LIS 412 Project Management and Evaluation

COURSE GUIDE

Course Code:	LIS 412
Course Title:	Project Management and Evaluation
Credit	Unit: 2
Course Status:	Compulsory
Semester:	1st
Required Study Hour:	4 hours per week
Edition:	First
Course	
Team: Course Developer:	Ibegbulam, Ijeoma J. PhD, CLN
Course Writer:	Ibegbulam, Ijeoma J. PhD, CLN
Course Editor:	Professor Philip Usman Akor

NATIONAL OPEN UNIVERSITY OF NIGERIA

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Ice Breaker

Upload your passport and introduce yourself by stating your names, what you do for a living, your hobbies, your expectation in this course and the name you would prefer to be called during this course.

LIS 412 (Project Management & Evaluation)

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LIS 412 (Project Management & Evaluation)

Course Guide

Introduction

Welcome to LIS 412: Project Management & Evaluation. This is a two-credit (2-CR) unit course that is compulsory for all the undergraduate students in the department. The course is designed to enable you to broaden your understanding of project management and evaluation as it applies to different types of projects. This will facilitate an excellent successful academic journey and enhance your personal development and increase your knowledge base in the area of project management and evaluation especially as many more organisations are beginning to appreciate the role of the project management approach in executing tasks in organisational success. It is also hoped that this course will give you the basic insight and knowledge you need to function on projects.

Course Objectives

By the end of this course you will be able to:

i. Define a project, project management, and evaluation as well as its scope.
ii. Understand different types of projects, their characteristics, and their objectives.
iii. Understand projects in organisation structure
iv. Appreciate the project management process
v. Understand who a project manager is, types of project managers, selection, roles, and responsibilities of a project manager.
vi. Examine more closely project evaluation and post-project evaluation
vii. Understand some issues that are associated with project management

Working Through this Course

This course consists of both theoretical and practical parts. To complete this course successfully, you are required to go through the modules and carefully read the study units, do all practical exercises and assessments and also explore the references provided for more in-depth knowledge of the course. Some recommended books and other materials that you are to read are available to you. Ensure that you read them and also attend the practical sessions of this course. Always participate in the online facilitations going on in your study centre. Each unit of study has an introduction, objectives you should achieve at

the end of the study, and a summary and conclusion informing you in a nutshell of what you studied in the unit. Above all, there is the Tutor-Marked Assignment (TMA) to evaluate what you have learnt. You can download the courseware into your device so that you can study it whenever you are offline.

Each study unit has an introduction, intended learning outcomes, the main content, summary conclusion, and references/further readings. The introduction opens the door to each unit and gives a glimpse of the expectations in the study unit. Read and note the intended learning outcomes (ILOs) which outline what you should be able to do at the completion of each study unit. This will help you evaluate your learning at the end of each unit to ensure you have achieved the designed objectives (outcomes).

Study Units

There are 15 study units in this course divided into five modules. The modules and units are presented as follows:

Module 1: Project

Unit 1: Concept of Project

Unit 2: Concept of Project Management

Unit 3: Project Initiation

Unit 4 Project Planning

Unit 5 Project Budgeting

Module 2 Project Organisation

Unit 1 Functional Organisation Structure

Unit 2 Pure Project Organisation Structure

Unit 3 Matrix Organisation Organisation Structure

Module 3 Resources in Project Management

Unit 1 Definition of Project Resource

Unit 2 Resource Management

Module 4 Project Evaluation

Unit 1 Concept of Project Evaluation

Presentation Schedule

The presentation schedule gives you the important dates for the completion of your computer-based tests, participation in forum discussions, and facilitations Remember, you are to submit all your assignments at the appropriate time. You should guide against delays and plagiarism in your work. Plagiarism is a criminal offence in academics and is liable to heavy penalty.

Assessment

There are two main forms of assessments in this course that will be scored: the continuous assessments and the final examination. The continuous assessment shall be in three-folds. **There will be two Computer-Based Assessments. The computer-based assessments will be given in accordance with the University academic calendar. The timing must be strictly adhered to.** The Computer-Based Assessments shall be scored a maximum of 10% each, while your participation in discussion forums and your portfolio presentation shall be scored a maximum of 10% if you meet 75% participation. Therefore, the maximum score for continuous assessment shall be 30% which shall form part of the final grade. The final examination for LS 412 will be a maximum of two hours and it takes 70 per cent of the total course grade. The examination will consist of 70 multiple choice questions that reflect cognitive reasoning.

Note: You will earn a 10% score if you meet the minimum of 75% participation in the course forum discussions and in your portfolios otherwise you will lose 10% of your total score. You will be required to upload your portfolio using Google Docs. What are you expected to do in your portfolio? Your portfolio should be notes or jottings you made on each study unit and activity.

How to Get the Most from the Course

To get the most in this course, you need a functional laptop and access to the Internet. This will make studying and learning easy and the course materials accessible anywhere and anytime. Use the Intended Learning Outcomes (ILOs) to guide your self-study in the course. At the end of every unit, examine yourself with ILOs and see if you have achieved the outcomes.

Carefully work through each unit and make your notes. Join the online real-time facilitation as scheduled. Where you miss a schedule for online real-time facilitation, go through the recorded facilitation session at your convenience. Each real-time facilitation will be video recorded and posted on the platform.

In addition to the real-time facilitation, watch the video and audio recorded summary in each unit. The video/audio summaries are directed to the salient points in each unit. You can access the audio and videos by clicking on the links in the text or through the course page.

Work through all self-assessment exercises. Finally, obey the rules in the class.

Facilitation

You will receive online facilitation. The facilitation is learner-centred. The mode of facilitation shall be asynchronous and synchronous. For the asynchronous facilitation, your facilitator will:

- Present the theme of the week;
- Direct and summarise forum discussions;
- Coordinate activities on the platform;
- Score and grade activities when needed;
- Upload scored into the university recommended platform;
- Support and help you to learn. In this regard, personal mails may be sent;
- Send videos, audio lectures and podcasts to you.

For the synchronous:

- There will be eight hours of online real-time contact in the course. This will be through video conferencing in the Learning Management System. the eight hours shall be of one-hour contact for eight times.
- At the end of each one-hour video conferencing, the video will be uploaded for viewing at your pace.
- The facilitator will concentrate on the main themes that a must know in the course.
- The facilitator will take you through the course guide in the first lecture at the start date of facilitation.

  Do not hesitate to contact your facilitator. Contact your facilitator if you:
- Do not understand any part of the study units or the assignments
- Have difficulty with the self-assessment exercises.
- Have any questions or problems with an assignment or with your tutor’s comments on your assignment.

Also, use the contact provided for technical support.

Read all the comments and notes of your facilitator especially on your assignments; participate in the forums and discussions. This gives you the opportunity to socialise with others in the programme. You can discuss any problem encountered during your study. To gain the maximum benefit from course facilitation, prepare a list of questions before the discussion session. You will learn a lot from participating actively in the discussions.

Finally, respond to the questionnaire. This will help the university to know your areas of challenges and how to improve on them for the review of the course materials and lectures.

Contents

The future is yours, so embrace it. You may not know what the road ahead has to offer, but you can prepare yourself to achieve. Remember to carefully and thoughtfully take it step by step. Reaching your goals can be challenging. You may encounter several twists and turns. But in the end, you will have succeeded.

Ford, Knight & McDonald-Littleton

Module 1: Projects

Unit 1: Concept of Project

Contents

1.0 Introduction

Examining the concept of project serves as the foundation upon which we will lay the course: project management and evaluation. This unit introduces you to the concept of project. In it also, you will understand the different types and characteristics of projects. Because organisations are usually faced with the difficult task of what projects to engage in, this unit will also help you to understand project selection/criteria for choice. Finally, you will be exposed to some project selection methods. It will also consider the scope of project management.

2.0 Intended Learning Outcomes

By the end of this unit, you will be able to understand and define the various definitions and meanings of the concept of project. You will also be able to determine the various types and characteristics of projects as well as project selection, criteria for selection, and finally, project selection methods.

3.0 Main Content

3.1 Definition of Project

A good place to begin in this module is to ask the question "what is a project?" The definition of the concept of project may vary within the context of use. To that extent, one can say that there is no universal definition of the concept. However, in project management, project can simply be described as a series of tasks that need to be completed to reach a specific outcome or goal within a specified time frame. It is "a temporary endeavour with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value" (Nokes (2012). Bridge Group cited in Project Management Book of Knowledge (Project Management Institute, 2017) says it is "a related set of activities and milestones with a preset goal and time frame that is designed as a specific event and not an ongoing process…a temporary endeavour undertaken to create a unique product or service."

The temporary nature of project proceeds from the fact that a project has a definite start and end date. In the same vein, the uniqueness is because the product or service is different from all similar products or services. A project can come either as a unique product or service. In other words, there are different types of projects and again even if you are carrying out two similar projects, each is distinct and by implication unique. They are also temporary and time-bound, as a result, it is not expected that a project should last forever.

In another definition, Turner(2004) sees project as an endeavour in which human (or machine), materials, financial, and knowledge resources are

organised in a novel way, to undertake a unique scope of work of given specification, within constraints of cost and time, so as to deliver quantitative, qualitative, and consumer-oriented product and service. This definition makes us understand that a project must have deliverables that meet the needs of the customer (s) i.e there is an outcome.

According to Harrison & Locke (2004), a project is a “non-routine, non-repetitive, one-off undertaking, normally with discrete (individually separate and distinct) time, financial and technical performance goals.” The point that is being emphasised here is that projects are not undertaken just for the sake of it. Rather, projects are initiated and executed to solve a problem or take advantage of an opportunity. For example; the construction of a new library building is a project which is aimed at providing a space to meet the informational, educational, and recreational needs of members of a community of users, be it academic or what have you.

It is also possible that a building can be built for financial gains as we have with rented apartments. In either case, the construction of a library building or any building for that matter is a one-time, non-routine, non-repetitive activity, and the project will have a start date and a completion date. You should differentiate a project such as that from the routine library operations that we carry out daily when we report to work. Library operations or work operations in other organisations that are routine and form part of their daily activities are not classified as projects.

Taking the example of a library building which is a construction project, we have to understand that every construction project is unique by itself and will involve many activities such as clearing the site, pegging and marking out the ground, construction of foundations, etc. This is the case with all building construction projects. The activities involved in constructing a building have to be broken down into a series of tasks that on completion of the series of tasks, it will ultimately result in having a physical building. That is why Najaragan (2012) adds that a project is accomplished by performing a set of activities. In our example above, the final goal or outcome is to have a library building that is built according to laid down specifications. Before the project can be deemed successfully completed, therefore, the construction should meet programmed specifications and should be completed on time and within the budget allocated. If it does not meet the specifications, it cannot be deemed successful. Be that as it may, projects come in different forms and sizes. They range from the simple to the complex and can be managed by any number of persons-- one person or a hundred persons as the case may be. The more complex a project is, the more resources that will be required, be it human or material.

In the case of a building project, we can understand more clearly what is meant by a series of activities that are involved from the table below

Table 1: Major Activities in Building A Custom Home

Event	Description	Time	Preceding (weeks) activity
A	Approve design and get permits	3	None
B	Perform excavation/lot clearing	1	A
C	Pour footers	1	B
D	Erect foundation walls	2	C
E	Frame house	4	D
F	Install windows	0.5	E
G	Shingle roof	0.5	E
H	Install brick front and siding	4	F, G
I	Install electrical plumbing, and Heating and rough-ins	0.25	A/C
J	Install insulation		
K	Install Sheetrock	2	J
L	Finish and sand Sheetrock	7	K
M	Install interior trim	2	L
N	Paint house (interior and exterior)		H,M
O	Install cabinets	0.5	N
P	Install flooring	1	N
Q	Final touch-up and turn house overto home owner	1	O, P

Source: Robbins, Stephen P., DeCenzo, David A. and Coulter, Mary

A good look at Table 1 above shows that the project name is “Construction of Custom Home.”

The hierarchy or series of tasks or activities that are involved are labeled A-Q, each with its individual description. The time frame (in weeks) for performing each activity is spelled out and the activities that can go on at the same time and those that must be completed before the next one can begin are also labeled. A delay in one task translates to a delay in the next task and will ultimately affect the completion date of the project. In essence, when we are talking about a project it is important that we know the specific goals of the project, the start date and the conditions within which it will be executed. It is also important to define responsibilities, plan the budget, fix the end date for the project, and identify the parties that will be involved in executing each of the tasks or activities.

Another thing to note is that projects cost resources in the form of men, material, money and time and it is expedient that these resources are available for a project to be completed. It is equally important that all these resources are properly allocated and managed to get the desired outcome or deliverable. Therefore, projects are usually an organised unit with the aim of attaining a definite goal. There is always time duration for any project as well specification according to the needs of the end-user. Each project is executed within a budget that is reflective of the specification and the expectation is that the project will be completed within the projected time as well as meet specifications. Anything short of this is not desirable.

In summary, a project is the purposed outcome consisting of a series of tasks/activities to be carried out within a specified time and financial constraints. Therefore, there is recognition that projects are subject to constraints, especially funds, and this can affect the completion time. Furthermore, projects vary in size and scope, from the construction of a cathedral to an activity as seemingly mundane as planning a wedding.

Let us consider another project, say a library project such as automation. This will also involve a number of steps within which many activities will be involved. So as soon as a decision is taken to automate, all the activities/steps from planning to implementation will be outlined. This will also require that time and resources are carefully planned and allocated. The project is expected to run within specifications and there will be a need to monitor it as it goes on to ensure that it meets the specifications. The project will not be considered successful unless the deliverables are according to specifications and also meet performance standards and objectives for embarking on it in the first place. This takes us to the objectives of projects.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of the two is correct?

a. A project is completed by accomplishing a set of activities
b. A project is completed by properly defining the scope

3.1.1 Objectives of Projects

As observed, all projects have a set of objectives, goals or missions. It is only when the objectives are achieved that the project can be said to be completed. As shown in the Construction of a Custom Home diagram earlier, the objective of that project is to construct a custom home. As soon as the custom home is completed and certified alright in terms of functionality and performance, the project comes to an end. The same thing goes with your educational pursuit. You complete it the day your graduate because no one is expecting you to continue attending lectures after your successful graduation from a course. The only way you can continue attending lectures is if you gain admission into another programme or even the same programme. This time, it is a different educational pursuit. That is why we say a project has a start date and an end time. Therefore, the objective of a project depends on what it is meant to serve and also the requirements of the client. Generally, however, Sindjuha (n.d.) has outlined three project objectives as discussed below:

(i) To Ensure Function or Performance:

Every project has its objectives. The project objectives outline the project's goals and aims. The type and size of a project will determine the objectives therefore, one project can have just one objective while another project has several objectives that could be completed at various times in the course of executing the project.

Project objectives should be practical and implementable and limited within the scope of the project.

As observed, every project has its end-user. The end-user makes his specification according to what he wants. Therefore, the final result of any project must satisfy the requirements of the end-user. If for instance, the end-user wants a block of offices for leasing, the project has to produce a block of offices for leasing at the end of it and nothing less. Not only that, the building must satisfy the specified standards for performance, reliability, and safety. In

other words, the block of offices for leasing should not only be the final outcome, but at the end of the day, it is important that in terms of function or performance, reliability and safety, the project is delivered to satisfy the requirements of the end-user.

(ii) To Ensure Containment of Expenditure within Budget:

Project management aims at containing expenditure within budget because project execution is costly in terms of resources. Ensuring containment of expenditure within budget is a project objective.

At the planning stage, every effort is made to attach costs to activities. This gives an idea of the entire cost of the project. Baring serious unforeseen circumstances, it is expected that projects are carried out within the stipulated costs or something very close to it. This is a very important criterion for project success. In our example of a block of offices for leasing, it is obvious that this is a commercial venture. If the development costs of the building exceed what has been planned, it means that the project owner would have to lease his offices at a much higher cost than planned so that he can recoup his extra expenditure. However, increasing the cost of leasing may not be favourable because there are other competitors in the business. Therefore, if his block of flats is charged far above the prices charged by his competitors for the same product, it will affect his business. This is why it is important that projects are completed within their budgeted costs. It is also why containment of expenditure within budget is one of the objectives.

(iii) To Keep to Project Time Scale*:*

We have mentioned that projects are put on a time scale. The successful completion of a project within the time scale is important. This is important to ensure not only that the project does not overshoot its budget but also so that it can be put into use within the time planned. Assuming the end-user or project owner was targeting a time within which if he sells he will make the most gain, it is important that the project is fully developed and ready for the market within the stipulated time scale. This is also true of other kinds of projects be it products or services. This point is important if the project is one that has a known peak period of the business. Therefore, a major objective of a project is to see that it is executed within the stipulated time scale in order to remain within budget as well as meet the needs for its execution.

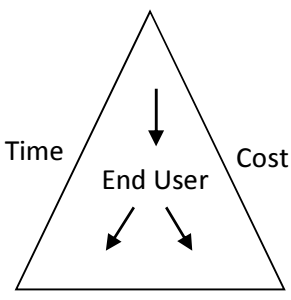

Fig. 1 Triangle of Project Objectives

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A project is a routine, repetitive, indefinite undertaking… a. True b. False

3.1.2 Types of Projects

It is important to consider the different types of projects in existence because in many cases when the word project comes up in a discussion, what normally comes to peoples' minds is construction work or construction site. However, that is only one type of project in the classification of projects.

Projects can take any form or shape. For instance, the development of software for an improved business process, the construction of a building, the relief effort after a natural disaster, the expansion of sales into a new geographic market are all examples of projects (Project Management Institute Book of Knowledge, 2021).

While appreciating that there are different types of projects according to their unique classifications, the classifications outlined by Nagajaran (2012) and Sindhuja (n.d.) will be discussed at length here. Nagarajan (2012:7-9) classifies projects under six headings as follows: (i) based on the type of activity; (ii) based on the location of the project; (iii) based on project completion time, (iv) based on ownership, (v) based on size, and (vi) based on need. These are discussed below

i. Based on the Type of Activity

Under this classification, projects are further classified under two broad headings: industrial projects and non-industrial or developmental projects. An example of an industrial project is a manufacturing project set up for the production of some goods. Under non-industrial projects, we talk about projects such as health care projects, irrigation projects, water conservation

projects, pest control projects, preservation projects and so on. Non-industrial projects are usually executed by the government and they are concerned with bettering the lives of the generality of people in the society. Although the products of such non-industrial projects cannot be quantified in terms of tangibles such as goods as we have in manufacturing projects, they are very important for the welfare of people and the general development the society. An electrification or water project will serve the purpose of providing light and water respectively to the citizens. This in turn betters their living conditions and enables them to be more productive in their individual pursuits.

Table 2. Difference between Industrial and Developmental Projects

Dimension	Industrial Project	Developmental Project
Scale of Project	Limited	Large
Promoters	Entrepreneurs or Corporates	Govt, Public sector, NGOs
Investment	….	High
Gestation Period	….	High
Profitability	High, Considered on IRR (Internal Rate of Return)	Modest, Considered on ERR (Economic Rate of Return)
Finance	Stringent debt equity norms	Operates on higher debt equity norms
Source of Fund	National stock markets and from domestic financial institutions	International organizations like World Bank, IMF, ADB, DFID and others mostly as loan, yet times providing for some grants.
Interest rates and repayment period:	Market rate and the repayment period is generally 7 to 10 years	Very low for borrowed funds and the repayment period extends up to 25 years and even beyond.

Source: https://www.manage.gov.in/studymaterial/PM.pdf

ii. Based on the Location of the Project

In this category are projects that can be classified as national projects and international projects. As implied, national projects are set up within the national boundaries of a country, while international projects are set up by one country in other countries. Furthermore, international projects may be set up by the government of a country or by the private sector of a particular country in another country. Note that the handling of international projects requires more expertise and greater efforts because they involve higher risks in terms of proportion and procedural formalities that are involved since they are international in nature. Some examples of international projects include:

- Setting up fully-owned subsidiaries abroad
- Setting up joint ventures abroad
- Setting up of projects abroad by way of mergers and acquisitions

iii. Based on Project Completion

Projects can be classified based on constraints such as project completion time, and based on that, they can be classified into two types: normal projects and crash projects. Normal projects are projects in which there is no constraint of time. In other words, they are not time-constrained or bound and so are not necessarily designed to be completed within a specified time. That is to say that there is no compelling reason to rush or complete the project on a given date.

On the other hand, crash projects are those that have to be completed within a stipulated time, sometimes at the cost of incurring higher project costs. For example, the Federal Government of Nigeria commissions a dam rehabilitation project which has to be completed before the next rainy season. This is a crash project because it must be completed before the coming rainy season to ensure that any envisaged disaster in the rainy season is averted. The fact here is that the project was embarked on to forestall an impending disaster during the next rainy season. So, the project has to be completed and commissioned before the next rainy season. Therefore, if it is not completed within the planned time, it has failed to achieve the expected end.

iv. Based on Ownership

Here, projects are categorised into three groups: private sector projects, public sector projects, and joint sector projects. A private-sector project as the name implies is completely owned by private promoters and investors. The major objective for establishing a private sector project is profit maximisation given that they are funded by private investors who are interested in recouping not only their investment but also gaining some good financial returns.

Public sector projects are owned by the state or government (federal, state or local). The major objective of executing public sector projects is the government's obligation to undertake development projects. Public sector projects vary from country to country depending on the kind of economic system that is run in the country. For instance, in a purely capitalist economy such as that of the United States of America, there is hardly any public sector enterprise except those that concern defence, public utility services etc. On the other hand, in mixed economies such as the kind we have in developing countries, both private and public sector enterprises exist.

In Nigeria, public sector enterprises include Nigerian Ports Authority and Nigerian Broadcasting Corporation. In socialist economy, public enterprises dominate the economy and are actually public property. Note that an enterprise is considered a public enterprise when the state or any other national, regional or local authority holds sole ownership or where the majority of its capital and the enterprise are under the control of the government.

Joint sector enterprises are those in which the ownership is shared between the government and private entrepreneurs. The overriding interest of the government in venturing into joint sector projects is to make use of the managerial talents, entrepreneurial capabilities, and marketing skills of the private enterprises. Therefore, projects can be undertaken by these enterprises and are said to be owned either by the government or private based on the ownership of the enterprise.

v. Based on Size

There are three types of projects under this category: small projects, medium-sized projects, and large projects. Size in this sense is expressed in terms of the amount of investment that is required to fund the project. The investment limit for the different categories of projects is announced by the government, and the investment is subject to periodic reviews keeping in mind such things as inflation, and the decision to offer certain incentives to projects categorised as small, medium, or large.

vi. Based on Need

This categorises projects based on the need they are set up to meet. They include

New Project: This is a project that is conceived and implemented to satisfy customer needs. This occurs when a company notices a gap in customer needs that should be filled and appropriate steps are taken to fill that gap. For

instance, a quantity of a product or service that is being provided is no longer able to meet market demand, the company goes ahead to increase the quantity that is supplied to close the gap.

Balancing Project: Generally, projects do not stand alone. They actually have many product units that are linked with one another. In this case, all the projects are able to service each other in one way or another in the sense that the output of one production unit exactly matches the input required for the next production unit. This ensures full utilisation and maximisation capacity of all the production units.

Diversification Project: This is a situation where an organisation initiates and implements a project that will entail their adding new products or services to the already existing ones. In this case, they are diversifying their products or services to include new businesses. Let us say a company was producing cars and later realises that adding a steel manufacturing plant will help them to save cost and increase the number of cars they produce, they set up a steel manufacturing plant which is now a subsidiary company. In this kind of project, subsidiary projects are implemented to service a major project in order to maintain or balance the production capacity.

Expansion Project: This is a project that is implemented to increase the production capacity of an organization. Let us say the current carrying capacity of a company that produces cars is sixty vehicles per annum but they wish to increase to one hundred vehicles per annum. The management will go ahead to enhance the capacity of the plant so that it can produce the desired number of cars within the same time.

Modernisation Project: This is a project that is implemented by a business to retool or upgrade already owned production equipment in a production plant so as to meet the technical standards. In this case, newer technologies are in existence and the company decides to upgrade its equipment to meet the current standards. To do this also, the job skills of the existing employees will also be improved through training to ensure that they are in such a condition to operate upgraded equipment. In this way, the plant is positioned for competitiveness and future growth. In other words, there is recognition that technological innovation is a continuous process so equipment and skills are upgraded to enhance productivity.

Replacement Project: In this situation, there is a noticeable underproduction as a result of some old and aging equipment. Also, the repairs and maintenance cost of machinery is rising and increasing the cost of production. At this stage,

the company realises that replacing the old and aging machinery would make more economic sense and embarks on a replacement project. In this case, they old machineries are replaced with new ones.

Backward Integration Project: In this case, a company expands its role so as to acquire a company that it formerly depended on for some inputs. In other words, they depended on the company they seek to acquire for supplies of the products and services that they themselves need for their production. They buy up the company and it becomes part of their own organization. Therefore, they will no longer require to procure that item or supplies from outside their organisation.

Forward Integration Project: In this case, a company decides to own and control business activities at the end of its production line. This is done after the organisation is fully satisfied that including new business will be profitable.

For instance, a company that produces clothing and used to supply them to boutiques for sales might decide to own a line of boutique outlets to which they supply their products. In essence, rather than depend on other sales outlets, they now have their own and deal directly with buyers. This is a value-adding service.

Types of projects as classified by Sindjuha (n.d.) is based on the content of the project. Here four types of projects are distinctly identified (1) manufacturing projects; (2) construction projects; (3) management projects, and (4) research projects. They are explained below

Manufacturing Projects*:* The sole objective of many organisations is the manufacturing of products. A manufacturing product is one where the end result is the manufacture of products or goods. For instance, projects such as building a ship, vehicle, computers, and so on are all manufacturing projects. Manufacturing projects are often very demanding, costly, and time-sensitive. To succeed in this type of project, it is important that there is close attention to detail as well as experienced management to oversee the jobs that are being done.

Construction Projects: A construction project is one that results in the erection of buildings, bridges, roads, tunnels, etc. Mining and petrochemical projects can also be included in this group.

Management Projects: Management projects do not necessarily produce a visible or tangible result as you would have in either a manufacturing or

construction project. By this, we mean that you do not necessarily see a physical product. But the achievement of management projects also aims at an outcome and if such projects are not successfully implemented, they can result in an operational breakdown for the organisation. Management projects enable an organisation to function more efficiently in the desired direction.

For instance, the development and introduction of a new classification scheme that will make the library material easier and faster to classify can be considered a library management project. Management projects can also be the design and testing of a new computer package, and relocation of a company's headquarters among others. All of these projects involve the management coordination of a series of activities before a successful outcome can be achieved.

Research Projects*:* Here a researcher proceeds on a scientific endeavour to answer a research question(s). The objectives of research projects are often difficult to establish, and the results are not always predictable. However, they seek to determine some answers to the questions that bug the mind of the researcher. Research projects include student projects and projects carried out in research laboratories and research institutes.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A manufacturing product produces tangible deliverables True False

3.1.3 Project Performance Dimensions

There are three major dimensions that define the performance of any project. These are scope, time and resource or cost. These three parameters are both interrelated and interactive as is depicted in the figure below

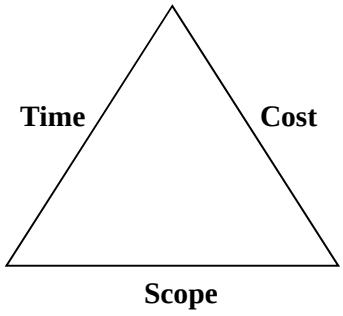

Fig.2: Project Performance Dimensions (Source: https://www.academia.edu/)

From the figure below, it can be seen readily that the three dimensions are interrelated and interactive to the extent that a change in one, will most definitely affect the other. To illustrate this, assuming that there is a change in the project scope, it will require that the project completion time be extended and this will invariably entail that the project cost would go up.

On the other hand, if there is a reduction in time, the scope and cost would also have to be reduced. In the same vein, if there is any change in cost, it will also reflect in scope and time. The implication is that to successfully complete a project, there is a requirement that specified goals be accomplished within the scheduled time and budget. In essence, the performance of a project "is measured by the degree to which these three parameters (scope, time, and cost) are achieved. Mathematically Performance = f (Scope, Cost, Time). In management literature, this equilateral triangle is also referred to as the "Quality Triangle" of the project" (https://www.academia.edu/, n.d.).

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes. Which one of these is not a project dimension: Time, Scope, Task

3.1.4 Characteristics of Projects

Having defined the concept and types of projects, the next important thing is to look at the characteristics of projects. Eighteen characteristics of a project have been highlighted by Nagarajan (2012: 3-4) as discussed below

- **Project Life cycle**

Every project has a life circle. The project life cycle includes the steps that the project manager has to take to successfully execute a project from start to finish. The life cycle comprises the following stages which include:

Conception stage : This is the conception of the project ideas.

Design stage : Detailed design of different project areas are worked out.

Implementation stage : Project implemented in line with comissioning stage

: Project is commissioned after implementation. Commissioning signals the end of its life cycle.

What is being explained here is that every project has a life cycle however, the life cycle of a project does not start when the work begins. Rather, it starts from the time the idea is conceived. As soon as the idea is conceived, the next thing is to begin to design all the stages that are involved in the project in the manner they will follow. Then the implementation starts using the design that had been outlined. This continues until the project is completed. As soon as it is completed and certified to have met all the requirements as outlined in the design, the project is commissioned. The commissioning marks the end of the life of the project.

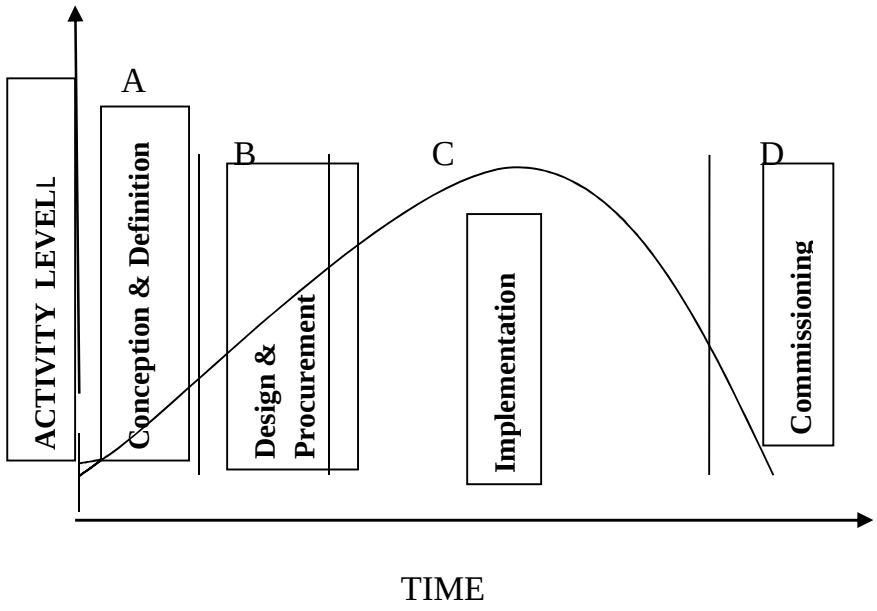

Fig. 3: Project Life Cycle adopted from Shraddha (n.d.)

- **Definite Time Limit:** Every project has a definite time limit/line. Projects are not meant to continue indefinitely but after they are completed, there can be maintenance exercises as required. Note that maintenance work is not considered a project because while maintenance is an ongoing process, the project itself cannot continue forever.

- **Uniqueness:** Every project is unique and no two projects are similar. Let us say that two libraries are being constructed in cities A and B. Construction of a library building in say city A is not the same as the construction of a library building in city B even though the two projects are about building a library and so similar. In fact, they are unique in themselves given the differences that exist in the owner organisations, infrastructure, location, technical specifications and the people that are behind the projects among other things. So, similarity does not imply that the projects are the same.

- **Teamwork:** Normally, a project consists of diverse areas of specialisation. Each specialised area will have people that are specialised in it. For example, in a building project, masons are specialised in their area and ironworkers (benders) are specialised in theirs too. Even in the area of library automation, different expertise will also be required including librarians, system programmers etc. depending on the skills the project requires. Therefore, any given project calls for the services of experts from a host of

disciplines/expertise. Co-ordination of the diverse areas calls for teamwork. Without teamwork, the project is bound to suffer.

- **Complexity:** Just as projects have diverse areas of expertise, so also, they have complex sets of activities relating to each diverse area. Factors such as technology survey, choosing the appropriate technology, procuring the appropriate machinery and equipment, hiring the right kind of people, arranging for financial resource, execution of the project in time by proper scheduling of the different activities, etc. contribute to the complexity of a project.

- **Sub-contracting:** The complex activities and functions of a project often warrant that some activities are entrusted to sub-contractors. This is done to reduce the complexity of the project. Sub-contracting some functions and activities enables a project manager to co-ordinate the remaining activities of the project more effectively than he would if he were to handle or manage every aspect. Generally, the extent of the complexity of a project, determines the extent that is sub-contracted. Sub-contracting is especially helpful if the sub-contractor is specialised in the activity. This further helps to improve the quality of the project. The sub-contracting is based on the fact that an organisation may not be involved in all the activities that a project requires to be set up or it is more economical to sub contract that aspect.

- **Risk and Uncertainty:** There is no risk-free project even if in some cases, a project appears risk-free. To that extent, risk and uncertainty go hand in hand with projects. Some risks are not noticed immediately and so a project will appear easy and risk-free but the risk may appear later. The project manager may have made some good forecasts to avert risks but he does not have all the power to ensure that everything stays on course according to the forecast. There could be unexpected events such as a sudden change in government, change of policies, inflation etc. which occurs and makes initial calculations wrong and make the forecasts/projections meaningless demanding that he goes back to the drawing board.

- **Customer Specific Nature:** A project is always customer-specific. This is in consideration of the fact that products/services offered by an organisation are customer-oriented. Therefore, the interests and choices of products/services offered by an organisation are made to meet the needs of the customer(s) and any project that is being carried out must be tailored appropriately.

- **Change:** While it is customary to put a life span to a project, it should be noted that the life span is not rigid. Changes occur throughout the life span of a

project. This can arise as a result of environmental factors. The change could be minor in which case it may have very little impact. It may also be major; in which case, it will have a big impact and may even change the very nature of the project.

To buttress the point above, it could be that certain technology or equipment had been proposed to be used at the planning stage. But during implementation, better and more efficient ones became available. The rational thing to do would be to switch to the latest technology. This is informed by the need to keep the project up to date. This can affect the life span of the project considering the lapse in the period between procuring and installing the new equipment.

- **Response to Environments**: Projects take shape in response to environments. For instance, countries set up projects in response to environmental needs. Projects that do not take into consideration the need of the environment will most likely end up as white elephant projects. We have a lot of abandoned white elephant projects in Nigeria.

- **Forecasting:** There is always competing interests and forecasting the demand for any product/service is important in any decision to initiate a project. If the forecast gives positive indications, the project is taken up for further study. In essence, forecasts must be accurate and based on sound fundamentals.

- **Rational Choice:** The decision to embark on a project among many other competing interests must be based on rational choice. This is because a project is a scheme for investing resources. So, in the midst of the available avenues, it is important that a rational choice is made.

  For instance, let us assume that there is a need for developing the health sector, and also a need for building a recreational centre. Given that both projects will demand huge resources, the most rational choice among the two should be made based on the most compelling need at the time.

- **Principles of Succession:** It is not possible to fully know beforehand how a project is going to be implemented. More is known about the intricacies of a project as it progresses. As a result, project components get modified and finalised successively with the passage of time as the project progresses.

- **Optimality:** Projects are aimed at developing the economy of organisations. That is why they must ensure that rational choices are made in deciding what projects to carry out. In all cases, resources are needed to execute a project and resources are scarce and have a cost. It is important that there is optimal utilisation of available resources as wastages can be costly.

- **Control Mechanism:** All projects will have pre-designed control mechanisms to ensure completion within the specified time schedule, within the estimated cost and at the same time achieve the desired level of quality and reliability.

- **Multidisciplinary:** Projects are multidisciplinary in nature. As a result, no project can be executed without the use of the knowledge and expertise of different kinds of people.

- **Conflicts:** The multidisciplinary nature of projects also means that multidisciplinary teams are used. Multidisciplinary teams are characterised by conflicts. Conflicts may arise between members of the project team and those members of the organisation who are connected with the project and even among members of project teams. For instance, a project that has a project team from within the project organisation and another team from the subcontracted specialist. There may be tension between the two project teams. Moreover, projects constitute a meeting place for different stakeholders such as project owners, financiers, contractors, users, opponents and public authorities. These can have shared or conflicting interests – often a combination of both (Olsen, 2006).

- **Part of a Larger Programme:** Projects are part of a larger entity called "programme." Many projects put together constitute a programme. For instance, building a steel plant is a programme that has many interrelated parts called projects. The construction of many projects is also considered a programme with individual projects. Take for example the construction of an estate. There are many buildings involved. Each building is a project while the sum total of the projects is a building programme. Care should also be exercised to differentiate projects from operations. Operations are the ongoing repetitive activities that are carried out in an organisation to keep the place running. In a library, you have operations such as circulation, administration etc. They are repeated every day as part of the activities that keep a library running.

Self-Assessment Exercise 5

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The project life cycle does not include the implementation stage:

True False

3.1.5 Project Selection/Criteria of Choice

Oftentimes, an organisation is faced with the challenge of selecting a project to execute out of the myriad of needs. Considering that projects require resources in terms of money and men it becomes imperative that a choice has to be made between the competing alternatives. This has to be understood from the perspective that organisations are interested in projects that will align with their objectives, and if such projects are for business, one that will increase their overall profitability. In order words, no organisation will invest in any project that has the possibility of pushing them into incurring a loss. This is why selection is an important element of project management. Let us consider this with the example of a library. Assuming there a is need to furnish a new library building and another need to install or build a library annex. Both projects are capital intensive therefore; the library management must make a choice between the two projects since resources are not inexhaustible.

Meredith and Mantel (2010) define project selection as "the process of evaluating proposed projects or groups of projects, and then choosing to implement some out of them so that the objectives of the parent organsiation will be achieved." Another definition says that project selection is a process to assess each project idea and select the project with the highest priority (Pacific Invasive, n.d.). The definitions further reinforce the point that the whole purpose of embarking on project selection is to be able to choose the most important out of other competing interests. The decision to choose one project or a number of projects out of many is not an easy one. As a result, some criteria have to be borne in mind to do it objectively.

Some criteria that have been articulated by Mansinghka & Mohan (2021) include:

- **Strategic Alignment with Business Goals:** There is no business that does not have its set of strategic goals, a defined vision, and a mission. This is necessary to give them a sense of direction toward the path to success. All projects that an organisation seeks to embark on must be strategically aligned to its goals. This will ensure that they stay on course and prevent any temptation to go into frivolous expenditure as they allocate their resources judiciously. Having this in mind will also keep an organisation from wasting time and effort on endeavours that steer them away from the organisational objective.

- **Assessment of Resource Capabilities and Availability:** This is yet another consideration. Even where some projects have the potential of aligning to the organisational goals or objectives in the future, there is a need to assess the personnel on the ground to accomplish it. Projects require both man and material for execution. It is, therefore, necessary to ensure that the personnel on

the ground have the capacity to deliver a quality project successfully. This is termed assessing the resource capability matrix using an appropriate tool. Once the assessment is done, they can make a decision on whether the project is feasible to continue with or not.

- **Evaluation of Potential Risks:** Risks and threats are associated with projects. It is therefore the responsibility of the project manager(s) to decide if the risk and threats can be mitigated or not. As soon as the project managers measure the resources that are available to execute the project, the next step is to diligently evaluate the potential risks they might face. An initial risk assessment helps to first understand if it is a high-risk or low-risk project based on pre-set risk appetite. In case it is a low-risk project, managers can even form a contingency plan well ahead of the curve to prevent future bottlenecks.

- **The Impact on Customer Satisfaction and Brand Loyalty**: Another pertinent consideration is the impact that the project will have on customer satisfaction and brand loyalty. Let us remember here that every organisation, whether they are into manufacturing, construction, service etc. has a customer base and brand to maintain. Because there are other competitors in the sector, maintaining and staying relevant during the ongoing market uncertainties is of utmost importance. That is only possible when the clients are happy with and stay with an organisation for a long time. The questions that need to be addressed are:

  - How will the final output of the project solve the existing problems for the client?

  - Will the project improve the client's perception of the firm's products and services?

  Once a consensus is reached and it is believed that the project can enhance customer satisfaction and improve brand loyalty that might be a pointer to the right direction to take up the project.

- **Data Availability and Expected Revenue:** This is concerned with finding out if there is enough data available on the project and, if not, is it possible to collect data from varied sources? When working on a project and the essential data is in place, implementing it at the right place and the task becomes easy. In the absence of relevant data, the tendency is that resources will be spent over a long period in gathering the right information, analyzing it, and then implementing it. Where there is limited data available, the possibility of hindering a project's progress is increased.

Along with this, there is a need to ensure that the ROI or Return on Investment is calculated based on the approximated revenue that the project is expected to generate. This is a very crucial activity since it is not wise to use resources, skills, time and effort, and the company's finances on a low-revenue generating project. If this is not done properly, it will lower profitability and also keep the organisation from taking up a higher revenue-generating project. Managers follow a benefit-evaluation model to calculate this.

Self-Assessment Exercise 6

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project selection is concerned with team selection True False

4.0 Summary

The foregoing has highlighted the concept of project, types, and characteristics of projects. Project selection and criteria for selection were also examined. Some salient points have been raised. The bottom line is that every project is meant to serve a purpose. Unless the purpose of a project is met, it cannot be deemed to be successful. Furthermore, projects come in different types and sizes. Also, no two projects can be said to be the same because they are unique in terms of environment, resources, objectives, etc. Projects are also temporary and must have a start date and finish date. The objectives of a project will determine the approach to be adopted in executing it. All said and done, if a project does not meet the specifications, budget, and timeline, it will not be considered successful.

5.0: Tutor Marked Assignment

1. What do you understand by project activities?
2. Name and explain at least five characteristics of a project.
3. Outline and explain four types of projects as outlined by Nagarajan.
4. Mention and discuss four criteria in project selection.

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7.0 Possible Answers to Self-Assessment Exercises (SAEs)

SAE 1 A (By accomplishing a set of activities)

SAE 2 True

SAE 3 True

SAE 4 Task

SAE 5 False

SAE 6 False

Unit 2: Concept of Project Management

Contents

1.0 Introduction

Having laid the foundation by explaining the concept, types, and characteristics of projects and selection and criteria for selecting a project, we will now focus our attention on the concept of project management. It is important to note again that project management is not an exclusive domain of the construction industry or manufacturing companies as some erroneously assume. Today, many business organisations employ project management in many aspects of their business, such as innovating a new product or service and implementing new processes and so on. The aspects of the business in which project management is employed are not only treated as projects but are also managed as such. When an organisation adopts project management in executing its internal operations it is said to be structured around projects (Nagarajan, 2012).

It is also important to note that while there is increasing recognition and use of project management today in achieving organisational goals, the concept has been with us for a long time. For instance, although it may not have been specifically identified as project management at the time, the truth is that famous projects such as the Egyptian pyramids were executed using project management approach. This is because it involved the use of men who

performed activities within time, budget and according to specifications, and under some managerial supervision.

2.0 Intended Learning Outcomes (ILOs)

At the end of this unit, you will grasp the concept of project management. You will also learn about the objectives and principles of project management as well as the project management process.

3.0 Main Content

3.1 Definition of Project Management

Simply put, project management is about using men and materials, to carry out successfully, a series of tasks or activities that are associated with a product or service, according to specifications, and within a specified time period. It is "the task of getting the activities (project activities/tasks) done on time, within budget, and according to specifications (Citeman, 2010)." It is "an organized venture for managing projects…that involves the scientific application of modern tools and produce desirable outputs in accordance with the predetermined objectives within the constraints of time and cost techniques in planning, financing, implementing, monitoring, controlling unique activities or tasks" (Aakanksha & Shah, 2010). Project management is the discipline of planning, organizing, securing, managing, leading, and controlling resources to achieve specific goals (Nokes, 2007).

It is "the application of a collection of tools and techniques…to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost, and quality constraints (Olsen cited in Project Management Institute, 2021). Each task requires a particular mix of these tools and techniques structured to fit the task environment and life cycle (from conception to completion) of the task."BridgeGroup (n.d.) further defines project management as the methods and disciplines used to define goals, plan and monitor tasks and resources, identify and resolve issues, and control costs and budgets for a specific project.

The concept is also defined as "the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations" (Darwish, 2017). From the definition by Darwish, we are made to understand that project management requires some knowledge, skills, tools, and techniques that must be brought to bear on a project for a successful outcome.

The purpose of project management is to minimise, contain or counter the risks, and organise and direct the resources so that the project is finished in time, within budgeted costs, and with the functional or other design objectives fulfilled (Sindjuha, n.d.). In another definition, Project Management Institute (2021) defines project management as “the use of specific knowledge, skills, tools, and techniques to deliver something of value to people.

Furthermore, Project Management Institute defines project management as a methodical approach to planning and guiding project processes from start to finish. It is the method of planning the plan. It starts with project definition and ends with goal achievement.

Going through the definitions carefully, you will notice that there cannot be any project management without projects, and projects are executed using men and materials such as finance and will also involve the use of knowledge, skills, and tools to ensure that expectations are met. The project manager is responsible for ensuring that all this is done successfully.

To further understand what project management is all about, it may be necessary to use an illustration that is very familiar to us. Let us take the example of schooling to drive it home. In this case, we see the pursuit of education as a project even though it may not seem so obvious. The truth remains that every student undergoing an academic programme can be deemed to be involved in project management. Why you may ask? Your academic journey which can be termed a project started at the time you first made up your mind about what course to study. Thereafter, you began to plan/prepare and eventually sat for and passed the Joint Admissions and Matriculation Board examinations to qualify for admission. The date you begin your educational pursuit or project can be termed the start date of the project. Once you have gained admission and completed your registration formalities, you found out that there are expectations that are arranged in levels (1, 2, 3, 4, and 5 or 6 as the case may be).

Your levels are arranged according to a series of tasks and activities (courses, lectures, quizzes, seminars, projects, etc.) which must be completed and achieved to qualify you for the next level. Your examinations are the project evaluation while your graduation is the project completion/date. Any student who seeks to achieve the desired outcome must work according to the specifications. Also, there has to be funding for all that is concerned with schooling. Therefore, the whole process of you managing all that goes into a successful educational outcome from start to end can be deemed project management, and you, the project manager.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project management approach guarantees organisational success:

True False

3.1.1 Importance of the Project Management Approach

We have established that the basic reason for initiating any project is to accomplish some goals. Also, although there is no rule that says that project management must be applied in executing a project, however, the need to focus the responsibility for the project on an individual known as the project manager and a small group also known as the project team makes it necessary to organise the task as a project.

In essence, organising tasks as a project makes for accountability and efficiency because the project manager and his team are now entrusted with the responsibility to execute it. In support of this, Basics, (n.d.) has outlined some benefits of adopting the project management approach in project execution including

1) Project management approach will help in handling complex, costly and risky assignments by providing an interdisciplinary approach to handling the assignments. This stems from the fact that projects usually require multidisciplinary expertise or teams for their execution. This implies that not one single individual has all the expertise needed to execute a project successfully;

2) Project management approach helps in handling assignments in a specified time frame with definite start and completion points. This is possible because even before implementation, all the stages that are associated with the project are carefully planned with responsibilities and roles as well as the duration of each clearly specified.

3) Project management approach provides task orientation to personnel in an organization in handling assignments. As mentioned, because roles and responsibilities are clearly defined according to the expertise of work teams, each work team understands not only what they are expected to do, but also how they are expected to do it.

3.1.2 Project Management Objectives

Like any other purposeful and productive engagement, project management has some objectives that are derivable from it. Clarizen (2020) has outlined at least five of them as follows:

- The successful development and implementation of all project procedures: Irrespective of its size, there are at least five equally important stages in the project life cycle: Initiation, Planning and Design, Construction and Execution, Monitoring and Control, and Completion. A successful project is that in which all stages in the project life cycle are successfully smoothly and uninterruptedly carried out.

- Productive guidance, efficient communication and apt supervision of the project's team: No project can be executed without a team(s) of workers. Also, in many projects, there is a multi-disciplinary work team. The work team is a deciding factor in the success or failure of a project. Therefore, good communication is an important element in project management. It is the objective of project management to ensure that there is good, smooth, clear, unambiguous, and complete communication in a way that all concerned are able to understand. The ability of all to listen and receive constructive feedback is also key in communication.

- The achievement of the project's main goal within the given constraints: The most important project constraints are, Scope in that the main goal of the project is completed within the estimated time while being of the expected quality and within the estimated budget. Staying within the agreed limitations always feeds back into the measurement of a project's performance and success.

- Optimisation of the allocated necessary inputs and their application to meeting the project's pre-defined objectives, is a matter where is always space for improvement.

  Project management aims to ensure that all resources that are provided for project implementation are fully and beneficially allocated and that they are deployed in such a way as to achieve pre-set goals. It is also the objective to ensure that the human resources are fully utilized towards achieving project goals. That being the case, it also aims to see that all impediments against the full actualization of a successful project are addressed. According to Clarizen (2020), project management ensures that "all processes and

procedures can be reformed and upgraded to enhance the sustainability of a project and to lead the team through the strategic change process."

- Production of a complete project which follows the client's exclusive needs and objectives: Projects are implemented to meet the needs of the end-user. At the planning stage, the objectives of the project are presented. It is an objective of project management to ensure that the project as implemented and completed meets the needs of the end-user/shareholders. There may be a need to shape and reform the client's vision and possibly modify the project objectives, but this must be done with the knowledge and consent of the end-user. The goal is to successfully complete and deliver a project that meets the specifications and needs of the end-user or stakeholders.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

One of the objectives of project management is the optimisation of allocated project resources: True False

3.1.3 Project Management Process/Steps

Project management is not carried out without any thought to the process. This is because the process helps to give order and guidance in the execution of any project. To that extent, there are some steps that are important to project management. Some processes/steps in project management as explained below include 1. Scoping, 2. Planning, 3. Estimating, 4. Scheduling, 5. Organising, 6. Directing, 7. Controlling, and 8. Closing.

Scoping

Scoping in project management is concerned with setting boundaries for the project by clearly defining the goals, deadlines, and project deliverables that one is working to achieve. It is important that the project team works within the scope of the project to manage funds appropriately and deliver within the timeline.

Project Planning

The saying “if one fails to plan, one plans to fail” is an axiom that is often used to drive home the importance of planning in all life endeavours. This is also true of project management. Planning is a very important aspect of project management because good planning anticipates all the factors that are associated with the project right before the project starts and puts them down in a document to serve as a working guide. Simply put, a project plan or project management plan is a document that describes the objectives of the project, and how the project will be executed, monitored, controlled, and closed or finished. As Ahmad (2010) puts it, “the project plan effectively outlines the objectives and scope of the project and serves as an official point of reference for the project team, larger company, and stakeholders”.

Estimating

Estimating involves a quantitative estimate of project costs, resources, or duration. This is concerned with attaching estimated financial implications to all the activities and tasks and personnel and as such is a critical part of project planning. However, often there are difficulties and confusion around estimating. This is most often the case with the public sector projects where bidding for jobs is required. Often, public sector job bidders sometimes underestimate in order to win the business. Inaccurate estimates can affect project planning because accurate estimates are the basis of sound project planning.

Let us take for example a library setting where a project is to be carried out. It could even be something like equipping a new library building. Usually, tenders are called for. A number of contractors submit their estimates for supplying the needed equipment. In a bid to win the contract, some of them would submit low estimates. The Tenders Committee selects one based on certain criteria including cost and that bid is approved. Now the planning as it affects costs is made based on the approved estimate and funds are released based on it. However, because the contractor had underbid to win the project, the contractor does not deliver within the stipulated time and in some cases may go-ahead to supply sub-standard equipment. This will definitely impact negatively on other aspects of the project. So, in project planning, it is important that proper estimates are made for all the component parts of the project.

Project Scheduling

Project scheduling is concerned with outlining the actual activities of the project with time assigned in the time order/sequence in which they are to be performed.

Let us take project scheduling of a construction project as outlined by Nagajaran (2012: 224) for example. The logical sequence of activities of a construction project is as follows:

1. Company registration
2. Obtaining industrial licenses/import licenses
3. Appointment of consultants
4. Resource mobilization
5. Land acquisition and site development
6. Preparing civil work designs, plans, and estimates and entrusting the construction work to civil contractors
7. Preparing design specifications and placing orders for plant and machinery
8. Transport of plant and machinery to the project site
9. Erection of machinery
10. Commissioning the plant and taking a trial run
11. Commencing regular commercial production.

All this are mapped out and timelines are attached to them. The essence is to provide some type of guidelines to ensure that time and other resources are used wisely.

Organising

As already explained, projects are grouped into activities. Also, resources are an important requirement in project execution. In organising, the project activities are clearly defined and analysed in such a way that they are clearly grouped according to their distinct areas or departments. It also entails establishing the authority and responsibility relationships by clearly defining who is responsible for what and who reports to who. It also involves organising the resources that are required for the accomplishment of organisational objectives. Essentially, project organisation is a structure that facilitates the

coordination and implementation of project activities. The structure defines the relationships among members of the project management and the relationships with the external environment.

We can look at it as a process because it provides the arrangement for decisions on how to realise a project. It decides the project's process: planning how its costs, deadlines, personnel, and tools will be implemented. The project organisation is then presented to the project stakeholders. A well-organised project ensures that everyone knows what's expected of them, what their authority is, and what they need to do. It provides the track on which to run a project. Without it, a project is bound to become directionless (Hughes, 2019).

Directing

Projects are executed with resources including people. Effectiveness and efficiency demand that the project manager who is directly responsible for the day-to-day running of the project directs people to work in the desired manner towards achieving the stated goals. Put simply, directing is "the process of guiding the subordinates towards achieving the organisational goals. To achieve this, there is the need to issue orders, directives, instructions, and commands. For the subordinates, directing enables them to know what the expectations are. Using the tools of instructions, orders, requests, guidance, supervision, coaching, advice, etc., the project manager is expected to get the subordinates to work according to expectations, and he is also to inspire them to achieve the project goals (Nagarajan, 2012).

Controlling

There are three important factors over which control is exercised in projects. These are time, resource, and quality. It is important to ensure that the project is running within the time scale, that the needed resources are available, and that the project meets standards in terms of quality. Controlling ensures that things are done according to the plan. It is the process of comparing the actual performance of the project with the planned performance i.e. the ideal and the reality. Controlling aims to check up on whether the project progresses exactly in line with what was planned. If in the course of controlling deviations also called variances are noticed, in terms of time, resource, and quality parameters, the variances must be analysed, with a view to identifying the reason for it and applying suitable remedial measures to correct them and then put the project back on the right track (Nagarajan, 2012).

Closing

As often mentioned, every project is a temporary undertaking. To that extent, a project has a start date and a finish date. Closing a project is the process of finalising all activities for the project, phase, or contract. This is an indication that the project has been successfully completed. It is called the close project or phase. However, while it is expected that the close project or phase indicates that the project has been successfully completed, a project may also be closed when it is terminated before it is finished. The close project or phase can be seen as the last phase of the project life cycle. At this stage, the project is closed, and reports of the level of success of the project are made to the owner. Other activities involved in the closing project or phase include handing over the deliverables to the customers, passing documentation to the business, releasing staff and equipment, canceling contracts with the supplier, and informing the stakeholders about the closure (Nagarajan, 2012).

In essence, this activity is heavy on document verification. All the project documents have to be gone through carefully and care taken to ensure that there are no unfinished items, that all the agreements concerning work items are delivered and signed off officially, and that all the objectives and plans, and obligations are met. Therefore, there cannot be a close project or phase until the owner has formally signed off on the project outcome or deliverables. A number of steps are involved in a close project or phase. The benefit of close project or phase can be said to be that the tool provides a formal method to end the project. As soon as the organisations' resources are released, new projects or endeavours can be pursued.

Some of the processes that have been explained above are captured diagrammatically below

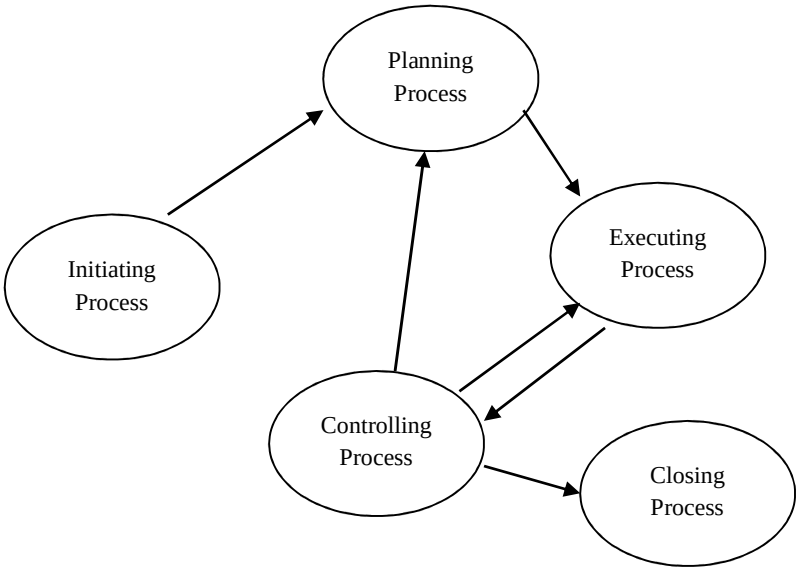

Fig. 4: Project Management Processes

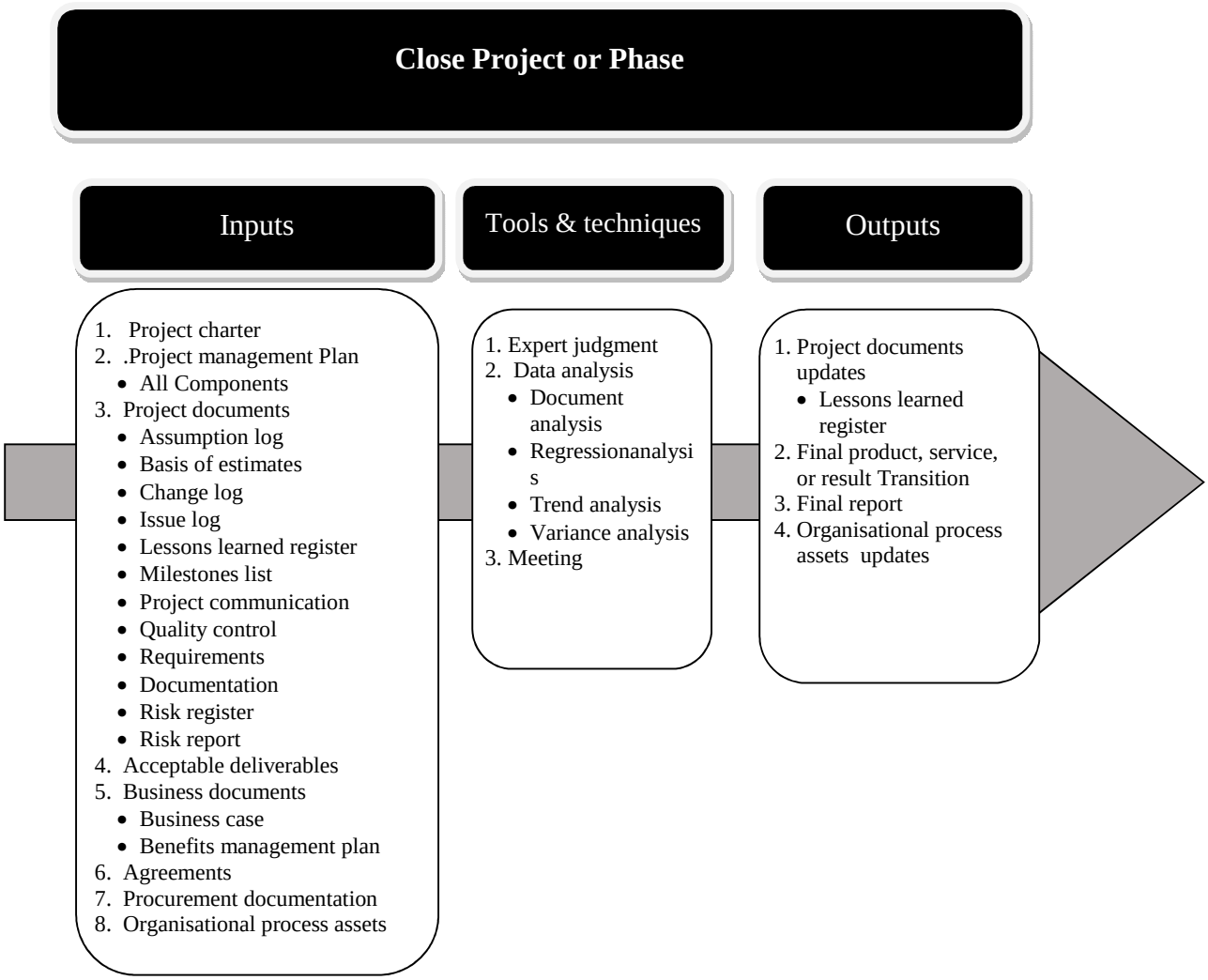

Fig.5: Close Project or Phase: Inputs, Tools & Techniques, and Output (Source: GreyCampus.com).

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.
Defining the goals, deadlines, and project deliverables relates to:

1. Project Organisation
2. Project Scope
3. Project Execution

3.1.4 Principles of Project Management

The rule that guides an engagement is as important as the engagement. That is why it is important to be aware of the principles that are associated with project management.

Wikipidia (2021) defines a principle as “a proposition or value that is a guide for behavior or evaluation.” What the definition conveys is that a principle is a rule that has to be followed or that is usually followed to achieve a stated objective or meet a standard.

A simple example can be a construction project. There are certain things that must be done in order to have a strong structure. Any attempt to do it differently will certainly result in a building that will not stand the test of time. Therefore, principles are expected to guide how things are done and where principles are neglected in the pursuit or execution of a thing or activity, it can lead to some unpleasant circumstances that are bound to attract some consequence(s).

So, when we talk about a principle guiding a system, we are saying that systems have their essential characteristics that take into consideration the reason for their design or their purpose and the only way that systems can be effectively operated or used would depend on whether the principles are acknowledged and adhered to or whether they are ignored. Therefore, refusal to adhere to the principles guiding a thing is to be likened to short-circuiting the process (Guido, also cited in Wikipedia, 2021).

We can therefore look at the principles of project management as the fundamental rules that should be followed for the successful management of

projects. In essence, for there to be a successful project, project management principles must be followed. This is why the principles of project management are described as “necessary assets when charting a path to completion [of a project]. The project principles can be applied to any level or branch of a project that falls under a different area of responsibility in the overall project organisation (Simplilearn, 2021).

We are reminded that a project is a temporary undertaking that has a defined beginning and an end. In project management, a constraint is usually associated with scope, time, quality, and budget. A major concern in project management is how to optimise the allocation of necessary inputs and integrate them to meet pre-defined objectives given that resources are limited (Simplilearn, 2021). What all this point to is that it is important that principles are followed if the desired outcomes are to be achieved.

When it comes to principles of project management, Wrike (2021) further notes that the Project Management Book of Knowledge (PMBOK) does not currently contain an official list of principles for successful projects but some principles are outlined by the Project Management Institute (2021).

The principles that must be followed will include 1) defining the project goals and objectives, 2) defining the project deliverables, 3) clarifying team roles and responsibilities, 4) creating a strategy for initiation and execution, 5)knowledge of numbers, 6)careful budgeting, and scheduling, 7) identifying priorities and milestones ahead of time, 8) accountability and responsibility, 10) communicating plan, 11) transparency, 12) risk assessment, and 13) monitoring and measuring progress.

Define Project Goals and Objectives

Definition of project goals and objectives is important because the goals that are set for a project play a critical role in its success or failure. Goals must be set before work begins and must not be ambiguous so as to enable all the work team to be on the same page and avoid future misunderstandings. Also, set goals must be realistic, clear, and measurable. When the goals are ambiguous, it makes it difficult for the project to be understood or achieved by the project team. This can result in delays in meeting milestones. With undefined goals, the project manager may encounter problems on a daily basis in the area of project organisation. All said, the project goal is the expected outcome and should be known ahead of time because it also leads to the project structure plan. It is important to state that the successful achievement of all project goals

lies with the project manager, and he can better define the goals using the SMART paradigm (specific, measurable, ambitious, realistic, time-bound).

Define Deliverables

According to the Project Management Institute (2021), a deliverable is "any unique and verifiable product, result, or capability to perform a service that is produced to complete a process, phase or project." We can look at it in terms of the things that are produced at the end of a project and depending on the type of project, could be a product or service that is the final outcome of the project process. After the goals and objectives have been established, the project manager has to define the project deliverables. The objective of the project could be for the end-user(s) to manage their own content on their website. for example, when the project has to do with the development of a website assuming the project is about something like software development. At the end of the project, the deliverable will likely be a piece of software that will enable the managers to manage content as well as training materials that will be used to train employees and other end-users on how to use the newly created software.

In the case of a building project, assuming the objective is for the end-user(s) to have a residential home, the deliverable that will be the final product should be a residential home that meets expectations in terms of function/quality and performance. Therefore, anything short of the client's specifications is not acceptable and can be regarded as a failure of a project.

Deliverables can either be organisation-focused or employee-focused. When the deliverable is organisation focused, the emphasis is on making sure that the several important components of the organisation are supporting one another. What this means is that the company's purpose, strategy, capabilities, structure, and system should all work together. On the other hand, the employee-focused view encourages managers to evaluate how well-matched the employee is in terms of individual role, professional goals, team membership, and organsitional vision and mission. In these examples, we can see that projects can even involve human development. Given the many aspects or areas of project management, it is not always possible for the project manager to have control over all the factors that are involved in project management, but to the extent that he can effect change, he should leverage these organisation alignment concepts for a more successful project.

Clarify Team Roles and Responsibilities

Projects are structured around teams. To that extent, it is important that members of teams understand very cleanly, what their roles and responsibilities are. Unclear definition of roles and responsibilities of team members is the cause of most confusion and tension among team members. This is because team members will most certainly cross their boundaries and may not be able to relate with each other if they are ignorant of the roles and responsibilities. This will usually lead to conflicts among team members. Therefore, the project manager has the responsibility to define the role of each team member to help everyone to work more harmoniously with each other. This point is driven home by the fact that in many cases, a project is multi-disciplinary in nature and as a result requires the expertise of members from different specialities. It is important that each knows where their roles and responsibilities begin and end in order to prevent avoidable conflicts. Project teams that are conflict-prone will never agree and this has the tendency to further delay the completion of the project. A delay in completion time entails more financial involvement.

Create a Strategy for Initiation and Execution

The project initiation and execution strategy are very important. For instance, it is during the project initiation phase that all preliminary work that must be done before any other project activities can take place is outlined. The preliminary work must be carried out before any other thing that is concerned with the project is done if not the project will run into murky waters. Incidentally, people tend to just focus their minds on project execution when they think about project management. Project execution starts with a project kick-off meeting. This meeting officially begins the project. It is at this meeting that the project manager shares the vision and plan for the project. It is also the time he delegates tasks and responsibilities to team members and sends everyone on their way to get things going. To ensure smooth execution of projects, during the execution phase, the project manager should ensure that there is a plan in place to document errors, corrections, and other changes.

Knowledge of Numbers, Careful Budgeting and Scheduling

Undoubtedly, projects require resources for their execution. While the project manager has at his disposal the resources that he requires to run the project, it is a fact that the resources are not inexhaustible rather they are limited. To this end, there is a need for judicious utilisation of the resources. To ensure that the project remains within the resources available, it is important that the project manager budgets his financial resources very carefully. In the budget, he should allow for certain flexibility by giving himself some margin for unexpected expenses. He should also ensure that he takes reasonable measures

to save costs during the course of the project. Since the project manager's budget is unavoidably linked to his project schedule, if he is not able to keep to the timelines, his budget will most likely suffer and affect the entire project. Therefore, it is important for the project manager to account for not just how long each project task should take, but he should also endeavour to work within the timeline. exigencies factor in exigencies such as holidays, corporate and stakeholder events, and team members' vacations. These should also be provided for in the budget.

Identify Priorities and Milestones ahead of Time

Prioritisation and identifying milestones ahead of time is a very important aspect of the project management process. With proper prioritisation, it is possible for the project manager to know what to focus on, as well as identify milestones where they exist. This is important because when a project manager is in the midst of a project, it is easy to sometimes get distracted from the things that matter by less important details that appear urgent at the moment. Distraction has the tendency to derail the process. Therefore, to avoid unnecessary distractions, the project manager should define his task priorities at the very outset of the project. This will enable him to know where to direct his team's energy in the event that a conflict arises. Furthermore, when the project execution is at its climax, it is easy to lose sight of the details that are involved in a project. Identifying milestones in the project planning phase will help the project manager to know if he is on course and on schedule.

Milestones define certain phases of the project and the cost and results that are associated with each phase. Milestones represent decisive steps during the project execution and they are set after a certain number of work packages that belong together. Work package means breaking down large project into parts that are related. This series of work packages leads to the achievement of a sub-goal.

Accountability and Responsibility

Projects cannot be executed without a team(s). Teams are made up of people who have certain expectations. It is therefore important to ensure that they are motivated. Motivating team members has the advantage of keeping them committed to the project; it goes a long way in keeping them focused on the goals. One of the best ways to achieve this is to empower them by giving them a sense of responsibility and accountability. When individuals are given responsibility for their own work, it not only motivates them but also makes the job of the project manager less burdensome. It also has the positive effect of

enabling the employees to work from their strengths and to learn new project management skills. This is advantageous to both the organisation and the employees in the long run.

Related to giving team members individual responsibility is setting up a means of accountability. The project manager needs a system in which task delegation and project deadlines can be tracked and each team member can see his or her contribution in the context of the larger project. Ambiguity in roles and responsibilities makes it difficult for the team members to work efficiently, and it can also be problematic in the area of holding people responsible when something goes wrong. When individuals are not given responsibilities or held accountable, they are more likely to approach the project with a laissez-faire attitude. In turn, the project manager will have difficulties in the course of the project as he is not only placing too much burden on himself, additionally, he may not have the loyalty or commitment of his team(s).

Communicate Plan

It is important that there is productive guidance, efficient communication, and proper supervision of the project team because the success or failure of a project is highly dependent on teamwork, thus, the key to success is always in project collaboration. To this end, the establishment of good communication is of major importance. Explaining and implementing strong communication guidelines from the outset of the project is good practice. The communication channels could be email, text messaging, a chat service, or some combination of things that everyone on the team understands and can use for communication. Because the different activities of a project entail teamwork, there is a need to ensure that this flows through the phases of the project. On one hand, information needs to be articulated in a clear, unambiguous, and complete way, so that everything is comprehended fully by everyone. On the other hand, the ability to be able to listen and receive constructive feedback will ensure that time is not wasted.

The project manager should be clear about the kinds of information that needs to be communicated, and who needs to be notified in certain circumstances. He should also model the kind of communication he expects from all stakeholders. It is important that the channels of communication are clearly defined and understood by all the people that are involved with the project.

Be Transparent

Transparency here entails creating a system in which all team members can access all relevant information about a project easily and efficiently.

Transparency is important because it is related to efficiency. There is appropriate software in existence for this and it is the responsibility of the project manager to ensure that the software that is appropriate for the work he is doing is utilised if he hopes to achieve transparency. Transparency also entails ensuring that every one that is part of the project is able to key into the system and understand the objectives and components of the project. There is a need to make project data available to the team. This can be achieved by providing good tools for collaboration and by sharing calendars among team members and even outside stakeholders.

Project transparency leads to better outcomes for both the team and the project itself. On the one hand, the team will be more motivated if there is a tangible sense of progress on the project, and on the other, it will improve trust.

Some useful tools for ensuring transparency include flowcharts, structure plan, and a milestone plan. These tools help the project manager to stay on track. Transparency also entails that the project manager should be able to present a brief report about the status of the project to his principal or stakeholders at each stage of the project. At such meetings, he should be able to give overviews of the costs, the timeline, and the achieved milestones. This ensures that he not only carries them along but also that he gains and retains their trust.

Assess Risks

The project manager should engage in regular evaluation of risks. A risk assessment is an acknowledgement that something could go wrong that could potentially derail the project. Risks need to be identified and addressed at the beginning of the project rather than catch the project manager off guard later. The project manager should also seek the team members' opinions on what risks they think he needs to consider. While it is not possible to eliminate all the risks from the project, being prepared for them can save him from project failure. Undoubtedly, all projects come with a variety of risks and this is quite normal. His ability to identify the risks sooner than later will save him a lot of costs as prompt identification of the risks will enable him to address them before they become unmanageable.

Monitor and Measure Progress

In the course of planning the project, the project manager must endeavour to establish key performance indicators (KPIs). A key performance indicator is one type of performance measurement which is quantifiable and used to evaluate the success of an employee, organisation, project, activity, product, etc. in which it is engaged so as to ascertain whether it meets the objectives for

performance. In projects, KPIs come in the form of budgets, project management timelines, and quality expectations. An organisation determines what it considers important to it. As the project progresses, the project manager should regularly keep track of project progress and check his KIPs so as to catch issues and make corrections quickly as delays can be costly. While he is monitoring and measuring progress, it is also not out of place to celebrate when his KPIs tell him that the team has achieved a goal. This can be a boost to his team because it will not only give them a sense of belonging but it also conveys to them that their efforts are noticed and appreciated.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

Project risks are best identified at the closing phase: True False

4.0: Summary

Project management is not a recent phenomenon however; it is gaining more recognition as organisations understand its role in the achievement of organisational goals. Project management covers all the processes that are associated with a project starting from initiation to closing. Project management can be applied in different kinds of situations and environments such as construction, manufacturing, business, and research.

The project manager runs a project and it is his responsibility to ensure that clear objectives and goals are defined and that the project meets the end-user's expectations especially as it affects time, scope and budget. All projects have their objectives and it is imperative that they are executed within these objectives. Project failure arises when the project is not executed within the project objectives.

The unit has gone to great lengths to define the concept of project management. Other important aspects covered in the unit include the objectives, the project management process/steps, and the principles of project management. Understanding the concept of project management will enable you to identify projects as different from activities, operations, and programs. Knowledge acquired from this unit will also enlighten you on how to go about managing projects especially as the project is not only when it is executed in construction or manufacturing industries.

5.0: Tutor Marked Assignment

1. Name and explain 3 objectives of project management.

2. Outline and briefly explain 4 project management principles.

3. Explain how the project management approach can be used in any type of library of your choice.

6.0: References/Further Readings

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7.0 Possible Answers to Self-Assessment Exercises

SAE I False

SAE 2 True

SAE 3 Project scope

SAE4 False

Unit 3 Project Initiation

Contents

1.0 Introduction

In the foregoing units we, have established that there are many types of projects but whatever the type of project, its initiation is important. In this unit, we will be focusing on project initiation. Embarking on a project is a critical decision, no doubt. No one jumps into any project without laying the groundwork because there are many steps to take even before starting a project. The initiation phase of a project includes all the steps that must be taken before the project is approved, and before you plan for the project. If the project initiation stage is handled well, chances are that the project will be successful. It is at this initial stage that the goal and purpose of the project are defined. It is also a time to answer some basic questions such as why the project is being embarked on and what business value is it expected to deliver? It is important to determine the scope of the project, identify the skills needed for the project team, and also likely risks to the project. These issues are important because projects are costly in terms of human and material requirements, and so no organisation wants to execute a project that lacks purpose or that has no value to add to the stakeholders.

2.0 Intended Learning Outcomes (ILOs)

In this unit, you will appreciate what project initiation is all about. You will also be able to determine the skills that are needed by the project team and the risks that a project may likely encounter.

3.0 Main Content

3.1 Project Initiation

Project initiation is the first phase and is often considered the most important in the project management life cycle because it is concerned with starting a new project. It is at this stage that organisations decide whether or not to take up the

project. This is called value judgement. Project value judgement is measured using two metrics called business case and feasibility. The essence of it is to determine whether the project will add more value in business terms and how will it be accepted in the market. These are very important considerations for a number of reasons including the fact that no organisation wants to execute a project that will not benefit them given the fact that enormous resources are expended on project execution.

The initiation phase is when "the business problem or opportunity is identified, a solution is defined, a project is formed, and a project team is appointed to build and deliver the solution to the customer" (Watt, n.d.). Major decisions that give direction and information about resource availability are made at this stage. This includes decisions on matters like project charter and selection of the project stakeholders. Making sure that the stakeholders come to a clear objective about the project helps to ensure that everyone is on the same page regarding how the project should proceed.

The project initiation phase consists of four essential steps as outlined by MacNeil (2021):

1. **Create a Project Charter or Business card:** Stakeholders need to be convinced about the necessity and benefit of the project. This is done with either a project charter or a business case. The project charter and the business case are essentially the same because they provide details that will help to sell the project to the stakeholders. However, while the project charter is used for smaller projects, the business case is used for bigger projects that require significant resources.

2. Identify Key Stakeholders: The key stakeholders are individuals that are an important part of the project and whose signature will be required to approve the project charter of the business card. Initiation stakeholders include the customers, external persons, and the project team.

Other individuals, who though not stakeholders are important in pushing the project and who can support the project should also be involved.

3. Run a Feasibility Study: A feasibility study is used to determine whether the available resources can complete the project. The feasibility study will also provide information about whether the Return on Investment (ROI) on the project is enough.

4. Assemble the Project Team and Tools

As soon as the project is approved and after the feasibility study has been carried out, the next step is to assemble the project team, workspace and tools.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these two project initiation documents is best employed for big projects?

a. Business case b. Project charter

3.1.2 Project Team Skills Identification

Projects are executed with team(s). Teams are made up of people who are brought together to work towards the achievement of the objectives of the project. Usually, the project team is made up of people of diverse expertise depending on the size and complexity of the project. These people have to work together as a team, and the success or failure of any project depends largely on the team.

Without teamwork, it will be difficult for the members of the team to cooperate with each other. Teamwork refers to the ability of individuals in a work team to work well with others to achieve a common objective. Teamwork is a skill that can be developed through regular practice. An individual who is a team player is always putting the interest of the team before his/her personal interests.

There are many skills that a project team should possess. Three basic essential skills that project team members should possess are outlined here. This includes 1. Good communication skills, 2. Basic management skills, 3. Amicable writing skills, 4. Skills management skills (MyClientSpot, n.d.). These essential skills are explained below

Listen for Good Communication Skills: It is important to listen for good communication skills. Good communication is a crucial ingredient in working together in teams. Teams communicate among themselves and with the leadership. It is important that communication is carried out effectively and team members should be able to do that in a language that is clearly understood and acknowledged by all. Good communication is also essential in minimising conflicts among teams. Therefore, communication skills is an essential skills to listen out for.

Look out for Basic Management Skills: While the project manager is responsible for the planning and operations of the team, ideally, his team members should possess basic management skills. Irrespective of the type of project, some basic grasp of leadership and judgement should be seen in a team member.

To identify these skills, from time to time, the project manager should delegate certain tasks and duties to his team. This will provide him with the opportunity to recognise the management strengths that each team member possesses. Identification of such skills is beneficial to the project manager as it goes a long way in the formation of a self-sustaining team that can multi-task on multiple projects at the same time.

Look out for Amicable Writing Skills: The project manager should look out for amicable writing skills because like good communication skills, amicable writing skills is important for sharing and passing information around clearly, correctly and effectively. Like good communication skills, amicable writing skills play a big part in ensuring information is shared and passed around clearly, correctly and effectively. There may be a need for documentation of technical information, if this skill is lacking, the job will not be done accurately.

Possession of Skills in Risk Management: Risks cannot be totally ruled out from projects even with the best planning. Even though this is an essential skill requirement from the project leader, it is also very important that this skill is possessed by team members.

Everyone in the team must see risk management as a shared concern. The ability of a team member to detect potentials risks and threats to the project and possibly prevent them is an essential skill that is desirable among team members. A project manager should take note of team members that possess this skill.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

To identify these skills, from time to time, the project manager should delegate certain tasks and duties to his team: True alse F

3.1.3 Project Risks Identification

Project risk has to do with any unforeseen or uncertain events that may or may not crop up during the project execution phase. However, it is important to note that risks are not necessarily negative. There are also positive risks. Because uncertainties cannot be completely eliminated, it is important to plan for and identify possible risk events that may impact the project.

To illustrate this. Assuming a particular library in Nigeria wants to embark on a project that will transfer all its operations into electronic methods, it is important that they identify all the risks that could arise including loss of data and system failure which is a very important consideration in a country that has an epileptic power supply.

Risk identification is important for risk management. According to Project Risk Coach (2022), to identify risks in project management, it is necessary to do the following

- Define Project Risk
- Write the Risk in a Consistent Format
- Use a Variety of Risk Identification Tools:
- Engage the Right Stakeholders to Identify Project Risks
- Look Beyond the Obvious Risks
- Capture your Project Risks

4.0 **Summary**

Project initiation is the first step and a very critical stage in the project life-cycle. It is the first step before project planning and later, project execution. Project initiation established the value and benefit of a project. As soon as the stakeholders approve the project initiation document, it is a nod that the project can commence.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project risk identification involves --

a. Define Project Risk

b. Write the Risk in a Consistent Format

c. Use a Variety of Risk Identification Tools

d. All of the above

6.0 Tutor-Marked Assignment

1. Briefly explain project initiation.
2. Why is it important to undertake a project initiation exercise?

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1	Business card
SAE 2	True
SAE 3	All of the above

Unit 4 Project Planning

Contents

Contents

1.0 Introduction

In the previous unit, we were taken through project initiation which is fundamental in project management. The planning phase follows the initiation phase. Planning in project managements is a very important part of project management. It is the responsibility of the project manager to assemble a project plan. The plan describes the cost, scope and schedule for the project, detailing exactly the activities and tasks that will be required and the resources that will be needed, spanning across personnel to equipment, and financing in addition to where they can be acquired. In essence, it is done even before the project is started to serve as a guide during the execution phase.

Without the project plan, it is very easy to derail the project in terms of personnel, cost, equipment, and schedule among other factors. The project plan also factors in the risk that may occur and how to manage them. Planning for risks will include contingency plans as well as a communication strategy that will ensure that all stakeholders are kept abreast of activities and progress.

2.0 Intended Learning Objectives (ILOs)

In this unit, you will be taken through project planning. It is important to understand how the planning phase of a project can either make or break the project execution. It is also important to understand the things that are involved in the process as well as the tools and techniques that are used for project planning. This is to guide you in the future.

3.0 Main Content

3.1. Project Planning

Project planning is an important part of the project life cycle and in fact can be said to be at the heart of the project life cycle. It can be described as a kind of

road map that tells everyone involved in the project where you are going and how you intend to get there. Let us take for instance a decision to set up a digital library. It will be foolhardy for management to simply rush into it without sitting down to plan what it will entail.

Considerations must be made about personnel, finance, equipment etc. that will be needed to complete the project.

Hassan (2006) opines that it is at the planning phase that considerations are given to resource availability, resource allocation, staff responsibilities, and forecasting of cash flow. In other words, the project plan states the resources that are available, how the resources will be allocated, what each staff is responsible for, and the timeline of the project. As a result, a well-conceived plan will most assuredly produce a successful outcome. It must be noted, however, that the project plan is not cast in iron i.e. it is not foolproof. As a result, there is a need to monitor and if necessary, re-plan the project as it progresses towards the specified goal to avoid project derailment.

At the project planning stage, it is important that all the parties involved in the project understand clearly its facets, the expected results or the processes involved in achieving the project (deliverables), the tasks that are associated with the project, and roles and responsibilities of all the team members. Also, it is at this stage that the time constraints within which team members are working are made clear. In essence, during the process of planning, the various activities/operations involved in the project, their sequences/order as well as how they relate to each other are established

Nagarajan (2012) outlines the following as the main steps in project planning:

(a) Defining the objectives of the project

(b) Making forecasts for achieving the goals

(c) Identifying the alternative courses of action for achieving the goals

(d) Evaluating the resources available to the organisation

(e) Evaluating the available alternative courses of action and selecting the course of action/actions that are most suited to achieve the desired results, taking into account resource constraints, if any.

The three basic components of a project plan are scope, budget and timeline. The scope is concerned with the boundaries of the project so that the project team understands what they can or cannot do. This also sets the deliverables and the performance goals.

The budget is concerned with taking a good look at the material and human resources that are needed to meet the project goals and estimate the project costs.

The timeline on the other hand is concerned with revealing the length of time that is expected for each of the phases of the project to be completed and this also includes the project schedule and milestones that will be met.
In project management, a project plan includes three important documents: Project Charter, Scope of Work Statement (SOW) And Work Breakdown Structure (WBS).

Project Charter is the section of the plan that presents a general overview of the project. In this section, the purpose and objectives of the project including the constraints and risks are outlined. It also defines the stakeholders as well as the general strategy that will be employed in the project's execution.

Scope of Work Statement (SOW) describes the scope, schedule, activities and deliverables of the project including key milestones.

Work Breakdown Structure (WBS) is the aspect of the document that breaks down the project scope into phases, deliverables and the individual activities that will lead to the closing deliverable. The Project Execution Plan (PEP) describes the execution strategy, roles and responsibilities of the project team, detailed schedule, project assurance, and risk management (Dey, 2022).

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these is not included in the project plan?

a. Project management document
b. Project charter
c. Scope of work statement
d. Work breakdown structure

3.1.1 Purpose of Project Planning

The purpose of the project planning phase includes

- Establish business requirements: It specifies what the project needs are and also the criteria for success. This includes the goals of the project and the performance criteria for success.
- Establish cost, schedule, list of deliverables, and delivery dates: With the project plan, it is possible to have a view of the cost, schedule, list of deliverables and delivery dates. This serves as a guide for the project team from the execution through the closing of the project.
- Establish resources plans: Projects require resources in the form of humans and materials for their execution. The project planning describes all the aspects and activities of the project with assigned resources for meeting the tasks that are involved.
- Obtain management approval and proceed to the next phase: The project plan provides all the information which is needed by management, company or organization to understand the objectives of the project, the expected deliverables, scope, costs, and timeline of activities among other things. A well-detailed project plan is a basis for seeking and receiving approval for the project which takes the project to the execution phase (Barron & Barron, n.d).

3.1.2 Project Planning Elements

Although the process of developing the project plan differs from one organisation to another, the basic elements of project planning as outlined by Meredith and Mantel (2010) are:

- Overview – A short summary of the objectives and scope of the project mostly directed to the top management. This contains a statement of the goals of the project including a brief explanation of their relationships to the firm's objectives, how the managerial structure that will be used for the project is and also a list of the major milestones in the project schedule.
- Objectives or scope – While the overview gives a summary of the objectives and scope of the project, this gives a more detailed statement of the general goals as noted in the overview section. The statement should also contain information on the profit, competitive aims and technical goals.
- General approach – This is where the managerial and technical approach that will be adopted in the work is outlined.
- Contractual Approach – This aspect provides information on the complete list and description of issues such as reporting requirements, customer-supplied resources, liaison arrangements, advisory committees, project reviews and cancellations procedures etc.
- Schedules – Here, the various schedules and milestone events are listed. Also attached is the estimated time for each task as obtained from the people that are responsible for them.
- Resources – This specifies the resources required according to tasks.

- Planning – This specifies the expected personnel requirements of the project including such things as special skills, types of training needed etc.
- Risk Management – This covers the plans for possible risks that could affect the project. It also states the optional contingency plans and the strategies for mitigating them.
- Evaluation Method – Evaluation is part of every project. This section details the procedure that will be used in monitoring, collecting, storing and evaluating the history of the project.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes. Project planning is aimed at laying the foundation for project's success True False

3.1.2 Project Scope

One essential characteristic of a project that we must always bear in mind is that every project is temporary and has a start and an end time. In essence, there must be a way to keep a budget within boundaries that will ensure that only what is required or specified is delivered. To that extent, "project scope is a part of the project planning process that documents specific goals, deliverables, features, and budgets. The scope document details the list of activities for the successful completion of the project" (Project, 2021).

Project scope defines what the project will deliver and what it will not. It is important to define the scope because one major setback for projects is the failure to determine or define the scope. If the scope is properly defined and managed, it will be easier to contain it within time and budget which ultimately results in the successful delivery of the project. Failure to define a project scope clearly and manage it efficiently will most likely result in an unsuccessful project

As mentioned, the project scope is a detailed outline of every aspect of the project. This includes related activities such as resources, timelines (deadlines), and deliverables. Deliverables are the tangible things that the project produces. Other aspects that are outlined in the project scope are key stakeholders, steps that will be taken, assumptions, and obstacles, as well as what the project is

about, what is included, and what is not. This could be a house or software, among other things.

One important thing is that a project is not expected to extend beyond its scope. The project scope also serves to provide the key stakeholders, with a clear understanding of why the project is being initiated as well as defines what the key goals are. This is important for the avoidance of ambiguity. All of this essential information is documented in a scope statement.

To that extent, the scope of a project must be clearly stated in the planning phase.

To ensure success in the business of carrying out a new project, therefore, three steps are necessary:

1) identify the factors that are involved in starting a project,

2) Clearly define the objectives, and

3) identify all measures of performance (Mirza, Pourzolfaghar and Shanazari, 2013).

Furthermore, if a project is to be successfully managed, there are some key steps that must be taken to define its scope. There is no doubt that a clear and proper definition of the project scope goes a long way in ensuring that the project stays within boundaries. The key steps are as follows

(ii) Work with key stakeholders to define and create a scope statement by identifying what is within scope, and out of scope. Collaborating with stakeholders helps to ensure essential things do not fall through the cracks.

(iii) Identify, document, and communicate assumptions. Assumptions are those elements that relate to the project that are assumed to be true for the duration of the project. Assumptions are necessary to provide an estimate of the cost and schedule to deliver the project's scope during the planning phase of a project.

(iv) Gain buy-in (acceptance and commitment) for the scope statement with the stakeholders who are most impacted to ensure that (Alexander, 2020).

Some essential information that is documented in a scope statement:

- A project statement of work (SoW), which is a detailed breakdown of all work to be performed by a project team and any important elements that may impact the outcome

- Constraints that might limit or negatively impact the outcome of the project, including resources, procurement issues, timing, or lack of information
- Scope exclusions, which can be anything that will not be part of the project or its deliverables
- Milestones that provide the exact date that something will be delivered or completed
    - The final deliverables that will be provided to the customer at the end of the project — for example, a report, a software feature, any process insights or analysis, or any product or service that a customer needs.
    - Acceptance criteria that spell out exactly how success will be measured
    - Final approval whereby the customer will sign off on the scope statement confirming that all parameters have been included and the document is complete and accurate (Ahmad, Masood & Mohmmed, 2013).

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The project scope is concerned with only project deliverables: True False

4.0 Summary

Project planning is a critical part of project management and must be carried out before the project is executed. The project plan contains information that is critical to the success of any project and any project that does not have a plan stands the risk of failing. In drawing up the project plan, the scope, costs and timeline must be clearly stated. Also, the objectives of the project and resources that are available. Each activity of the project should be carefully planned with costs attached to it. The plan serves as the roadmap for the project. While it is not cast in iron, it helps in keeping the project on course.

5.0 Tutor-Marked Assignment

What do you understand by project planning?
Mention and explain three elements of the project plan**.**

6.0 References/Further Reading

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7.0 Possible Answers to Self-Assessment Exercise

SAE 1	Project Management Document
SAE 2	True
SAE 3	False

Unit 4 Project Budgeting

Contents

1.0 Introduction

Projects are executed with money and so funds can be considered the life blood of any project. In project management, budgeting is concerned with the total amount of money that is set aside for the completion of the project. It is the responsibility of the project manager and the project team to estimate the cost of completing a project.

Where budgeting is done properly and the project manager uses it judiciously for the purposes outlined, there is a good chance that the project will run smoothly within the specified timeline. Therefore, the project budget helps the project manager to facilitate the project within the estimated costs and timelines and helps to check on wasteful expenditure.

2.0 Intended Learning Objectives (ILOs)

In this unit, you will be introduced to budgeting in project management including the budgeting process, budgeting and risk management and the budgeting process output. It is hoped that with this knowledge, you will be able to carry out proper budgeting in any project that you may be called to execute.

3.0 Main Contents

3.1 Project Budgeting

Essentially, “a budget is a document that translates plans into money - money that will need to be spent to get your planned activities done (expenditure) and money that will need to be generated to cover the costs of getting the work done (income). It is an estimate, or informed guess, about what you will need in monetary terms to do your work” (Civicus, n.d.).

Following this general definition of a budget, we see project budgeting as a laid down plan for allocating resources. It is important to note that resources are scarce and so must be used judiciously to achieve the desired results. So, no project can proceed without funds and funds cannot or should not be disbursed without a laid down project budget.

By way of a definition, “project budget is the total amount of authorized financial resources allocated for the particular purpose(s) of the sponsored project for a specific period of time. It is the primary financial document that constitutes the necessary funds for implementing the project and producing the

deliverables. The project budget gives a detailed statement of all the direct and overhead costs required to carry out the project goals and objectives" (McConnel, 2011).

A project budgeting is also defined "as the total projected costs needed to complete a project over a defined period of time. It is used to estimate what the costs of the project will be for every phase of the project. It will include such things as labour costs, material procurement costs and operating costs" (Bridges, 2019).

The definitions help us to understand that the project budget is usually an estimated cost of how much it will cost to execute a project. The estimation is done to cover the different phases of a project.

Arguably, one important aspect of project execution is the source of obtaining the funds that will be used to execute it. Another important issue is ensuring that the funds that are allocated to a project are used carefully so as to successfully complete the project. So, the judicious allocation of funds starts with estimating the cost of the different phases that are involved in a project to ensure that there is a view of how much will be involved in completing the project. So, the project budget can be viewed as a control mechanism that ensures that funds are used judiciously in achieving the project's objectives and deliverables.

However, beyond being a control mechanism, it should be understood that a project budget also serves as a means of communicating to the stakeholders how much money is needed and when it is needed thereby enabling them to keep track of the project.
To that extent, a project budget assists in monitoring the income and expenditure of the project as well as in the identification of any problem that may arise. It is the basis for financial accountability and transparency because based on it, informed questions can be asked if discrepancies are noticed in the expenditure. The budget also serves as a basis for approval for the project to proceed to the execution phase.

In a nutshell, project budgeting is important in the following ways

- Budgeting is an essential part of getting a project approved and securing project funding.
- Well-planned budgets become the foundation for project cost control.
- Project budgets have a direct relationship with the financial viability of an organization (CFA Journal, 2022).

Take note, however, that the budget is only an estimate. It is not cast in iron such that it cannot be changed when the occasion warrants it. An estimate may

be done at a particular time only for market forces to affect the costs of items. This will be taken into consideration in the budgeting process but care should be taken to avoid arbitrary implementation of the project budget to avoid depletion of funds even before the project is completed.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project budgeting is:

a. The total projected costs needed to complete a project over a defined period of time
b. The total projected estimate needed to complete a phase of the project
c. The total project costs needed to complete a project phase
d. None of the above

3.1.2 Project Budget Management

Project budget management is the process of managing and controlling the project budget throughout the project's life cycle. Budget management consists of a series of tasks and steps designed to help manage the costs of the project, the steps identified by PM4DEV (2015) are:

• **Defining the Budget:** It is the responsibility of the project manager to define the budget by estimating the budget required to complete the project. The process involves the allocation of costs to all project activities and all aspects of the project. This includes the cost of internal and external human resources, equipment, travel, materials and supplies. The budget has to be more detailed than it was in the project proposal and if it is a new budget, should carefully cover all the project activities. In the event that there was already a contracted budget before the project manager starts his job, there should be no assumptions. There is a need for that budget can accommodate the project scope. Where this is not the case, the budget should be reviewed and updated.

• **Executing the Budget:** A budget is executed by authorizing the expenses approved in the budget. Thereafter, the project manager initiates to carry out the activities that include hiring project staff, purchase of equipment, materials and services, all according to a project procurement plan developed during the resource management process. This step occurs after the budget has been approved and the project authorised to start its activities according to the project plan.

• **Controlling the Budget**

Monitoring and controlling the budget is a critical activity therefore, it is not enough to have a budget. In the event of any changes in the budget, this should be appropriately captured and approved and included in the project baseline.

The whole point of controlling and monitoring the project is to ensure that resources are deployed appropriately. There should be accountability for the project costs. All expenses must be formally identified, approved and paid for. The roles and responsibilities of the individuals charged with project control should be clearly defined.

- **Updating the Budget**

As approved changes are made to the budget, there should be an update to it. This is all in a bid to ensure that all items of expenditure are accounted for. Approved changes to the budget will need to be reflected in the accounting system used by the organisation and new project budget reports will need to reflect this change.

To locate this process in the library. In the university system, the Bursary department is charged with the responsibility of controlling and managing the budget. Normally, calls for budget submissions is made by them from the various units and departments in the university system. If the university prepares their budget, it must be approved before it can operate it. The first step in the process is articulating all the needs and attaching financial implications to them. When the budget is approved by the Vice-Chancellor, the Bursary will be directed to release funds. The library management must ensure that the funds are used as stated. Any new additions or changes must be approved and the budget updated. Without approval, no additional expenses can be included. Also, as the activities are being carried out, all receipts on expenditure will be carefully kept and used to retire the released fund. The Bursary department will then ensure that expenditure is tallied with budget submission.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project budget management involves:

a. Defining the budget
b. Executing the budget
c. Controlling the budget
d. the budget
e. All of the above

3.1.2 Steps in the Project Budgeting Process

This process can take several steps, however, Wikiaccounting (2022) has outlined the following steps.

1. **Pre-planning**: This is the first step in project budgeting and it should start with identifying the tasks, activities, and milestones of the project since the project cost estimation will be based on it. Having the project tasks, activities and milestones broken down in such detail can help in detailed cost estimations and allocation of resources in full.

2. **Cost estimation**: The budgeting process should not end with outlining the tasks, activities and milestones of the project, rather, they should be assigned estimated costs. Project activities and resources should be assigned estimated costs to provide an insight into the expected overall cost of the project.
3. **Contingency planning**: Projects are prone to contingencies and so provision should be made for contingencies in the budget. This is necessary to avoid mishaps during the project execution and helps to cushion any shortcomings in the pre-planning stage.
4. **Real-time management**: The real-time management of the budget involves real-time costs and expenses during the project activities. This step is the actual movement of money into and out of the project. It serves to give project managers an idea about their pre-planned cost estimates. This is can be seen as the estimate vs the actual step.
5. **Variances**: As noted earlier, a project budget is not cast in iron. The actual money is spent during the project execution phase. The variance is any difference between the amount that was budgeted and the actual outcome. The estimated cost can be affected by positive or adverse budget variances. These operational variances can arise from a number of reasons including idle labour hours, and machine inefficiencies among others.
6. **Reconciliation**: This is the process involved in checking the differences between budget estimation and the outcome. Generally, the project cost is determined by computing the cost of the different aspects of a project at completion. However, reconciliation of costs cannot be left until the completion of the project. It can take place during the project and will serve to control
spending.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Contingency should be provided for in a project budget to take care of unexpected events: True False

3.1.2 Project Cost Estimation Technique

The cost estimation technique is the process that involves estimating all the costs that are associated with the completion of a project from start to completion within the scope and timeline. There are a number of forecasting techniques that can be used in project estimation. They include 1. Bottom-top estimation, 2. Top-down estimation, 3. Analogous estimation, 4. Parametric estimation, and 5. Three-point estimation (CFA Journal, 2022).

1. **Bottom-Top Estimation:** This is the most commonly used technique in project budgeting. This technique requires a sum of all the costs allocated to different project activities, and the sum-up of all the costs is the total project cost. The drawback of this technique is that it takes a considerable amount of time to accomplish since all the project activities are budgeted for. Project budgeting is a continuous exercise and as the project moves into later stages, it becomes more defined and the goals become clearer.
2. **Top-Down Estimation:** This is the opposite of the bottom-top estimation. In this technique, the sum total of the cost is broken up and allocated to all the

activities, tasks and phases of the project. This technique is useful where there is a decision to be made about whether or not to accept the project; the budget is therefore kept as a limiting factor that will determine the decision.
The top-down approach to budgeting is literarily set in stone as it does not have enough room for change. The fact that every project experiences an increase in scope and planned tasks as it progresses, means that with this technique frequent changes to the plan and revisions of the budget are discouraged. The technique is best suited for projects that of a recurring nature where the nature and scope of the project are fully understood.

3. **Analogous Estimation:** In this method, information from already executed similar projects is used for the estimation. Available data from the projects is used to determine how long a current project will run and how much it will cost. This technique is possible where the estimator is experienced and already has an idea of the nature and scope of a project. For instance, a project manager has executed Project A and is asked to execute Project B under similar conditions. Data used to estimate Project A is used to make an estimation for Project B which in nature and scope is similar to Project A.
   The drawback is that it is only useful when a precedent already exists. It cannot be used for a new and unique project. Moreover, an inexperienced project manager may find it difficult to use. Moreover, drawing a parallel from a previous project may be misleading as many aspects of the cost may change over a period due to inflation, wage increase, etc.

4. **Parametric Estimation:**
   Parametric estimation can be said to be an improvement in the analogous estimation technique. In this technique, data is gathered from different similar projects and then applied to the current project. The data points could be more than one similar project. The objective of this estimation technique is to make the analogous estimation technique more accurate by including data sets that are suitable for the current project from many different projects to increase the overall relevance of costs. In this technique, statistics, historical records and variables are used to create a budget quickly in comparison to a bottom-top approach but the accuracy is similar.

   The drawback however is that it may be difficult to find similar and relevant data sets; it is time-consuming and only applies where there are similar projects in existence.

5. **Three-Point Estimation:**
   The three-point estimation technique is used to estimate activity and duration/time and costs of work items. The strength of this technique is that it minimises the risk of exceeding the project budget. It also allows the project manager to deliver within the budgeted estimates.
   The only drawback is that it is time-consuming.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these estimation techniques is best used when there is a decision to be made about whether or not to accept the project?

a. Parametric estimation
b. Bottom-top estimation
c. Top-down estimation
e. None of the above

4.0 Summary

Project budgeting is a critical exercise in project management. Resources are needed to execute projects, but resources are not infinite and so need to be properly planned for. In project managing, every activity and tasks should be captured in the budget and funds attached to them. It is important that the budget takes the scope and objectives of the project into consideration. Also, the budget must be controlled and monitored to ensure that it is used as planned. Without funds, a project stands the risk of not being completed. In this unit, you were taken through project budgeting and budgeting management and its importance as well as control and monitoring of project budget, and project estimation.

5.0 Tutor-Marked Assignments

1. Briefly explain why project planning is important.
2. Outline and briefly explain three basic components of a project plan.

6.0 References/Further Readings

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7.0 Possible Answers to Self-Assessment Exercises

a. SAE 1 The total projected costs needed to complete a project over a defined period of time
SAE 2 All of the above
SAE 3 True
SAE 4 Top-down estimation

Unit 5 Project Manager

Contents

1.0 Introduction

When we talk about resource or resources in project management, we are referring to anything that is needed to run and make a success of a project.

Resources should be allocated before the commencement of the project to serve as a guide in determining how much is allocated to a particular aspect of the project. This also helps in the tracking of the resources. The resource could be human or material.

One of the vital resources needed to execute a project is the project manager. This underscores the point that the whole essence of adopting the project management approach in the executing of projects is to ensure that the responsibility for the project is placed on someone who is responsible for the project from initiation to completion or closing. A project often has many aspects and teams and it is important that they are coordinated properly for the best outcome. While it is not impossible to work on a project without a project manager, the presence of a project manager is to a large extent beneficial.

2.0 Intended Learning Outcomes (ILOs)

In this unit, you will understand who a project manager is and the various types of project managers there are. You will also understand the role of a project manager in a project and his responsibilities. At the end of the unit, you will understand the expectations from a project manager in case you are charged with the responsibility of managing a project in your organisation.

3.0 Main Content

3.1 Project Manager

A project manager is an integral part of any organisation that uses project management in its operations. The project manager is a very important part of a project. He is a professional in the field of project management who is charged with the responsibility of the planning, procurement, and execution of a project, in any undertaking that has a defined scope, defined start, and a defined finish; regardless of the environment or industry. While the project manager may not necessarily be the overall head of an organisation, once appointed, other heads of departments that are involved in the project answer to him as long as the issue has to do with that project. He in turn answers to the overall boss.

Even in construction projects, it is also the project manager that takes that responsibility. He is the one that the stakeholders go to on any issue concerning a project. Therefore, project management is the responsibility of a project manager. This individual seldom participates directly in the activities that produce the result, but rather strives to maintain the

progress, mutual interaction, and tasks of various parties in such a way that reduces the risk of overall failure, maximizes benefits and minimizes costs (Wikipedia, 2021). Therefore, it can safely be said that the success or failure of a project depends on the project manager. Any project manager that is worth his salt will stake everything to ensure that the project is successful.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The project manager is responsible for:

a. Budgeting and cost control

b. Resources allocation

c. Tracking project expenditure

d. All of the above

3.1.1 Types of Project Managers

Project managers can be categorised according to the type of industry or job description. What this implies is that the duties of a project manager vary and can only be examined on the basis of the industry however, whatever the industry, the project manager is in charge of projects. In some cases, also, project managers are categorized based on their character.

In this section, however, we are considering project managers based on the type of industry or their job description. Wikipedia (2021) identifies five types of project managers: (i) architectural project manager, (ii) construction project manager, (iii) engineering project manager, (iv) insurance claims project manager, and (v) IT project manager.

i. **Architectural Project Manager*:*** This type of project manager manages projects in the field of architecture. The architectural project manager possesses many similar skills to a project manager in the construction industry. In fact, the architectural project manager will often work closely with the construction project manager. In addition, the architectural project manager coordinates the work design team and many consultants who contribute to a construction project. He is

also in charge of managing communication with the client. Specifically, he is responsible for budgeting, scheduling, and quality control.

ii. **Construction Project Manager*:*** This project manager works in the construction industry such a building construction. Often times, the construction project manager works closely with an architectural project manager.

iii. **Engineering Project Manager*:*** Engineering projects are managed by an engineering project manager. Engineering project management has as the deliverable, a product or device through the developing and manufacturing stages, working with various professionals in different fields of engineering and manufacturing to go from concept to finished product. Optionally, this can include different versions and standards as required by different countries, requiring knowledge of laws, requirements, and infrastructure.

iv. **Insurance Claim Project Manager:** Insurance policies are taken by individuals or organisations to cover losses through fire, flood, or other kinds of disaster. Therefore, an insurance claims project manager often oversees and manages the restoration of a client's home/office after a fire, flood, or other disaster, covering the fields from electronics through to the demolition and construction contractors.

v. **IT Project Manager:** Naturally, an IT project manager works in the IT industry and manages IT projects. Two categories of managers are classified under IT project management. These are software (development) project manager and infrastructure project manager.

Software is those instructions that enable the user to interact with a computer, its hardware, or perform tasks. Essentially, most computers will be useless without software. Therefore, the development of software is an important project in the IT industry. The project manager in an IT industry plays a vital role. A software project manager has many of the same skills as their counterparts in other industries. Beyond the skills normally associated with traditional project management in industries such as construction and manufacturing, a software project manager will typically have an extensive background in software development. Many software project managers hold a degree in computer science, information technology, management of information systems, or another related field.

On the other hand, an infrastructure IT project manager is concerned with ensuring the smooth running of hardware in the IT department. Hardware includes computers, servers, storage, networking, and such aspects of them as backup, business continuity, upgrades, replacement, and growth.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A project manager is competent to work on all types of projects

True False

3.1.2 Selection of A Project Manager

The foregoing discussions, undoubtedly, have helped you to understand the unique role and responsibilities of a project manager. The fact that a project manager is entrusted with the responsibility of running a project from initiation to closing phases reinforces the point that it is not a job to be given to one who is not well grounded. As mentioned severally, the success or failure of a project largely depends on the project manager. Therefore, care must be exercised to ensure that the one commissioned to manage a project is capable of meeting expectations.

The success of a project may be made more likely in having a qualified project manager. Egeland (2010) contends that careful thought should be given to selecting the right person for a project because even the qualities of this particular individual can have a direct impact on the outcome of the engagement. Reinforcing his position, Egeland (2016) further notes that the sole criteria for selecting a project manager should not be based on qualification because many qualified people can do the mechanics of project management, but not everyone is a project leader. The technically competent person is not necessarily a competent project leader. A person may have the best logical and analytical mind in the group and yet lack the qualities that lead a project to a successful conclusion. Because the project manager must interact with many people (such as sponsors, senior management, client, and team members), it is important that that person have good “people skills.

Regarding qualifications, while having advanced subject expertise in s specific project activities is desirable, it needs to be understood that this is not necessarily important because the project manager does not work alone on the entire project rather, he most likely will work with a team of sub-project managers that have the required advanced expertise. In essence, the project manager can rely on them to provide advanced subject expertise in the specific parts of the overall projects that they are overseeing. What is more important is that the project manager possesses good people skills to enable him successfully interact with all the people that he must meet in the course of the

project such as stakeholders, senior management, client and team members. His ability to interact successfully with the various groups of people will go a long way to guarantee the success of the project.

Indeed Editorial Team (2021) also posit that irrespective of the industry a project manager works in, it is imperative that he possesses some soft or peoples skills in addition to having technical skills as these skills can boost his success. not exhaustive, Indeed Editorial Team (2021) has also outlined these eight key qualities to include: 1. Leadership skills, 2. Communication skills, 3. Problem-solving skills, 4. Delegation skills, 5. Enthusiasm, 6. Team-building skills, 7. Integrity and 8. Competences.

1. **Leadership Skills:** Strong leadership is an important skill that a project manager should possess if he is to be successful on the job. The project manager is tasked with the responsibility of overseeing the project from start to finish. To achieve this responsibility, he will require team from start to finish. Being a good leader means that the project manager should be able to motivate his team to perform at their best throughout the project and ensure all team members have a clear understanding of what is expected of them. He should also be able to assess his team's strengths and weaknesses and decide how to best utilize them throughout the project completion process.

2. **Communication skills:** Communication is very important from the start to finish of a project. The project manager will have to communicate with the stakeholders and senior management team as well as the various work teams that are involved with the project. Effective project management requires clear and competent communication about the expectations, goals and responsibilities of the team who will be completing the project. Being able to efficiently communicate with his team as well as clients and management can ensure that everyone is of the same understanding regarding project expectations. Good communication skills also allow him to provide constructive feedback to his team to better guide them. Both written and oral communication skills are important for project managers to have.

3. **Problem-solving skills:** In the course of executing a project, a number of issues may arise which can only be resolved by a project manager. Poor management of issues such as conflicts and misunderstanding can create problems in achieving the objectives. Successful project managers should be able to solve a variety of problems throughout all stages of a project. Issues that may need to be solved could involve team members, clients or

stakeholders related to the project. Being able to think on his feet and address disputes and problems is key to ensuring the project is completed in an efficient and timely manner.

4. **Delegation skills:** A lot of activities and sub-teams are involved in any project. Even the best of project managers will need other people to help him oversee some aspects of the project since he cannot be everywhere at the same time. Being able to assign and oversee tasks is a fundamental component of successful project management. A project manager should have the ability to access the skills of his team and sign tasks based on these skills. Effective delegation also requires him to trust his team members to fulfill their duties and allows him to avoid micromanaging them. Delegation has the advantage of equipping other people with supervisory skills.

5. **Enthusiasm:** The mood of a project manager can transmit positive or negative vibes to his team members. Enthusiasm is an important part of being a good project manager because it shows the team that the project manager believes in the project and has confidence in his team's ability to complete it. Being enthusiastic can also help keep team members motivated and in a positive state of mind while working on their assigned tasks.

6. **Team-building skills:** As mentioned severally, teams are used to execute projects. The project manager should possess team-building skills. Being a good team builder can help him bring a successful team together and that works as a unit to complete a project. Leading his team towards a common purpose and keeping the enthusiasm and motivation alive throughout the entire project will make him a better project manager and leader.

7. **Integrity:** The project manager should have enough integrity to commit to the finishing of a project. Integrity, sometimes also referred to as loyalty or honesty, is an important quality for a project manager to have. Integrity can help him set a good example for his team and make them more likely to follow that example. It also shows his team that they are committed to the project and are willing to see it through to the end at all costs. Integrity additionally fosters trust from his team and promotes an ethical and responsible work environment.

8. **Competence:** Being competent in project management can promote both a sense of trust and authority in the team. Knowing how to effectively and competently lead his team is paramount to the overall success of project completion. However, another important part of competency is realizing

when he is not an expert in a certain field and therefore be willing to ask for help from others when it is needed. Refusal to ask for help is not only a sign or immaturity but also of foolhardiness as it can derail the project.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A projects manager's ability to assign and oversee tasks is a fundamental component of successful project management. What type of skill is this?

a. Accountability skill

b. Communication skill

c. Problem solving skill

d. Delegation skill

3.1.3 Roles and Responsibilities of a Project Manager

The exact duties of a project manager are largely dictated by the type of industry, organsation and types of project over which he has oversight. What is not controvertible however; is the role of a project manager spans through the planning phase to the closing phase of a project. During all of these phases, a project manager also ensures that the project stays within the stipulated time, budget and within scope. But irrespective of the industry, organisation or type of project, five distinct phases of processes are usually associated with projects. These phases are commonly referred to as the "project life cycle.

Project managers are charged with certain responsibilities, and in line with the type of project one is involved in. However, the specific tasks that consume a project manager's time will vary substantially depending on which phases of the life cycle their projects are in. What this means is that the responsibilities will vary as they get into one stage or phase of the project or another. However, there are a number of general tasks that any good project manager can expect to perform on a daily basis. The mark of a good project manager is in how efficient and effective he is in carrying out his responsibilities because the success or failure of a project will to a large extent depend on him.

Miller (2019) cautions that one should not see the project life cycles listed above as steps as such because these are processes that project managers continually return to throughout the duration or life of a project. However, they

form the basis on which the role of a project manager can be discussed. The processes are discussed more closely below.

1. **Initiating**: Every project is new and unique and project managers start each new project by defining what the main objectives of the project are. He is also the one to define the purpose and scope of the project. Because every project has stakeholders, the project manager identifies key internal and external stakeholders, discuss shared expectations, and gain the required authorization necessary to move the project forward (Miller, 2019). These are things that need to be done to ensure that everyone is on the same page. Miller (2019) has gone on to identify important questions that project managers ask during the initiating phase. This includes:

a. Why is the project important?

b. What's the specific problem we're trying to solve?

c. What is the desired outcome?

d. What are the project's success criteria?

e. Who are the stakeholders on this project? Who is impacted by, or who impacts, this project?

f. What are the requirements and constraints within this project?

g. What assumptions are we making?

h. How will the project be funded?

i. What is within our scope? What is not within our scope?

j. Has this project been executed before? If so, what was the result? What information from that past project should be considered in this project?

2. **Planning**: It is the responsibility of the project manager to formulate an integrated plan to meet the projects objectives. The plan will outline the scope of the project, budget, timeline and risks. This is important as a guide for the project while it lasts. Other information that should be captured in the plan includes the communication strategy, a plan for execution and documentation, and a proposal for follow-up and maintenance. The plan has to be approved by the stakeholders because it will serve a critical part of the presentations needed to convince key decision makers. It is during this phase that project managers will outline key deliverables and milestones and identify the tasks that must be completed to complete each. It should be noted that the project planning does

not end until the closing of the project. Throughout project implementation, the plan constantly evolves and changes as the need arises (Miller, 2019; Wrike, 2021).

3. **Executing:** A project is executed using teams of diverse expertise. It is during the execution that the project manager uses team members to complete the work that has been identified in the project plan in order to reach the goals of the project. The project manager's role is to assign this work and to ensure that tasks are completed as scheduled. The project manager will also typically:

a. Protect the team from distractions

b. Facilitate issue resolution

c. Lead the team in working through project changes

4. **Monitoring and Controlling**: This is a very important role of a project manager to ensure that everything is going according to specified plans. Despite being listed as the fourth phase, monitoring and controlling processes actually commence at the beginning of a project and continue throughout planning, execution, and closing. In the monitoring and controlling phase, a project manager's work includes:

a. Monitoring the progress of a project

b. Managing the project's budget

c. Ensuring that key milestones are reached

d. Comparing actual performance against planned/scheduled performance

Bear in mind that although theoretically, the project is supposed to go according to the laid down plan, the truth is that it does not always go exactly as planned because unforeseen circumstances can emerge. It is good practice therefore, that a project manager must be flexible enough to work within a project's plan but readily adapt when necessary.

5. **Closing:** The closing stage is the end of the project. During this phase, the project manager strives to ensure that all activities necessary to achieve the final result are completed. During the close of a project, project managers will:

a. Work with the client to get formal sign-off that the project is complete. This is because it is only the client that can certify the project completed because the client is the one who assigns the project

b. Release any resources (budget or personnel) who are no longer needed for the project

c. Review the work of third-party vendors or partners in order to close their contracts and pay their invoices

d. Archive project files for future reference and use when there is a need for it.

After the project has been completed, all the stakeholders will meet for a post-implementation review which is often used to identify key lessons learned. Understanding what went well, what could be done differently, and what to stop doing can help inform and improve project management practices moving forward.

Furthermore, there are specific demands that are made on the project manager on a daily basis. As mentioned earlier, while the demands that are made on the project manager may vary according to the type of project or the phase that a project is in, there are some general demands that are expected for the project manager to meet. Miller (2019) outlines and explains these responsibilities as they relate to communicating (with team members and stakeholders), issue identification and resolution;

1. **Communicating with Team Members:** Project Management is all about communication, whether through emails, calls, daily check-ins, or team meetings. Project managers must communicate with the members of their team regularly to determine the status of various projects and potential roadblocks that will need to be resolved. It is important that there is productive guidance, efficient communication and proper supervision of the project team because the success or failure of a project is highly dependent on the work team, thus, the key to success is always in project collaboration. To this end, the establishment of good communication is of major importance. Because the different activities of a project entails teamwork, there is need to ensure that this flows through the phases of the project. On one hand, information needs to be articulated in a clear, unambiguous and complete way, so everything is comprehended fully by everyone. On the other hand, the ability to be able listen and receive constructive feedback will ensure that time is not wasted.

2. **Communicating with Key Stakeholders:** There are key stakeholders in every project. It is important that they are regularly updated on project as it progresses. This is important to ensure that the project still aligns with changing company initiatives. This communication can take many forms, including weekly or monthly reports, regularly updated dashboards, or quick emails, calls, or meetings. Regardless of the medium, getting

comfortable communicating with data is an essential skill that every project manager requires.

3. **Issue Identification and Resolution:** Throughout the course of any project, it's common for scope, budget, resource allocation, and other miscellaneous issues to arise. It is the role of the project manager to ensure that these issues are resolved effectively in order to keep the project on track. Conflicts may also arise within teams or between members of different teams. The project manager must ensure that such conflicts are resolved so that the work is not hindered.

4. **Budgeting:** Project managers work with money and it is important that proper budgeting is done so that every aspect of the project is covered. However, the scale of the budgeting that he does would normally be dependent on the size of the project. For small-scale projects, cost estimation may be a weekly or even a monthly task. But for larger projects with many different expenses to keep in mind, project managers may spend time reviewing budgets each day to ensure the project does not exceed resource allocations. This may also include reviewing, processing, and approving invoices from outside vendors if the project includes such partnerships.

5. **Time management and Approval:** Projects are time bound, and it is important to keep to the timeline as much as possible. This is to ensure that the project remains on track. To carry out this responsibility, many project managers turn to timesheets or a project management software that allows them to see how their team is spending their time. In addition to ensuring that the project is moving along as planned, this helps project managers shift resources between projects as necessary.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

A project manager has the final say in every project decision

True False

4.0 Summary

The success or failure of a project depends on the ability of the project manager to play his roles effectively. Generally, a project manager is basically charged with five major roles. Every project manager irrespective of the type of project plays the five major roles. In addition to the major roles, there are also specific daily responsibilities of a project manager. All this is important in the smooth running and successful execution of the project.

In this unit, you were learned about the project manager, the types of project managers, selection of project managers and the roles and responsibilities of a project manager and how these roles relate to the project. The unit further affirms to importance of a project manager in the smooth running of a project. Where the project manager is efficient in carrying out his responsibilities, they project will be successfully completed within the budget and time to the satisfaction of the end user. On the other hand, failure of the project manager to carry out his responsibilities will derail the project. This is costly in terms of funds and other resources needed in project implementation.

5.0 Tutor-Marked Assignment

1. Mention and explain three responsibilities of a project manager.
2. Mention and explain five qualities that a good project manager must possess
3. Mention and explain three types of project managers.

6.0 References/Further Reading

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7.0 Possible Answers to Self-Assessment Exercises

1. All of the above
2. False
3. Delegation skill
4. False

Module 2 Project Organisation Structure

Unit 1 Functional Organisation Structure

Unit 2 Pure Project Organisation Structure

Unit 3 Matrix Organisation Organisation Structure

Unit 1: Functional Organisation Structure

Contents

1.0 Introduction

In the previous module, you were taken through the concepts of project and project management. This module will focus on project organization structure. Project organisation structure is an important element in project management because it determines the way that an organisation and the project manager performs. Pm4Dev (2016) observes that orgnisation structure defines the authority and this is usually conveyed with the aid of an organization chart. An organization chart is a graphical illustration which shows where individuals are located in the chart and also the project structure. Organisation forms are usually in a pyramid form and “individuals that are located closer to the top of the pyramid have more authority and responsibility than members located toward the bottom.” Relatively speaking also, the location of individual employees on the organization chart is what specifies the working relationships, and the lines connecting the boxes designate formal supervision and lines of communication between the individuals” (Pm4Dev, 2016). Typically, the project initiation phase is characterised by a level of uncertainty and confusion; having structure in place helps to reduce uncertainty and confusion.

Indeed, the organisation structure that any organisation adopts or selects will largely influence how projects are carried out in it. It is therefore important that one understands the organization structure in place as well as the culture within which the project manager is working. In a nutshell, the project organisation structure facilitates the coordination and implementation of project activities. The major aim is to ensure that the environment of work is such that fosters interactions among the team members thereby reducing to the minimum, incidences of disruptions, overlaps and conflicts. Given that “each project has its unique characteristics, the design of an organisational structure should consider the organisational environment, the project characteristics in which it will operate, and the level of authority the project manager is given” (PM4DEV, 2016). PM4Dev further observes that creating the structure is not the issue because it is only a part of organizing the project. There are three major types of project organization: functional organisation structure, pure project structure, and matrix structure. In terms of organisation of project teams and their leadership structures, the differences lie in who the project leader is, who has certain responsibilities and who makes the decisions (Odedayo, 2021).

The diagram below is a typical hierarchical organization chart that graphically represents an organisation’s structure. It highlights the different jobs, departments, and responsibilities that connect the company's employees to each other and to the management team (Chen & Rasure, 2021).

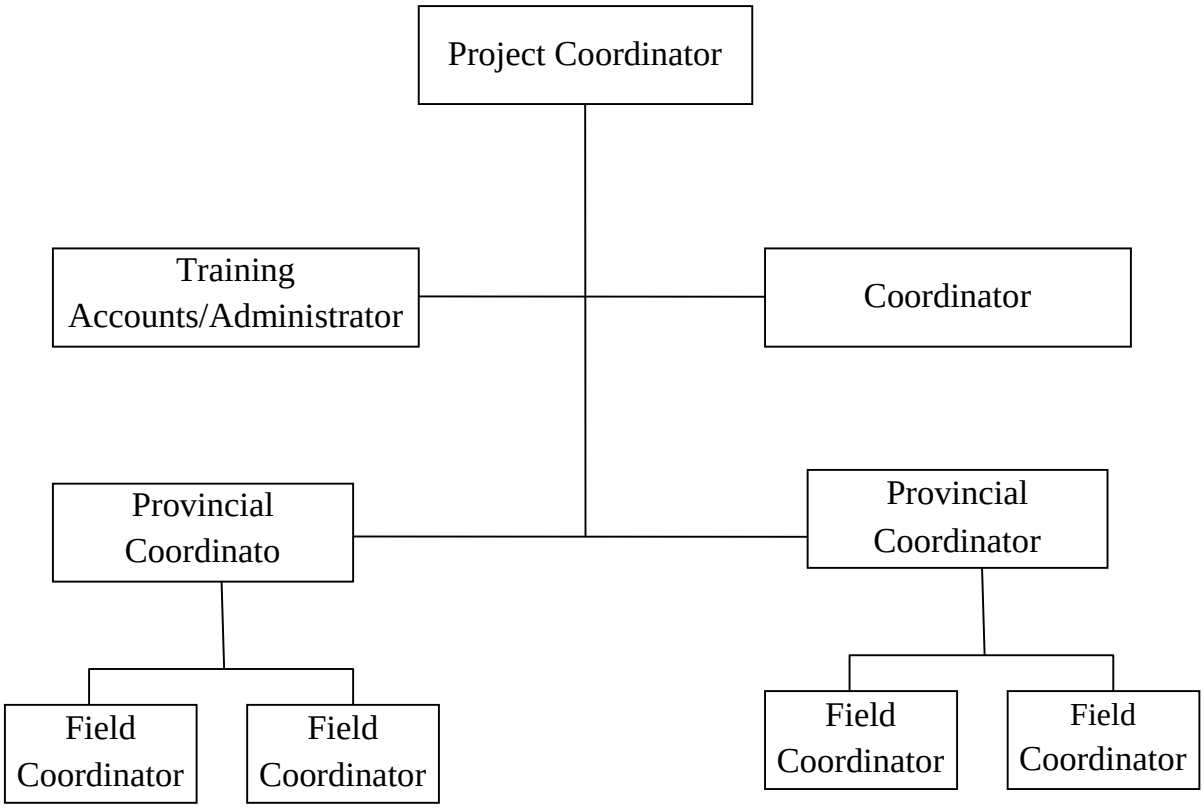

Fig. 6. Project Organisation Chart (Adopted from PM4Dev)

2.0 Intended Learning Outcomes (ILOs)

In this unit, your attention will be on project in functional organisation structure. The definition of functional organisation structure will be given in order to clearly differentiate it from other types of organization structures. You will learn about the advantages and disadvantages of functional organisation structures as it affects projects. Finally, you will be enlightened on the role of the project manager in functional organisation structure.

3.0 Main Content

3.1 Definition of Functional Organisational Structure

It is relevant to note that all firms start small usually with a few human and material resources. At the initial stages of their operations, they can manage to function without a sophisticated structure. However, as they become successful, and begin to grow and add more resources and people along the way, the pressure arises for them to develop an organisational structure

according to their need. This is important because if the organisation is left as it were without a defined structure, the system in place will no longer be capable of supporting the business and activities that take place, and the inevitable result is that the work will be affected negatively. To ensure that this does not happen, organisations adopt one form of structure or another. So then, what is organisational structure? IPL.org (2021) defines organisational structure as "how activities such as task allocation, coordination, and supervision are directed toward the achievement of organisational aims." In essence, organisational structures are created to ensure that activities or the work factors are divided, organized and coordinated. This includes also the performance of members of work teams

There are three major types of organisational structures including the functional organisation structure. The type of structure that an organisation chooses or adopts will be dependent on a number of factors that are peculiar to it. Where there are projects in the organisation, they are most likely to be carried out based on the organisation structure that is in place.

In A functional organisation structure is a structure that is used to organize workers based on their specific skills and knowledge. In other words, the focus here is placing workers according to their specialisation. In such organisations, functional units and roles are created. The units are identified by their names which clearly show what kind of function they perform. For example, you have Finance, Customer Care, Sales, Human Resources, Marketing, Administration, etc, usually within departments, and the employees are assigned to one product or service.

Each unit is managed by a functional manager who reports to the strategic direction of the organisation. In a large organisation, the heads of the individual functional units may have other operational managers working under them and that report directly to them. The larger the organisation the more functional units you have. Each of the unit functions independently and has its own vertical management structure.

Workers within each functional department communicate with each other exclusively, and then department heads communicate with each other. In other words, each functional department is independent and the functional manager only reports to the overall head. This structure works well in a stable environment that has continuous operations. The goal of a functional structure is to put together every informational and human resource necessary for one activity in a single place. That is if you talking about finance, for instance, every employee there is concerned with finance and their interaction with other

functional unit or department is to the extent that it is related to finance matters. The functional organisation structure helps organisations run their business and earn a profit.

An example of a functional organisation is the university system. In any university, there are different departments (not necessarily academic). Within the departments are sections, and under some sections are smaller units. Let us take the example of the university library. The library is divided into sections and under the sections are units. Each section or unit is charged with a particular aspect of the job. The unit head reports to the sectional head who in turn reports to a divisional head, and finally, the divisional head reports to the University Librarian who reports to the Vice-Chancellor. One distinguishing thing about a functional organisation structure is that the line of authority is strictly maintained. In fact, deviance is strictly discouraged.

In functional organisation structure, project team members are allocated according to the different functional units of an organisation. For instance, if there is a project in cataloguing unit, the project team will consist mostly of staff that are in the Technical Services Division and other sections or units are incorporated into the project only to the extent that there is a role for them to play. In essence, if there is another section or unit that will be involved in the project, staff are drawn from there too. The overall objective is to achieve the goals of the organisation. To that extent also, there is not likely to be a project unit.

Therefore, functional organisation structures must be managed using a hierarchical structure.

In an organisation of this type, the execution of a project means the birth of a temporary team. The project team will be composed of members coming from different functional units to the extent that they are relevant to the work. Where the members of the different functional units are invited into the project, each will deal with the part of the project that concerns them most closely and for which they are directly responsible.

Note that it is not mandatory that all units of an organisation are present in a project. The employees will in fact be assigned only on the basis of the requirements of the given project. For some projects, for example, no member from a particular department may be needed while more specialists of another department may be required.

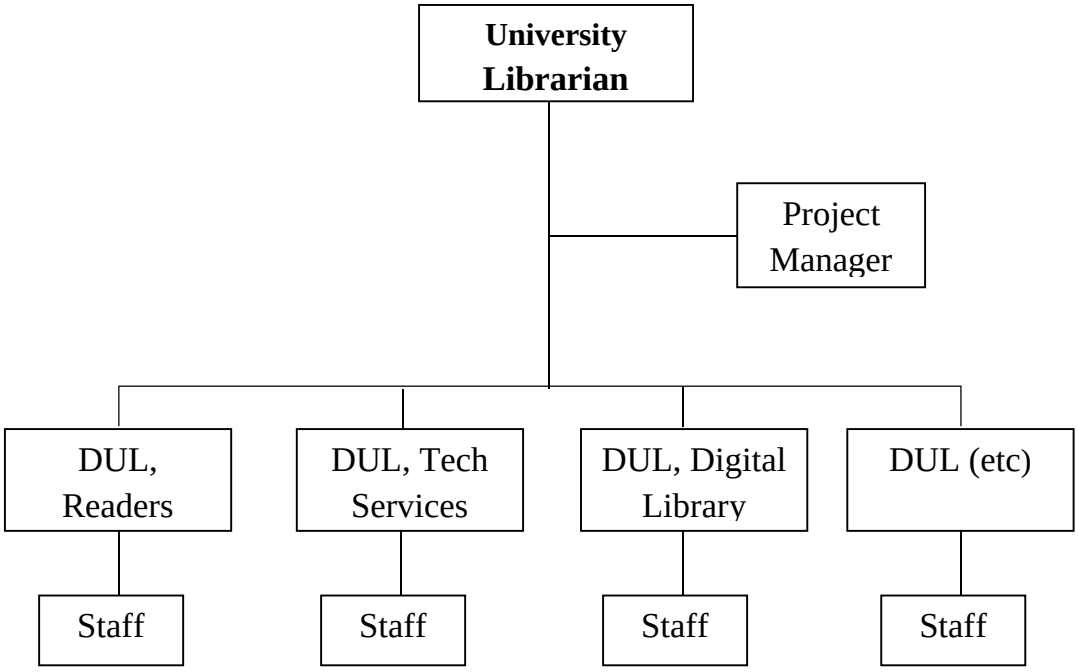

Fig. 7: Functional Project Structure (Adapted from Cristobal and Diaz, 2018)

The diagram above describes succinctly the hierarchical nature of functional organization structure. As can be seen, there are no staff under the project manager. So, if there is a project to be carried out, he will depend on the staff under the Deputy University Librarians who in this case are the functional managers. The one the project manager works with will depend on the project at hand. The functional heads also do not report directly to the project manager. In the same vein, each functional manager has staff that reports to him/her directly. Therefore, the functional manager that the project manager works with goes along with his staff who are directly answerable to him and not the project manager. This hierarchy is strictly maintained and only the University Librarian has overall control of all because both the project manager and the functional managers report directly to him/her.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A functional organisation structure is hierarchical True False

3.1.1 Advantages of Functional Organisation Structure

- **Competence:** As mentioned above, a functional organisation is structured based on the special skills and knowledge of the workers. As a result, employees who possess similar skills and experiences are grouped together. This makes for more efficient and higher quality production.

- **Clarity and Accountable Structure:** There is clarity of roles and accountability in functional organization structure as it relates to roles and tasks. As a result, there is little or no change in the operations of functions with the result that so little time is spent on learning since each member of the team in the project does the same thing that he/she would normally do in their unit.

- **Clear Communication Lines**: In functional organisations also, the hierarchy is simple, and employees know the one manager they are to answer to, instead of multiple people. This streamlines communication and reduces confusion among employees. Employees can feel confident about what they're doing because it is standardized. They are more likely to feel a loyalty to their department and the organisation as a whole. This increases morale and work ethic, as there is more job security. There is a clear path of growth for employees which provides motivation, and they are more likely to be corporative with people in their department. A functional organisational structure provides a perfect environment for learning for new employees (especially fresh graduates) to be taught the real-world application of theoretical information (Upcounsel, 2021). In addition, generally speaking, a functional organisation structure is more suitable for projects that require the greater technical experience. There is greater technical experience because the team has worked on the jobs over the years and so has been able to improve on their skills.

The points above have been succinctly captured by Twproject (2021) as outlined below:

- **No Change:** Project is not completed outside the basic functional structure of the organisation. So, it is familiar ground and as such, there is no radical change in the operations and structure of the organisation.

- **Flexibility:** The use of team members is maximally flexible. There is maximum flexibility regarding the use of team members. Specialists from different functional units can be temporarily assigned to the project, after which they return to their normal work. With many specialists available within each functional department, people can be exchanged between different projects with relative ease unlike if they were to be sourced from elsewhere.

- **In-depth expertise:** If the primary responsibility of the project is assigned to the correct functional unit, it is possible to make use of in-depth expertise on the most crucial aspects of the project.

- **Easy post-project transition:** Normal career paths are maintained within a functional department. While specialists can make a significant contribution to projects, their functional unit is their professional home, therefore the focus of their professional growth and advancement. The project becomes like a temporary home for the staff member and, once it is completed, the employee returns to his "real" permanent home which is the functional department.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

One advantage of a functional structure is that it is based on the skills and knowledge of workers: True False

3.1.2 Disadvantages of Functional Organisation

Although functional organisation structure has its advantages, there are also some disadvantages that are associated with it. Twproject (2021) has articulated some of these advantages to include:

❖ **Monotony/Boredom:** Given the repetitive nature of the job done in a functional organisation structure, the likelihood of boredom exists as employees may find it boring to repeat the same task over and over, and become less enthusiastic over time. If promotions are not handled well, an employee may be discouraged if a lower-performing peer is promoted over them. Problems may arise among management if department heads are only focused on their department and do not communicate effectively with other departments. This can cause poor communication and "silos" that are too independent of one another. If employees and management are only loyal to their teams, there will be a lack of teamwork and coordination.

❖ **Rigidity:** It is a rigid structure where changes, innovations, and flexibility can be difficult to implement. An employee in any department may lack knowledge of information about all other departments. Managers tend to make decisions without consulting the department first, which can lead to problems. A department can become too autocratic and put its goals above those of the organisation as a whole. With so many specialists involved in a process, it is

difficult to pin the blame for a specific product or service malfunction on any individual.

- **Lack of Attention:** Each functional unit has its own basic work to do. Because of this project responsibilities are set aside to meet these primary obligations. This becomes even more difficult when the project has different priorities for different units. For example, the marketing department can consider one project urgent while other departments consider it only of secondary importance – if not a real waste of time. This can lead to delays and quality problems.

- **Poor integration:** There may be poor integration between functional units. Functional specialists tend to care only about their own project segment and not what is best for the project in general.

- **Slow Response Time:** The hierarchical nature of function organisational structure results in bureaucracy and red-tape in the operations. As a result, more time is often needed to complete projects within a functional organisational structure. Bureaucracy and red-tape causes slowness in response times. Information on the project and decisions must be disseminated through the normal management channels that do not consider horizontal communication between departments. For example, if a staff member of functional unit A needs to solve a problem involving a team member of functional unit C, the problem must first be assumed by the manager of A, who must then coordinate with the manager of C that can then reach team C member in order to get the relevant information and then retransmit it along the same path back to the staff member of A. This, as is easily deducible, is a complicated process and can cause delays and stress.

- **Lack of Ownership:** The motivation of the people assigned to the project may be weak. The project can be seen as additional work not directly related to one's professional development. Moreover, since project members only work on one part of the project, they do not identify with the project as a whole. Lack of ownership thus discourages team members who may not engage enough in project-related activities. The result, even in this case, will be a problem of quality of the results.

- **Poor Integration:** There may be poor integration between functional units. Functional specialists tend to care only about their own project segment and not what is best for the project in general.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This

should not take you more than 5 minutes.

Bureaucracy is a major advantage of a functional organizational structure: True False

3.1.3 The Role of Project Manager Within a Functional Organisation Structure

More than in any other form of organisation structure, the project manager in a functional organization structure has less authority over the project team. In fact, he is more of a project coordinator than a real project manager. This is precisely because functional managers maintain complete authority over project team members and project budgets in the aspects that concern their department or unit.

Here are the important facts regarding the role of the project manager within a functional organisational structure as outlined by Twproject (2021).

- The functional organisation is a traditional organisational structure in which the authorities – and therefore the real managers – are divided according to the functions performed by a particular group of people, such as Finance, HR, Marketing and Purchases, etc.
- Power and authority are in the hands of the functional manager, not in those of the project manager.
- The functional manager has the authority to release the resources based on their knowledge and their competence – the project manager is therefore always dependent and pending on the decision of the different functional managers.
- The resource goes back to the functional manager after completing the project – and in any case it is never “completely” separated.
- The resources that work in this type of organisation are always under the authority of the functional manager, in any situation.
- The project manager generally has much less power in this type of organisation.
- Project manager skills are much less used in this type of organisation.
- The resource assigned to the role of “project manager” is usually a member of the team within a functional area and does not have a real project manager title or training.

- The functional manager will control the budget and the “project manager” will act more as a coordinator of the project activities rather than having real project management responsibilities.
- The resources for the project must be negotiated with the functional managers and the accessibility of these resources will be based on the business conditions.
- Any type of problem escalation must be reported to the functional manager.
- Since the “project manager” has low or no authority, the project can last longer compared to other organisational structures. Generally, there is no recognized project management methodology or best practices used.
- The project manager practically assists the functional manager.
- The project manager spends a lot of time doing administrative tasks and often works as a PM only part-time.

Finally, in a functional organisation, project managers have little or no role when it comes to allocation of resources and so they must completely rely on and hope for the cooperation of functional managers in order to obtain the resources they need to complete projects.

Functional managers have complete control over the company’s specialized departments and are responsible for the productivity and results of the unit. Given this scenario, it is safe to conclude that in general, the functional organisation structure can work well in a company that mainly carries out repetitive work.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Team members report directly to the project manager in a functional organisation structure: True False

4.0 Summary

In this unit, the focus was on the functional organization structure. The definition of the concept, as well as the advantages, disadvantages and role of the project manager in this type of organization, was examined. The unit posits that as organsations grow in the human and material resources, the need arises for them to create a structure to enable them to carry out their job. A functional

organisational structure is one of the structures that are adopted by organisations in their attempts to achieve their goals and objectives. A functional organisational structure emphasises the placing of the human resources according to their skill, experience, and knowledge.

A functional organisationa structure has its merits but it is too heavily reliant on work teams with their basic functional units. In project execution, the area specialisation of workers constitute the basis for their inclusion on any project and is only involved when their expertise is needed. However, they remain loyal to their functional unit as well as their functional manager. The role of the project manager is not well defined as in general he acts like a coordinator given that the functional manager controls both their men and other resources. This structure is best in an organisation where the work is mostly repetitive in nature

5.0 Tutor-Marked Assignment

1. Explain what you understand by a functional organisational structure
2. List and explain three advantages of a functional organisational structure
3. In a functional organisational structure, the project manager's role is that of a coordinator. Explain

6.0 References/Further Reading

Chen, J. & Rasure, E. (2021). Organizational Chart. Available at https://www.investopedia.com/terms/o/organizational-chart.asp

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7.0 Possible Answers to Self-Assessment Exercises

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

SAE 1 True

SAE 2 True

SAE 3 False

SAE 4 False

Unit 2 Pure Project Organisation Structure

Contents

1.0 Introduction

Another type of organisation structure besides the functional organisation structure is the pure organisation structure. Projects executed in this type of organisation structure are referred to as pure project. This is because the focus of the work is the project rather than the functional arms. Also, the roles and responsibility of the project manager is clearly defined as he is in direct control of all the resources that are concerned with the project and only reports to the management. Organisations that adopt this structure are structured around projects.

2.0 Intended Learning Outcomes (ILOs)

In this unit, you will learn the definitions of pure project. You will also know the advantages and disadvantages of this organisation structure as well as the role of the project manager in a pure organisation structure.

3.0 Main Content

3.1 Definition of Pure Project Organisation Structure

A pure project organisation may be deemed the opposite of functional organisation. This is because while in the functional organisation structure, the focus is the functional arms, units or departments, the focus of pure project organisation is the project itself. The idea behind a pure project organisation is to ensure that the loyalty is to the project, rather than to a functional manager. The advantage here is that the project manager has total control of the project and does not have to depend on the functional manager for resources to execute the project. This therefore gives him a measure of independence. According to Nagarajan (2012), "the project organization offers the flexibility in determining cost, schedule and performance trade-offs since all the required recourses are at the disposal of the project manager."

In essence, the project is autonomous of the parent or home organisation, and there is minimal interference. A characteristic of this approach is that the project is separated from the home organisation. It also entails that the project has the independence that guarantees its own special technical staff and administration. Its loyalty to the parent or home organisation is therefore not so strong as the connection to the home organisation consists of links that a weak and all that required of the project manager is reports on the advancement of the project. However, in terms of work performance, there may also be different practices where the home organisation regulates issues related to administrative, financial, staff and control procedures in detail. So, there may be some variations in how this is carried out by different organisations.

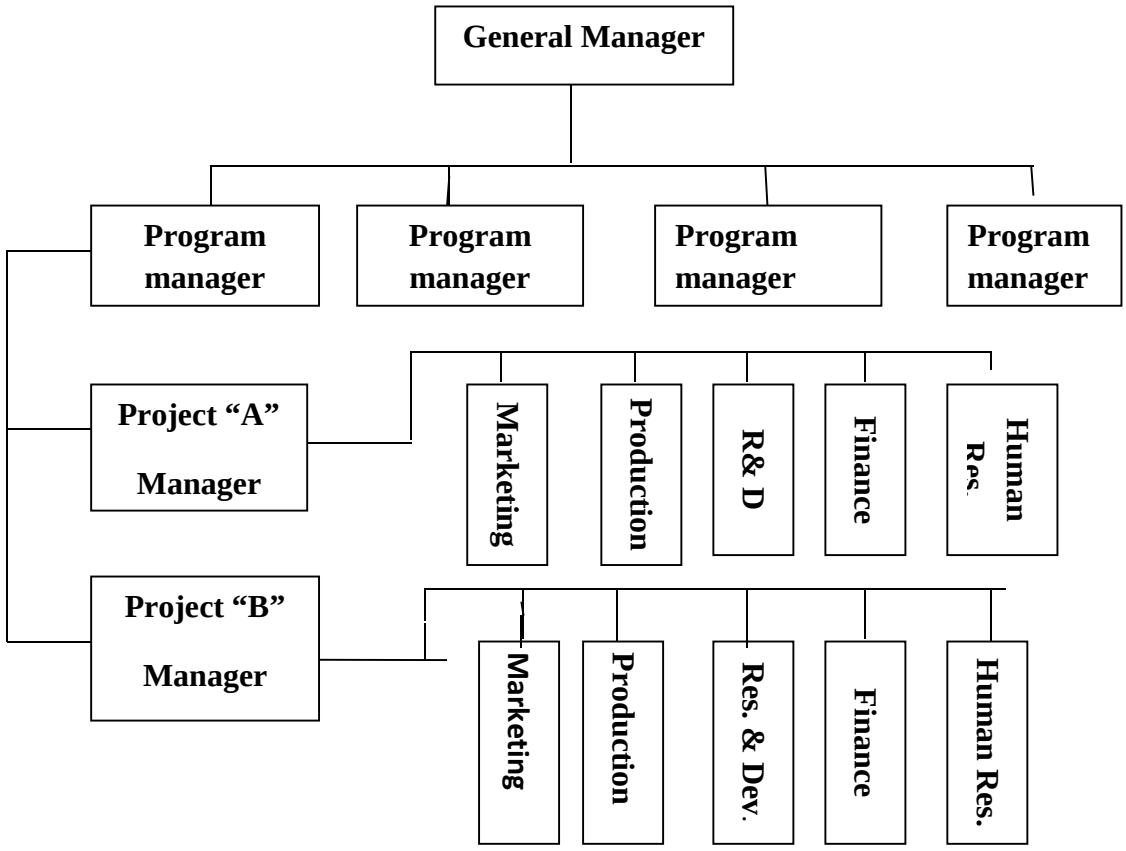

Fig. 7 Pure Project Organisation Structure (Source: Bobera, 2008)

The diagram of a pure project organisation structure clearly shows that the project manager is independent. In this organisation structure, more than one project can go on if the duration is long. The project manager has control over the team members and reports directly to program manager where the project is part of a larger program. Where there is no program manager, he reports directly to the general manager. This is clearly different from what happens under functional organisation structure.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The focus of work in a pure project organisation is the functional arms of the organisation

True False

3.1.1 Advantages of Pure Project Organisation Structure

A few advantages are derivable in pure project organisation structure. AIMS (n.d.) has outlined them to include:

1. Clear Line of Authority*:* Clearly, the project manager is in control so there is no ambiguity about the line of authority. This is unlike the functional organisation where team members are derived from the functional units and report to the functional manager. As a result, the project manager in a functional structure depends on the functional manager for resources needed to execute the project.

The communication is strong because there is only a single reporting system as the project manager bypasses the functional manager and reports to only the top management structure. This shortened the communication because the project manager does not have to deal with the functional manager.

2. **Flexibility in Trade-Offs and Decision Making:** Since the project is not under more than one single reporting system, there is more flexibility in decision-making.

3. **Fast Decision Making:** Arising from the above, decision making is faster as the project manager does not have to get the views and advice of the functional manager as the case is with functional organisation structure because the project manager does not have to depend on the input of another manager.

Self-Assessment Exercise 6

3.1.2 Disadvantages of Pure Project Organisation Structure

- **Excessive Exercise of Power (Project manager):** This is clear enough. Because the project manager is independent and in control of the project including resources, there could be the tendency to be arrogant.
- **Stressful Work Environment:** Pure project organisation thrives on deadlines or milestones. As a result, it can be a stressful environment as there is an expectation to meet deadlines or milestones. This can put both project manager and project team under pressure.
- **Insecurity of Jobs:** Since the focus is on the project, there usually is not a permanent job position for team members who are usually assembled for the purpose of the project. They are not necessarily employees of the organisation. Consequentially, when the project comes to an end there is the fear of loss of jobs as some may be redundant as they await another opportunity. In essence, disengagement is a part of the issue with pure project organization structure.
- **Costly:** In most cases, the project team are not members of the project organisation but are rather hired for the sake of the project. Some equipment may also have been hired. Therefore, if the project is not delivered within the time frame, it affects the budget.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Job security is guaranteed in a pure project organisation:

True False

3.1.3 The Role of The Project Manager in Pure Organisation Structure

Pure project organisation is most appropriate when an organisation has a smaller number of projects but with longer duration. For each project, a

manager is appointed and he is responsible to conduct all the activities associated with the project. The project manager is in turn responsible to the program manager ie the project is part of a program with a program manager. The project manager has full authority for the execution of the project and he reports to the program manager in the parent organisation. As a result, the lines of communication are shortened as the project manager directly communicates with the parent project organisation members.

In a pure project organisation, the project manager has all the power and authority and everybody working directly in the project team reports to the project manager. In essence, in a pure project organisation, it is either that there is no functional manager in existence, or if he exists, he will have a very limited role. The implication is that in a pure project type of organisation project managers have a high level of authority to manage and control the project resources. The project manager in this structure has total authority over the project and can acquire resources needed to accomplish project objectives from within or outside the parent organisation, subject only to the scope, quality, and budget constraints identified in the project. In the project-based structure, personnel are specifically assigned to the project and report directly to the project manager. The project manager is responsible for the performance appraisal and career progression of all project team members while on the project. This leads to increased project loyalty. Complete line authority over project efforts affords the project manager strong project controls and centralized lines of communication. This leads to rapid reaction/response time and improved responsiveness. Moreover, project personnel are retained on an exclusive rather than shared or part-time basis which is not the case in functional projects where project members are mostly members of the organisation. As a result, project teams develop a strong sense of project identification and ownership, with deep loyalty efforts to the project and a good understanding of the nature of project's activities, mission, or goals (GEC 524, n.d.).

4.0 Summary

Pure project organisation structure is the opposite of the functional organisation because the focus is on the project rather than the functional unit. It is most appropriate when an organisation has a smaller number of projects but whatever project there is has a longer duration. Because the project is the focus, it entails that the project manager has control in terms of resources and decision-making. This is different from what obtains in the functional organisation structure where the focus is the functional department under a

functional manager who the project manager is dependent on for the resources that he requires to execute a project. The pure project structure, therefore, grants the It aims to correct some of the problems of the functional organisation structure especially as it concerns the independence of the project manager. At the end of the day, the choice of type of project organisation structure depends on the type of project and the environmental requirements

In this unit, you have been exposed to the definition of pure project structure, advantages and disadvantages as well as the role of the project manager in a pure project organisation. project manager independence to execute a project.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

The project manager is autonomous in a pure project organization:

True False

5.0 Tutor Marked Assignment

1. Explain the pure project organisation structure
2. Compare and contrast the role of the project manager in a pure organisation structure vis-à-vis the functional organisation project structure
3. Outline and briefly explain three advantages and three disadvantages of pure project organisation structure.

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1 False
SAE 2 False
SAE 3 False

Unit 3 Matrix Organisation

Contents

1.0 INTRODUCTION

The matrix organisation is the third of the three major types of project organisation structure. As mentioned earlier, project organisation is determined by many factors including how projects are run in the environment.

2.0 INTENDED LEARNING OUTCOMES (ILOS)

In this unit, you will learn the definitions of and understand the matrix organization structure. You will also know the advantages and disadvantages of this organization structure as well as the role of the project manager.

3.0 Main Content

3.1 Definition of Matrix Organisation

A matrix organisation structure is one in which the reporting relationships are set in a grid form. What this entails is that the traditional hierarchy which is top down is totally done away with in the chain of command. Instead of having a worker(s) report directly to one supervisor or manager, he reports to two. This is because in matrix organisations, there is both a functional as well as a product manager that see to the daily productivity. As a result, workers report to the two unlike what you have in functional organisation structure. According

to Business Talk (2012), the matrix project attempts to blend properties of functional and pure project structure. Wikipedia, (2021) notes that under a matrix organisation structure, team of employees are frequently used to accomplish work. The objective is to take advantage of the strengths, as well as make up for the weaknesses, of functional and decentralized (pure project) forms. In their illustration of how this works, Wikipedia (2021) explains that “an example would be a company that produces two products, "product A" and "product B". Using the matrix structure, this company would organize functions within the company as follows: "product A" sales department, "product A" customer service department, "product A" accounting, "product B" sales department, "product B" customer service department, "product B" accounting department. In essence, the matrix structure is an attempt to balance between the two extremes that functional and pure project structures present. Referring to the o matrix as rows and functional as columns, Business Talk (2018) further says that if the choice of structure is a matrix, different projects (rows of matrix) borrow resources from functional areas (columns). Given the nature of this structure, the decision regarding the type of matrix to use in executing a project (weak, balanced, or strong) rests with senior management.

- Weak/functional matrix: A project manager with only limited authority is assigned to oversee the cross- functional aspects of the project. The functional managers maintain control over their resources and project areas.

- Balanced/functional matrix: A project manager is assigned to oversee the project. Power is shared equally between the project manager and the functional managers. It brings the best aspects of functional and projectized organisations. However, this is the most difficult system to maintain as the sharing of power is a delicate proposition.

- Strong/project matrix: A project manager is primarily responsible for the project. Functional managers provide technical expertise and assign resources as needed (Wikipedia, 2021).

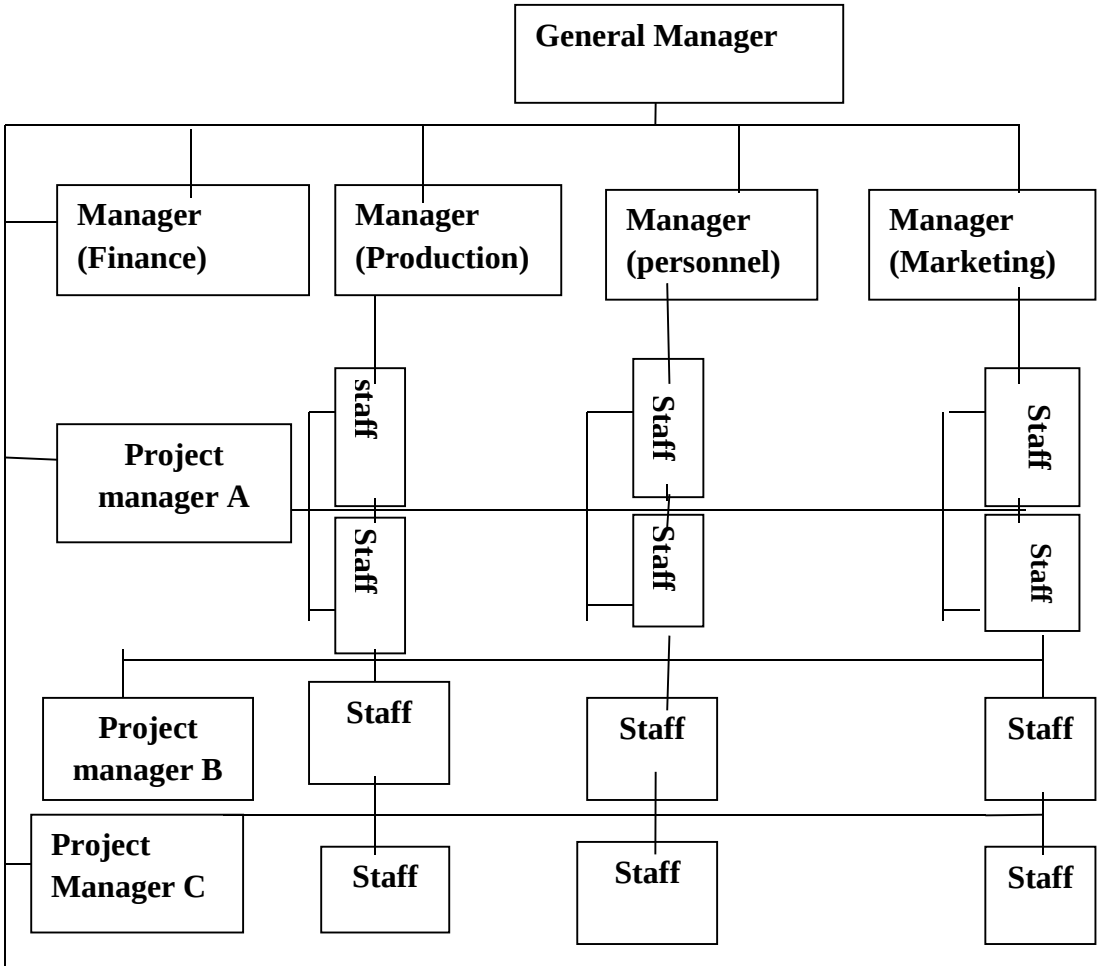

Fig. 8: Pure Project Organisation: Adopted from GEC 524 & Nagarajan, 2012

The diagram above depicts a matrix organization structure. There are three project managers (A, B & C) who are in charge of three different projects. The project managers report to the General manager and to that extent are independent and have authority over the projects. There are also four functional managers who report to the General Manager.

The responsibility of the functional managers is maintenance of functional excellence in all the projects. In order words, they are there as to support the project manager. While the project managers define what is to be done, the responsibility of the functional managers is to decide how to do it (Nagarajan, 2012). The key element here is they coordinate with each other to ensure that all the resources needed to bring the project to a successful end are available in the best interest of the organization; the functional and project managers jointly provide input to the planning process and while the functional managers are in charge of the vertical line of control, the project managers are in control of the horizontal line, but although they must work together, they also are freely

allowed to operate as a separate entity except in the area of administration. Therefore, the employees are both under the functional manager as well as the project manager. The overriding interest is to work synergistically to achieve success in the overall interest of the organisation.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

A matrix organisation is an improvement of the functional organization structure: True False

3.1.1 Advantages of Matrix Organisation

As a structure which is designed to be an improvement of the extremes between functional and pure project structures, the matrix structure has some advantages. Some of these advantages are outlined by Harrin (2018) as follows

- **Resources Sharing:** Matrix structure allows for resource sharing especially when there is need to share skills across departments to complete tasks. Because of this, a wide range of talents and strengths can be garnered in tasks completion.
- **Flexibility:** Matrix structure makes room for flexibility because members of work teams are able to work on a lot of different areas of a project rather than their functional units or departments.
- **Responsiveness:** Matrix structure allows teams and individuals to respond quickly to new situations. For instance, in the course of working on one project, if a new project comes up that has to take priority, it is easy enough for members to quickly adjust and focus on something the area of priority. This cannot be done easily in a project structure, where it takes longer to disband and regroup.
- **Common Structure:** The matrix structure requires that everyone uses the same project management lifecycle and methodology. As a result, moving between projects is easy. People can join a project team with relative ease when the terminology and processes are common.

3.1.2 Disadvantages of Matrix Organisation

Although the matrix structure has its advantages over the functional and pure project structures, it is not without its fair share of disadvantages. This includes

- **Overload**: The matrix has a common structure and this is a disadvantage in the sense that it also presents with work overload for team members who are also be part of a functional unit and to that extent are have their regular jobs to carry out. The work overload is compounded by the fact that the systems that should manage and monitor the overload is not in place. As a result, team members are prone to burnout. They may also neglect their tasks or not complete it. This can in turn affect both the quality of the work or the completion schedule.

- **Conflic**t: There is more than one project at a time, project teams or individuals will likely fight over the same resources as another project. There can be some conflict between business-as-usual tasks and project work for individuals, especially when both managers are giving them different priorities. Moreover, the structure gives the project manager an edge over the functional manager. This could lead to conflicts and power struggle between the project department and functional department as each tries to assert their authority. Therefore, there is likelihood of frequent conflicts and conflict resolution processes.

- **Duplication of Efforts:** There are chances of duplication of effort as the project manager and functional manager operate independently of each other. None reports to the other. Moreover, there could be a case where the people who possess the right skills are not made available for project work by their line manager.

- **Cost Ineffective:** Implementing matrix form of organization is not cost effective as more people than required are employed.

- **Role Ambiguity:** Since there is more than one manager, there are more chances of role ambiguity among managers and employees. This can result in more discussions than actions (Nagarajan, 2012).

3.1.3 The Role of a Project Manager in a Matrix Organisation

By its nature, the matrix management can put some difficulty on project managers because they must work closely with other managers and workers in order to complete the project with different roles, goals, objectives and priorities. This can present a problem where there are pragmatic programme managers who may have different goals, objectives, and priorities than the project managers. This aspect has to be addressed in order to get the job done. In addressing this situation, it is necessary to adopt an approach that consists of a variation of the matrix organisation. This approach will include a

coordinating role that either supervises or provides support to the project managers. In some organisations this is known as the Project Management Office (PMO), dedicated to provide expertise, best practices, training, methodologies and guidance to project managers (GEC 524, n.d.).

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

In which of these organisational structures is duplication of effort most likely to occur?

a. Functional organisation structure

b. Matrix organisation structure

c. Pure project organisation structure

4.0 Summary

The type of organisational structure that an organisation chooses is influenced by a number of factors including environment. Matrix culture is an attempt to correct the faults in the functional and pure project organisation. As a project structure, it combines the features of functional organization structure and pure project organisation structure. It is a structure which makes use of the functional manager and the project manager. However, both are independent and report to the overall manager. While there are some advantages of this structure, there are also some inherent disadvantages.

This unit has exposed you to the matrix organisational structure which is one of the three major types of organisation structure. You have looked at the concept of matrix organisation as well as the advantages and disadvantages of the organisational structure. The role of the project manager in a matrix organisational structure was also considered.

3.0 Tutor Marked Assignment

1. Briefly describe a matrix organisation structure

2. Explain in what way the matrix organisation structure defers from pure project structure

3. Name and explain three advantages and three disadvantages of matrix organisation structure

6.0 References/Further Readings

Business Talk (2012)

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7.0 Possible Answers to Self-Assessment Exercises

1. True

2.True

3. Matrix organisation structure

Module 3 Resources in Project Management

Unit 1 Definition of Project Resource

Unit 2 Resource Management

Unit 1 Definition of Project Resource

Contents

1.0 Introduction

2.0 Intended Learning Outcomes

3.0: Main Content

3.1 Definition of Project Resource

1.0 Introduction

In the preceding module, you were taken through project organisations to enlighten you on the various types of organisation structures in project management. In this module, we will be looking at resources in project management.

Resources are very important in project management. Generally speaking, a resource is a stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organisation in order to function effectively (Lexico, 2022). From that definition, we can say that resources come in various forms: people, tools and equipment, materials and so on. Without availability of resources, it will be difficult to start and complete any project. To that extent, if there is inadequacy of resources, it will have and adverse effect on the project execution.

Also, where there are resources, they must be allocated and utilised judiciously to ensure that they complete the project within the scope and schedule. In project management, the project material has the responsibility to manage project resource to ensure that project does not run into murky waters due to poor management and use.

2.0 Intended Learning Objectives

In this unit, you will be taken through the meaning of project resource and types of project resource.

3.0 Main Content

3.1 Definition of Project Resource

The concept of resources is defined across many disciplinary areas somewhat differently. In economics for example, a resource is a service or other asset used to produce goods and services that meet human needs (McConnell, Brue,

and Flynn, cited in Wikipedia, 2022). When resource is mentioned in Geography, they are perceived natural endowments that are of great value to the survival of man. In library science, we mostly view resources as those things that are used to meet the information needs of clientele.

Project management involves project tasks and activities that on completing, results in achieving the expected deliverables. This cannot be achieved without the resources that are needed to execute project tasks and activities. Resource allocation also known resource scheduling, recognises and assigns resources for a specific period to various project activities in order to successfully deliver within the project life cycle.

One of the responsibilities of a project manager is to find the resources that are suited to the project he is executing and to also allocate them properly. Where the resources do not match the project, there is bound to be project failure. This is referred to as poor resource project planning and allocation. When the resources are not planned and allocated properly there could be shortage of resources that could lead to project delays or even abandonment.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes. Project resource allocation is merely concerned with allocating funds to project tasks: True False

3.1.1 Types of Resources in Project Management

There are different types of resources in project management. Some attempts have been Resources that are used in project management into people, equipment, materials, facilities and costs. These have been categorised into three main areas: work, materials and costs (Microsoft Project, 2010).

Work Resources: The work resources are the people that are part of a project, also called the project team. This category of resources is highly important because the project largely depends on people to make things happen. While material resources are important, they cannot do any work by themselves. This drives home the point that the quality of human beings in a project team will determine the success or failure of the project. This makes it imperative for the project manager to intentionally recruit the best possible team.

The work of the project manager does not end with recruiting the work resources. It is also his responsibility to manage them to get the most benefit from them.

Part of what the project manager should look out for as he gathers his work team is the skills that are possessed by each person. Nobody can perform beyond their skills level.

However, to get the best out of his work team, the project manager must ensure that he pays attention to the welfare needs of his team.

Material Resources: Material resources are tools and assets that are required to get the work going. The work resources or project team needs tools and assets to execute the tasks that are assigned to them.

Material resources include tangible goods such as supplies and equipment. It is also important that they are in good functioning conditions to enable the project team work effectively and efficiently with them. Poor working tools can cause dissatisfaction and delays in executing their tasks.

In cases where the company does not have some of the needed equipment, the project manager should hire them or outsource the tasks to external teams.

Costs Resources: Regardless of the size or type of project, money will be needed to execute it efficiently. The project manager also needs money to procure vital tools and equipment and also pay the salaries of team members. Inadequacy of funds will definitely make project execution difficult.

However, it is not just enough that money is provided. It is imperative that the project manager how to budget and allocate money properly. Without this skill, no amount of money will be sufficient. Financial accountability is also required from the project manager as the project sponsors want be assured of efficient deployment of their money.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

The people in a project are categorised under:

a. Cost Resources

b. Material Resources

c. Work Resources

d. All of the above

3.1.2 Project Resources Allocation

Resource allocation is an important part of project management. Resource allocation is the process of assigning and scheduling available resources in the most effective and economical way possible…it is the management and delegation of resources throughout a project to ensure that it runs as smoothly and successfully as possible (Wrike, n.d.).

The need for assigning and scheduling available resources in the most and effective and economical way possible stems from the fact that resources are not inexhaustible. Projects need resources from the initiation phase to the closing phase. The onus is on the project manager to know the right time and allocation of the resources within the project schedule. The resources are expected to be planned and scheduled proper.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project team members constitute the work resource:

True False

3.1.3 Importance of Resource Allocation

Prevention of Project Delays: The importance of resources in project management cannot be understated as resources affect all working processes in project management. The implication is that their availability and sufficiency enable the project manager to keep to project deadlines and, therefore, meet the project's objectives.

We should remember that projects consist of tasks and activities. These tasks and activities must be completed before the expected deliverables can come. Delay in completing any of the tasks will most likely result in a delay in

meeting deadlines. Most project delays are caused by either insufficient or inappropriate allocation of resources.

The importance of resource allocation therefore lies in the fact that with proper resource allocation, there is less delays and more favourable outcomes. It also means getting the best result and paying lower costs. This cuts across all types of resources: work, material and cost.

Reduction of Incidences of Conflicts: Although conflicts cannot be ruled out completely from project management, negative conflict is not the desire of any project manager. Unmanaged or improperly managed conflicts can affect the project schedule and to that extent is costly. One of the ways to prevent conflicts on the project site is to ensure that workers are paid salaries are paid promptly and that their welfare is taken seriously. Proper planning and allocation ensure that there are no delays in salaries and so no delay in project completion.

Prompt Procurement/Replacement of Tools and Equipment: Proper allocation of resource makes it possible for the project material to procure and/replace broken-down tools and equipment promptly. Invariably, there will be no delays in the work process. This in turn significantly reduces team burn outs and improve retention.

Ease of Accountability: Although the project manager is responsible for the resources, he is expected to allocate the resources properly. Proper allocation means that all financial expenditure and use of other resources are properly documented and accounted for. Lack of accountability results in mistrust of the project manager and could make the stakeholders lose faith in him. Practice of proper resource allocation enables the project manager to keep correct accounting.

Lower Overhead Costs: Proper resource allocation encourages efficient resource allocation which in the long run discourages wastage and saves resources for the organisation. For instance, it goes a long way in making it possible to choose the best available assets and use them for multiple projects, and manage them throughout the work and by so doing, avoid under utilisation or overutilisation of employees.

Increased Productivity: Resource allocation aims at ensuring that there is no hitch to the project by allocating resources efficiently across tasks therefore, when done properly eliminates or reduces wastages and delays which in turn leads to greater productivity.

Enhanced Profits: Proper resources allocation lowers overhead costs and encourages better productivity among project teams which in turn increases their productivity. Thus, when there is reduction of overhead costs and

increased productivity, the organisation benefits by saving resources that could be deployed into other projects.

Improve Quality in Projects and Products: With proper resource allocation, it is possible to engage project teams and equipment that are of high quality. In terms of the human resources, expertise ensures that quality products are delivered. High quality equipment also makes it possible to work with equipment that produces high quality products and services. This is guaranteed to satisfy the stakeholders.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Project deliverable is not hindered by resource allocation: True False

4.0 Summary

In this unit, we looked at resource allocation in project management. Resource in project management covers all the things that are needed to execute a project including work, material and costs. Because projects consist of tasks and activities, and given that resources are not infinite, it is important that the available resources are allocated in such a way that no task or activity suffers. Failure to allocate resources properly results in project delay and in the long run could make the project exceed its life cycle. There are many advantages associated with proper resource allocation.

5.0 Tutor-Marked Assignment

What do you understand by resource in project management?

Name and discuss at least five advantages of resource allocation**.**

6.0 References/Further Reading

Landau, P. (2022). What is resource allocation? 12 resource allocation tips for projects. Available at https://www.projectmanager.co./blog/resource-allocation

Lexico (2022). Resource. https://www.lexico.com/en/definition/resource

Wikipedia (2022). Resource. Available at https://en.wikipedia.org/wiki/Resource

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1 False
SAE 2 Work Resources
SAE 3 True

Unit 2 Resource Management

Contents

1.0 Introduction

In the previous unit, we looked at resource allocation in project management. We were able to understand its importance. In this unit, we shall be looking at resource management.

Without doubt, availability of project resources is a boost to project delivery. It also ensures that the best resources are procured for the project. It reduces delays and encourages project delivery within the expected timeframe among other benefits.

However, it is not enough to have resources. There should bs proper resource management as improper resource management is bound to affect resource utilisation. Where resources are not utilised properly, the project can suffer

adverse effects such as poor-quality delivery, late project delivery and in fact, incomplete project in the worse of circumstances.

This is why it is important that resource management is part of project management.

4.0 Intended Learning Objectives (ILOs)

In this unit, you will learn about project resources management, its objectives, the tools and techniques for project resource management and the constraints to project resource management. Knowledge of this aspect of project management will equip you for proper resource management.

3.0 Main Content

3.1 Definition of Resource Management

Project budget management is the process **of** tracking and monitoring the finances throughout the project. Resource management rates highly among the many skills needed by a project manager. Regular monitoring of the project budget throughout the life cycle of a project goes a long way to eliminate leakages, wastages and mismanagement and ensures that project budget is not adversely affected. With resource management, the project manager can quickly identify when costs begin to exceed estimates. This enables him to make adjustments that ensures that project resources are not depleted during the project life cycle.

Project resource management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project (Course Hero, n.d.). This definition includes the gamut of processes that include identification, acquisition, and management of resources. In other words, management is not limited to the ensuring that the resources are utilized in the best way possible.

In resource management, the project manager should endeavor to use the original project budget prepared during the planning phase as baseline with which to judge variance i.e. the different between the estimated and the actual.

Since it is possible for changes to occur in the budget, the project manager must ensure that he receives approval for such changes and then go ahead to re-baseline the project baseline. Re-baseline here implies that the original baseline has been changed as a result of the later changes made in the original project budget.

Be that as it may, the project manager should avoid frequent and unexpected budget change that results in significantly running over the budget. Although there is provision for contingency in the project budget to handle variance, too much of it is detrimental and care must be taken to avoid it where necessary.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The difference between the project planned project resource and the actual cost is termed variance

True False

3.1.2 Resource Management Process

As we already know project resource management is an ongoing process that continues throughout the project life cycle starting from the planning phase and ending at the project closure phase to complete the project management cycle. There are three distinct stages in the project management process and it is important that the project manager has a clear understanding of how to properly manage the project resources through all the stages.

During this phase, it is important that the project manager understand how to do resource planning, resource scheduling and resource allocation.

Resource Planning is the stage where all the project is broken down into tasks and estimated resources that would be used to complete each task. This is done as soon as the project scope is determined. Changes that may occur in the future are also factored into the project plan.

Resource Scheduling: This is concerned with efficient allocation of resources to all the project tasks to ensure that the tasks or project have all the resources that will be needed to complete it.

Resource Allocation: This is the actual process of assigning and managing the project assets of resources in such a way that it supports the strategic goals of the organisation. Part of resource allocation is managing tangible assets such as equipment and human capital in such a west that the best use can be made of them.

3.1.3 Resource Management Techniques:

The following resource management techniques are used to forecast, plan, allocate, level and optimise resources during the project execution phase.

- **Resource Forecasting**: This is concerned with estimating the resources that will meet the plan. This is done with resource estimation to cover all the tasks and activities.
- **Resource Allocation**: This consists in evaluating the available resources including capacity, resource schedule and the tasks that need to be completed to find the project team members who possess the skills that are most relevant and ensure that the resources available will be used to carry them out are available when they are needed
- **Resource Leveling**: This is concerned with team skills and finding better resource opportunities. With a thorough knowledge of the skills of project members, tasks are assigned in such a way that resources are used efficiently.
- **Resource Allocation**: This is the last of the techniques and it is concerned with tracking allocated resources to enable the project manager can spot idle resources. Where resources are not being used efficiently, they are reallocated or changes made in the resource management plan.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

Resource leveling is concerned with tracking allocated resources:

True False

3.1.4 Project Resource Management Tools

- **Resource Management Plan**: It is one thing to have the resources and another to allocate them efficiently. A resource management plan is a tool that project managers use to manage their most important resource which is the human resource. It is the foundation upon which the resource management process is built and so is considered the most important tool in project resource management.
- **Resource Breakdown Structure (RBS):** This is a chart that is used to help project managers to organize the resources. It is hierarchical in nature and so allows them to see how the resources interrelate. It is the basis on which the budget is laid because a thorough listing of resources in the chart makes it easier to estimate the cost of the project.

- **Responsibility Assignment Matrix (RAS**): A project consists of different work packages or related components that are grouped together. This technique shows how the resources are assigned to each work package including each thing that is being worked on and who is working on what thing. Thus, the RAS is used to illustrate the connections that exist between work packages or activities and the project team members.
- **Resource Histogram**: This is also a chart but unlike the hierarchical RBS chart, this is a bar chart and is used for resource allocation. The resource histogram is essentially a planning graph that shows the amount of time that a resource is scheduled to work over a period of time. With this graph, it is possible to determine when a resource is available at any time during the project resource management life cycle.

Self-Assessment Exercise 6

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Resource breakdown structure is a tool used to illustrate the interrelations that exist between work packages and the project team:

True False

3.1.4 Constraints to Resource Management

1. Resource constraints can be described as any limitation or barrier or risk that is associated with project resource allocation. It is important that they are identified because they act as roadblocks that can derail and prevent or delay the successful **Time Constraint:** As we have already determined, a project is a temporary endeavor with a definite start and end time. In essence, project managers work with a timeline within which they are to produce the project deliverables. Therefore, the time constraint has to do with the project's schedule for completion. This also includes the deadlines for each phase of the project, and the date of the final project delivery.

   It is the wish of every project manager to work within the time constraint as any delay will tamper with the phases and of course date of completion of the project.

   To mitigate against time constraint, the project manager should ensure proper planning, scheduling and monitoring.

2. **Scope Constraint:** A project's scope defines the specified goals, deliverables, features and functions of a project. It also includes the tasks that are required to complete the project.

Failure to scope the project properly is detrimental to the execution of the project**.**

To check against scope constraint, the project manager should

- Provide clear documentation of the full project scope at the beginning of the project, including all requirements.
- Set up a process for managing any changes, so if someone proposes a change, there is a controlled system in place for how that change will be reviewed, approved or rejected, and implemented if applicable, and
- Communicate the scope clearly and frequently with stakeholders

3. **Cost Constraint:** The cost of the project also known as the project's budget encompasses all of the financial resources that are needed for the timely completion of the project in line with its predetermined scope. The cost here includes the costs for labor, vendors, quality control and other factors. well.

   Insufficient budget constitutes project cost constraint. It also has its multiplier effect including delay in providing deliverables.

   Depending on the type and size of the project, budget estimation techniques such as parametric estimation, bottom-top estimation etc. can be used to check against this in the planning phase.

   and timely completion of any project.

   In project management, there are three major constraints: time, scope and cost.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Constrains related to goals, deliverables, features and functions of a project are described as:

a. Cost constraints
b. Scope constraints
c. Time Constraints
d. None of the above

3.1.5 Guide for Project Resource Management

To ensure that resource allocation is done properly, there is a need to consider some tips that can guide one through the process. While there is no authoritative guide on how to go about it, some authors have identified some guides that can help to make the process more effective and efficient.

Landau (2022) has outlined a number of guiding principles along this line.

1. **Knowledge of Project Scope**: Before the project manager, he should be clear on the scope of the project including size and duration of the project. As soon as this is determined, he needs to decide on the resources he would be needing, including how many of those resources that will be necessary to complete the project. With a good knowledge of the project scope, it will be easier to determine how to allocate resources to take care of everything.
2. **Identify the Project Resources**: With knowledge of the scope as well as the project objective and the tasks, approval received, the next thing to do is to identify the resources that are available including the equipment that may be purchased or hired. Again, it is important to ensure that the available resources will serve throughout the timeline.
3. **Avoid Procrastination**: The project manager should go to work to plan his resource allocation. Waiting for the perfect time to carry out this responsibility is not advisable. Granted that resources needs may change, it is better to go ahead and plan and then as time goes on, changes can be made. Setting up a resource plan enables him to detect potential red-flags and responding to them beforehand before the arise.
4. **Holistic Thinking**: All aspects of the project including the time schedules for the project team should be planned for. What time is for holidays and what happens in the event of illness among the project team. Also, if some equipment or site has been leased, how long will that last? In essence, the project manager should pay attention to detail.
5. **Knowledge of Resource Dependencies**: Oftentimes, there are several projects running at the same time, it will be wrong to over depend on one project team for the accomplishment of all the major project work across the projects, especially if it is an external team as it could result in work overload blocks and resource shortages. areas.
6. **Track Time**: Time is critical in project management so, ensure that you are closely watching the job performance of you team to ensure efficiency. This is important to avoid job delays or procrastination.

   You can improve time tracking by keeping track of the team's workload using the right tools that makes real-time data collection on one page where one can see and schedule ahead of time.
7. **Invest in/Use Productivity Tools:** There are available online project management software that are great at managing resources more productively. Online tools can also get project data instantly updated. These will enable you

see where the resources are allocated. With such tools, it is possible to know what the current situation is with the team members.

8. **Avoid Over-Allocation**: Over-allocation of resources is not helpful and can result in team burnout. Project team members should not be stretched to their breaking point. The key for getting result is to allocate resources evenly.
9. **Realistic Approach**: Do not favour one aspect of the project over another by allocating more resources to it. For instance, in the project estimate, do not allocate more resources by adding more people or days to the schedule. This will be detrimental in the long run.
10. **Create a Routine**: The project manager plans before executing and monitoring, expectedly. However, even with the best of resource allocation, something could go wrong and if not caught on time could mar the process. Therefore, it is not wise to leave monitoring/checks for later. It is important to build in regular monitoring into the plan. Ideally, this should be set up to happen on a particular day and time every week. The project manager should go through the resources, check the project management tools and ensure that no one is over-tasked for the coming week.

    Also, have regular conversations with your team and update them on the progress of the progress while also getting their feedback on any issues of concern. Setting up a routine check-in and keeping updated with the project management software will help you to have a good idea of your resources spread.

Self-Assessment Exercise 5

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Dependency relates to over dependence on one project team
True False

4.0 Summary

Resources availability is the basis for project execution and complete and as such is a very critical aspect of project management. This stems from the fact that all the phases of the project life cycle until the project closure and provision of deliverables depend on resources for their execution. Resources include all the assets required for successful completion of a project including people, equipment, facilities and so on. However, beyond resource availability is the important matter of project resource management. This cuts across planning, scheduling and costs. It is important that resource management allocates resources properly as well

as monitor and control them to ensure that they are efficiently used to complete the project.

Tools and techniques are available to assist the project manager in carrying

out the process of resource management.

5.0 Tutor-Marked Assignment

What do you understand by resource management?

Name and explain the three resource constraints.

6.0 References/Further Readings

Course Hero, (n.d.). Chapter 9: Project resource management. Pdf -chapter. Available at https://www.coursehero.com/file/38254272/Chapter-9-Project-Resource-Managementpdf/

Landau, P. (2022). What is resource allocation? 12 resource allocation tips for projects. Available at https://www.projectmanager.co./blog/resource-allocation

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7.0 Possible Answers to Self-Assessment Exercises

1. True

2. True

3. True

4. Scope constraint

5. True

Module 4: Project Evaluation

Unit 1 Concept of Project Evaluation

Unit 2 Concept of Post Project Evaluation

Unit 1 Concept of Project Evaluation

CONTENTS

1.0 Introduction

Project evaluation is a very important aspect of project management. The expectation of any project manager is that the project will be successfully completed. Success is about ensuring that the project deliverables are met and that the organisation or end user is satisfied with the outcome. There is no way of ensuring that a project stays on course towards successful completion except by collecting and analysing information in order to understand the progress and effectiveness of a project. To this end, project evaluation can facilitate the successful completion of the project, and inform decisions about the future of both the project at hand and other projects. This unit therefore, focuses your attention on the processes that are associated with project evaluation and how they all dovetail in ensuring a successful completion of a project.

2.0 Intended Learning Outcomes

At the end of your study in this unit, you should be able to appreciate the definition of the concept of project evaluation as well as understand the reasons for project evaluation.

3.0 Main Content

3.1 Definition of the Concept of Project Evaluation

Generally speaking, evaluation is concerned with assessing an object, project, product or service according to predetermined specifications. Essentially, project evaluation is an assessment carried out on a project during the course of its implementation. The evaluation is carried out as major milestones are reached. The objective of carrying out an assessment as the project reaches milestones during the course of implementation is to determine if the project is still on course, and in the direction that was planned. According to Nagarajan (2012), "project evaluation is an attempt to determine if the overall status and progress of the project is acceptable as compared to what was planned earlier and if the objectives are being achieved. The ultimate aim of project evaluation is to bring about all round improvements in project planning and execution. Meredith and Mantel (2011) have observed that while evaluation seeks to ensure that a project is successful, its' primary purpose also is to help translate the achievement of the project's goals into a contribution to the parent organisation's goals. To achieve this, every facet of the project is studied to identify and understand the project's strengths and weaknesses.

Zarinpoush (2006) sees project evaluation as a process of collecting and analyzing information in order to understand the progress, success, and effectiveness of a project. Evaluation is an important aspect of project management because it can facilitate the successful completion of the project, and inform decisions about the future of both the project at hand and other projects that will come up any time in the future.

The IFRC (2007) defines project evaluation as "the systematic and objective assessment of an ongoing or completed project, programme or policy, its design, implementation and result. Evaluation determines the relevance and fulfillment of objectives, efficiency, effectiveness, impact and sustainability." They further state that evaluations are not done just for the sake of it because certain key information are expected. To that extent, "evaluation should provide information that is credible and useful, enabling incorporation of lessons learned into the decision-making process of both recipients and donors."

The definitions underscore the point that evaluation is an integral part of project implementation. They also point to the fact that evaluations are carried out during and after the project implementation. Therefore, evaluation is important and must not be ignored.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should

not take you more than 5 minutes.

Project evaluation is the process of understanding the process of collecting, analysing information to understand the progress and effectiveness of a project.

True False

3.1.1 Objectives of Project Evaluation

Project evaluation is done to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability of a project. To be beneficial, evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of all stakeholders. This should be seen from the perspective that every project has objectives that it should achieve. Therefore, the critical questions of development efficiency, effectiveness, impact and sustainability of the project is very important. The evaluation has to provide an information for action that will be useful in decision-making, strategic planning and if need be program modification. The evaluation information once available is distributed among the project stakeholders and integrated into management practices. If this is not done, evaluation is a waste of organisation resources. Meredith and Mantel (2010) further posit that during the process of project evaluation, recommendations for improvements that can help both ongoing and future projects are made in order to:

- Identify problems earlier
- Clarify performance, cost, and time relationships
- Improve project performance
- Locate opportunities for future technological advances
- Evaluate the quality of project management
- Reduce costs
- Improve the process of risk identification and management
- Speed up the achievement of results
- Identify mistakes, remedy them, and avoid them in the future

- Provide information to the client
- Reconfirm the organisation's interest in and commitment to the project.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Evaluation is important for

a. Decision-making and for strategic planning

b. Scheduling activities

c. Project organising

d. None of the above

3. 1.2 Types/Choice of Evaluation

It is important to understand the different types of evaluation that can be conducted over a program's life-cycle and when to use what. As far as project evaluation is concerned, there are many types each with its own set of processes and/or principles. Also, there are a number of factors that influence the decision to use one type of evaluation or another. By way of categorization, an evaluation can be according to their purpose, who conducts them, when they are carried out, the broad approach used, and cross-cutting themes.

Although there are many types of evaluations, the main types are process, impact, outcome and summative evaluation.

Process Evaluation: Process evaluation (also called formative or implementation evaluation) examines the ongoing operations of the project. It focuses on what staff and participants do, whether the target population is being served, what parts of the project are working as expected, and what parts are not working. The results of a process evaluation can help the project manager improve the operation or implementation of the project.

In actual fact, process evaluation should be done before any other type of evaluation because measuring the effectiveness of a project or program is necessary to determine if it is being run as intended, and if it is reaching the intended audience.

Hawe et al (1990) outlines the following as some of the questions that process evaluation will help in answering:

- Has the project reached the target group?
- Has the project reached the target group?
- Are all project activities reaching all parts of the target group?
- Are participants and other key stakeholders satisfied with all aspects of the project?
- Are all activities being implemented as intended? If not why?
- What if any changes have been made to intended activities?
- Are all materials, information and presentations suitable for the target audience?

Outcome Evaluation: Outcome evaluation (also called impact evaluation) assesses the extent to which a project has affected participants or environment. It focuses on immediate, intermediate, or ultimate outcomes that are attained as a result of completing a project. The results of outcome evaluation should identify or anticipate both the desirable and undesirable impacts of the project. Outcome evaluation can also determine how the needs that gave rise to the project were satisfied, or whether these needs still exist. In other words, outcome evaluation is concerned with the long-term effects of the program and is generally used to measure the program goal. Consequently, outcome evaluation measures how well the program goal has been achieved.

Outcome evaluation will help answer questions such as:

- Has the overall program goal been achieved?
- What, if any factors outside the program have contributed or hindered the desired change?
- What, if any unintended change has occurred as a result of the program?

Outcome evaluation measures changes at least six months after the implementation of the program (longer term). Although outcome evaluation measures the main goal of the program, it can also be used to assess program objectives over time.

Impact Evaluation: Impact evaluation is used to measure the immediate effect of the program and is aligned with the programs objectives. Impact evaluation measures how well the programs objectives (and sub-objectives) have been achieved.

- Impact evaluation will help answer questions such as:
- How well has the project achieved its objectives (and sub-objectives)?
- How well have the desired short-term changes been achieved?

Impact evaluation will assess the attitudes of young people towards the learning environment and how they perceived it. It may also assess changes in participants' self-esteem, confidence and social connectedness.

Impact evaluation measures the program effectiveness immediate after the completion of the program and up to six months after the completion of the program.

Summative Evaluation*:* At the completion of the program it may also be valuable to conduct summative evaluation. This considers the entire program cycle and assists in decisions such as:

- Do you continue the program? If so, do you continue it in its entirety?
- Is it possible to implement the program in other settings?
- How sustainable is the program?
- What elements could have helped or hindered the program?
- What recommendations have evolved out of the program

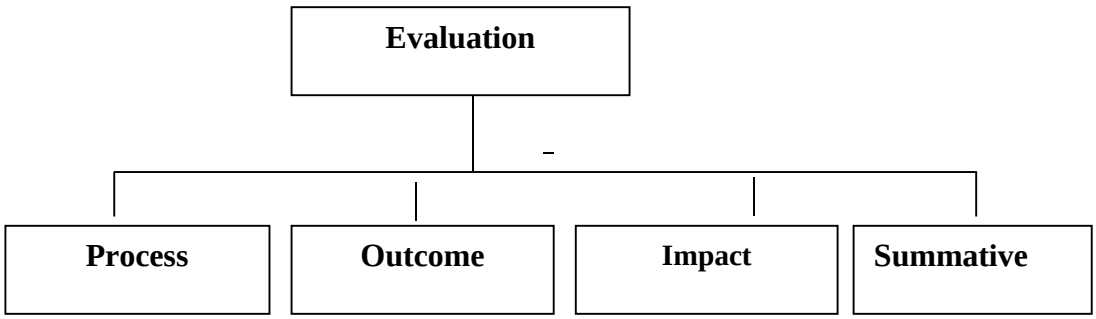

Fig. 9: Types of Evaluation

The choice of project evaluation type can be made based on the following

- **Objectives and Priorities of the Project:** A project has its objectives and priorities, and it is important that these are borne in mind in the attempt to achieve it. It is important therefore to find out whether the objectives and priorities set out in the initiation of the project are being carried out.

- **Purpose of the Project Evaluation:** The purpose is concerned with the reason for initiating the project. Is the project being executed with the purpose in mind? If the purpose is to build a library, is the project that is being executed going to meet that need at the end of the day? If it is a service, will it be able to provide the service needed? Let us assume that the project is to develop a program that can carry out library automation. Is what is being expected capable of giving that?

- **Nature of the Project:** This looks at the type of project that is being considered; is it process, outcome, impact or summative? The nature of the project is important as the evaluations are done at specific times in the development of the project.

- **Time frame for Conducting the Evaluation:** What time is the evaluation being carried out? Is it during or after the project? Carrying out an evaluation as it is on-going is as important as when it is completed. The merit for carrying it out during the project is that it gives room for corrections to be made if discovered. This will enable the necessary adjustments to be made, and will be less costly in terms of resources. On the other hand, the evaluation that is carried out at the end of the project will seek to know whether the client is satisfied with the deliverables in terms of function and performance.

- **How, and for whom, the Results of the Evaluation will be used:** At the end of the day, every project has its end user. There are also other people who are involved in it. This can be senior management personnel or other stakeholders. Therefore, factors such as how, and for whom, the results of the evaluation will be presented will determine the type of evaluation to be prepared.

- **Time Frame and Budget for Completing the Evaluation*:*** The timeframe and budget for completing the evaluation is also an important consideration. At what stage of the development and length of time is the evaluation needed? Also, resources will be needed to carry out an evaluation. The amount of resources that is required for evaluation is also dependent on the type of evaluation that will be prepared. This is also dependent on what stage of the project life-cycle the evaluation is needed.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

The type of project will determine whether it is a process, outcome, impact or summative of evaluation.

True False

3.1.3 Principles of Evaluation

Like project management, project evaluation also has some principles or steps that need to guide the process for it to yield a satisfactory result. These are 1. Develop an evaluation plan. 2. Conduct evaluation, 3. Analyze data and develop report

1. **Develop an Evaluation Plan:** It is good practice to develop an evaluation plan. This step will involve review of the project goals and objectives, identification of the stakeholders of the project and their roles; identification of the project activities and how they are related to the objectives of the project; identification of key evaluation questions. The questions that are identified should be able to show the progress and success of the project. Other things that must be part of the plan include identification indicators (i.e., measurable factors) that can reflect the success of each step of the project, and identification of the measurement tools needed to gather information. The tools used in measurement will determine the type of information that is gathered. It is advisable to try to use both formal tools such as surveys, focus groups and informal tools such as meetings, checklists. Finally, the plan should identify sources for collecting data (i.e., who and where to get the information from).

2. **Conduct evaluation:** Having developed an evaluation plan, the next thing to do is to develop a system to keep track of all information and observations. Also develop rapport with the project stake holders, making sure to communicate the importance of project evaluation, and encourage them to participate in information collection. This is important because they are part and parcel of the project. If they are not involved in the conduct of the evaluation, critical information may be lost, and this can have an adverse effect

on the project. The next thing is to develop the planned evaluation tools and apply them.

3. Analyze Data and Develop Report*:* The collected data has to be developed into a report. To do this, enter data into a chosen data analysis program. This can be done with Excel, or the Statistical Package for Social Sciences (SPSS). The two can be used to analyse quantitative data. On the other hand, N6 or NVivo can be used for qualitative data. Once the data has been entered, it should be analyzed. Tables and tables and graphs should be created for presenting the results. After that, interpret the results for findings and compare them against the project objectives and evaluation questions. From that, develop answers to the evaluation questions; identify strengths, weaknesses, lessons learned, and changes that should be implemented. Finally, write the evaluation report and explain how it can be used.

Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

In data analysis and development of report, N6 or NVivo is best used in what kind of data?

a. Qualitative

b. Quantitative
c. Process
e. Summation

4.0: Summary

This unit examined the concept of project evaluation. It has shown that project evaluation is important in the life-cycle of a project because of its inherent benefits such as helping to ensure that objectives are met, identifying successes, identifying problems and weakness so they can be rectified, and providing information to aid further development among others. It is expected that if you are confronted with a project, you will be able to use the knowledge you have gained here as a stepping stone.

Project evaluation is inherently important in the life-cycle of a project. Timely evaluations will enable the project manager and his team to know clearly whether the project is going in the right direction. The report of a project

evaluation will help to avoid mistakes before they become late. Also, the type to use is dependent on a number of factors. The information that is collected after an evaluation is important will serve to not only guide the current project, but also even future projects.

5.0: Tutor-Marked Assignment

1. What is project evaluation?
2. Name and explain four types of project evaluation
3. What factors are important in the decision to use any type of project evaluation?

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1 True

SAE 2 Decision making and for strategic planning

SAE 3 True

SAE 4 Quantitative data

Unit 2 Post Evaluation (Post Audit)

Contents

1.0 Introduction

In the previous unit, you were taken through project evaluation and its various aspects. In this unit, you will be taken through post project evaluation. While project evaluation is an ongoing exercise that is carried out in the course of executing the project and as milestones are reached, post project evaluation/audit is conducted after the project is completed. This is important to ascertain the actual cost of the project and the time within which is completed as against what was projected at the planning stage. Without post project evaluation or audit, it is difficult to have a wide view of the various aspects of the project.

3.2 Intended Learning Outcomes

This unit is aimed at broadening your understanding of post project evaluation/audit. At the end of the unit, are going to know about post project evaluation/audit, its objectives, phases and types.

3.0 Main Content

3.1 Definition of Post Project Evaluation (Post Audit)

Post project evaluation also known as post audit or post completion audit is the evaluation that is carried out on a project after it has been completed. In their definition, Liu and Sanli cited in He & Lei (2020) define post project evaluation as “as a systematic and objective analysis of the project completed or its planning purpose, implementation process, benefit play, role and influence.” Altug (2002) defines post project evaluation as “activities performed by a project team at the end of the project to gather information on what worked well and what did not, so that future projects can benefit from that learning.

It aims to find out best practices and documenting “lessons learned.” It is important to remember that at the initial project appraisal, activities such as

estimates are made by way of costing and also the time it will take to complete the project. Given that what is done at the time of project appraisal is to put down estimates about the presumed cost and completion time of the project, the post project evaluation assesses the actual cost and completion time of the project. This is why it is carried out after the project is completed. According to Nagarajan (2021), while project appraisal estimates the future of the project, post project evaluation or audit is an assessment of the past ie what is already done. There is no doubt that the aim of every project management is to ensure that projects are carried out within the budget and time. In essence, a project is considered successful if it is completed within time and the budget in addition to meeting the need in terms of functionality or performance.On this, ihttp://www.gov.tas.au/projman/pmirp/pm4_11.htm cited in Altug (2002) posits that a project is considered successful if outcomes are realised; project outputs are delivered on time and to the agreed quality; costs are within those budgeted and; the requirements of all stakeholders are met.

In addition to appraising the completion time and budget or cost of the project, the post project evaluation also assesses the actual social cost-benefit factors and the extent to which the project objectives are achieved.

Social cost-benefit is concerned with comparing the cost of executing a project in terms of capital and operating expenses viz a viz different types of social impacts such as travel time savings, travel costs, impacts on other modes, climate, safety, and the environment. Social benefit cost is particularly considered in public projects (CIVITAS, 2017). Anbari cited in Anbari, Carayannis and Voetsch(2008) posit that “during the termination phase a post-project evaluation needs to be conducted to measure the success of the project in terms of its original and modified objectives.”

They also add that the post project evaluation should “contain explanations of major variances, lessons learned from the project, and recommendations to support further success of future projects.” Liu and Sanli cited in He and Lei (2020) also observe that the aim of carrying out a post project evaluation is to determine whether the target that was set for the project was achieved, document lessons learned and garner project information in the form of timely and effective feedback for future new decision- making as well as improve the management level of project investment among other things.

In essence, unlike a projection or speculation or even expectation, the post project evaluation provides a clear picture of what took place throughout the phases or life cycle of the project and this is conducted at the completion of the project. This is why it is possible to derive from it, explanations about differences, the lessons

that were learned in the course of executing the project from which recommendations are made to serve as a guide for management of future projects.

This information is important especially to enable management take decisions regarding future projects because organisations want to invest only for benefits not to incur losses. According to UK Department of Education NI (n.d.) the template for a post project evaluation will include the following sections: 1) background (summary of the EA ie Evaluation Amount); 2) detailed findings – assessment of enrolment; 3) project timing; 4) monetary costs and benefits; 5) non-monetary costs and benefits; 6) risks; 7) project management and 8) lessons learnt and recommendations.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these appraisals assesses what has already been completed?

a. Project appraisal estimate

b. Post project evaluation

c. Post management assessment

d. All of the above

4.1.1 Objectives/ Purposes of Post Project Evaluation (Post Audit)

Following from the above, Nagarajan (2012) has summarised the following as constituting the objectives for post project evaluation:

- building up an information base to help proper estimation of project cost and time
- educating all those concerned with the project about the realities of project management
- establishing correct time-cost relationship
- creation of appropriate standards for work based on suitable work technique
- sharing of project audit information among all concerned, in order to build up better understanding and better comprehension of the project and its problem areas so that lapses could be avoided in future.

Additionally, the Uk Department of Education NI (n.d.) has outlined a number of purposes of a post project evaluation as follows:

- evaluate the effectiveness of the project in realising the proposed benefits as outlined in the economic appraisal
- compare planned costs and benefits with actual costs and benefits to allow an assessment of the project's overall value for money to be made
- identify particular aspects of the project which have affected benefits either positively or negatively; recommendations for future projects can then be derived
- reveal opportunities for increasing the project's yield of benefits, whether they were planned or became apparent during or after implementation, and to recommend the actions required to achieve their maximisation.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes. Post project evaluation completes the life cycle of a project True False

4.1.2 Phases of Post Project Evaluation (Post Audit)

There are two phases to post project evaluation: immediately after the project is completed and after a lapse of time, maybe two or three years since after the completion of the project. Nagarajan (2012) notes that there are reasons why post project evaluation/audit is done on each of the phases as outlined below.

1. Post Project Evaluations/Audit (Completion): Post project evaluation/audit that is done immediately after project completion is done to:

a. consider the differences that exist between the estimated cost and the actual cost

b. consider the difference that exist between the estimated time and the actual time taken project implementation

c. determine the areas that contributed in the variation between project time and cost

d. identify the reasons for the observed variances, classifying them into avoidable and unavoidable variances

e. analyze the steps that could have been taken to curtail or avoid the observed avoidable variances

f. study more closely the factors that resulted in having the unavoidable variances as well as examining what possibilities exist for removing them in the future by way of adopting suitable methodology

2. Post Project Evaluation/Audit after a few years: In the case of post project evaluation after a few years, the reason that it is done is to:

a. Examine whether the goals and objectives set for the product are achieved

b. Determine whether the product that is produced by the project is of acceptable quality

c. Know whether the output estimated for the project is achieved

d. Know whether the market has accepted the product and also determine whether the production volume of the project meets the market share that is planned to achieve.

3.1.3 Types of Post Project Evaluations

Three major types of post evaluations/audit will be discussed. They are: technical evaluation or technical audit; financial evaluation or financial audit and economic evaluation or economic audit.

a. Technical Evaluation (Technical Audit): Technical evaluation or technical audit is done to evaluate the quality and quantity of production including the operating costs. Here a comparison of these factors is made between the information presented in the feasibility report against what the actual achievement is. Let us assume in the case of a production company, the feasibility report would have suggested an estimated output of one hundred million products per week pre-production or at commissioning or the plant. During production, the actual output is determined. Other areas of technical evaluation include: utilities consumed by the plant in the form of power, fuel, water, consumables, spare parts etc. Under this evaluation also, the quality and quantity of the outputs are measured to determine whether they meet expected standards.

b. Financial Evaluation (Financial Audit): Typically, during project appraisal, financial projections/estimates regarding project cost under various heads such

as operating costs, maintenance costs, profitability estimates, cash/fund flow estimates, sources and application of funds for the project etc. (Nagarajan, 2012). Financial evaluation seeks to find out whether the actual project cost viz a viz the estimates made on the various financial heads at the time of appraisal match. It should be borne in mind that some of the parameters set can only be determined after a few years of operations.

c. Economic Evaluation (Economic Audit): According to Nagarajan (2012), economic evaluation is the most difficult to make because it involves many subjective aspects that are difficult to quantify. As a result of this, it requires experienced personnel to carry it out. Such an evaluator must have the ability to identify the social costs and social benefits of the project. This type of evaluation is usually associated with public sector projects and community projects where social objective rather than financial and other objectives is the driving force.

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Social costs and social benefits evaluation of a project is normally carried out on which of these projects?

a. Public sector/community projects

b. Private sector projects

c. Non-governmental Association projects

d. All of the above

4.0 Summary

Evaluation is a very important aspect of project management. Evaluations conducted during project implementation usually as the project achieves milestones helps to ensure that the project is the right direction. At this stage, errors are detected and corrected all aimed at bringing the project to a successful completion. Beyond project implementation evaluation, post project evaluation or post audit conducted after project completion is very important as the evaluation provides information regarding whether the project was able to meet objectives, find out how effectively the project runs in terms of estimates and projections during project appraisal. This enables information to be gathered as to actual in comparison with estimations and projections. It also

provides information on lessons learnt which is important for decision making and for future projects.

This unit took you through post project evaluation or post audit. In it you were exposed to the objectives/purposes of post project evaluation in addition to the three major types of post project evaluation/post audit. One thing that is clear here is that a project must undergo this evaluation in order to match projections and estimates presented during post appraisal in comparison with the actual as the project begins operations.

5.0 Tutor Marked Assignment

1. What do you understand by post project evaluation?
2. Name and explain two types of post project evaluations

6.0 References/Further Readings

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1 Post project evaluation

SAE 2 False

SAE 3 Public sector/community projects

Module 5 Some Organisational Issues in Project Management

Unit 1 Leadership in Project Management

Unit 1 Leadership in Project Management

1.0 Introduction

While there are various other factors associated with effective project management, leadership no doubt remains the most important factor. This stems from the fact that leadership goes a long way because it not only ensures project management effectiveness, but it also enhances project success. This is possible because it is the responsibility of the leadership to select and build competent teams. When there is a competent team, arguably it is possible to have successful project implementation.

However, while this is true to a very large extent, there is also no doubt that the type of management style used in project organisation will significantly determine the kind of project teams there is. Another point that must be borne in mind is that leadership styles differ from country to country and to that extent, businesses are run differently given that cultures as well as the needs of people differ. Be that as it may, even within the same country, the leadership style required may vary from project to project.

Therefore, it is important to consider how leadership plays out in project management bearing in mind that team members can sometimes be under stress because of the nature of the work they do and the fact that projects usually require multi-disciplinary work teams. If stress is not managed properly, it can escalate to conflicts either between members of different teams or among members of the same team. Where the conflict is not properly managed, it can become a hindrance to project effectiveness. It takes a good team leader to create a comfortable environment which will also motivate team members to be committed to ensuring that the objectives of the project are achieved.

2.0 Intended Learning Outcomes (ILOs)

In this unit, you will know the definition of the concept of leadership; you will be taken through some leadership theories, role of leadership in project management, leadership and project conflicts, leadership and team building and leadership and motivation. At the end of the unit, you will understand more clearly the role that leadership plays in project management.

3.0 Main Content

3.1 Definition of Concept of Leadership

Leadership means different things to different people, and to that extent, any definition of the concept usually depends on the perspective, personality, philosophy, values and professional angle of the one defining it (Student Activities and Leadership Centre, n.d.). Northouse (2007) defines leadership as a process by which a person influences other to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent. The Leadership Theories and Studies (n.d.) defines the concept as a process by which one individual influences others toward the attainment of group or organisational goals.

In the definition by Kouze & Postner (2008) leadership is perceived as process of influencing others so that they understand and agree about what actions can be taken, how the actions can be executed effectively, and how to inspire individual and team efforts to accomplish shared objectives

In essence, the definitions view leadership from the point of the ability of an individual who in this case is perceived as a leader, to influence others to work in a desired direction for a desired goal(s). Oftentimes also, the concept is used interchangeably with management.

However, while the two terms have some things in common, they are not the same thing. To buttress that and also to differentiate the two terms, the leadership vs management matrix as adapted by Hammond, Klingborg, &MacNeil is presented below

Table 3: Differences Between Leadership and Management

	LEADERSHIP	MANAGEMENT
Definitions	he process-oriented, non-specific practices of challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and encouraging the heart The process oriented, non- specific practices of challenging the process, inspiring a shared vision, enabling others to act, modeling the way and encouraging the heart.	The implementation of those task-oriented duties that facilitate, support, and direct the timely and efficient maintenance of operations
Outcomes	Determining what should be done, systematic change, transformation, paradigm shifts, significant improvement or innovation, new and added value to or from the organisation.	Getting it done and done well. Effective, efficient completion or work, product, maintenance of operations with a focus on quality of the product.
Characteristics	A critical thinker, a risk taker, a visionary, innovative, courageous, creative, forward thinking, open to change, able to learn from and overcome failure. A team builder, a continuous learner, able to get along with people. Honest, dependable, competent, supportive, fair minded, cooperative, respectful, motivating, values driven, inspiring, resilient, patient, tenacious, credible, balanced, emotionally mature.	Efficient, detail oriented, a good delegator, organized, persistent, administrative. A team builder, a continuous learner, able to get along with people. Honest, dependable, competent, supportive, fair-minded, cooperative, respectful, motivating, values driven, inspiring, resilient, tenacious, credible, balanced, emotionally mature.
Scope	Focused on forward thinking and the long term. Strategic, visioning and planning requiring insight, complex choices and decision making, creating a new order, facilitating movement	Organisational focused, policy development and compliance maintenance, support and implementation of systems, incremental focused

	towards an end goal.	improvements.
Interaction	Motivates and inspires, builds potential in others, creates an environment that fosters learning, collaboration and fluid teamwork, and attracts right performers. Team building and effective functioning teams.	Focus on individual performance and work outcomes, maintains a productive work environment. Team building and effective functioning teams
Impetus	Self-directed, situational, opportunistic, serendipitous, can be courageous in the face of uncertain outcomes.	Calendars, directives, scheduling, culture and custom deadlines.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these is not true about leadership in project management?

a. A leader cannot lead a team without the right style

b. The project will still be completed without a leader

c. A leader may make changes if a style is not working

d. A leader can choose his team

3.1.1 Leadership Theories and Project Management

The question of how and why certain people become leaders has been of interest to human beings over the years. This is why different theories have been propounded to explain how this happens. Leadership theories focus on the traits and behaviours that people can adopt to increase their leadership capabilities (Western Governors University, 2021). These theories have emerged from researches conducted by scholars and researchers. Leadership in project management is essential in view of the increasing appreciation and adoption of the project management approach by organisations and enterprises

all over the world. It therefore entails that there has to be effective leadership if projects are to succeed.

This is why Liphadzi et al (2015) posits that leadership is important in any activity that involves collaboration in a group(s) of people. Project management falls within this definition because it entails the collaboration between project teams. Definitely, the subject of leadership is important because when it comes to projects, the project manager's leadership style goes a long way to influence the performance of his team members just as the leadership style of a manager influences the performances of every organisation, process or activity (Micik, 2016). A number of theories have been used to explain leadership. This includes the trait school, the behavioral or style school, the contingency school, the visionary or charismatic school, the emotional intelligence school and the competency school among others.

Out of all these theories, the one that is most used in leadership as it concerns project management is the competence theory.

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Leadership is important in any activity that involves collaboration in a group(s) of people therefore leadership is important in project management

True False

3.1.2 Project Performance and Contingency Theory

With the increasing understanding of the importance of the project management approach in products and services delivery and its acceptance and adopted by many organisations, the demand for project managers is on the rise. This is because project managers execute projects.

However, the extent any project manager is able to perform the job effectively determines the success of a given project. On the other hand, successful delivery of project goes beyond just the personal attributes of the project manager to include organisational environment within which he is working made up of management, stakeholders and the project team. In realisation of the role of the project manager's performance in the success of projects organisations are also paying attention to the need to develop the leadership skills of the project manager for more effective job performance.

The project manager is the leader of any given project and he is expected to possess leadership skills to make for effectiveness.

As mentioned earlier, the concern to understand why and how leaders succeed has given rise to the leadership theories as we have them today. One thing that is given is that individuals including leaders have certain personal characteristics that are inherent in them. Personal characteristics play a big role in the leadership skills of a leader in addition to the organisational factors or makeup of the group that is to be led. These factors as they present in a given situation in which the project manager is leading will determine whether he will succeed or not. This is referred to as situational leadership (Villanova University, 2021).

For instance, a project manager with certain characteristics mentioned may find it difficult to lead a team in a given environment characterised by their peculiar environmental factors mentioned above, but when put in another environment or situation that is different, he may perform better. So rather than use the same management style in leading across all project situations, it is the role of the project manager to establish the best possible fit between the organisation, its environment and sub-systems (Designing Buildings, 2021).

One size fits all approach may not always work. So, the major issue is to understand how different leadership situations can be matched by the personal characteristics of the leader. This is because superior performance results from matching managerial actions with internal characteristics (personal factors) and external environments (organisational factors) (Puddicombe, 2011).

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

It is the role of the project manager to establish the best possible fit between the organisation, its environment and sub-systems

True False

4.0 Summary

Leadership is very important in project management because it takes effective leadership to successfully complete and deliver a project. The project manager interacts with different organizations, stakeholders, teams and customers in the course of carrying out his responsibilities. A lot of factors including personality

of the leader, the makeup of the group he is leading as well as the internal and external environment should guide the style of leadership that he adopts. This is to say that an effective leader must understand the leadership style to adopt at any given time as a one- style fits all style of leadership may impact negatively if he chooses to implement the same style throughout.

This unit has exposed you to the concept of leadership in project management. The unit also highlighted leadership theories and styles as it affects project management. The role of leadership in project success or failure was also highlighted.

5.0 Tutor Marked Assignment

1. What do you understand by leadership in project management?
2. Explain the contingency theory as it relates to project management

6.0 References/Further Reading

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7.0 Possible Answers to Self-Assessment Exercises

SAE 1 The project will still be completed without a leader

SAE 2 True

SAE 3 True

Unit 2 Conflicts & Project Management

Unit 2 Conflicts in Project Management

1.0 Introduction

Conflicts are inevitable in any activity that involves more than one person including project management. In project management, conflicts arise because project execution requires the coming together of different people including stakeholders, project manager and project team(s). Conflicts are not necessarily

bad because there can be constructive conflict which aims to benefit the individuals concerned, and from which people can grow and develop. However, there is also destructive conflict which more or less defies solution, dissipates energy and distracts attention from more important activities or issues. Such conflicts destroy team morale and result in the polarisation of groups of people or teams if left unaddressed (Cappozoli cited in Ohlendorf (n.d.).

The implication, therefore, is rather than expect not to have conflicts during a project, the concern or focus should be on how to resolve conflicts if/when they arise. Managing conflicts successfully result in successful project delivery. Being able to manage conflict is seen as a core leadership competence as this can help project teams to grow and advance. Be that as it may, conflict management is not so easy and is considered to be one of the most difficult skills that someone can master and develop (Giotis, 2010).

2.0 Intended Learning Outcome

In this unit, you will be taken through the interpersonal aspects of project management with particular attention to conflicts in project management, types and causes of conflict in project management as well as methods of resolving conflicts in project management. The skill of conflict management can also be useful in other life situations.

3.0 Main Content

3.1 Definition of Conflict

Capozzoli cited in Ohlendorf (2001) defines conflict as "a situation of competition in which the parties are aware of the incompatibility of potential future positions and in which each party wishes to occupy a position which is incompatible with the wishes of the other." Conflict has also been defined as a process in which one party perceives that its interests are being opposed or negatively impacted by another (Wall & Callister, cited in Prieto, Cobo, Ortiz-Marcos & Uruburu, 2015). Another definition sees the conflict as perceived difference between one or more parties resulting in opposition (Ahmed, 2001). Looking at these definitions, it is obvious that conflict does not necessarily mean that the parties involved in a conflict are engaged in physical fighting or combat as you will have between armies on opposite sides. It simply means a serious disagreement or argument over something that stems from a difference of opinion or another factor. This is why Dan also cited in Ohlendorf (2001) notes that certain elements must be present in any issue in which there is a conflict. These elements are interdependence, emotions, perceptions, and behaviours. In other words, the parties are in a situation where there is competition arising from each person wanting to have their ways and neither wanting to concede to the other.

While people tend to avoid conflicts, Giotis (2010) notes that conflicts are bound to happen because conflict is the force that drives change. Lencioni (2002) is also of the view conflict is good for the development and maturity of teams. Along this line, it is asserted that conflict is important, and beneficial and should be stimulated through methods such as mining and real-time permission. Mining is concerned with deliberately bringing out sensitive issues to be discussed by the group. Real-time permission entails allowing and facing healthy debate. Lencioni further counsels that management should not interfere with conflict among team members when it occurs but should rather allow such

conflicts to come naturally. Giotis (2010) further notes that generally speaking, conflict is divided into good and bad conflict. Good conflicts are the kind of conflicts "that produce new ideas, solve continuous problems, allow people to expand skills, allow creativity, and improve performance." In other words, good conflicts push people onto a positive path and motivate them to be productive and problem-solvers and also lead to growth and development. On the other hand, "bad conflict lowers team energy or morale, reduces productivity, prevents job accomplishment, creates destructive behavior, and fosters poor performance." In the same vein, conflict may be justified or unjustified. Conflict is justified when team members disagree with the stated goal while conflict is unwarranted when team members agree with the stated goal but do not agree about the best way to adapt to accomplish the stated goals.

Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A process that begins when there is a perception of unfair treatment and deliberate attempt to frustrate is called

a. Uncertainty

b. Risk

c. Conflict

d. Poor management

3.1.1 Causes of Project Conflict

Conflicts can arise in a project in any number of ways. While not exclusive, Guan (2010) has identified the following causes of project conflicts:

- Cultural differences
- Schedules
- Prior unresolved conflicts
- Project priorities
- Resource competition

- Technical issues
- Team or clique
- Personality conflicts
- Organisation structure
- Communication barriers
- Poor planning

Cultural Differences: Conflict arising from cultural differences arises from the fact that the advances in information communication technology have created a global village in which people across countries and cultural differences can work on the same project. Cultural differences can arise from language, food, and religious differences among others. On a project team where there is much ignorance and little appreciation of differences, a conflict can arise. If such a conflict is not addressed quickly and decisively, it can lead to bigger problems that can potentially derail the course of the project.

Work Schedules: Conflict can arise from schedules. Touma (2009) notes that project schedule related conflicts can be of many types and can arise within the project team: stakeholders/management vs. project manager, project manager vs. team member(s), and finally team member(s) vs. another team member(s). Sometimes the project manager is given a near unrealistic project completion dateline by the customer. The pressure that arises from this can affect not only the project manager but also the team and this can result in conflict. Conflict arising from schedules could also be a result of last-minute schedule changes. It can also arise from delays in completing project activities, especially where the team depends on another team to complete their work before they can commence theirs. This can increase the level of stress and frustration and eventual conflict.

Prior Unresolved Conflict: Conflicts can also arise from prior unresolved conflicts in which case one party was not satisfied with the way a prior conflict was managed or was not convinced that the conflict was handled fairly handled by the leadership at the time occurred. It could also be between team members or with the project manager or even with stakeholders. Such unresolved conflicts are never laid to rest but simmer and wait for a trigger to resurface.

Project Priorities: Every project is owned by stakeholders. Stakeholders are the individuals, groups or entities for whom the project is being executed. Stakeholders' expectations must be met before a project can be delivered

successfully. In essence, the stakeholders' interest is paramount in project execution. Sometimes, stakeholders, have different expectations are interests that they want to be prioritized. It might be difficult to manage these expectations, and as a result, can be a source of conflict among the stakeholders or between the stakeholders and the project manager.

Another important person that must be satisfied is the customer. While the project manager is expected to meet the needs of the customer, there is no doubt that there are times that customer expectations can be unrealistic, in which case the project matter is torn between following his guts or going along with the customer. This conflict must be resolved because customer satisfaction is key in business planning.

Resource Competition: Resource competition can also be a source of conflict. This is most likely the case in organizations with functional structures where the project manager is not in total control of resources in terms of men and capital. It could also arise when a smaller project team has to share resources with a larger project team as the tendency exists for the larger project team to appropriate more of the resources available. This can result in conflict as each project manager wants to deliver his project within the best possible time.

Technical issues: The Collins English Dictionary (2021) defines the term technical to mean something involving the sorts of machines, processes, and materials that are used in industry, transport, and communications. The technical aspects of a project include planning, scheduling and timeline maintenance, execution, managing the budget, communication with stakeholders, and ongoing maintenance (Wrike, 2021). All of this requires careful attention, and if that is not done properly, can result in conflict.

Technical issues of a project may also be technological changes that entail replacing old tools with more modern ones. In the early stages of such changes, conflict can arise as attempts are made to either update or learn new skills that are required to master the new technology.

Team or Clique: Project Management (2012) describes a team as "comprising a group of people linked in a common purpose" while a clique is a "small group of people with shared interests, who spend time together and exclude others." A strong team shares information and supports one another to grow and develop in the best possible way to achieve a common purpose. A clique is exclusionary and will not share information with those who do not belong to their group. In a project environment, care must be taken to ensure that teams do not turn into cliques. Conflict can arise where there are cliques as there is no

cohesiveness or common identity ultimately making the outsider(s) feel a sense of isolation and frustration. This can lead to conflict.

Personality Conflicts: Projects teams are made up of individuals with varying personality traits and behaviours. Personality clashes can lead to conflict between the project manager and team or among team members when there is a perception that one's interests are either being opposed or negatively affected by another party. Also, in a bureaucratic and highly departmentalised organisational environment, there is a tendency for interpersonal conflicts to arise because of a feeling of lack of independence and self-actualisation. Other factors that can result in interpersonal conflicts in the work environment can arise from an individual's domestic affairs, emotional and mental challenges or even financial instability. Such things can be easily carried over to the work environment and if not handled or put in check can cause conflicts.

Communication Barriers: Communication is a very important aspect of project management. In the course of his work, the project manager relates with stakeholders and project teams. With the stakeholders, the project manager has to communicate the project's success from time to time to enable them to keep abreast of development. In the same vein, the project manager communicates with project teams to ensure that they have clarity and are on the same page as the project manager. When there is a communication breakdown, there is bound to be conflict because a lack of communication results in inconsistencies, uncertainty and confusion.

Poor planning: The planning phase is very important in project management because it "involves defining clear, distinct activities and work required to complete the activities for each project. Some of the activities that are outlined in the planning phase include: defining the project scope, defining the work breakdown structure, estimating resource requirements, outlining communication procedures among managers, team members, and the customer, identifying and evaluating risk, and developing a Baseline Project Plan" (Ohlendorf, n.d.) In essence, proper planning provides a sense of direction while lack of planning does the otherwise and often exposes an organisation to one crisis or another. When there is no sense of direction, a stressful atmosphere is created and results in many unpleasant circumstances including misunderstanding which ultimately leads to conflict. Planning is beneficial and although it requires some time, "the time spent in planning will be recouped many times over in the more efficient use of workers' time, and in real and long-term benefits to clients" (Community Door, 2021).

Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

When a conflict arises as a result of failure to define clear, distinct activities and work required to complete the activities for each project, it is said to be caused by

a. Poor planning

b. Communication barriers

c. Personality barriers

d. All of the above

3.1.2 Project Conflict Resolution

As stated earlier, conflicts are inevitable in project management because it involves the coming together of different people to achieve a goal. Expectedly, these people have different opinions, expectations, values and methods of working. In essence, the fact that many people who may not have had any dealings with each other in the past are involved in a project is one of the very reasons that conflicts arise. Therefore, the focus is not to try and eliminate conflicts but to make sure that if and when they do occur, there are mechanisms for resolving them because if conflicts are not given the attention they require, they breed unpleasant circumstances that have the potential to derail the project or destroy it. This is why conflict resolution is paramount in project management, and it is without the power of the project manager to ensure that situations that can escalate conflicts are checked to avoid unpleasant circumstances. Prieto, Cobo, Ortiz-Marcos and Uruburu (2015) that conflict resolution is a key issue to manage when dealing with diverse stakeholders.

Villax & Anantatmula (2010) observe that there are different types of conflict and each one influences the project environment differently and each one is managed differently with a different approach. In other words, there is no one-size-fits-all conflict resolution in project management as conflicts are caused by different kinds of factors and each must be treated on its merit.

Stephen & Robbins cited in Villax, C. & Anantatmula, V. S. (2010) note that over the years, three different views have developed about conflict in projects and organizations, and each perspective determines the approach to resolution

that is adopted. These three views are the traditional, behavioural view and interactionist views. In terms of their approaches towards conflict, the traditional view sees conflict as a negative and so must be avoided. In this view, the job of the manager is to ensure that a culture that fosters harmony is created in the behavioural view, although conflict is negative, it is natural and inevitable therefore, managers should encourage conflict rather than try to eliminate it. The view also believes that conflict can produce positive results if handled properly. On the part of the interactionist view, conflict should be encouraged up to a certain level because conflict tends to increase performance, and low conflict can lead to less innovation, less change and fewer improvements for the organisation.

The three views are diagrammatically represented below

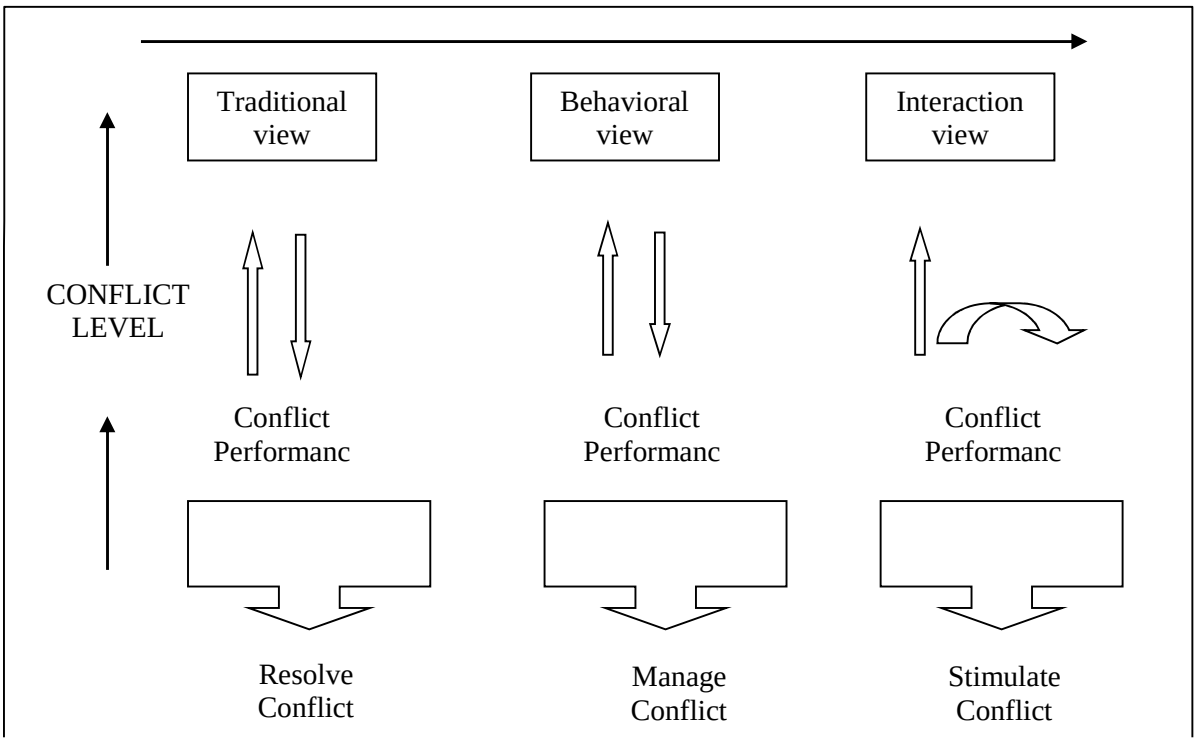

Fig. 9 Adopted from Villax, C. & Anantatmula, V. S. (2010)

Miller (2021) has given ten strategies that can be adopted to resolve project conflicts however, they are not exclusive. These are 1) set guidelines, 2) active listening; 3) avoid force and intimidation; 4) embrace conflicts & learn from them; 5) encourage team collaboration; 6) use the power of compromise; 7) constructive criticism 8) pragmatic decision making and 9) appoint a mediator.

1. **Set Guidelines:** This strategy is considered beneficial in lowering the chances of project conflicts occurring. In this strategy, the team members are given clear guidelines on matters such as the expected behaviours from the outset. They are made to understand the team hierarchy and reporting relationships, how to work to align with the organizational goals and more. The advantage of this strategy is that everyone knows the guidelines from the start and so the chances of miscommunication are reduced thus, lowering the probability of conflicts.

2. **Active Listening:** Most project conflicts occur because there the parties involved are not listening to the viewpoints of the other. When there is active listening, it becomes easier to listen and get to learn the viewpoints of everyone involved in the conflict. Because projects usually involve different

stakeholders, the tendency for varying interests exists and people act based on their interests. It, therefore, means that each person should be allowed to air their views and those views should be subjected to unbiased problem-solving. It is also important to ask questions to clarify and get to the facts of the matter. So active listening makes one go deeper than the surface level to understand positions, views, emotions and so on.

3. **Avoid Force & Intimidation:** Oftentimes, leaders try to resolve conflicts through intimidation and force. This involves engaging one's authority to get people to act in the way the leader desire. This is a strict approach to conflict resolution and may not always bring about the desired results. The project team may be cowed to toe the line of the leader, but this can be temporary as it does not give room for the independence of action and thought. In the short run, it may appear to be effective but in the long run, it creates an uncomfortable environment that discourages interaction between the leader and his team. When emotions, anger, and frustration are left unaddressed, the probability of them resurfacing is high. The onus, therefore, is on the leader to remain calm in the face of conflict resolution. It is important to listen to the concerns that all team members have. The focus should be on having an effective communication system at work in the environment.

4. **Embrace Conflicts & Learn from Them:** Conflicts are inevitable and cannot be completely ruled out in the work environment. Moreover, not all conflicts are bad as some can be an opportunity for growth and development. Because team members have their views on certain things that concern them and their work, it is not unlikely that they would question them. Such occasions can be seen as an opportunity to bring positive changes to the organization because in hearing team members' viewpoints, room for change is made and it can also be an opportunity to address the concerns and prevent future occurrences.

5. **Encourage Team Collaboration:** Encouraging team collaboration is also an effective strategy for conflict resolution in project management. In this strategy, all involved in the conflict arrive at a solution that everyone is satisfied with. Here opinions are sampled so that the solution that is arrived at is acceptable to all. An example of this is a situation where a collaborative technique is applied in a disagreement that has to do with work distribution. This technique ensures that the work is equitably distributed in such a way that no single individual in the team is overburdened. The advantage of this is that it fosters satisfaction and builds team morale.

6. **Use the Power of Compromise:** The compromise approach calls on the parties to make sacrifices by yielding to some beliefs or ideas for the greater good of

the team. In essence, rather than maintain a fixed post, the parties are encouraged to collaborate and work towards a common team goal. When successfully applied, this technique can result in an amicable resolution of the conflict as all involved in the conflict situation sit down together to discuss, negotiate, and exchange ideas.

7. **Constructive Criticism:** Constructive criticism is concerned with giving feedback that is specific, and also giving workable suggestions. In essence, the suggestions that are given are not general advice but rather ones that come with recommendations on how to make positive improvements. A leader who employs constructive criticism approach bases his decisions on the changing needs of the team. Based on that they make decisions that are balanced in both emotions and reasoning. By so doing, they employ an emphatic approach to solving team conflicts. Explaining further, Proprofs (2021) said with constructive criticism, when a conflict arises, the leader analyzes both sides of the issue. All the parties to a conflict get a fair chance to speak out and add their inputs. With everybody's feedback, a pragmatic leader tends to take an unbiased view of the situation. Not just solving the immediate problem, they also learn from the conflict and put in place effective preventive measures for the future.

8. **Appoint a Mediator:** In this strategy of project conflict resolution, a third party is brought in to resolve project conflicts. The mediator acts as a bridge between the conflicting parties. He listens very carefully to the parties to understand. The objective of the mediator is to ensure that the team members go beyond arguments and help them to reach a mutually beneficial agreement. The mediation technique resolves quite difficult conflicts and is faster, less time-consuming and minimally stressful.

Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these resolves conflict?

a. Traditional approach

b. Behavioural approach

c. Interaction approach

d. None of the above

4.0 Summary

Conflicts are inevitable in a project environment because of the multiple stakeholders and teams that are involved. Project conflicts arise as a result of many factors including cultural differences, personality differences, and team environment among others. While there is the tendency to see conflict as bad, the truth is that conflicts can be good or bad. While good conflicts are desirable because they tend to lead to growth and development, the bad type can be quite destructive and damaging if left unattended. Project conflict resolution comes in many different approaches. Many techniques or approaches are available for resolving project conflicts and each one has its attendant peculiarities. There is a need for the right one to be applied in a given situation for effectiveness.

This unit has looked at the definitions of the concept of conflict in project management. It has also looked at some of the factors that can breed conflicts in the project environment. Also, some project conflict resolution strategies were considered.

5.0 Tutor-Marked Assignment

1. Outline and explain five causes of conflict in the project environment.
2. Mention and explain four strategies of project conflict resolutions.

6.0 References/Further Readings

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7.0 Possible Answers to Self-Assessment Exercises

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

SAE 1 Conflict

SAE 2 Poor planning

SAE 3 Traditional approach