

project planning and management series

PNHAR 444

ISM 37096

ACKNOWLEDGEMENT

The Project Planning and Management Series consists of a set of manuals and associated modules presenting practical approaches, tools and techniques for project planning and management. (See list on back cover). A product of the Government of Jamaica/USAID National Planning Project (1976-1980), the series was developed by the Project Development Resource Team (PDRT) of PAMCO for use in "action-training" workshops and reflects extensive experience in training and project development. All present PDRT members are contributing authors and have worked together in writing, revising and publishing the series. Special credits are due to Dr. Meryn Kettering for design and development of the series; Dr. Bruce Brooks for writing final versions of many modules; Mrs. Marjorie Humphreys for assuming primary editing and production responsibility and for organizing draft papers into more useful materials; Mr. Lascelles Dixon, head of PDRT since 1979, for designing the cover and improving many of the illustrations; and Mrs. Christine Hinds and Miss Linette Johnson for typing the drafts and final manuscripts. Any comments on the series and its usefulness are welcome.

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March, 1980

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Published by:

The Project Analysis & Monitoring Co. Ltd. (PA
Inter-Continental Hotel, 4th Floor
Kingston, Jamaica, W.I.

MODULE 3

WORK BREAKDOWN STRUCTURE

Bruce Brooks

A. PREREQUISITES:

References: MODULE 5 - Project Organization Charts
MODULE 6 - Linear Responsibility Charts

B. DISCUSSION:

Brief Discussion

The Work Breakdown Structure is not an organization chart for the project, but a logical division of the project into its natural managerial parts. The parts include all of the manageable components, elements, and activities.

Initially, no effort is made to identify organizations responsible for the work, but these are included later by developing a Linear Responsibility Chart showing how the different organizations are related to the different parts of the project.

There are four levels in a project work breakdown. These are:

The Project	-	Level 1
Project Components	-	Level 2
Project Elements	-	Level 3
Project Activities	-	Level 4

Level 1 has only one entry which is the project.

Level 2 breaks the project into several entries called components, e.g., planning, site, funding, equipment procurement, etc.

Level 3 shows each of the components broken down into elements. These elements will further define what is to be done, e.g., "site" may be broken down into select site, survey site, purchase site, clear site, and prepare site.

Level 4 breaks the elements down into the activities necessary to do the job, e.g., the element, "select site" may be broken down into these activities: formation of site selection committee, selection of site, preparation of legal papers for site, and approval of site selected.

It should be noted that the last level of project work breakdown is project activities, which is shown as LEVEL 4. *Activities* are the lowest level of managerial responsibilities shown on the project work breakdown chart. Project activities are delegated to others who may break them down into tasks and sub-tasks. This is not shown on the Project Work Breakdown Structure Chart, but should be listed by the activity manager.

C. PURPOSE:

The purpose of a Work Breakdown Structure for a project is to provide the planners and decision-makers with a logical breakdown of the natural parts of a project to a point where management tasks are defined.

D. USES:

The uses of a Project Work Breakdown Chart are to:

1. describe the project tasks;
2. show the inter-relationships of the tasks to be done in an easily comprehended and systematic manner; and
3. enable the management to control and manage the project more easily so as to reach the stated objective.

E. DEFINITIONS:

A Project Work Breakdown Structure is a systematic and understandable breakdown of the different components and elements of a project to a point where manageable activities are defined. It is a technique for breaking down a total job (project) into its components, elements and activities and displaying them to show the relationships between each other and the whole.

F. LIMITATIONS:

1. The Work Breakdown Structure may not include all of the major activities, elements, and components necessary to reach the objective. Others can be added, and should be, if they are identified.

2. The responsibility for performance at each level is not assigned. This is done with a Linear Responsibility Chart (SEE MODULE 6 - LINEAR RESPONSIBILITY CHARTS).
3. No time frame is set for accomplishment. This is done by using Project Bar Charts (SEE MODULE 8 - USING BAR CHARTS FOR PROJECT CONTROL and MODULE 9 - PROJECT SCHEDULING - NETWORK ANALYSIS).
4. Project Activities do not include activities that must be carried out below the managerial level. These tasks are multitudinous and are delegated to others. The tools for organizing this portion of the project manager's job is the Activity Description Sheet (SEE MODULE 4 - ACTIVITY DESCRIPTION SHEETS).

G. ASSUMPTIONS:

The successful preparation of a Work Breakdown Structure assumes that the project planners have sufficient knowledge about the various task levels in the project to enable them to break the project down into its relevant components, elements, and activities and portray the relationships that exist. This assumption includes the premise that the planners will seek assistance if they are unable to fulfil this responsibility.

H. OUTPUT:

A comprehensive list of activities required to be carried through so as to achieve the stated objectives successfully.

I. STEPS IN CONSTRUCTING A WORK BREAKDOWN STRUCTURE CHART

Please refer to ILLUSTRATION 1.

- STEP 1. On a page, put the title of the project at the top of the paper and the title of the document, i.e., Work Breakdown Structure (SEE ILLUSTRATION 1 - EXAMPLE OF A WORK BREAKDOWN STRUCTURE).
- STEP 2. Fill in the project levels across the page as shown in ILLUSTRATION 1.

- STEP 3. Put the name of the project in the space near the middle of page at the left hand margin under Project (LEVEL 1).
- STEP 4. *On a separate sheet of paper list the project components, the elements of these components, and the managerial activities needed to do each of the component jobs. Complete each component plus its related elements and activities before moving on to another component. Continue this process until you have included all of the necessary components, elements, and activities.*
- STEP 5. Enter each component in a space under Level 2, each element related to the components in an adjacent space under Level 3, and all activities under Level 4 on the Project Work Breakdown Chart you have already started. (SEE ILLUSTRATION 1 for an example of how it should appear when completed).
- STEP 6. When it is completed, review it with knowledgeable persons, and revise it if necessary.

An Example of a Work Breakdown Chart

ILLUSTRATION 1 shows an example of a completed Work Breakdown Structure chart which has been worked out for a Community Centre Project.

EXERCISE

Form groups of 3 or 4 to do this exercise.

Using Illustration 1 as an example, construct a Work Breakdown Structure for your own project.

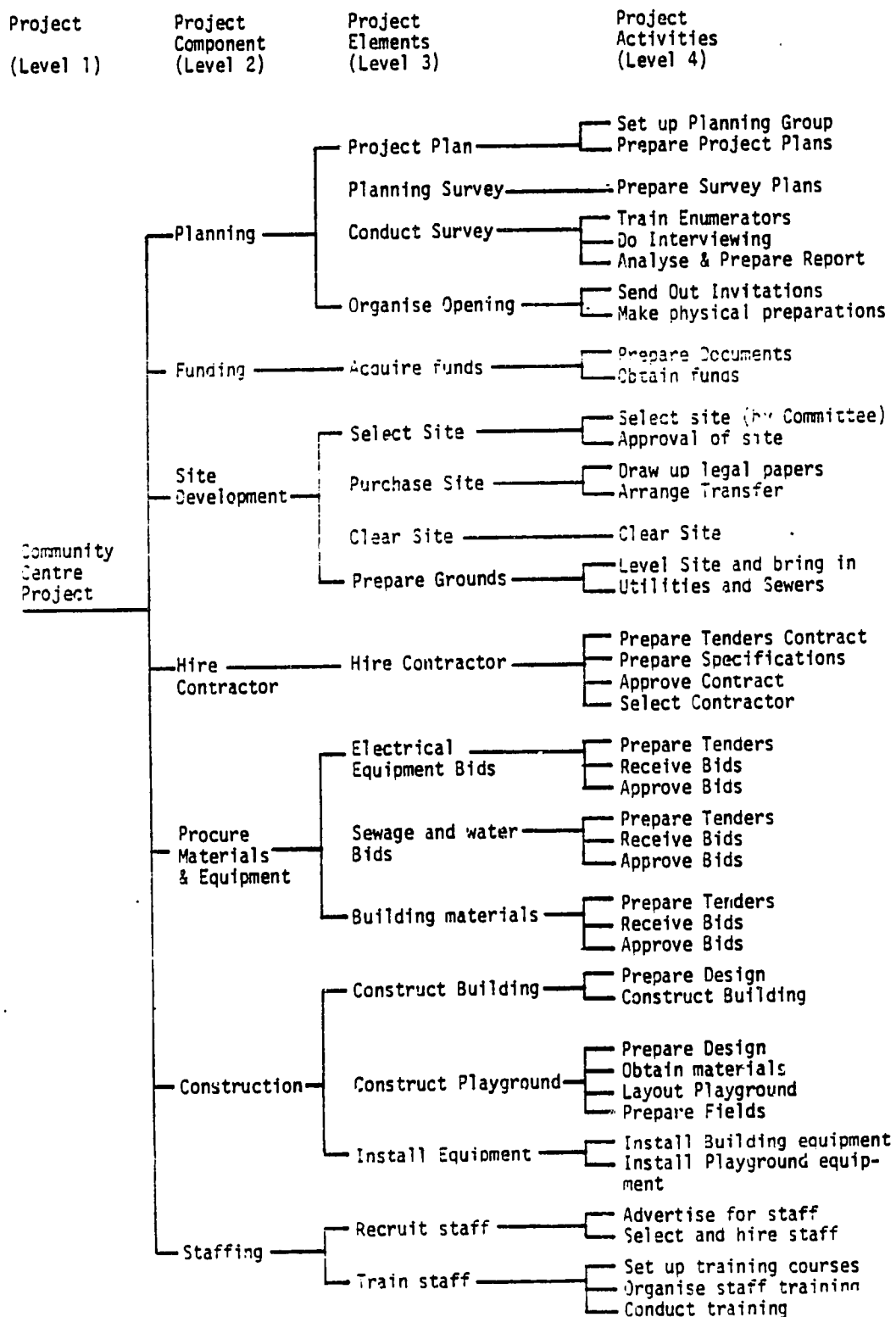
If you are not involved in a project, choose a project idea, or a project you are familiar with, and develop a Work Breakdown Structure for it.

Earlier PDRT working papers relevant to this topic include "Managing Project Plan Preparation", M. Kettering and J. Kristiansen. 1977 (11 pages).

ILLUSTRATION 1

Example of a Project Work Breakdown Structure

COMMUNITY CENTRE PROJECT



DO NOT DUPLICATE WITHOUT PERMISSION

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Project Planning and Management Series.

MANUAL - I Planning for Project Implementation
MANUAL - P Project Planning
MANUAL - M Project Management
MANUAL - PF Pioneer Farm Implementation Planning

MODULES

1. Defining Project Objectives (Objective Trees)
2. The Logical Framework
3. Work Breakdown Structure
4. Activity Description Sheets
5. Project Organization
6. Linear Responsibility Charts
7. Project Scheduling - Bar Charts
8. Bar Charting for Project Control/Scheduling
9. Project Scheduling - Network Analysis
10. Milestones Description Charts
11. Resource Planning & Budgeting
12. The Role of PAMCO
13. Project Technology Analysis
14. Demand Analysis
15. Market Strategy Analysis
16. Project Area Analysis
17. Project Costs & Benefits
18. Project Profile
19. Financial Analysis
20. Cash Flow Analysis
21. Discounting
22. Net Present Worth Analysis
23. Cost-Benefit Analysis
24. Benefit-Cost Ratio Analysis
25. Internal Rate of Return
26. Social Analysis of a Project
27. Economic Analysis of Projects (including Border Pricing)
28. Financial Statements & Ratios
29. Project Selection & Ratios Analysis
30. Brainstorming
31. Decision-making System for Projects
32. Project Institutional Environmental Analysis
33. Ecological Analysis for Projects
34. Introduction to Contracts, Jamaican Contract Documents & Tendering Procedures
35. Selection & Use of Consultants
36. Project Documents for Planning & Implementation
37. Report Writing for Projects
38. Project Files
39. Formats for Pre-Feasibility & Feasibility Studies
40. Motivation of Employees and Personnel Evaluation
41. Design of a Project Management Control System
42. Evaluating & Forecasting Project Progress & Performance
43. Project Termination
44. Introduction to Lending Agencies
45. Organizing and Conducting Conference Meetings
46. Withdrawal of and Accounting for Loan Funds in the Financing of Projects

