on Process (activity), monitoring tracks the use of inputs and resources, the progress of activities and the delivery of outputs. It examines how activities are delivered – the efficiency in time and resources. It is often conducted in conjunction with compliance monitoring and feeds into the evaluation of impact (IFRC, 2011, P.12).

Donor regulations and expected results, grant and contract requirements, local governmental regulations and laws, and ethical standards (IFRC, 2011, P.12).

Context (situation) monitoring tracks the setting in which the project operates, especially as it affects identified risks and assumptions, but also any unexpected considerations that may arise. It includes the field as well as the larger political, institutional, funding, and policy context that affect the project. For example, a project in a conflict-prone area may monitor potential fighting that could not only affect project success but endanger project staff and volunteers (IFRC, 2011, P.12). 13

Beneficiary monitoring tracks beneficiary perceptions of a project. It includes beneficiary satisfaction or complaints with the project, including their participation, treatment, access to resources and their overall experience of change. Sometimes referred to as beneficiary contact monitoring (BCM), it often includes a stakeholder complaints and feedback mechanism. It should take account of different population groups, as well as the perceptions of indirect beneficiaries (IFRC, 2011, P.12).

Financial monitoring accounts for costs by input and activity within predefined categories of expenditure. It is often conducted in conjunction with compliance and process monitoring. For example, a livelihoods project implementing a series of micro-enterprises may monitor the money awarded and repaid, and ensure implementation is according to the budget and time frame (IFRC, 2011, P.12).

Organizational monitoring tracks the sustainability, institutional development and capacity building in the project and with its partners. It is often done in conjunction with the monitoring processes of the larger, implementing organization (IFRC, 2011, P.12)

Project control

Project control is the process of comparing project actual performance against plan to identify deviations, evaluate possible alternative courses of actions, and take appropriate corrective action. The project control steps for measuring and evaluating project performance are setting an 18 baseline plan, measuring progress and performance, comparing plan against actual and taking corrective action (Erik & Clifford, 2011, P.454).

The baseline plan provides us with the elements for measuring performance. The baseline is derived from the cost and duration information found in the work breakdown structure (WBS) database and time-sequence data from the network and resource scheduling decisions. From the WBS the project resource schedule is used to time-phase all work, resources, and budgets into a baseline plan.

The organizations must ensure projects deliver the expected benefits which are used to justify the money spent and with the specified schedule and the required specification. The structured process for checking progress and take action to overcome any deviations from plan by the organizations is due to project controlled mechanism.

During implementation, controls are designed to bring actual project status back into a balance with the project plan. Both organizations have plans to control projects in case the projects are away from the right track. Both organizations develop project control activities that contribute to the mitigation of risks to the achievements of project objectives to acceptable levels. Timely project monitoring and communication for decision making process to bring the project to the right track, taking of adequate and timely action to control project deviation, expending project funds for only allowable project activities and documentation of lessons learn reports and uses for future projects are also used by MoA and EIAR in order to control agricultural projects. The result revealed that mean for the agricultural project control is between 3.37-3.73, 2.94-3.64 and 3.89-4.17 for the aggregate, MoA and EIAR respectively with a Likert rating scale of 1-5 (Table 7). All the scale items in agricultural project control, means are above the average only developing risk mitigation strategy in the MoA is a little bit below the average (mean=2.94). The organizations verify project progress, examine constraints to progress, implement timely corrective actions in order to ensure the project effectiveness (doing the right activities) and operational efficiency (doing the activities right).

**Qtn 16.What are the methods used in evaluating, auditing and terminating a project**

The most frequently mentioned and described static methods are:

The payback period

Account of comparative costs

Account of comparative profit

Account of comparative profitability

The average rate of return on investment

Test of the first year

For evaluation of investment projects, more common is the tendency to use the dynamic methods that includes.

NPV - net present value

IRR - Internal rate of return

MIRR - Modified Internal Rate of Return

Annuity method

The profitability index

NPVR - Indicator revised of net present value

**Methods of auditing a project**

Auditing is defined by the Chartered Institute of Internal Auditors as ‘an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

The following methods are recommended for the project auditing:

Review of appropriate board minutes and documentation Review of stage gate (gateway) approvals Schedule of delegated authority.

Review of approved business case to identify responsibilities and ensure that business case template and guidance is available.

Review of approved business case to assess extent of compliance.

Review of cost methodology and processes based on approved business case Review of approved business case. Ensure that cost of risk has been accounted for Review whether additional funding should be sought to enable successful delivery.

Review of schedule and program methodology and processes Review of approved business case

Assessment of change control mechanisms applicable to project and that business case is routinely updated.

Review of approved business case – scope must be clear and unambiguous Assessment of change control processes Schedule of delegation in PID or approved business case.

Review of PID and approved business case to ensure clarity of scope and planning

Review of project governance arrangements including authorization to start projects

**There are four fundamentally different methods of terminating a project (Meredith and Mantel 2000, 540–545):**

Termination by extinction. The project may be stopped because it has been either successful, or unsuccessful. Examples of successful projects include the launch of a software program; the inauguration of an automobile production line; and, the completion of a new school building. Unsuccessful projects may include a drug manufacture that has failed efficacy tests; a project that is no longer cost-effective; and, a disposal site that has failed to meet environmental standards.

Termination by addition. This is where a project is made more or less an external, but full-fledged addition to the parent organization. For example, a new department of a university would be built as an extension of existing university facilities, to operate with substantial independence from other segments of the institution.

Termination by integration. This is the most common way of dealing with successful projects, and the most complex. The output of the project becomes part-and-parcel of the operating systems of the parent or client, becoming embedded in day-to-day operations. This requires thorough integration with primary operations at various levels, distributing the output among existing functions.

Termination by starvation. As the term suggests, the financial, human, and material resources needed to execute the project are curtailed or withheld. The project is effectively dead, and merely on minimal life-support system for legal reasons. Termination by murder, or “projecticide” is an interesting variation, where the incomplete project is terminated without warning.

Another can be Termination by suspension. In some cases, a project may be suspended or shelved for a period, and resumed at some future point. A pharmaceutical product that needs input from the product of a forthcoming project is an example where it is pointless to continue the project until the key ingredient is available.

**Qtn17. Explain in detail the functional organizational and matrix organizational structure?**

A functional organization is one in which work is organized on the basis of specialization. This form of organization was devised by F.W. Taylor, the father of Scientific Management.

Functional Organizational Structure has developed from increasing complexity of business operations, par­ticularly in production department, and the need to have specialists to aid line personnel. Functional organization in one form or the other exists in all business concerns, particularly at the top. The very division of the total activities of a business concern under production, marketing, finance and person­nel, is an example of functional organization.

**Features of Functional Organizational Structure**

**Following are the features of functional organization,**

The whole task of the organization is divided into different functions.

Each function is performed by a specialist.

The functional head is in charge of the activities of his function in the whole organization.

Functional heads operate with considerable independence.

**Advantages of Functional Organizational Structure**:

Functional organization has the following advantages:

**Specialization:**

This type of organization has the benefit of having specialists in each area. The work is performed by those who have the specialist knowledge of that work. The workers have the advantage of getting instructions from specialists. This makes possible the fullest use of energy in the organization.

**Increase in Efficiency**:

There is a division of labor up to manager level. Planning and execution are also separated. This helps to increase the overall efficiency in the organization. The workers get guidance from expert supervisors and this enhances their performance at work.

**Scope for Growth:**

The functional organization provides wide scope for growth and mass production. The employment of specialists at various levels of work enables the organization to grow as per the needs of the situation.

**Flexibility**

Functional organization allows changes in organization without disturbing the whole work. The span of supervision can also be adjusted according to the requirements.

**Relief to Top Executives:**

Top executives are not unnecessarily burdened as happens in line organization. The line officer is supposed to be a jack of all trades and is burdened with all types of works. On the contrary a specialist is a master of his line and he has the expertise and capability of taking his own decisions.

**Economy of Operation**

The use of specialists helps in controlling the waste of materials, money and time. The consolidation of activities leads to optimum use of facilities like office accommodation, plant and machinery, etc.

**Better Supervision**:

Every superior is an expert in his own area and he will be successful in making proper planning and execution. The superiors being well acquainted with the work, they will be able to improve the level of supervision.

**Democratic Control:**

This type of organization eliminates one man control. There will be a joint control and supervision in the organization. This boosts the morale of employees and also enthuses a sense of co-operation among them. The democratic approach motivates workers to go deep into their work and make suggestions for work improvement.

**Disadvantages of Functional Organizational Structure:**

Following are the disadvantages of functional organization:

**Conflict in Authority:**

The principle of ‘unity of command’ is violated in functional organization. A subordinate is answerable to many bosses. Every superior considers his work important and wants the workers to give top priority to his assignment. The workers feel confused and are unable to decide about the priorities of their work.

**Lack of Co-Ordination:**

The appointment of several specialists creates problems of co-ordination, especially when the advice of more than one is needed for taking decisions. Specialists try to give more importance to their work as compared to other areas. This creates conflicts among specialists and co-ordination becomes a problem.

**Difficulty in Fixing Responsibility:**

Since there is no unity of command, it becomes difficult to fix responsibility for slackness in work. So many persons are involved in completing a work and everybody tries to blame others for low performance.

**Delay in Taking Decisions:**

The involvement of more than one person in decision-making process slows down it. The speed or action tends to be hampered by the division of authority. Much time is taken in consulting different specialists prior to decision-making.

**Poor Discipline:**

The division of authority creates problem of discipline. The workers have to obey many bosses, their loyalty becomes divided. Discipline tends to break down not only among workers but also among lower level supervisors.

**Expensive:**

Multiplicity of experts increases overhead expenses of the organization. A number of specialists are appointed for manning various lines of work. These persons being specialists, they demand much higher emoluments. Small units cannot afford to have functional organization.

**Group Rivalries**:

The emergence of many persons of equal status encourages group rivalries among executives. Persons connected with different fields try to create their groups and then rivalry starts among these groups. Every group tries to dominate the other. The growth of the unit is adversely affected in a vicious atmosphere.

**Matrix organizational structure**

According to Stanley Davis and Paul Lawrence, matrix organization is, “Any organization that employs a multiple command structure but also related support mechanisms and an associated organizational culture and behavior pattern”.

**Matrix Organizational Structure – Features, Advantages and Limitations**

Matrix organization, also called grid organization, is a hybrid structure combining two complementary structures namely, functional depart- mentation with pure project structure. Functional structure is a permanent feature of the matrix organization and retains authority for the overall operation of the functional units.

Project teams are created whenever specific projects require a high degree of technical skills and other resources for a temporary period. Functional departments create a vertical chain of command while the project teams form the horizontal chain. The functional or vertical line of authority intersects product or horizontal lines, thereby forming a matrix or grid.

Matrix organization is a two dimensional structure, a combination of pure project structure and the traditional functional departments. Members of a particular project team are drawn from the functional departments and are placed under the direction of the project manager.

The project manager has overall responsibility for the success of the particular project. He has authority over the members of the project staff. On the completion of the project, the project team is dissolved and its members including the project manager revert or return back to their respective departments for reassignment to new projects. They may again be deputed to another project.

**Matrix organizational Structure – Advantages and Disadvantages**

Matrix organization represents a middle course. Project and functional organizations exist side by side in a matrix structure. Matrix organizations are combination of vertical as well as horizontal relationships and are extremely useful in meeting the challenges of new and complex problems. According to Fred Lathan’s, “The matrix organization is a project organization plus a functional organization rather than a variation of a project organization”.

**Advantages:**

Matrix organization provides the pooling of talent in interdepartmental and interdisciplinary projects.

The services of qualified and experienced functional personnel can be utilized in a number of projects.

Representative of different departments work together under the lateral coordinating influence of the project managers.

There is the emphasis on timely completion of the projects.

The projects members retain their contract with their parent department.

Top managers can delegate on-going decisions to project managers and leave themselves free to perform more urgent task.

There is a big contribution in the process of decision-­making.

Members of the organization are exposed to new and complex problems, which enlarge their experience and provides them an opportunity to show their worth.

Knowledge and experience can be transferred from one project to another.

**Disadvantages:**

Role ambiguity feature of matrix structure has an in-built mechanism for generating conflict between project and functional managers.

Managers as well as subordinate are overburdened with work.

The responsibility for the successful completion of a project lies squarely on the shoulders of the project manager while authority is shared between him and the functional heads.

Authority and responsibility are overlapped.

It enlarges the organizational structure.

It also violates the principle unity of command.

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