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IMPLEMENTATION OF I.T AUTOMATION SYSTEM IN DEFENCE HOUSING AUTHORITY (DHA), LAHORE.

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WITNESS CERTIFICATE

This witness statement is issued to the applicant for the fulfilment of his/her MS (Project Management) program requirements being carried out at Bahria University Lahore Campus (BULC).

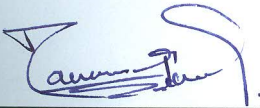
It is witnessed that **Mr. NoumanHaider Nawaz & Mr. Sajjad Umar** Enrollment: **03-298161-013 & 03-298161-031** Class: **MSPM-III** Semester: **SPRING 2017** has contacted / visited / frequently utilized our premises / participated in our real-time projects for implementing project management skills using EPM as a leading software tool.

He in case of participation in organization's project has contributed fully in the DHA Automation Project and within the highlighted fields

1. Planning, Scheduling

2. Execution

Additionally, it is noteworthy to mention that **Mr. NoumanHaider Nawaz & Mr. Sajjad Umar** demonstrated good ethical practices, enthusiastic approach to work, task convergence capabilities, professionalism while his stay with this organization.



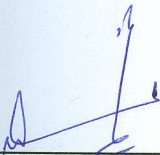
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It is certified that MS/M.Phil Project Report Titled "**Implementation of I.T Automation System in Defence Housing Authority, Lahore**" by MSPM-II student named *Mr. Nouman Haider Nawaz* and *Mr. Sajjad Ali* has been examined by us. I undertake the following:

1. Project report has significant new work/knowledge as compared already published or are under consideration to be published elsewhere. No equation, diagram, table, paragraph or section has been copied verbatim from previous work unless it is placed under quotation marks and duly referenced.
2. The work presented is original and own work of the author (i.e. there is no plagiarism). No ideas, processes, results or words of others have been presented as Author own work.
3. There is no fabrication of data or results which have been compiled / analyzed.
4. There is no falsification by manipulating research materials, equipment or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.



Mr. Faisal Shahzad

Date: _____

DEDICATION

We are delectating this report to our beloved parents who have helped us and always supported our education since day one, without their prayers we are nothing. Our family is always a source if guideline for us there is no doubt in our mind that without his continued support and counsel we could not have completed this report.

We dedicated our work to our family and our teacher Mr. Faisal Shahzad. We would like to acknowledge the support and assistance given to us by Sir Faisal Shahzad because he has given us deep appreciation and love for beauty and detail of this project

ABSTRACT

This project is about the Project management office. As the role of project management in organization is consider important while in development of project. In this report Project management tools and techniques implement for the DHA Automation System.

A brief introduction of company to implementation of Project management office in the aforementioned company gives the many advantages to DHA. As this company not using the Project management office to it's any project and faces may problems related to schedule, cost etc.

After brief analysis we developed a Project management office in this organization as this is the need of company. As most of the projects are done by the consultants or through direct involvement with contractor they face many issue.

These issues are resolved by the implementation of the Project management office. For its implementation many problems faced as upper management not willing to accept the change but with the proper guidance we able to implement the Project management office.

DHA is going to automate their all Land Records as well as customer history and their plot details. With the help of this Project management office they now easily know all the requirements of the project and all cost are in front of them. This report helps them to select their contractor in more effective way and progress of work monitor through this schedule.

Number of resources, cost required all is cover in this report and role of project manager which is very important clear in this report. Final result may be more accurate due to this project management office. Different project management also establishes to guide the company about the right path.

Last but not least this project will definitely help the DHA in this current project and also for the future one.

All guidance and expertise are given by our respected Sir. Faisal Shahzad

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ABBREVIATION

DHA:	Defence Housing Authority
TFR:	Transfer & Record
BC:	Building Control
PR:	Public Relation
IT:	Information Technology
ACQN:	Land Acquisition
Ph:	Phase
Sec:	Sector
CCA:	Central Commercial Area
DRGCC:	Defence Raya Golf & Country Club
EPS:	Enterprises project structure
OBS:	Organizational Breakdown Structure
WBS:	Work Breakdown structure
EVM:	Earned value management
CV:	Cost variance
SV:	Schedule variance
PV:	Planned value
AV:	Actual value
CPI:	Cost performance index
CPM:	Critical Path Method
SPI:	Schedule performance index
BAC:	Budget at completion
ACWP:	Actual cost of work performed
BCWS:	Budgeted cost for work scheduled
BCWP:	Budgeted cost for work performed
EAC:	Estimate at completion
VAC:	Variance at completion
PMO:	Project Management office
P6:	Primavera P6

1. INTRODUCTION

Defence Housing Authority Lahore is "Nationally recognized corporate" organization that has endeavored to provide, to the people of Pakistan, an opportunity to live the innovative models of modern living.

Tuned to the latest worldwide developments in the field of Urban and Community Management, it has added the grandeur of our cities and communities.

Relying on the elements of strategic urban planning, development and sustainability it has carved out its residential and commercial projects [1].

1.1 Vision

By introducing modern designs in construction of houses, infrastructure and essential associated facilities it has infused a new life in "Defence Living", that is beautifully energetic, attractively vibrant and conveniently livable [1]

1.2 Mission

Our emphasis continues to remain on building our communities with the essence of our socio-cultural and religious traditions & needs. We envision our future urban dwellings to be more friendly, modern and green [1].

1.3 Scope of The Project

All Data should be computerized of TFR, BC, Land Acquisition, PR and I.T Branch. DHA wants a paperless environment in just 2 year. All Customer Data should be Sync and organize properly in Repository. Also to enhance the customer service and should be informed through SMS Alert service from all over the world for Overseas Pakistani customer of DHA.

1.4 Goals & Objectives

- Develop urban communities.
- Provide modern living standards.
- Offer sustainable infrastructures.
- Generate environment friendly developments.
- Facilitate People with essential civic facilities i.e. Health, Education & Entertainment.
- Build our socio cultural fiber by reconnecting communities.
- Promote religious harmony by defining communal worship centers.
- Encourage educational pursuits by designing modern centers of education [2].

1.5 About DHA



Fig 1 – About DHA

1.6 THE GOVERNING BODY

1.6.1 Functions

1. General Direction
2. Policy Making
3. Guidelines
4. Governing Rules

1.6.2 Chairman Governing Body

1. Lt. General (Retired) Zamir Ul Hassan Shah, HI(M)
2. Secretary Defence, Ministry of Defence, Government of Pakistan

1.6.3 Vice Chairman

1. LT. GENERAL SADIQ ALI, HI(M) COMMANDER 4 CORPS

1.6.4 Members

1. BRIGADIER ZAFAR YASIN BABAR – ADMINISTRATOR D.H.A
2. COLONEL (RETIRED) ZAIM UR REHMAN – SECRETARY D.H.A

1.6.5 Co-Opted Civilian Members

1. BRIGADIER (RETIRED) IMRAN MALIK, S.I(M)
2. MR. KAHLID TOOR [3]

1.7 THE EXECUTIVE BODY

1.7.1 Functions

Under the direction of Governing Body, carry out affairs of the Defence Housing Authority Lahore, by exercising following powers [4]:-

1. Administrative
2. Executive
3. Financial

1.7.2 Composition

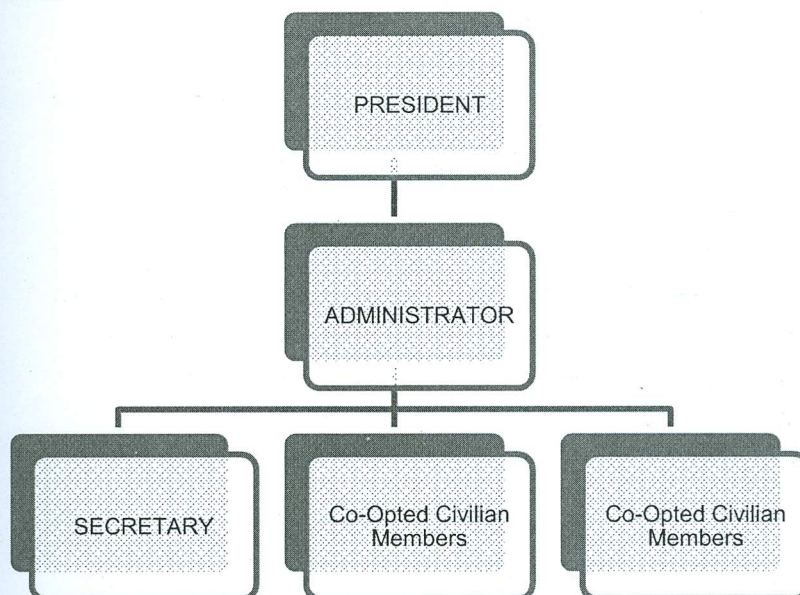


Fig 2- Organogram

1.8 PROJECTS

1.8.1 Completed

- i. Penta Square CCA Ph-V
- ii. Prism 9
- iii. Ivy Green
- iv. DHA New Office Complex
- v. DRGCC Club House
- vi. Swimming Pool
- vii. Police Station
- viii. Sector Mosques [5]

1.8.2 Projects under Development

- i. Construction of Swimming Pool, Sector K, Phase - V.
- ii. Construction of Sports Complex Sector A, Phase - VI.
- iii. Construction of Sports Complex Sector XX, Phase - III.
- iv. Construction of Community Club Sector K, Phase - V. [5]

1.8.3 Commercial Projects

- i. Mazyood GIGA DHA Lahore - Phase IV
- ii. DHA Haly Tower – Phase II
- iii. Beaconhouse School – Phase VI
- iv. Beaconhouse School – Phase V
- v. City School – Phase VI

- vi. Lahore Grammar School – Phase VIII
- vii. Nirvana Health Centre and SPA – Phase V
- viii. Shapes Health Club – Phase V [5]

1.8.4 Developments

Phase VI:

Construction and development of housing units and commercial plazas

Phase VII

Sector Q,R,S,T and U have been completed. Sector P,V,W,X,Y and Z are nearing completion

Phase VIII

Infrastructure development in sectors W and Y has started.

Phase IX

Town Planning and development are under process

Phase XI – Halloki Gardens

Infrastructure developments has been completed and electrification work is nearing completion [6]

1.9 PLANNING & DEVELOPMENT

Defence Housing authority is one of the most well planned societies in the whole of Pakistan. Currently, DHA has seven phases, from phase 1 to phase 7 that are open for possession by the civilian population. The remaining four phases, from phase 8 to 11 are either in the process of development or have not seen the start of development even. Each phase has a number of sectors or blocks having English alphabets as their names which are further subdivided into plots for the construction of houses ranging from land area five marla (approx. 1361 square feet) to 2 canal (approx. 10890 square feet). Each phase also has a central commercial area for shops and offices catering to the community. The phases with the most construction and population are the Phases 1 to 5, with Phase 6 and 7 being the least developed. The overall plan of Phases 1 to 4 displays an older style of town development with narrower roads, streets and grassy areas, also without underground wiring for electrification, while also lacking sector mosques. Phase 5,6 and 7 being the most recent in terms of planning and development show sixty feet roads as well as broader streets, with underground electrification and each sector or block having its own mosque [6].

1.10 HEALTH CARE

The main hospital situated in the heart of DHA is one of the best hospitals called The National Hospital. However, recent reports of doctors negligence are on the rise, questioning the integrity of the hospital. Alternative hospitals within easy reach of DHA can be found on the Defence Main Boulevard (the road leading to the main DHA entrance). In addition to the hospitals, small clinics can be found in markets all over. Many pharmacies can also be found scattered throughout. T block will soon be having a health /wellness medical spa called SAMS (Skin Analysis Medical Spa) However, a famous Day Spa from Islamabad by the name of Nirvana has already started operating in Phase 5 (near LUMS) [6].

1.11 FOOD

DHA, like the rest of Lahore, is overflowing with food lovers and has a lot of variety of foods on offer, from fast food chains such as McDonald's, Hardees, Kentucky Fried Chicken and Pizza Hut to upper-scale restaurants specialising in Pakistani and Western cuisine. The 'Food Street' situated in the 'H-Block' market is home to many local small-scale restaurants and takeaways providing countless cuisines; the famous ones are Cock & Bull (famous for its chicken cheese shewarma) and Karachi Hot'n'Spicy (for Pakistani cuisine). Besides the larger restaurants, DHA is full of small cafes which offer a nice atmosphere to chill out, such as Jammin Java, The Hot Spot, Masoom's Pancake Lounge, Gloria Jean's Cafe, Coffee Planet, Cosa Nostra, Second Cup, Coffee Tea & Company, Coffee Republic, and English Tea House [7].

1.12 EDUCATION

DHA Education System (DHAES) is a group of progressive and ever-expanding Schools and Colleges providing quality education to the wards of residents of DHA and surrounding areas. Established in 1993, the prime responsibility of DHAES is to provide quality education at an affordable fee structure to the students of DHA and its suburban areas. Started with two Schools, but now it boasts of eight following institutions which includes two colleges and five schools and Centre of Excellence – Training Institute for teachers' career progression.

- DHA Kindergarten
- DHA Junior Campus T Block
- DHA Junior Campus Z Block
- DHA Senior School for Girls

- DHA Senior School for Boys
- Defence College for Women
- Defence College for Boys

DHA is home to various educational institutes, including LUMS University (Lahore University of Management Sciences) and the Lahore School of Economics (LSE). Other institutes in the DHA include Ibn-e-Sina College (named after the philosopher), the Lahore Alma School, Lahore Grammar School, which has branches all over Lahore, and Learning Alliance, which also has branches in Faisalabad and Gulberg. The Beaconhouse School System operates a branch here. An elite Kids Campus, DHA Kindergarten and Defence Degree Colleges for boys and girls and Lahore Model School (LMS) are also present. Lahore's first Urban Learning-based Activities Center, The Knowledge Factory is also located in Phase 2 of DHA [6].

1.13 REAL ESTATE

DHA is regarded as one of the most expensive communities in Lahore as far as the prices of both residential and commercial property go. Pakistan real estate in general and property in DHA in particular underwent a boom during the early and mid 2000s when overseas Pakistani started sending substantial amounts of their savings back home after 9/11. As of 2016, statistics at imlaak.com (DHA Lahore real estate consultants) reveal that an average 500 yards (1 kanal) plot is priced at 15 Million Pakistani Rupee. Pakistan real estate in general and DHA Lahore property market in particular experienced immense growth. Pakistan real estate experts from Zameen.com (the largest property portal of Pakistan), reckon that DHA Lahore was only one of the beneficiaries of these funds. Moreover, it's confirmed that new projects of DHA Lahore are on their way and soon DHA has planned to launch DHA Gujranwala and DHA Peshawar, but their dates are not confirmed and DHA Multan's project has been started and running successfully. DHA Lahore expanded rapidly during this period and it now consists of 11 phases as of March 2013, five of which were announced after 2002.

According to a report released by Zameen.com in Feb 2013, property for rent and sale in DHA has performed phenomenally well even though there is a general stagnancy in Lahore real estate sector over the course of last five years. In the budget for 2016-17, Government has levied Capital Gains Tax (CGT) and advance withholding Tax on real

estate, this has negatively impacted the property market, however experts at imlaak.com believe that the DHA property market will continue to grow steadily [6].

1.14 DHA CLUBS



Fig 3- DHA Clubs

The Defence Club Lahore was registered with Assistant Registrar Joint Stock Companies Punjab Lahore on 9th August 1990. The Club was formally inaugurated by the then Chief of Army Staff General Asif Nawaz Janjua HI(M) on 23 Jan 1992.

Over the period facilities were added to include Swimming pools (Ladies/Gents), Wooden Flooring in Squash & Badminton Courts, Golf view Chinese & Italian Restaurant, Coffee Shop & Pastry Shop.

During the years 2006 – 2010 massive renovation works on Club Façade, Lobby, Card Room, Sitting Hall, Banquet Hall, Library and Community Centre Halls were undertaken involving complete reshaping of Club thus giving it a new and befitting look, a fine blend reflecting both contemporary and traditional culture of Lahore [7]

2 INTRODUCTION TO PRIMAVERA

2.1 : Introduction

Primavera Oracle P6 is a planning tool and integrated project portfolio management. It provides solutions consisting of role specific tool to provide equal opportunity and satisfy to each member of a team. Primavera contains a standard windows interface; server oracle and Microsoft server database.it provide multi features to tackle the needs of project planner and schedulers. Primavera basically includes project management software which helps the users to track and analyze performance of a project. It is a multi-feature and multi user system which provides ease for planning in a best way in the module is perfect for associations that need to all the while deal with different activities and support multiuser access over a division or the whole association. It bolsters an undertaking venture structure (EPS) with a boundless number of tasks, exercises, baselines, assets, work breakdown structures (WBS), hierarchical breakdown structures (OBS), client characterized codes, and Critical path method (CPM) booking and asset leveling [8]. Substantial scale usage for big business wide venture portfolio administration utilizes it with Oracle or SQL Server as the venture database. For littler usage, you can utilize SQL Server Express. The PM module likewise gives incorporated asset administration. This incorporates asset timesheet endorsement and the capacity to impart with venture assets who utilize the Progress Reporter module. In expansion, the module gives coordinated hazard administration, issue following, and administration by edge. Some elements empowers clients to perform dynamic cross-extend rollups of cost, timetable, and earned esteem like extend work items and reports can be appointed to exercises and oversaw midway. The Report Wizard makes tweaked reports that concentrate particular information from its database. Moreover, primavera includes the following features.

Work breakdown structures, user defined fields, codes, resources leveling support by a primavera

1. Same project can be access concurrently by multiple users
2. One of the major features tracking of issues in a project
3. Threshold can be used for a management purpose
4. Schedule, earned value and cross project rollups of cost are enables form tracking feature.

5. Providing opportunity to assign work products and documents to activities and managed them centrally.
6. By the help of visualizer time based Gantt and Time scale logic diagram can be create
7. Resource management become easy for a planner and project manager
8. Different types of reports can be obtained from software for better understanding

2.2 Benefits of Primavera

There are many benefits for working with primavera. It is Oracle based software which provides many benefits to a planner and project manager. Some the benefits of primavera are as following.

2.2.1 CLEAR VISIBILITY

It provides simple view that one able to see what is going on with a project at different time.

2.2.2 FORECASTING

Forecasting can be improved with a passage of time as up-date information provides to see where there is to utilized resource more or not.

2.2.3 INSTANT ACCESS

Progress can be track with a passage of time and different aspects like resource, cost information can be obtained whenever needed.

2.2.4 MONITORING

Monitoring can be better as it provide information about the project through tracking and reports on progress.

2.2.5 PROJECT MANAGEMENT

Easier project management especially in large scale and complex projects.

2.2.6 DIMINISHED RISK

It not only diminished risk but also cost connected with schedule overhead.

2.2.7 CONTROLLING

One can easily control project from different aspects of project and area.

2.2.8 OPTIMIZATION OF RESOURCE

Resource can be utilized and management more efficiently and over allocation of resource can be asses through this tool.

2.2.9 BETTER COMMUNICATION

Communication among stakeholder and team members becomes more effective and better.

2.2.10 BREAKDOWN OF PROJECT

It provides mechanism to easily breakdown projects along with activities structure.

2.2.11 COLLABORATION

It provides simple collaboration between all users assigned to a specific project

2.3 Hierarchal Structure in Primavera

Commanding in a sequence is very important for every project success. Well defined span of control results into project timely completion. The following is a sequence for establishing starting hierarchical structure in a primavera.

1. Firstly set up the organizational breakdown structure as to arrange organization management structure for their roles and responsibilities.
2. After that set up the enterprise project structure that defines or identify hierarchical structure of the organization projects and enable organization and management of those projects in organization.
3. Then set up a resource hierarchy helps to define organization resource structure and helps in assigning to different activities.
4. Moreover, for every project work break down structure is set up which is a hierarchical arrangements of the products produced by a project.

2.4 Organization Breakdown Structure

The Organizational breakdown structure is a worldwide chain of command that speaks to the supervisors in charge of the activities in your undertaking. The OBS generally mirrors the administration structure of your association, from top-level faculty down through the different levels constituting your business. You can relate the dependable chiefs with their ranges of the EPS (Enterprise Project Structure) — either hubs or individual undertakings [8]. When you relate a mind full director with an EPS hub, any ventures you add to that branch of the EPS are allocated that administrator component naturally.

2.4.1 How to Create Organizational Breakdown Structure

1. Go to Enterprise >> OBS
2. In the pop up window click on display >> Filter by >> choose All OBS Elements
3. Click Add and create a new OBS entry

2.5 Enterprise Project Structure

The enterprise project structure display and summarizes all projects of an organization within the well-defined enterprise hierarchically for top down budgeting, cost analysis and resource. It also enables one to manage multiple projects from the top level of the organization to the single level that perform particular project tasks. Furthermore, it used to define project features like dates, budgets, codes and resources.

2.5.1 HOW TO CREATE ENTERPRISE PROJECT STRUCTURE

1. Click enterprise form the top menu
2. Select Enterprise project structure
3. Use the arrow key to place the new element at the desirable position
4. The respective responsible manager selected which was created in the OBS

2.6 Work Break Down Structure

A WBS is an order of work that must be proficient to finish a venture, which characterizes an item or administration to be delivered. The WBS is organized in levels of work detail, starting with the deliverable itself, and is then isolated into identifiable work components. Every Project has its own WBS progressive system with the top level WBS component being equivalent to that of each EPS hub or project. Every WBS component may contain more point by point WBS levels, exercises, or both. While making a project, the project director ordinarily builds up the WBS to begin with, doles out reports to every WBS component, and after that characterize exercises for playing out the component's work. Notwithstanding record and action assignments, every WBS component additionally has an allotted logbook, particular earned esteem count settings, and a doled out OBS component in charge of all work incorporated into the WBS component.

2.6.1 HOW TO CREATE WORK BREAK DOWN STRUCTURE

1. Give project name

2. Then select project/WBS form the main drop down menu at the top of the screen of software
3. This will display WBS view then select +Add form the main drop menu at the top of the screen
4. Type in the name of the WBS element
5. Code identification will be automatically entered by the software
6. Option +Add again will be used again to add more elements in WBS

2.7 RESOURCE BREAK DOWN STRCUTURE

Resource break down structure is same as like other structures. It divides the hierarchy of resource according to their expense. It is also the source of resource exported to project like labor, material and roles [11]. Resources estimation is important for the success of a [project as experienced resources must be listed at the top of the hierarchy because due to their seniority in the flied and expertness. Through resource break down structure organization able to understand about all resource and their deployment in the project different areas along with the total expenses occur in completion of project.

2.8 Activity Types in Primavera

After making of work break down structure a next step is to add activities. As activities is easy to add but their properties/attributes needs great attention so activity type is what that affects the duration, start and finish dates of the activity. Following are the type of activity types.

2.8.1 START AND FINISH MILESTONE

A Milestone speaks to a point in time (occasion) when a pre-decided assignment or objective is begun or accomplished, for example an assignment which has some centrality is either begun or is finished. For instance, Start/Finish of a Project, Commencing execution works, Completion of a Phase, and so on. A Milestone will indicate just a single date in the Start/Finish Date sections. A Start Milestone will have just a begin date and no complete date. So also, a Finish Milestone will have just a complete date. This is on the grounds that by definition, a Milestone is only the representation of a point in time; it has no span of its own. That is the reason Milestones have "zero" days as span. Additionally, Milestones don't devour any assets.

2.8.2 RESOURCE DEPENDENT

In resource dependent a number of resources are assigned to a task which determine the task duration. Resources assigned to such kind of activity are scheduled to work according to the defined resource calendar instead of activity calendar. Duration of activity is obtained by the presence of resource to work on the activity. As no resource is assigned to a particular activity then the activity duration is calculated on the basis of using calendar assigned to the activity.

2.8.3 TASK DEPENDENT

This Activity Type is utilized as a part of situations where the assigned number of resource has no effect on the assurance of length. At the end of the day, the movement should set aside a specific measure of opportunity to be performed independent of the assets it has.

2.8.4 LEVEL OF EFFORT

Level of effort duration is dependent upon on the assigned predecessor and successor activities. Defined relationship at the level of predecessor and to the successor is used to calculate duration. After completion of this task then the other one is start.

2.8.5 WBS SUMMARY

In the work break down summary duration of all the activities in a work break down structure which are starting from the start of the earliest activity to the finish of the activity which is finishing last in that particular work break down structure. Hence no actual relation is needed to be specified.

2.8.6 HOW TO ADD ACTIVITY TYPE

1. Approach to Project >> Activities
2. Click on the +Add option on the top right hand side of the display
3. Select activity ID and Activity name > Next
4. Select appropriate WBS to place activity where to place > Next
5. Activity type choose from the drop down menu > Next
6. Assigning of resources will be done later so for now leave this part > Next
7. Specify duration type > Next
8. Specify the effort need to complete the activity > Next

9. In next step configure relationships between activities but can be done late so choose 'the no continue option' > Next
10. More information will be added about activities choose 'no thanks option' > Next Finish.

2.9 Activity Duration Type in Primavera

Duration of an activity matters a lot as it is the basis for estimating the selected activity completion time period. It also calculates the resource availability, schedule and cost are most crucial when updating project activities. The duration type only calculates and applies when resources are assigned to the activity otherwise it would be difficult. Following are the duration types which are considered important while planning project for execution.

2.9.1 FIXED DURATION AND UNIT

In this activity duration whole activity duration does not change until unless the number of resources assigned changed or update. Selecting duration type while utilizing task dependent activities update the remaining duration for the activity can choose to calculate the remaining duration.

2.9.2 FIXED DURATION AND UNITS/TIME

This is also a task dependent activity as in it the duration and units/time is fixed and uses the activity calendar.

2.9.3 FIXED UNITS

Fixed units is selected when the total work along with a fixed cost is the most important. It tells about budget that the total amount of work is fixed no additional can be done in this cost. During updating activities the work effort need to be complete the activity which does not change if the activities duration changes. It performs according to the resource calendar as it is a resource dependent activity.

2.9.4 FIXED UNITS/TIME

In this if organization considers resource availability is the most important then considered it. Unit/time of the resource remains unchanged even activity duration changes. It is resource dependent activity and performs according to the resource calendar.

2.9.5 HOW TO DO SETTING IN A PRIMAVERA

Activity duration is important for completion of successful project so following procedure is used to setting or assigning activity duration

In case to control how the duration, resource units and resource units/ time for activities

$$\text{Duration} = \text{Duration} * \text{Units/time}$$

In case of activity is not started yet then

$$\text{Budgeted units} = \text{Original duration} * \text{Budgeted units/time}$$

In case activity has started then

$$\text{Remaining units} = \text{Remaining duration} * \text{reaming units/time}$$

For balancing equation there is a list to show what to do or not when one variable is changed

Duration Type	If duration change then what changes?	If units/time change then what changes?	If unit change then what changes?	If add resource what changes?
Fixed Duration and Units	Units/Time	Units	Units/Time	Units/Time
Fixed duration and units/time	Units	Units	Units/Time	Units
Fixed Units	Units/Time	Duration	Duration	Duration
Fixed units/time	Units	Duration	Duration	Duration

Table 1 – Duration Type

2.10 Percentage Complete Types

Completion of work with full percentage is important for project progress. So the activity percentage mostly used to find out the amount of work completed on an activity. Following are the types of percentage complete types to activity.

2.10.1 DURATION PERCENTAGE COMPLETE

Duration percent complete is used to calculate progress form the planned and remaining duration of completion. It is calculated as

Duration percent complete = (Original duration minus remaining duration)/ (original duration)*100

2.10.2 PHYSICAL PERCENTAGE COMPLETE

This type is needed when one wish to use steps to drive progress of activity. The percent complete values will be entered by the planner manually as entering a value in the activity percent complete domain will update the physical percent complete value.

2.10.3 UNIT'S PERCENT COMPLETE

This activity percent complete is used when resources are given or assigned to an activity so actual units work will be tracked. These actual units can be entered manually.

2.11 STACKED HISTOGRAM

Stacked histogram is basically a best way to see all resource of a project assignments levels which vary with the passage of time [9]. It is look like stacks which each bars on the top of each other to provide full view of project resourcing over the period of time. It draws either at completion units or at completion cost.

2.11.1 ADVANTAGES OF STACKED HISTOGRAM

1. It provides great information as compare to the standard resource profiles.
2. One can view all resources or resource grouping participating to the overall labor in a given time period
3. Present relative importance for each resource or resource grouping
4. Different color coding can be utilized to highlight a resource or resource grouping

2.11.2 HOW TO DEVELOP IN PRIMAVERA

1. Select a project
2. Click resource usage profile
3. At the left side of the bottom in display filter resources to current projects resources
4. Select Stacked Histogram from the right bottom Display option
5. Again select resource usage profile option from the same right bottom display
6. Select Add option
7. Now where option is appear
8. Select type of thing you want to implement like resource, calendar etc.
9. Suppose resource id is selected

10. Then open the option of value appears in the same option
11. Add resource
12. Write the same name display in filter name
13. Click in ok you can start to see how we build out that histogram.
14. If one want to display every resource, you do need to go in add the filter for each resource

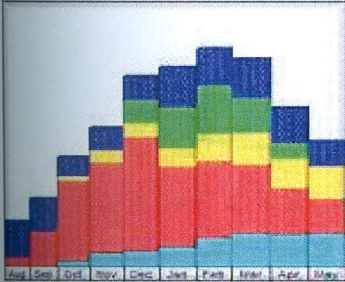


Fig 4 – Stacked Histogram 1

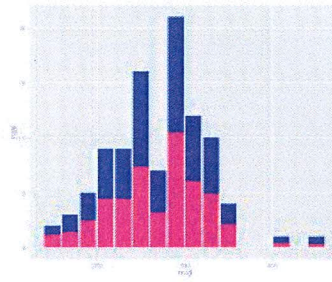


Fig 5 – Stacked Histogram 2

2.12 BASELINES

Baseline refers to the original schedule of a project or project estimate. Hence baseline is a copy of schedule that stored in a static form. Once it is created then the final baseline has been accepted by all the stakeholders of the project and not changes without due processes. Baseline primary, secondary and tertiary are more ad hoc snapshots of the project that are for upcoming term variance and comparison reporting. Its features allow making evaluation about project schedule against a baseline of project areas like cost, schedule and resource assignment. Primavera allows comparing project schedule to four baselines at a time [9]. It also provides opportunity to set the project baseline up to three baselines for comparison. Assigning of at least one baseline is crucial one for the project. A project baseline is important which provide access to particular project. It also used to compare projects dates. Furthermore, baseline later utilized to compare project progress whether project is going at the right way or not.

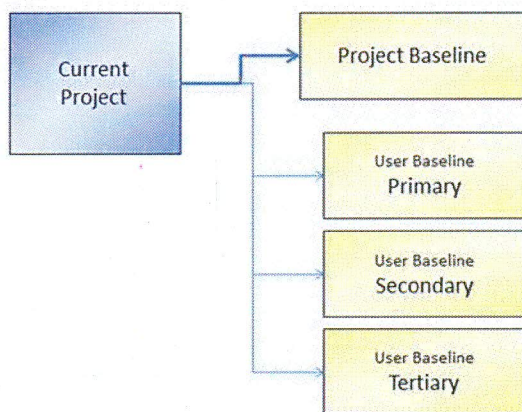


Fig 6 - Baseline

2.12.1 CREATING BASELINES IN PRIMAVERA

Creating baseline in a primavera is not a complex method. Following steps follow to create it for a project.

1. Open a project option then go to the activities screen
2. After that go to the project menu and click maintain baselines
3. Click add to take a snapshot of project
4. Then select save a copy of the current project as a new baseline and click of button

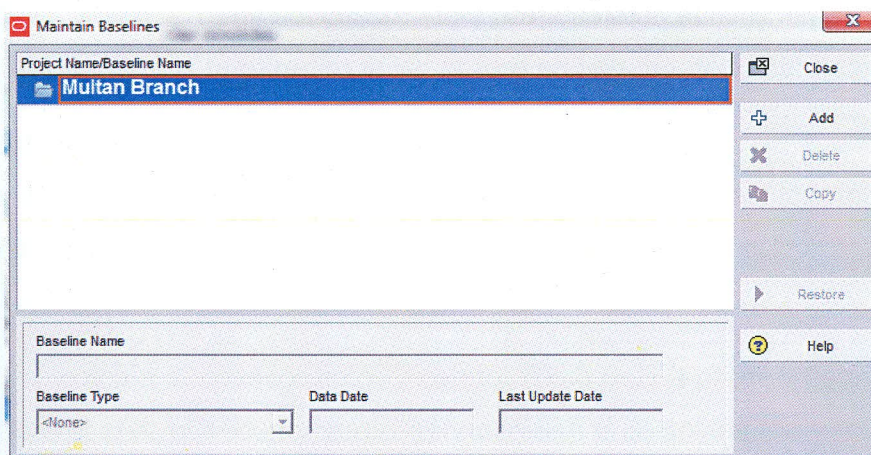


Fig 7 – Creating Baseline

2.12.2 ASSIGNING A BASELINE

After maintenance of baseline forms the maintenance option then next step is to assigning baseline which is done by follow following steps.

1. Project then open option of Assign baseline

2. Select option either for project baseline or primary baseline

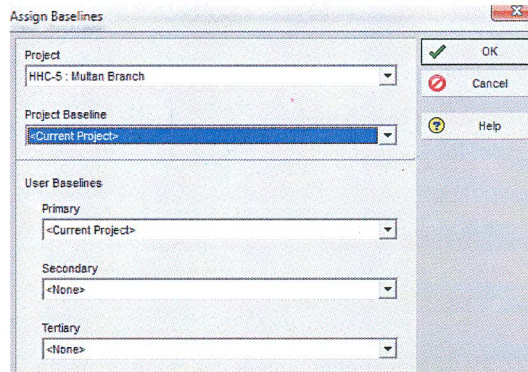


Fig 8 – Assigning Baseline

2.13 LOGICAL RELATIONSHIPS BETWEEN ACTIVITIES

There are four types of logical relations. A previous activity is an activity that logically comes before a dependent activity in a schedule of a project. Hence, successor activity is a dependent activity that comes after another activity in a project schedule. Following are the four logical relations between activities.

2.13.1 FINISH TO START

A logical relationship in which firstly previous activity has to finish then next activity starts. Example the prize distribution cannot start until race has finished.

2.13.2 FINISH TO FINISH

A logical relation in which a both successor and predecessor activity finished together. Example writing a document is required to finish before editing the document can finish.

2.13.3 START TO START

A logical relation in which both successor and predecessor activity start together. Example of level concrete and pour foundation.

2.13.4 START TO FINISH

A logical relation in which a successor activity cannot finish until a predecessor activity has start. Example the first shift of security guard cannot finish until unless the second security guard shift starts.

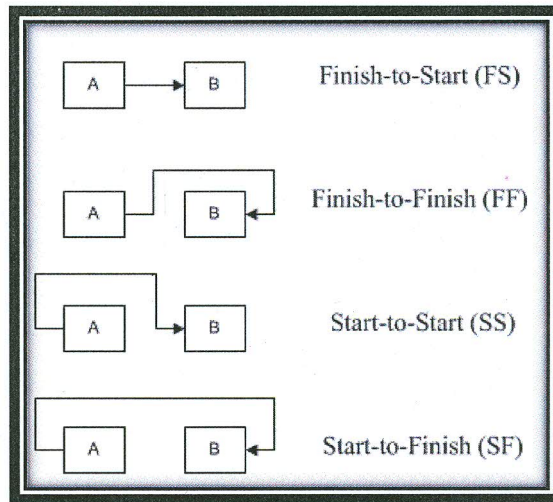


Fig 9 – Logical Relationship

2.14 ASSIGNING RESOURCE TO ACTIVITIES

Assigning of resource is an important task in a primavera because it also estimate about the actual cost incur for completing that particular activity. Following are the steps to follow for assigning resources to different activities.

1. Choose activities of project
2. Select the activity that wants to assign a resource
3. In activity display click the resource tab
4. Then click add resource
5. Different resources are given select the resource wants to assign
6. Click the assign button and close button for completing assigning

2.15 PROJECT BAR CHARTS

A Project Bar Chart comprises of bars speaking to cost, unit, earned esteem, earned esteem work unit, or aggregate exercises information for EPS hubs, activities, or WBS components. One can incorporate up to three bars for any information class. For instance, show earned esteem information and incorporate bars to speak to Planned Value Cost, Earned Value Cost, and Actual Cost. You can determine the shade of every bar and show whether you need the bars to be stacked or included on an indistinguishable line from the first bar. The EPS hub, venture, or WBS component that compares to every bar is recorded in segments to one side of the Bar Chart; the request in which these components are recorded relies on upon the present gathering and sort choices. You can conceal the left

segments [10]. You can amass the Bar Chart by venture, EPS/WBS, OBS, WBS class, or by particular WBS information. You can likewise indicate amazing aggregates as well as outline information just, and sort by any accessible WBS information sort.

2.15.1 HOW TO CREATE PROJECT BAR CHARTS IN PRIMAVERA

1. Project bar charts are a representation of a project data in different graphical shapes. Bar charts in primavera can create by following steps.
2. On tracking windows choose view and layout
3. Give name to new layout
4. Able option for access for current and all users
5. Select project bar charts then click ok
6. Select the category of data to include in the bar chart from the display section
7. For preview the bar chart of a project without closing the dialog box click apply
8. For finishing click ok

2.16 REPORTING FEATURES

Reporting give a huge library of standard venture administration reports, two reporting devices are accessible to get to and report data put away in the database by the report Wizard and report Editor.

2.17 REPORT WIZARD

One can utilize the Report Wizard to effortlessly make a wide assortment of modified reports. The wizard steps you through the way toward making new reports, empowering you to choose the classification of data and particular information fields to incorporate. You can gather, sort, and channel extend data and incorporate time-conveyed information for units and expenses. When you make a report with the Report Wizard, you can later utilize the wizard or the Report Editor to adjust the report, if vital

2.18 REPORT EDITOR

The Report Editor is an effective device that empowers you to make reports that are exceedingly redone. In spite of the fact that you can make tweaked reports with the Report Wizard, the Report Editor gives the ability to tailor a report all the more nearly to your particular necessities. The Report Editor empowers you to gathering, sort, channel, and

move up venture data. You can show time circulations for units and costs and incorporate illustrations and HTML interfaces in your reports. You can utilize the Report Editor to additionally alter reports you make with the Report Wizard. In any case, on the off chance that you adjust a wizard report in the Report Editor, when you revive the report in the wizard, you lose the greater part of the changes made in the Report Editor.

2.19 PRINTING AND SPARING REPORTS

One can review and print reports and you can spare reports as content or HTML documents. On the off chance that you spare an answer to a record, you can import the information to a spreadsheet program, email the report, distribute the give an account of a Web webpage, or potentially file the report. You can likewise order a report and make a WP and Docs record for the report. At the point when P6 Professional is associated with a P6 EPPM database, reports can likewise be gotten to from the Project Documents portal and the Projects, Documents page in P6.

2.20 EARNED VALUE MANAGEMENT

This technique helps project managers to evaluate or measure project performance time to time. It is a project management mechanism which is used to find variances in project by comparing worked performed and worked planned [12]. It is also used to control cost and schedule of a project along with the project forecasting. Project baseline is an important component of earned value management. It also provides different figures and quantitative data for project decision making.

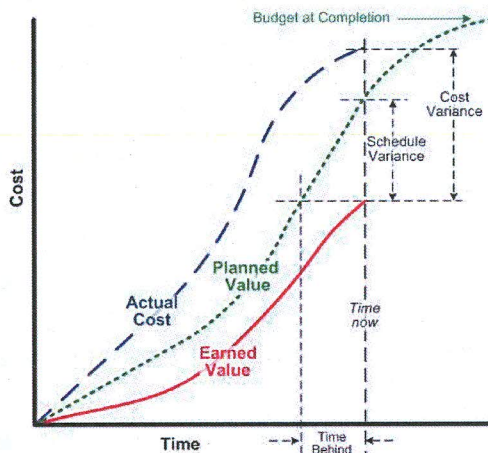


Fig 10 – Earned Value Management

2.20.1 THE MAIN OBJECTIVES OF EVM ARE AS FOLLOWING

1. Relate time staged spending plans to particular contract undertakings as well as proclamations of work.

2. Give the premise to catch work advance evaluations against the standard arrangement.
3. Relate specialized, timetable, and cost execution.
4. Give substantial, convenient, and auditable information/data for proactive venture administration investigation and activity.
5. Supply chiefs with a functional level of synopsis for viable basic leadership.

2.20.2 EVM PROVIDE INFORMATION ABOUT FOLLOWING

1. Budgeted cost for work scheduled (BCWS) which the planned value for a project
2. Earned value or Budget cost for Work performed (BCWP)
3. Actual cost of work performed (ACWP) in a project
4. Budget at completion (BAC)
5. Estimate to completion (EAC) it is basically the cumulative to cost of work performed and the estimate to complete the remaining work of a project
6. Cost Variance (CV) it tells about cost related matters whether project is under cost or over cost
7. Schedule Variance (SV) it tells about schedule of a project whether project is above schedule or behind schedule
8. Variance at completion it tells about total variance at the completion of project

2.20.3 HOW TO CALCULATE EVM IN PRIMAVERA

1. Define activities
2. Assign resources to activities
3. Go to project option > Maintain Baseline
4. Click on Add and click ok to create a baseline
5. Go to project > Assign Baseline click on project baseline to select baseline
6. Then right click on activity table > in column choose earned value management column group to add different values of earned value management

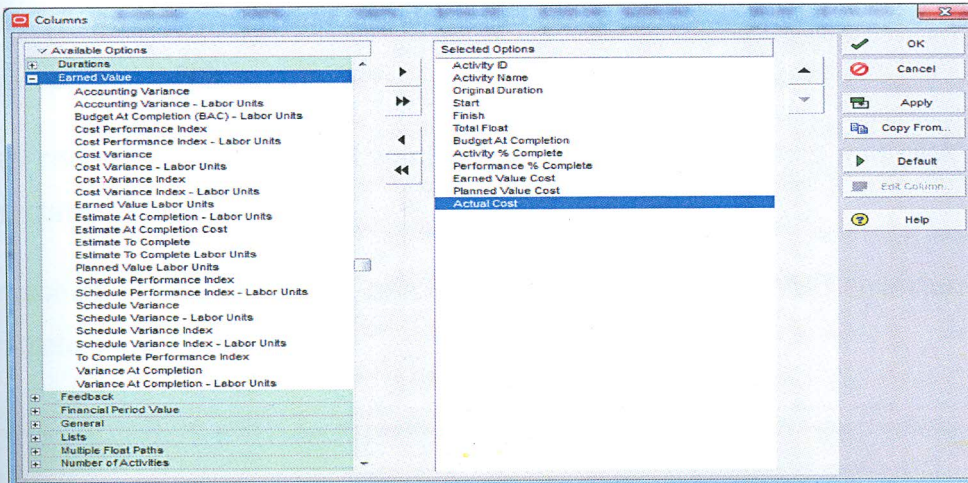


Fig 11 – EVM in Primavera P6

2.21 CALCULATING PERFORMANCE PERCENT COMPLETE

In primavera there are five options for selecting performance percent complete. These options are select at the WBS level and to all activities within the WBS. These techniques are selected and calculated on the following basis.

2.21.1 ACTIVITY PERCENT COMPLETE

Activity percent complete technique is used to calculate earned value cost which is based on the activity percent complete. For this primavera provides three different options for setting activity percent complete which are listed below.

2.21.2 DURATION PERCENT COMPLETE

It is used when progress is reported based on remaining duration. The formula to calculate it $(\text{original duration} - \text{remaining duration}) / (\text{original duration}) * 100$

2.21.3 UNIT PERCENT COMPLETE

It is used to reported progress on the actual work performed and units to complete remaining. It is calculated as $(\text{Actual cost} / \text{at completion units}) * 100$

2.21.4 PHYSICAL PERCENT COMPLETE

This technique is utilized on the basis of personal judgment as project manager assume that this particular work can be done or will be done in this period of time.

2.21.5 WBS MILESTONE LIST

This option is selected form the WBS and it is calculated on the basis of completion of the WBS elements weighted milestones

2.21.6 HOW TO SELECT IN PRIMAVERA

1. Select project WBS
2. Then choose WBS value that want to give weighted milestones and click the earned value tab
3. For computing performance percent complete click the WBS milestones percent complete option

The screenshot shows the 'Earned Value' tab in Primavera. It is divided into two main sections:

- Technique for computing performance percent complete:**
 - Activity percent complete
 - Use resource curves / future period buckets
 - WBS Milestones percent complete (highlighted with a red box)
 - 0/100
 - 50/50
 - Custom percent complete:
- Technique for computing Estimate to Complete (ETC):**
 - ETC = remaining cost for activity
 - or
 - ETC = PF * (Budget at Completion - Earned Value), where:
 - PF = 1
 - PF = 1 / Cost Performance Index
 - PF = 1 / (Cost Performance Index * Schedule Performance Index)
 - PF =

Fig 12 – Calculating Percent Complete

2.21.7 0/100 MILESTONE COMPLETE

It calculated earned value cost as zero percent after an actual start date recorded and hundred percent after the actual finish is recorded.

2.21.8 50/50

It calculated earned value cost as fifty percent as when the actual start date is reported and reported hundred percent on the actual finish.

2.21.9 CUSTOM PERCENT COMPLETE

It calculates earned value cost as a defined user percentage after actual work start is reported and reported or recorded hundred percent after an actual work is finish.

2.22 S-CURVE

S-Curve is a basic chart that plots costs, hours, units or different qualities (contingent upon the topic) after some time. They are well known in Project Management since they give directors a speedy and straightforward perspective of combined spending plan, genuine and remaining qualities over the venture lifecycle. The term S-Curve indicates the inclination of the lines to frame a shallow "S" shape; compliment toward a beginning of project more extreme in the center and smoothing off again towards the end [12]. This

ape is exceptionally regular of most ventures as the exertion increase first and foremost periods, settles amid the fundamental execution stage and after that begins to slow down gain towards the Project's fulfillment.

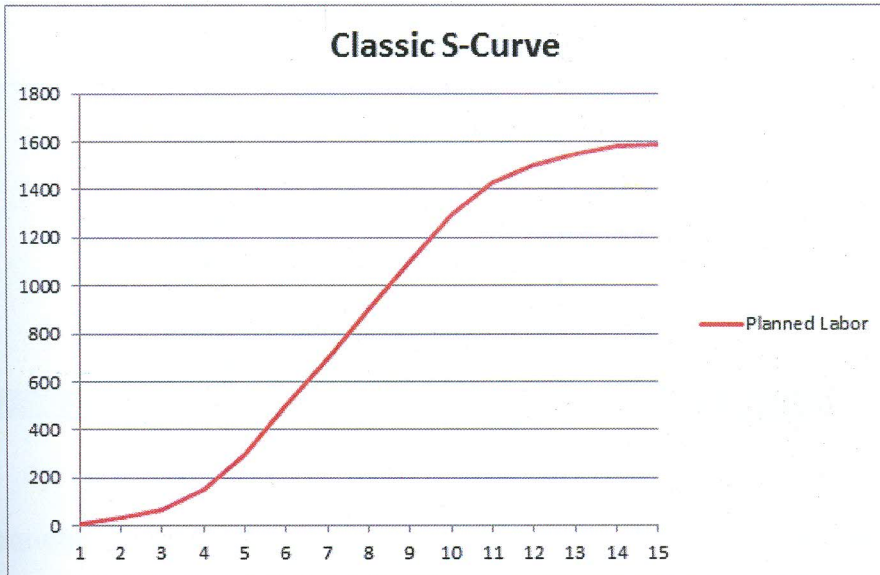


Fig 13 – S-Curve

22.1 HOW TO CREATE S-CURVE IN THE PRIMAVERA

Open the Resource Usage Profile it shows a histogram of use for the chose asset. This histogram is based upon period values as directed by the timescale setting. So if your timescale base level is showing weeks, then the histogram bars will be a rundown of the aggregate work units for that week; accepting you're showing a work asset [13]. S-Curves be that as it may, are based upon aggregate information. The line rises every week to mirror the gathering of work hours after some time. In Primavera P6 the Resource Usage histogram is set to show the present time frame bars as a matter of course. To change this default you have to do the accompanying:

Right-click in the diagram range of the Resource Usage Profile zone and in the subsequent menu, pick the Resource Usage Profile Options.

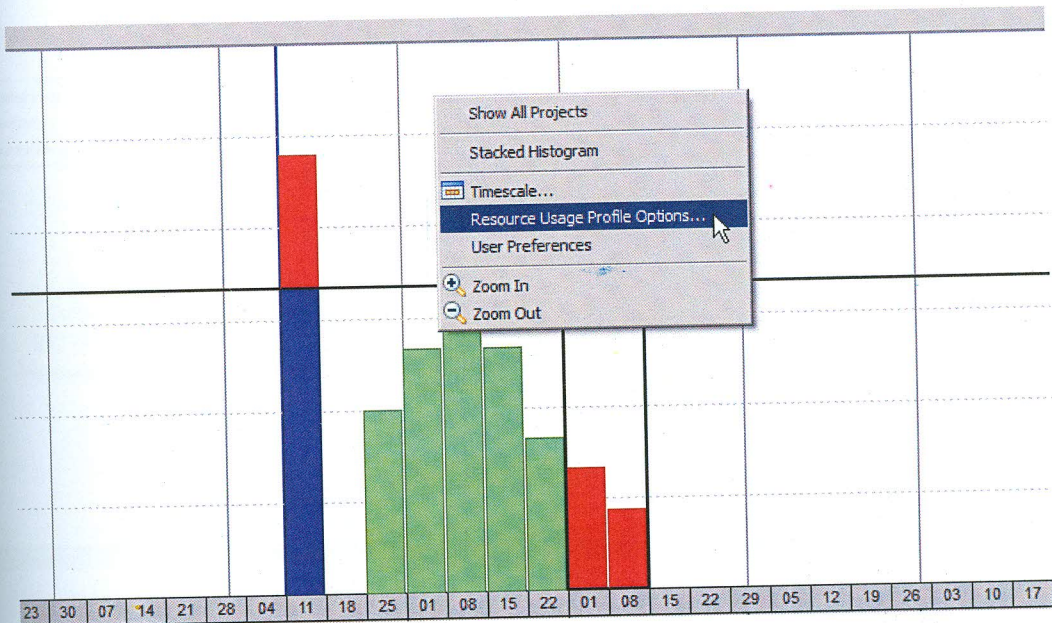


Fig 14 – Resource Usage Profile

In the subsequent Options dialog one can deselect the by date choices in the Show Bars/Curves assemble, and select the Cumulative choices as demonstrated as follows. You can likewise change the shades of the Budget and Actual alternatives utilizing the neighboring Color catches.

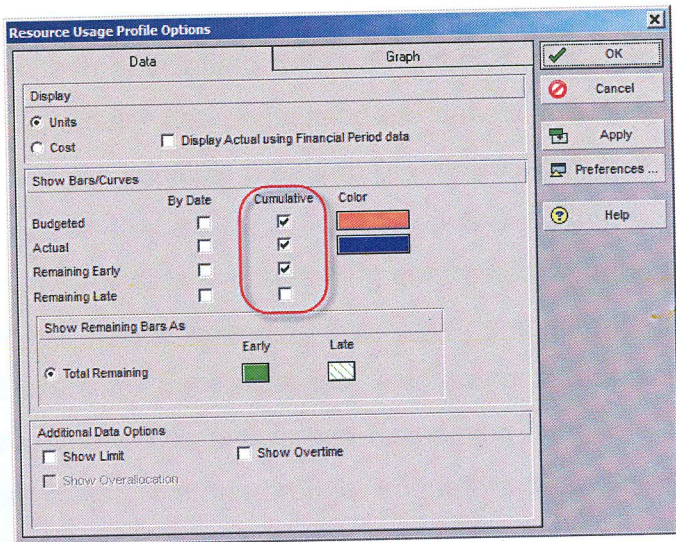


Fig 15 – Resource Usage Profile 2

Now click the apply button to view the result of selected options. It may be appear like following

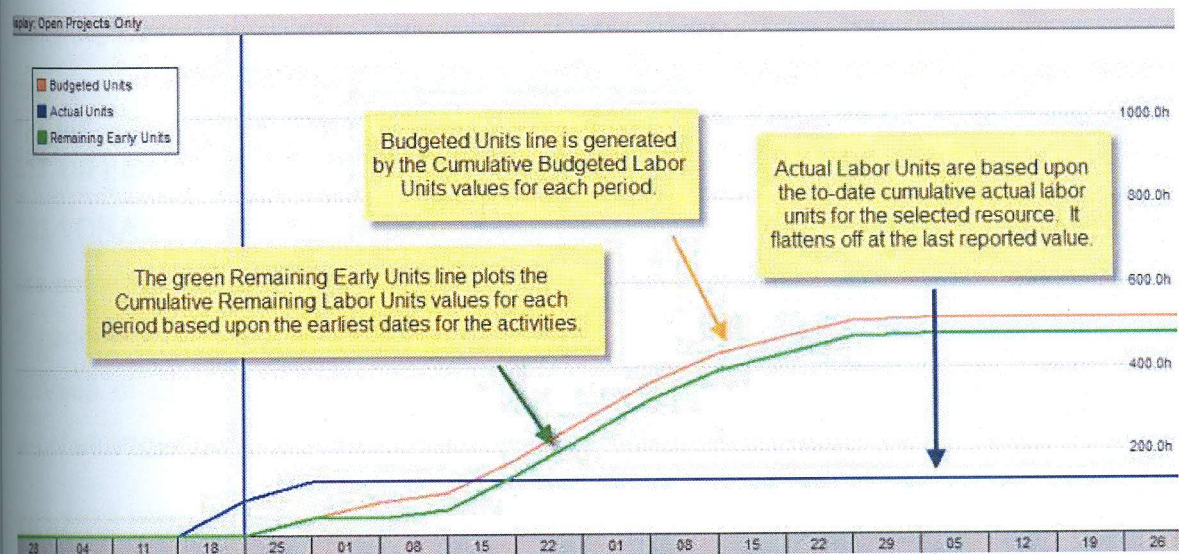


Fig 16 – S – Curve Shape

2.22.2 INTERPERTATION OF S-CURVE LINES

In the above illustration one can see that the Budget Units and Remaining Early Units lines are somewhat extraordinary for the chosen asset. The Early Remaining Units line is beneath the Budget Units line. This demonstrates the rest of the work for this asset is anticipated to cost less in hours than initially planned. The fundamental exercises are Physical % complete sorts, and demonstrate that, contrasted with the first arrangement; the work is going speedier than anticipated. Since Physical % complete sort has been utilized on the exercises, the scheduler has possessed the capacity to physically conform the rest of the span to mirror a more sensible measure of time to finish the work; for this situation, less time than arranged. Be that as it may, on the off chance that you take a gander at the blue Actual Units line, the asset is overspending contrasted with the first arrangement. The blue line is well over the orange spending line. This demonstrates more hours are being spent on the present exercises than arranged. This proposes the work is time-basic and is being overseen appropriately. The anticipated Remaining Durations have been diminished on the in-advance exercises. This has brought about the green Remaining Early Units line to drop beneath the monetary allowance, demonstrating that the forthright overspending is having the wanted effect and the work will probably total early accepting this pattern proceeds.

2.22.3 PRINTING S-CURVE

After complete creation of S-Curve if want to take print of it then go to the print preview dialog to select options tab. Here uncheck the activity table and Gantt chart options. So

select the profile option. The S-curve will appear on the printing page and one can give print command.

2.23 DIFFERENCE BETWEEN ORACLE PRIMAVERA & MS PROJECT

2.23.1 ORACLE PRIMAVERA

The perceived standard for elite venture administration Primavera P6 Professional Project Management, handles huge scale, exceedingly complex and multifaceted projects. Sort out activities of up to 100,000 exercises with boundless assets and a boundless number of target arrangements

2.23.2 MS PROJECT

Microsoft project is a tool which helps in a management of a project. It is developed and sold by Microsoft to assist project managers of different domains in developing a plan, assigning resources to tasks, tracking progress, managing the budget of the project and analyzing workloads.

Table 2 – Difference between Oracle Primavera VS MS Project

Primavera	MS Project
It was designed for the enterprise form the start	It migrated from a desktop application and added enterprise capabilities with Project Server
Multi user option is not available for a planner	Primavera allow multiple users to work on a single project at the same time
Number of baseline are primary, secondary and tertiary	Unlimited baselines can be created
One of the feature is of Progress Spotlight which highlights activity table row in yellow if they are due any status in the next period	In Microsoft project requires the development of filters to allow for the selection of activities requiring status
It can record issues and risks against a project on WBS activity	Not east to tackle risks and issues
It allows documents to convert into HTML directly from the software	It does not allow documents to concert into HTML directly from the software
It allows planned, remaining and actual project expenses to be entered at the	Microsoft project does not have this type of capability

activity level	
It allow to create custom fields	It also allows to define formula for custom fields and add additional values to it
More than one type of relationship can be establish between activities	Only one relationship can be made between two activities
It includes projects details like different activities, resources, reports, risks, and anything one want to define	Such type of features are not available in Microsoft Project
Allowed multi projects to be created and viewed	It also allowed multi projects to be created and viewed
It has the ability to have threaded discussion with other team members form within the tool	It does not have threaded discussion with other team members form within the tool
It offers a hint help feature that explains the values and calculations for a column when the cursor if place on the filed	No such type of feature is included
WBS is created separated form activities as in WBS activities are defined at each level	In this activities are indented to make them look like WBS.

3 ESTABLISHMENT OF PROJECT MANAGEMENT OFFICE

3.1 ESTABLISHMENT OF PROJECT MANAGEMENT OFFICE (PMO) IN DHA

There is a desire need of Project management office implementation in Defence Housing Authority, Lahore Cantt. As through this implementation projects can be managed in more effective ways and many problems can be solved through proper surveillance. PMO provide the more Affective ways for projects to complete its completion on time and cost reduce. Proper guideline provided for the better management of the ongoing project. A Project Management Office (PMO) is a gathering or division inside a business, office or endeavor that characterizes and keeps up models for task administration inside the association. Over time a PMO generally will become the source for guidance, documentations and metrics related to the practices involved in managing and implementing projects within the organization A PMO may likewise get included in undertaking related errands and follow up on venture exercises through finish. The workplace may give an account of task exercises, issues and prerequisites to official administration as a key instrument in keeping implementers and chiefs moving toward steady, business-or mission-centered objectives and destination A PMO for the most part bases its undertaking administration standards, practices and procedures on some sort of industry standard technique, for example, PMBOK (Project Management Body of Knowledge) or PRINCE2 (Project in Controlled Environments). PMO (Project Management is Essential for the management of project for proper management of project and success the PMO Play its role very well and chances of project success become more.

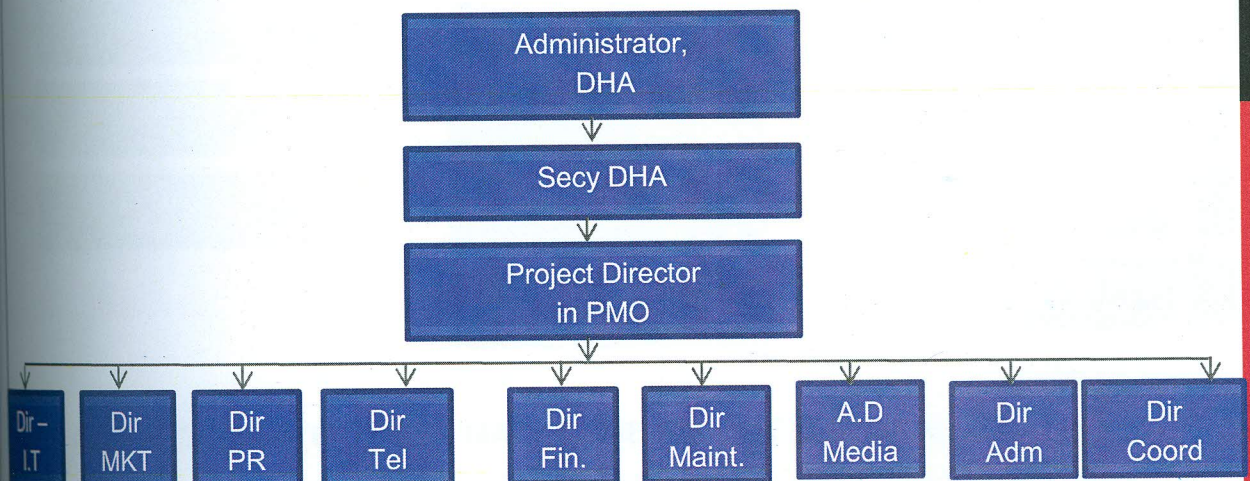


Fig 17 – PMO Structure in DHA

Dir I.T	-	Director Information & Technology
Dir MKT	-	Director Marketing
Dir PR	-	Director Public Relation
Dir Tel	-	Director Telecom
Dir Fin.	-	Director Finance
Dir Maint	-	Director Maintenance
A.D Media	-	Additional Director Media
Dir Adm.	-	Director Administration
Dir Coord	-	Director Coordination.

3.2 ORGANIZATION STRUCTURE OF DHA

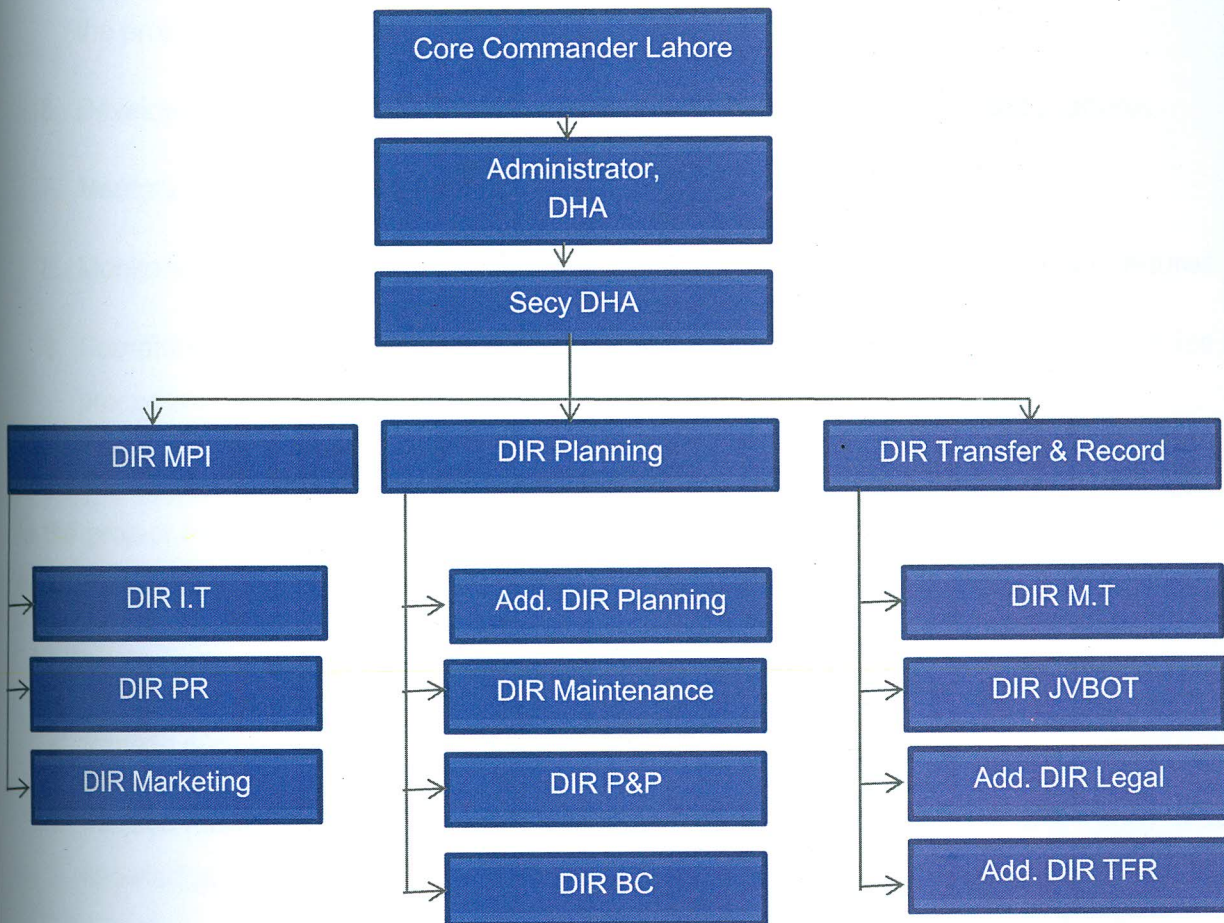


Fig 18 – DHA Organogram without PMO Structure

3.3 GOALS OF PMO (PROJECT MANAGEMENT OFFICE) IN DHA

1. Manage all projects by utilizing Best Practices and a critical factor in achieving higher project completion rates

2. One of the main goal of Project management office is that it manage strategic change like coherent groups of projects, small enough to succeed but can be successful through coordinated to achieve strategic goals.
3. Crucial goal of project management office is to rand and select important tactical improvement projects through project portfolio management to ensure that don't over commit resource and instead focuses efforts on projects with the highest impact for the cost.
4. Moreover, project accountability and resources like people, equipment will be managed in a best possible way.
5. The one of the most important function of PMO is to manage shared resource across the project administered.
6. Developing and identifying project management methodology and best practice.
7. Mentoring, coaching and training
8. Monitoring compliance with Project management standards, policies and procedures
9. Coordinating communication within the project Developing project policies, procedures and templates shared documentation

3.4 BENEFITS OF PMO (PROJECT MANAGEMENT OFFICE) TO DHA

As the project management office serves the organization in many different ways some of the crucial benefits that the organization obtain from the PMO is as following.

1. Project management office making the availability of qualified project managers
2. Provide support personnel to assist project managers in many activities
3. Project management office also allow project managers to pool their skills and knowledge
4. Help project managers to develop professionally
5. Recommended for organizations with many project managers
6. Project management office provide consulting type service and products to its constituency

3.5 DISADVANTAGES OF NOT USING PMO (PROJECT MANAGEMENT OFFICE)

Now a days Project management office is most important need of some organizations there are some pitfall of not using PMO in organizations where it is needed. Some of the demerits are listed below.

1. Project managers in performing multiple projects can face the problem
2. Project managers are not sharing best practices
3. Project managers are not challenged to improve their skills
4. Project managers can be overtly influenced by line mangers
5. Project managers scattered across an organization with no common bond are significant handicapped

3.6 TYPES OF PMO (PROJECT MANAGEMENT OFFICE) IN DHA

There will be three types of PMO in DHA

1. Weather station (Governance)
2. Control Tower (Center of Excellence)
3. Resource Pool (Project Support)

3.6.1 WEATHER STATION

The Weather Station venture administration office writes about what is going on yet does not attempt to impact it. This PMO doesn't trouble any of the PM's who are driving activities. These Weather Station individuals gather information about undertakings and abridge it for administrators without settling on any choices or authorizing any guidelines. They simply go on the data to any individual who is intrigued. It frequently turns out that nobody utilizes their information. The Weather Station can be executed effortlessly and if the data is engaged, they can serve chiefs' needs. Some of the time officials get apprehensive about all the cash they're spending on activities without their truly realizing what's occurring. They get confounded by various reporting designs originating from various undertaking chiefs with various assortments of language, in addition to the sheer number of exercises going ahead on the double. To end their perplexity, climate station is recommended.

3.6.2 CONTROL TOWER

In the Control Tower project management office, the venture office gives venture supervisors course on procedure. This incorporates venture start, securing assets and remedying differences. While every PM deals with his own particular ventures, the Control

Tower PMO will alarm them to approaching issues. It will likewise distinguish circumstances where the PM is not holding fast to the approach, especially amid booking and confirmation of deliverables.

3.6.3 RESOURCE POOL

This kind of project management office helps ventures acclimate and perform. The arrangement associations that depend intensely on tasks to work together can't manage the cost of absentmindedness to this key ability. Set up an assets pool for undertaking administrators. Supervisors and administrators requiring extends then contract a task director from this archive of mastery. It bodes well to consolidate the Resource Pool with the two prior PMOs.

3.7 THE ROAD MAP FOR PMO ESTABLISHMENT IN DHA IS AS FOLLOWING

An arrangement or technique proposed to accomplish a specific objective is referring to as road map. So the establishment of PMO required proper road map through which the effective PMO will be established.

- i. PMO roadmap is simply great arranging, for every one of the regions that add to a fruitful product offering.
- ii. The Project management office roadmap process drives a cross-practical arranging group to completely inspect potential aggressive procedures and approaches to execute those techniques. Innovation choices are made as a vital part of the arrangement, not only an idea in retrospect.
- iii. PMO roadmap helps the group ensure that they will have the advances and capacities at the time they will be expected to do their procedure.

For the establishment of PMO for DHA the following roadmap will be following

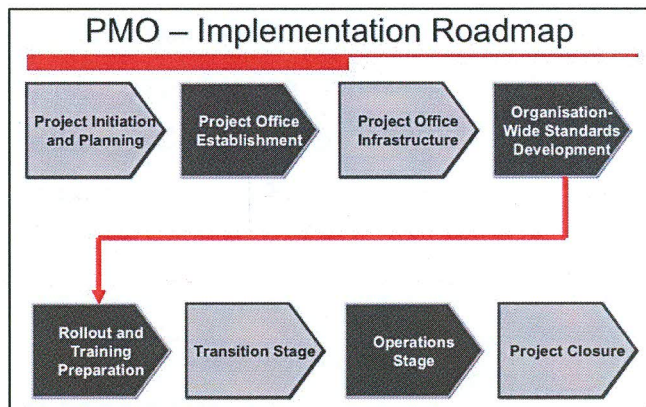


Fig 19 – PMO Implementation Roadmap

3.7.1 PROJECT INITIATING & PLANNING DELIVERABLES

- I. Charter
- II. Objectives
- III. Project Plan
- IV. Project Scope
- V. Project Budget
- VI. Business Case
- VII. Success Factors
- VIII. Measure & Metrics
- IX. Project Organization
- X. Project Standard & Control Procedure
- XI. Educating Top Management & Project Staff

3.7.2 PROJECT OFFICE ESTABLISHMENT

- I. Project Office Budget
- II. Project Office Staffing Plan
- III. Project Office Facilities Plan
- IV. Project Office Communication Plan
- V. Project Office Documentation Plan
- VI. Project Office Organization Structure

3.7.3 PROJECT OFFICE INFRASTRUCTURE

Project Office Guidebook

- I. Project Base-Lining Procedure
- II. Project Office Interface Structure
- III. Software and Hardware Procedures

- IV. Operational Management Procedures
- V. Standard Project Justification Criteria
- VI. Security & Budget Control Procedure
- VII. Communication & Staffing Procedure
- VIII. Project Resource Allocation Procedure
- IX. Project Meetings and Reporting Guidelines

7.4 ORGANIZATION STANDARD

- I. ISO

7.5 TRAINING ROLLOUT – DELIVERABLE

- I. Training Strategy
- II. Change Resistance Strategy

7.6 TRANSITION DELIVERABLE

- I. Project Office Support
- II. Project Office Report based on transition Stage Performance
- III. User feedback & Process Improvement

7.7 OPERATION STAGE – DELIVERABLES

Process for Project Assessments & Prioritization

- I. On Going Projects
- II. New Projects

Process Office Reporting on Projects

- I. Cost Analysis
- II. Time Analysis
- III. Performance Analysis

Assessment of Project Office Activities

7.8 PROJECT CLOSURE – DELIVERABLES

- I. Project Closure Meetings
- II. Process Improvement Report
- III. Project Performance Measure
- IV. Action Plans for remaining open items

- V. Maintenance guide for Project Office Activities
- VI. Celebration Of Success
- VII. Lesson Learned

Note

- I. PMO evolution is a journey with manageable phases
- II. Develop a sound business case and a Positive ROI
- III. PMO is the enabler but senior management has to be the driver
- IV. Ensure PMO manager has prior PMO experience
- V. Train and coach users on PMO process
- VI. PMO vision and an overall strategic plan
- VII. Create management awareness on PMO approaches
- VIII. Send PMO staff to the trenches and avoid "ivory tower" syndrome

Lesson Learned

- I. Celebrate small wins/success
- II. Cater reporting to stakeholder need
- III. Tell management about the successes
- IV. Write a project management handbook
- V. Provide monitoring and advisory services
- VI. Create PMO services across the spectrum
- VII. Create a lesson learned database/portal
- VIII. Standardize – methods, process, tools, techniques, checklists etc.

3.8 PROJECT MANAGEMENT OFFICE ROLES AND RESPONSIBILITIES

- I. The PMO will report to Secy. DHA or ADHA of business operation
- II. Go about as contact between Secy. DHA and ADHA required in the execution Of a task
- III. The PMO will Plan with Contractor Schedules
- IV. The PMO will Pre Planning and Resource determining.
- V. Work with all Concerned Directors for all significant work
- VI. Go to Meetings and Project
- VII. Give Job Site Assistance to oversee field operations

- VIII. Complete activities on timetable, inside the apportioned spending plan and as per determined benchmarks of value and execution
- IX. Concentrated on arranging and checking of recommended work
- X. The project management office will oversee setups and teardowns
- XI. Survey all required reporting gathering of logs from all branches.
- XII. The PMO manage and monitor the organizational process
- XIII. The one of the most important duty of PMO is to coordinate with upper management and provide solution to them for any problem they faced
- XIV. The PMO develop Templates for the project management of organization according to the requirements of senior management

3.9 PROJECT MANAGEMENT METHODOLOGY

Project management approach characterized by PMBOK will be utilized for the proposed PMO. The venture administration handled will be given very much characterized interfaces. The use of the task administration prepared will be iterative.

3.9.1 PROJECT ADMINISTRATIVE SUPPORT

Administration play very important role in the development of project management office in the organization as there is some capital investment in setting up a PMO especially in light of the fact that it will add administration overhead notwithstanding existing ventures expenses. Planning necessities of the PMO will be worked upon by PMO controlling panel. After spending plan endorsement from ADHA for PMO setup an office premises will be set up by Administration office. Acquirement office will obtain essential office types of gear and furniture for the PMO. Moreover administrations of an inside planner will be acquired by Administration office to make the workplace prepared for PMO group. There are some tools used by the Project management office for the project management in the organization. Tools play their own role in completion of project in time and on budget. The following are the tools that can be used by PMO for the effective project management in the organization for the best progress of organization.

TOOLS : Oracle Primavera P6 V7

3.9.2 PROJECT TRAINING AND COACHING

A customary preparing program for task directors will be led by the PMO at regular intervals. Remote instructional classes may likewise be given to venture directors on

prerequisite premise. Assignments for instructional classes will be acquired by the PMO from all offices lastly will be endorsed by ADHA. The said rundown will be sent to HR office for further fundamental activity. The PMO will build up the human asset which will fill the honing need of other task groups at different areas. This group will likewise evaluate the current authoritative structure of the PMO and give suggestions which will be checked on by the ADHA. There might be changes in PMO authoritative structure subject to endorsement by the ADHA

3.9.3 MANAGEMENT REPORTING

- i. To report continuous undertakings status, dashboards will be produced and made accessible to senior organization administration. Administration dashboards will be founded on the information recorded by PMO group in the said application.
- ii. The PMO will be mindful to brief senior administration about status of at present in-advancement ventures.
- iii. PMO Head will set up a presentation for this reason on month to month premise for instructions to organization's senior administration

The stakeholder management is also important duty of Project management office. Effective stakeholder manager will lead the progress of project more. The project manager will share their following reports to the Project management office

- i. KPI (Key Performance Index) : Include Cost, Scope and Time
- ii. Progress Project : According to the Project and Phases

3.9.4 RESULT AFTER IMPLEMETIG PMO

- I. Complete partner examination
- II. Clear qualification amongst undertaking and line assignments
- III. Development level distinguishing proof for advancement documentation
- IV. Accomplishing fast wins as right on time as could be allowed
- V. Clear meaning of PMO assignment fields
- VI. Try not to begin with excessively numerous errand fields
- VII. Thorough correspondence of PMO order
- VIII. Setting up a change administration from the earliest starting point

- IX. Clear sponsorship by the administration
- X. Legitimate examination of the PM shortcomings

3.10 CHALLENGES FACED IN ESTABLISHMENT OF PROJECT MANAGEMENT OFFICE

Numerous organizations let regular difficulties go about as a barricade to an adult PMO when truth to be told, understanding the issues natural in a developing PMO is the main stride to overcoming them

Table 3 – PMO Challenges

PMO TOOLS	<ul style="list-style-type: none"> • Lack of inter-operability between the other tools • Failure of functionality in PMO tools
PMO Resource	<ul style="list-style-type: none"> • Lack of experience project manager and leadership of PMO • Skills failure during PMO implementation • Problem in staffing PMO with experienced persons • Lack of stability of PMO resources • Lack of stability of PMO stakeholders • Increased administrative workload
PMO sponsorship	<ul style="list-style-type: none"> • Lack of full support of the upper management • Failure of stakeholder commitment with tools for PMO
PMO role	<ul style="list-style-type: none"> • PMO role is poorly defined
PMO design	<ul style="list-style-type: none"> • Design problem due to complexity nature of organization
Organizational culture	<ul style="list-style-type: none"> • Rigid type corporate culture • Resistance to change by employees

3.11 ADDITIONAL CHALLENGES ARE AS FOLLOWING

- I. Lack of comprehension of the part of PMO by senior administration
- II. Concerns from top administration in regards to introductory subsidizing and continuous operational expense
- III. Resistance by senior administration to acknowledge incorporated tasks control
- IV. Perception among task supervisors that the PMO will serve as an obstruction to the opportune achievement of undertaking administration objectives
- V. Lack of comprehension of the quality suggestion that PMO gives by administration
- VI. Resistance from venture administration groups in consistence to new procedures and methodology characterized by PMO.
- VII. Creation of another hierarchical structure and
- VIII. PMO strategies, procedures, and bolster administrations were to be presented in a staged way, and their usage was to be organized in a period staged way.

3.12 WAYS TO TACKLE THE AFOREMENTIONED PROBLEMS

While implementing the project management office in Midas safety numerous difficulties faced but the challenges are overcome in the following ways

Table 4 – Ways to Tackle

Solutions	Way forward
Benefit realization	Suggestions to Upper management
Planning of Projects & Tasks	Coordination with department DIR's
Program and project prioritization	With PMO and Concerned DIR's
Organizational alignment	With its goals and objectives
Management of Resource	With efficient tools
Streamlining all processes	Define project management processes
Commitment from senior management	Ensure all standard processes

3.13 VALUE ADDITION TO DHA BY PMO

- i. The PMO will align a portfolio of projects of organization with the future strategy
- ii. One the crucial the advantage that PMO will give is deliver project on time within budget and on schedule
- iii. The PMO will also provide the understanding about the dependencies linkage between various projects
- iv. The PMO also improve the communication between the team members for the better progress of project
- v. The PMO will make analysis regarding the cost of project whether the organization go with this project or not
- vi. Trend analysis also make by the PMO so the organization better able to understand the ongoing or future market trend
- vii. Standards and Procedures are ensured by the PMO
- viii. Organizational processes also ensured by the PMO in the company
- ix. Reporting mechanism in organization also effective by the PMO for proper communication among project team members or stakeholders

4 IMPLEMENTATION OF PRIMAVERA

4.1 IMPLEMENTATION OF PRIMAVERA P6 IN DHA LAHORE

There is a desire need of Primavera P6 implementation in DHA Lahore. As through this implementation projects can be managed in more effective ways and many problems can be solved through proper surveillance. Primavera P6 provides the more Affective ways for projects to complete its completion on time and cost reduce [14]. Proper guideline provided for the better management of the ongoing project.

4.2 Why there is a need for Primavera P6 at DHA Lahore

4.2.1 CONSISTENT METHODOLOGY

A Primavera P6 permits everybody in the organization to talk the same dialect and take after steady procedures. Some procedures may work wonderfully, some may work awfully the fact is that none are steady with each other or over the association. You require a typical task administration procedure

4.2.2 ECONOMICS OF SCALE

A Primavera P6 executes moderate and practical endeavor wide arrangements. It is not exceptional for an organization to have about venture administration applications inside an organization, each with its own particular money related expense for execution and preparing work force

4.2.3 OBJECTIVE OPINION

A Primavera P6 gives a fair and target feeling with respect to the status of a task this is significant to venture partners and officials.

4.2.4 REDUCE COST

One of the most important benefits of Primavera P6 is to provide accurate costing for the project completion so it helps to reduce extra expenses which may occur during completion of project.

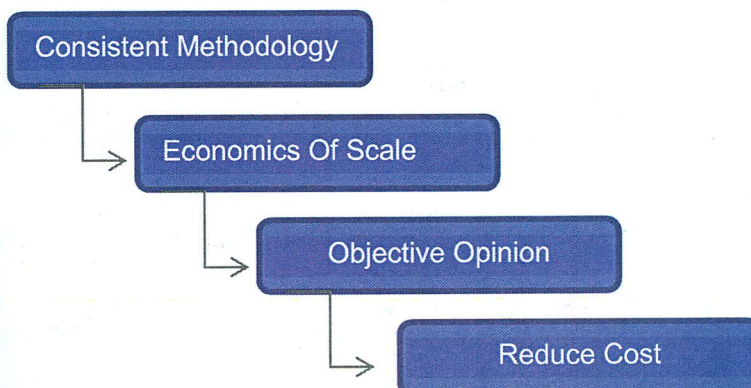


Fig 20 – Need for Primavera P6

The main benefit for the DHA Lahore to establish Primavera P6 is to better track and management of project and moreover this tool also will be setup for providing project information regarding project from all angels.

4.3 PROBLEMS WITHOUT PRIMAVERA P6

Primavera P6 has its value for the completion of project but if without Primavera P6 the ample problems can be waiting which stop the working of project effectively, some of the problems are listed as following.

1. Inappropriate scope definition
2. No Project plans are achieved without effective planning
3. Lack of Visibility on resource demands
4. Not enough expertise to review exiting projects against changing conditions.
5. Lack of achievement in terms of time, on budget and quality of deliverables due to the control over project
6. No proper planning on project procurement which is the main part of the project progress
7. Lack of communication among project team members
8. Problem in identification of risk in project
9. No documentation records.
10. Failure to check regular project progress
11. Lack of proactive project management
12. Project completion date extended due to poor planning and cost overrun
13. Tools are most important for the management of project but without Primavera P6 Planner utilize tools according to their interest which is bad for the project.

14. Some anticipates required regular communication with contractual workers. Absence of reliable collaboration with significant temporary workers influences one or more venture goals
15. One gathering of assets deals with different activities in the meantime, which results in over-burdening of assets and underutilization of different assets
16. Failure of project manager to provide accurate report on the project progress and ongoing project progress.

4.4 CHALLENGES FACED IN IMPLEMENTATION OF PRIMAVERA P6 AT DHA

It is not easy to implement any tool in an organization because a number of barriers are waiting in one's success road path. During implementing a Primavera P6 following challenges were faced by us. These are listed below.

1. Lack of inter-operability between the other tools
2. Failure of functionality in Primavera P6
3. Lack of experience project manager
4. Skills failure during Primavera P6 implementation
5. Problem in staffing Primavera P6 planners with experienced persons
6. Lack of stability of Primavera P6 planner resources
7. Lack of stability of Primavera P6 stakeholders
8. Increased administrative workload
9. Lack of full support of the upper management
10. Failure of stakeholder commitment with tools for Primavera P6

11. Rigid type corporate culture

12. Resistance to change by employees

4.5 VALUE ADDITION TO DHA LAHORE BY PRIMAVERA P6

- I. The Primavera P6 will align a portfolio of projects of organization with the future strategy
- II. One the crucial the advantage that Primavera P6 will give is deliver project on time within budget and on schedule
- III. The Primavera P6 will also provide the understanding about the dependencies linkage between various projects
- IV. The Primavera P6 also improve the communication between the team members for the better progress of project
- V. The Primavera P6 will make analysis regarding the cost of project whether the organization go with this project or not
- VI. Trend analysis also make by the Primavera P6 so the organization better able to understand the ongoing or future market trend
- VII. Standards and Procedures are ensured by the Primavera P6
- VIII. Organizational processes also ensured by the Primavera P6 in the company
- IX. Reporting mechanism in organization also effective by the Primavera P6 for proper communication among project team members or stakeholders
- X. Fair examination of the Project Management shortcomings
- XI. Complete partner investigation
- XII. Clear refinement amongst undertaking and line assignments

- XIII. Development level recognizable proof for advancement documentation
- XIV. Try not to begin with an excessive number of assignment fields
- XV. Setting up a change administration from the earliest starting point
- XVI. Clear support to the administration
- XVII. For casting about expected cost and completion time for a project
- XVIII. Provide opportunity for risk analysis

4.6 STAKEHOLDER

This is a procedure of distinguishing the greater part of the partners who have an interest and impact over the Primavera P6 in order to comprehend who is steady and who is not strong. This then permits an arrangement to be developed to move the individuals who are not steady to being strong. Basically stakeholders are the most important part of the Primavera P6 without them best Primavera P6 cannot be manages. It is a smart thought to recognize the key partners and have a comprehension on the off chance that they are steady or not of the Primavera P6. This can be accomplished by leading Stakeholder Analysis.

4.6.1 EVALUATION OF STAKEHOLDER IN IMPLEMENTATION OF PRIMAVERA P6

Low power	Low influence
Low power	High influence
High power	Low influence
High power	High influence

Table 5 – Stakeholder Evaluation

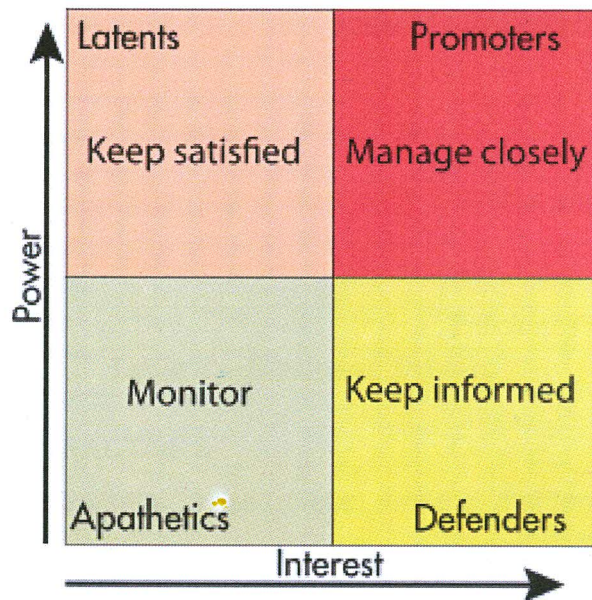


Fig 21 – Stakeholder Evaluation

4.6.2 STAKEHOLDER ANALYSIS

Stakeholder analysis in project management and business organization, is the procedure of distinguishing the people or gatherings that are prone to influence or be influenced by a proposed activity, and sorting them as indicated by their effect on the activity and the effect the activity will have on them

Stakeholder	Power	Interest
DHA Lahore	High	High
Vendor	Low	High
Local Real Estate	Low	High
Government	High	Low
Consultants	Low	High

Table 6 – Stakeholder Analysis

BUSINESS DRIVERS

Business drivers are fundamentally vital elements that decide, or cause an expansion in worth or real change of a business. Business driver is an asset, process or condition that is indispensable for the proceeded with achievement and development of a business. An organization must distinguish its business drivers and endeavor to amplify all key elements that are under their control. A key business driver is something that majorly affects the execution of the business and should be always redesigned to be in a state of harmony with the most recent patterns in their business sectors and innovation. Business drivers are fundamentally essential components that decide, or cause an expansion in worth or real change of a business. Business driver is an asset, process or condition that is a key for the proceeded with achievement and development of a business. The business drivers vary

from industry to industry it's depend upon the nature of business. Business drivers of DHA LAHORE are shown as following

Demand in Market	Engagement of Stakeholders
Opportunity for Overseas Investment in Real Estate	Skillful workers
Branch name	Effectiveness of Departments
Economics of scale	Efficiency of operations

Table 7 – Business Drivers

4.7 CRITICAL SUCCESS FACTORS

CSFs, otherwise called Key Results Areas (KRAs), are the vital territories of movement that must be performed well in the event that you are to accomplish the mission, destinations or objectives for your business or task. By recognizing your Critical Success Factors, you can make a typical perspective to help you direct and measure the accomplishment of your business or undertaking. As a typical perspective, CSFs help everybody in the group to know precisely what's generally imperative. Also, this people groups perform their own particular work in the right setting thus pull together towards the same general points.

The critical success factors of DHA Project are listed below

- i. Upper management support
- ii. Collaboration of all Concerned DIR's
- iii. Project team involvement in management and implementation of strategies
- iv. Finish project must meet the end user requirements or branch requirement.
- v. Propose of project clearly convey with the entire team
- vi. New Projects innovations and effective marketing
- vii. Knowledge of competitors in the market

To consider the all critical success factor must consult the Rock arts CSF type as an checklist it include the following

Table 8 – Critical Success Factors

Industry	These are the characteristic that company must do for being competitive
Environmental	Business climate , Competitors and technological advancements
Strategic	The way in which organization going to position itself in the market
Temporal	This include the internal forces such as Barriers, challenges and directions

5 PROJECT DOCUMENTS

The implementations of this project some documents required which play very important role in the implementation of project. The following are the list of documents that are required

- i. Project charter
- ii. Project Scope Statement

5.1 PROJECT CHARTER

Ver. No	Completed by	Revision Date	Approved By	Approval Date	Reason
1.0	Mr. Nouman Haider Nawaz Mr. Sajjad Ali	12-03-2016	PMO	03-4-2016	Charter Document

Table 9 – Project Charter

5.1.1 Project Charter

The project charter is the document issued by the project sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities. Necessary information required by decision makers to approve the project for funding and it is created during the initiating phase of the project.

5.1.2 Project Purpose

The main purpose of the project is to automate all the Land, Transfer, building Control Branch and to retrieve all the data on a Single Click. Also to be a paperless environment and to satisfy the customer for a such a fast productivity

5.1.3 High Level Requirement

The DHA should be compatible with the customer requirements and enhance their productivity through automation system

5.1.4 Success Criteria

- i. Meeting the goals and objectives of the automation
- ii. Tool capabilities
- iii. Capabilities and skills of automation team
- iv. Reduced Operating cost
- v. Increased productivity
- vi. Improved collaboration
- vii. Improved Employee satisfacation

5.1.5 Estimated Duration

The Senior Management decided to finish this project in just 2 years

5.1.6 High Level Risk

- i. No solution exists that will meet all the requirements
- ii. No interest from some areas.
- iii. Losing features of current system.
- iv. Upsetting clients/staff (learning new system)
- v. Loss of data
- vi. Conversion from existing systems may not be smooth
- vii. Costs may increase, recommendation may not be cost effective or in budget

- viii. People time may increase (installation/conversion/maintenance, increase in use across

5.1.7 Milestone Schedule

DHA Automation Project consists of 5 Modules. Each module is a milestone itself.

- i. Completion of Transfer & Record branch Business Processes
- ii. Completion of Building Control branch Business Processes
- iii. Completion of Land Acquisition branch Business Process
- iv. Completion of Security branch Business Process

5.1.8 Roles & Responsibilities.

Name	Role	Responsibility
Syed Nasir Ali	Project Manager	Perform the day to day management of the project and manage the project within the approved constraints of scope, quality, time and cost to achieve the targets
Arif Mehmood Khan	Project Coordinator	Check the Milestones and KPI against each Individual
Junaid Azam	Developer – Business Process	Develop All Business Process
Nouman Haider Nawaz	R & D and Test Business Processes	Check the Business processes and deploy in different branches
Kashif Mansoor	.Net Developer	Develop Report for all Business Processes along with security constraints

Table 10 – Roles & Responsibilities

5.1.9 Stakeholders

- i. Defence Housing Authority, Lahore
- ii. M/S Oratech Pvt Ltd.

5.1.10 Budget

The total Budget of the DHA Automation System which is going to be start is PKR 7.5 Million. As all the amount is finance by the DHA itself no bank loan is taken for this project. Moreover the DHA has taken 10 Million from M/S Oractech as a Bank Guarantee in case of any uncertainty.

5.1.11 Constraints

- i. People time available
- ii. Availability of software for testing
- iii. Assumptions
- iv. Recommendation would be centrally funded
- v. People are interested in participating in this project
- vi. Technology, people, budget is in place to implement the project.

5.1.12 Project Charter Approval

The undersigned acknowledge that they have reviewed the project charter and authorize and fund the project. Changes to this project charter will be coordinated with and approved by the undersigned or their designated representatives.

Name : _____

Role : _____

Project Sponsor (D.H.A, Lahore Cantt.)

Date : _____

Signature _____

Name : _____

Role : _____

Project Director (Dir I.T)

Date : _____

Signature _____

5.2 PROJECT SCOPE STATEMENT**Version History**

Ver. No	Completed by	Revision Date	Approved By	Approval Date	Reason
1.0	Mr. Nouman Haider Nawaz and Mr. Sajjad Ali	18-4-2016	PMO	30-4-2016	Initial version of project scope statement

Table 11 – Project Scope Statement

5.2.1 Project Scope Statement

The project scope statement is the description of the project scope, deliverables, assumptions and constraints. The project scope statement documents the entire scope including project and product scope and it also describe in detail the project outcome and the work required to create those deliverables.

5.2.2 Project Scope

All Data should be computerized of Transfer, Building Control, Land Acquisition, Public Relation and I.T Branch. DHA wants a paperless environment in just 2 year. All Customer Data should be Sync and organize properly in Repository. Also to enhance the customer service and should be informed through SMS Alert service from all over the world for Overseas Pakistani customer of DHA.

5.2.3 Acceptance Criteria

- i. Approval of Project Charter from Senior Management
- ii. All the data and equipment's should organize properly. Data should be arranged in New Automation System and hardware should be organized in a Proper Data Centre
- iii. All software should be market oriented and user friendly so that end user should easily switch from Manual system to Automation

5.2.4 Project Deliverables

- i. New DHA Automation System
- ii. All Software's and Operating systems should be licensed
- iii. Meet the customer satisfaction and enhance the productivity

5.2.5 Constraints

Procedure	Direct purchase
Number Developers	Very limited
Duration of Agreement	Very Short
Schedule	Project activities must be completed within the established project schedule
Cost	Reserves can be used through approved change in the project

Scope	Project activities must be support project scope statement
Resources	All Project activities must be done with current personnel
Technology	Specifications must match with statement of work

Table 12 - Constraints

5.2.6 Assumptions

- i. If there is any delay in the project execution due to resources or unavailability of hardware M/S. Oratech shall be adequately compensated.
- ii. To document the specific assumptions on which the estimates, schedules, and financial plan are based.
- iii. The schedules, estimates and costs herein are based on the assumptions identified below. If any of these assumptions are incorrect, then DHA reserves the right to re-estimate both the schedule and the cost for this project
- iv. The software development environment will be confirmed during the Concept Definition stage and established during the Functional Design. It consists of the necessary hardware and software tools required to develop and test the applications.

6 RECOMMENDATION

The recommendations are intended to ensure that there is department-wide accountability for and ownership of accomplishing project management objectives. The recommendations provide the department-wide leadership with direction to strengthen the departmental Project Management Culture

Recommendation 1: Develop The Department's project management culture by providing clear, consistent, executive communication and leadership regarding the department-wide importance of project management objectives and their accomplishment.

Recommendation 2: Establish department-wide ownership and accountability by senior management for strategic objective accomplishment in scope, budget, schedule, and quality.

Recommendation 3: Establish measurable Departmental strategic objectives for scope, budget, schedule, and quality and measure their accomplishment.

Recommendations for Roles and Responsibilities of the Project Manager

These recommendations address the concerns that project management at The Department is inconsistent. There is no widely shared understanding of the role of the project manager or the project team; project management practices vary widely and the extent to which projects are actively managed at all is variable. The intent of the recommendations detailed below is to increase the consistency and discipline with which best project management practices are applied at The Department.

Recommendation 4: Establish department-wide the roles, responsibilities, and authority of project managers, project teams, technical managers, technical leaders, and team members. Strengthen the project manager's level of authority.

Recommendation 5: Strengthen the consistency of project management across the Department by establishing consistent project management procedures.

Recommendation 6: Revise project management policies, guidelines, and manuals to reflect these consistent project management requirements.

Recommendation 7: Establish measurable performance objectives for project managers that are aligned with the departmental strategic objectives and project managers' roles, responsibilities, and authority.

Recommendation 8: Develop and maintain department-wide project status information regarding project scope, schedule, and budget.

Recommendation 9: Strengthen scope management by revising policies and procedures to establish greater accountability and reporting mechanisms.

Recommendation 10: Establish a standardized process for project schedule planning and management.

Recommendation 11: Establish and manage project budgets.

Recommendation 12: Use quantitative information to evaluate DEPARTMENTAL labor requirements and establish work standards by activity to support project scheduling and budgeting.

Recommendation 13: Perform multi-project resource loading to evaluate the "deliverability of the program" and support overall program management.

Recommendations for Organizational Development to Strengthen the Department's Project Management Function

The recommendations address the study findings that strengthened project management requires elevating and supporting the development of project management as a discipline within The Department.

Recommendation 14: Create a department-wide organizational focal point for all project management at the Department.

Recommendation 15: Establish project management as a visible and attractive Departmental career path.

Recommendation 16: Continue to emphasize and amplify training and professional development for project managers. This recommendation builds on the existing level of commitment to training for project managers and team members.

7 CONCLUSION

Following S-Curve is showing about overall cost required for completing the project as starting month is July 2016 and completion month is July 2017. Firstly flow of cost or funding for a project is less than the planned cost.

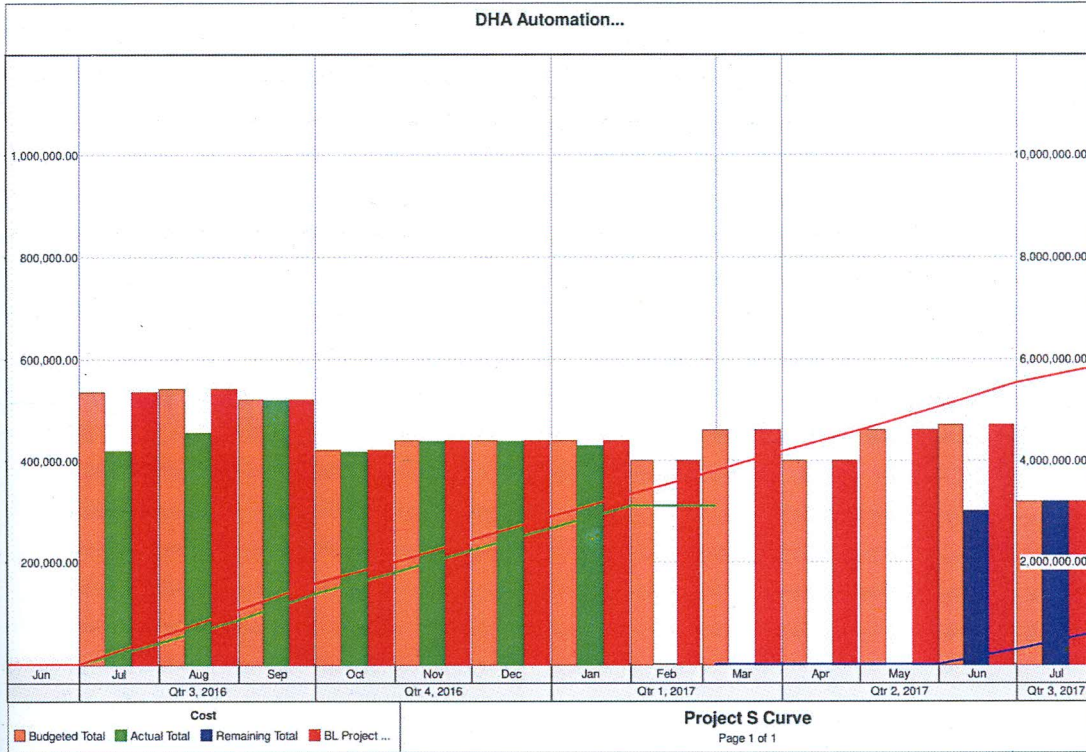


Fig 22 – Project S-Curve

This above S-curve tells about project actual baseline cost which is sponsor by the DHA Lahore. In this S- curve it is possible to make conclusion about project progress. So following is a S- curve about project progress which show about values after progress of some work in the project.

This S- curve is telling about different costs Occur in fulfilling the project requirements and flow of a cost in whole project period of time.

As shown in the above S-curve that Baseline project cost is set by the company. So as the project start moving in a set direction then its costs vary on many different phases. According to above project is moving in a good direction in terms of cost. Its means project will be complete within a time and budget.

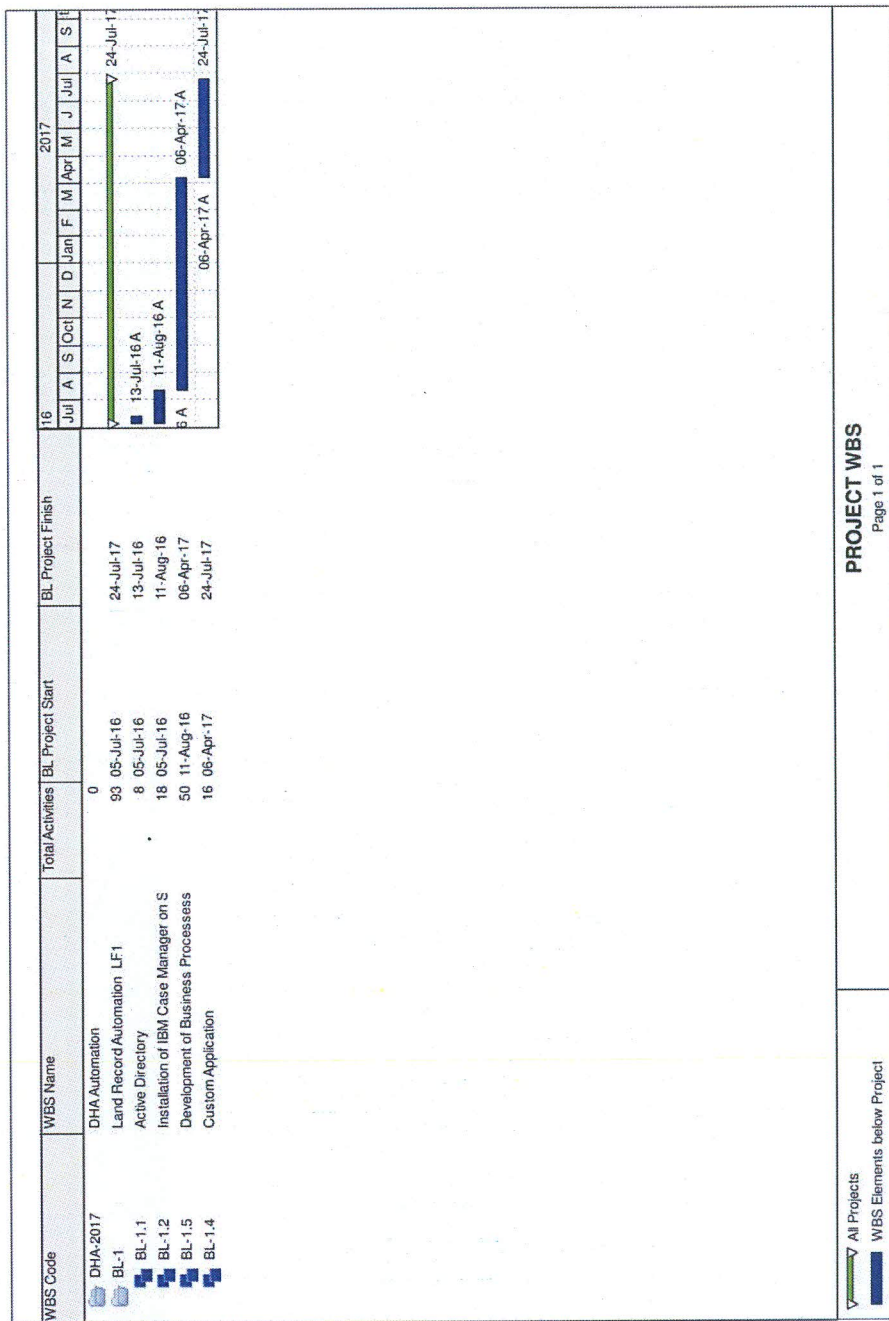
8 APPENDICES

8.1 APPENDIX A: Primavera P6 Reports

Primavera P6 has been used for the DHA Land Record Automation Project. This section shows generated reports of a Primavera P6 of above mentioned project. The following are the reports which are shown in this section.

- I. WORK BREAK DOWN STRUCTURE
- II. RESOURCE SHEET
- III. ACTIVITY STATUS REPORT
- IV. PROJECT BASELINE LAYOUT
- V. ACTIVITIES COST REPORT
- VI. EARNED VALUE CURVE
- VII. S CURVE

8.1.1 WORK BREAKDOWN STRUCTURE



PROJECT WBS
Page 1 of 1

Fig 23 - WBS

8.1.3 ACTIVITY STATUS REPORT

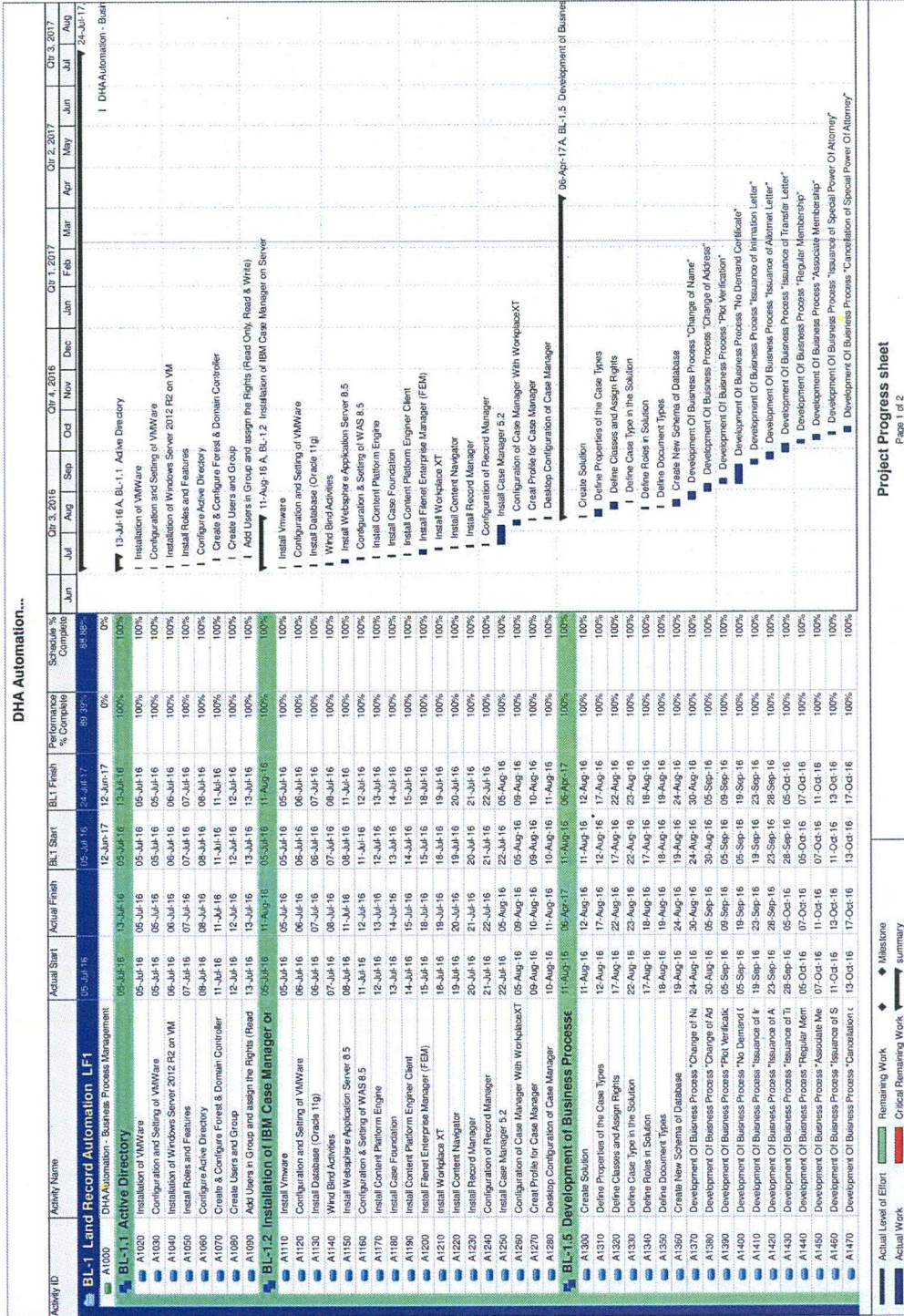


Fig 25 – Activity Status Report 1

8.1.4 PROJECT BASELINE LAYOUT

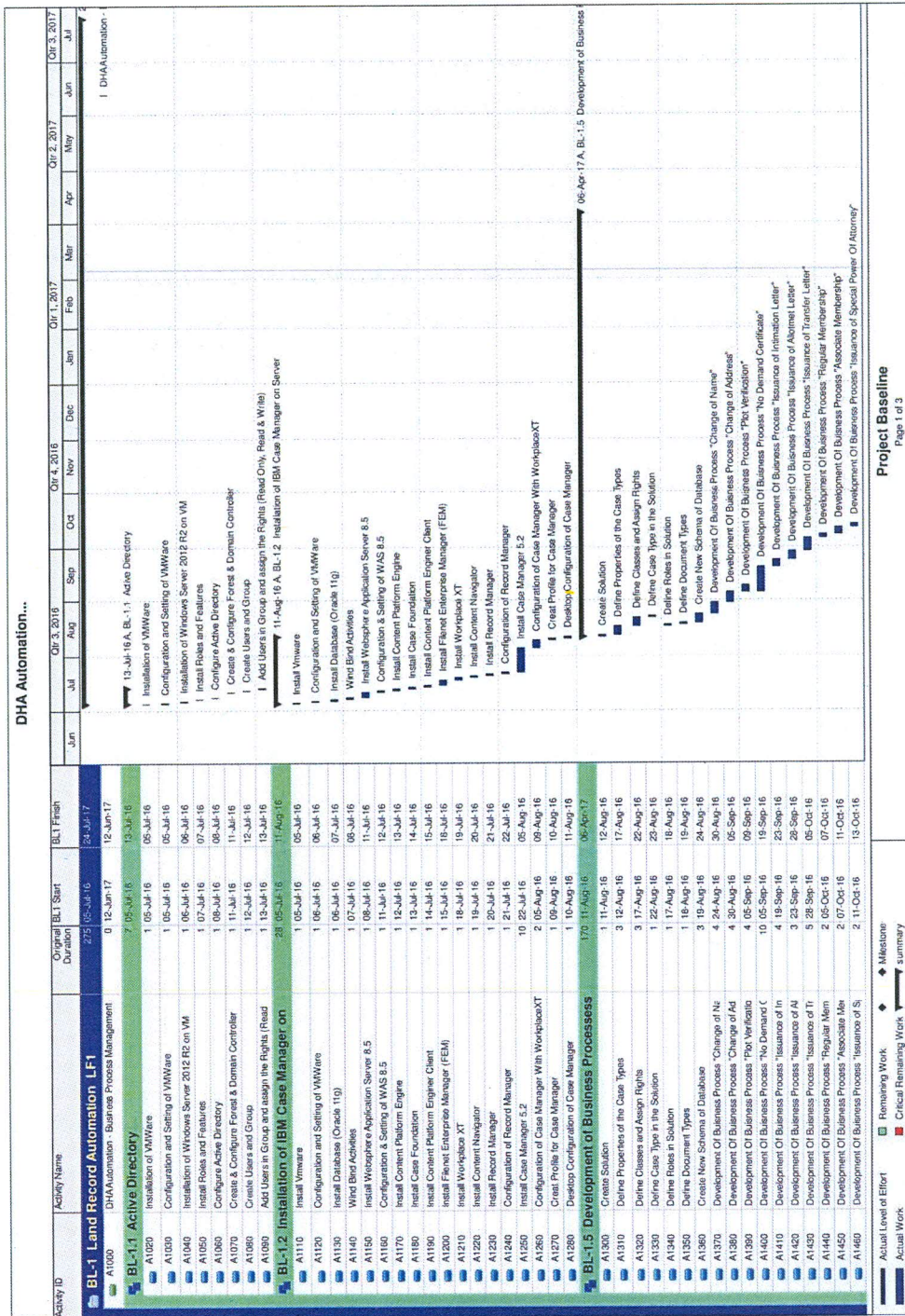


Fig 27 – Project Baseline Report 1

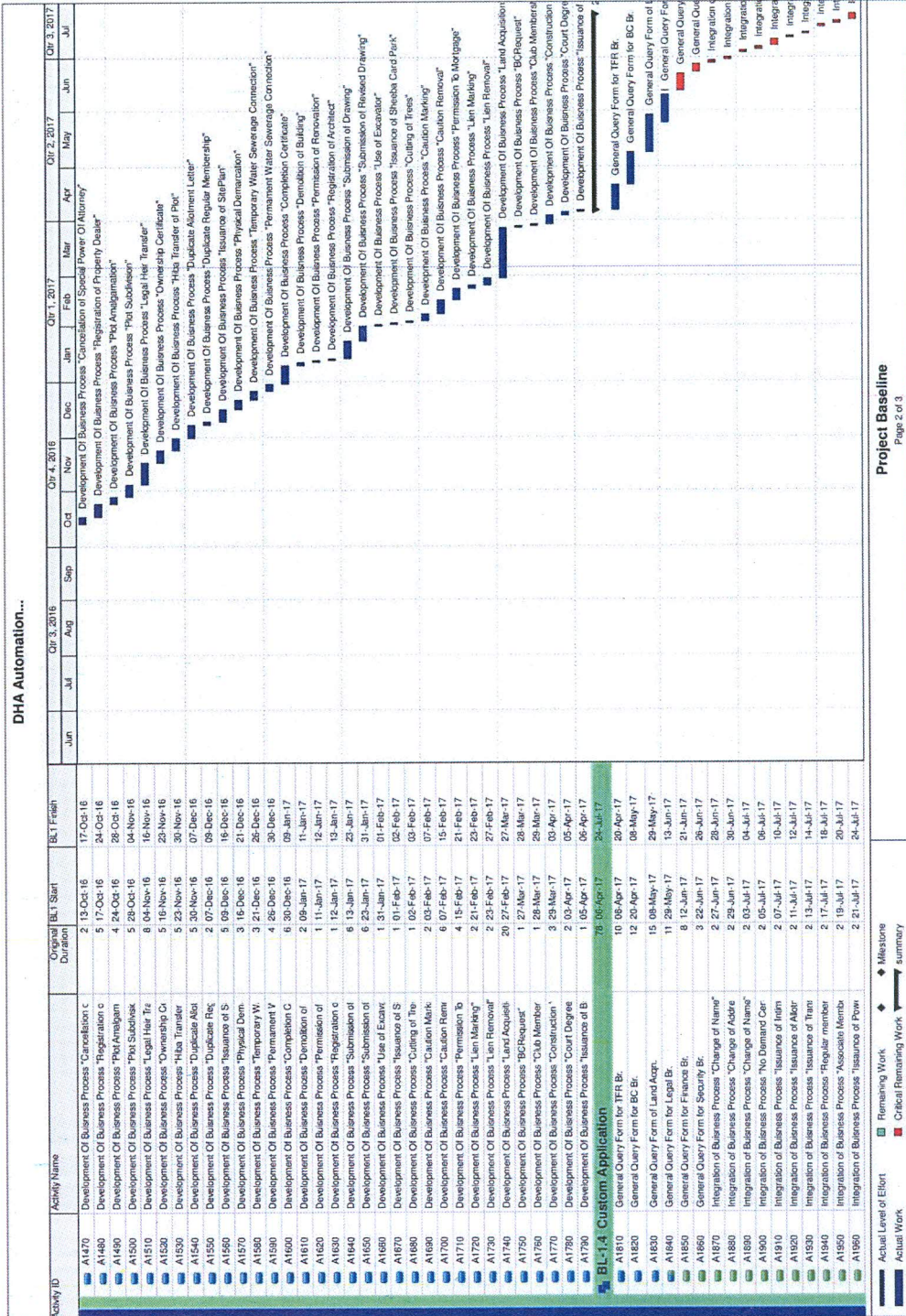


Fig 28 – Project Baseline Report 2

8.1.5 PROJECT ACTIVITIES COST

DHA Automation...

Activity ID	Activity Name	Budgeted Total Cost	Actual Cost	Planned Value Cost	Earned Value Cost	Cost Variance	Cost Performance Index	Schedule Performance Index	Budget At Completion
BL-1	Land Record Automation LFI	5,845,200.00	111,700.00	5,195,200.00	5,225,200.00	113,500.00	1.03	1.01	5,845,200.00
A1000	DHA Automation - Business Process Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BL-1.1	Active Directory	152,200.00	142,600.00	152,200.00	152,200.00	10,600.00	1.07	1.00	152,200.00
A1020	Installation of VMware	17,600.00	17,600.00	17,600.00	17,600.00	0.00	1.00	1.00	17,600.00
A1030	Configuration and Setting of VMware	17,600.00	17,600.00	17,600.00	17,600.00	0.00	1.00	1.00	17,600.00
A1040	Installation of Windows Server 2012 R2 on VM	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1050	Install Roles and Features	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1060	Configure Active Directory	20,000.00	19,700.00	20,000.00	20,000.00	300.00	1.02	1.00	20,000.00
A1070	Create & Configure Forest & Domain Controller	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1080	Create Users and Group	20,000.00	17,500.00	20,000.00	20,000.00	2,500.00	1.14	1.00	20,000.00
A1090	Add Users in Group and assign the Rights (Read Only, Read & Write)	20,000.00	19,300.00	20,000.00	20,000.00	700.00	1.04	1.00	20,000.00
A1100	Add Users in Group and assign the Rights (Read Only, Read & Write)	20,000.00	12,900.00	20,000.00	20,000.00	7,100.00	1.55	1.00	20,000.00
BL-1.2	Installation of IBM Case Manager on Server	550,000.00	361,500.00	550,000.00	550,000.00	188,500.00	1.52	1.00	550,000.00
A1110	Install VMware	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1120	Configuration and Setting of VMware	10,000.00	10,000.00	10,000.00	10,000.00	0.00	1.00	1.00	10,000.00
A1130	Install Database (Oracle 11g)	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1140	Wind Bird Activities	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1150	Install WebSphere Application Server 8.5	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1160	Configuration & Setting of WAS 8.5	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1170	Install Content Platform Engine	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1180	Install Case Foundation	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1190	Install Content Platform Engine Client	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1200	Install FileNet Enterprise Manager (FEM)	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1210	Install Workbase XT	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1220	Install Content Navigator	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1230	Install Record Manager	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1240	Configuration of Record Manager	20,000.00	17,300.00	20,000.00	20,000.00	2,700.00	1.16	1.00	20,000.00
A1250	Install Case Manager 5.2	20,000.00	18,300.00	20,000.00	20,000.00	1,700.00	1.09	1.00	20,000.00
A1260	Configuration of Case Manager With Workplace XT	20,000.00	18,500.00	20,000.00	20,000.00	1,500.00	1.08	1.00	20,000.00
A1270	Config Profile for Case Manager	20,000.00	18,600.00	20,000.00	20,000.00	1,200.00	1.08	1.00	20,000.00
A1280	Desktop Configuration of Case Manager	200,000.00	19,300.00	200,000.00	200,000.00	180,700.00	10.36	1.00	200,000.00
A1290	Configuration of Case Manager	40,000.00	38,800.00	40,000.00	40,000.00	1,200.00	1.03	1.00	40,000.00
A1300	Desktop Configuration of Case Manager	20,000.00	20,500.00	20,000.00	20,000.00	(500.00)	0.98	1.00	20,000.00
A1310	Desktop Configuration of Case Manager	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
BL-1.5	Development of Business Processes	3,560,000.00	695,600.00	3,560,000.00	3,560,000.00	354,400.00	1.37	1.00	3,560,000.00
A1300	Create Solution	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1310	Define Properties of the Case Types	60,000.00	58,000.00	60,000.00	60,000.00	2,000.00	1.03	1.00	60,000.00
A1320	Define Classes and Assign Rights	20,000.00	19,200.00	20,000.00	20,000.00	800.00	1.04	1.00	20,000.00
A1330	Define Case Type in the Solution	20,000.00	19,000.00	20,000.00	20,000.00	1,000.00	1.05	1.00	20,000.00
A1340	Define Roles in Solution	20,000.00	19,000.00	20,000.00	20,000.00	1,000.00	1.05	1.00	20,000.00
A1350	Define Document Types	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1360	Create New Schema of Database	80,000.00	80,400.00	80,000.00	80,000.00	(400.00)	0.99	1.00	80,000.00
A1370	Development Of Business Process "Change of Name"	80,000.00	78,500.00	80,000.00	80,000.00	1,500.00	1.02	1.00	80,000.00
A1380	Development Of Business Process "Change of Address"	80,000.00	80,000.00	80,000.00	80,000.00	0.00	1.00	1.00	80,000.00
A1390	Development Of Business Process "Plot Verification"	200,000.00	200,000.00	200,000.00	200,000.00	0.00	1.00	1.00	200,000.00
A1400	Development Of Business Process "No Demand Certificate"	80,000.00	80,000.00	80,000.00	80,000.00	0.00	1.00	1.00	80,000.00
A1410	Development Of Business Process "Issuance of Intimation Letter"	60,000.00	60,000.00	60,000.00	60,000.00	0.00	1.00	1.00	60,000.00
A1420	Development Of Business Process "Issuance of Allotment Letter"	100,000.00	100,000.00	100,000.00	100,000.00	0.00	1.00	1.00	100,000.00
A1430	Development Of Business Process "Issuance of Transfer Letter"	40,000.00	40,000.00	40,000.00	40,000.00	0.00	1.00	1.00	40,000.00
A1440	Development Of Business Process "Regular Membership"	40,000.00	40,000.00	40,000.00	40,000.00	0.00	1.00	1.00	40,000.00
A1450	Development Of Business Process "Associate Membership"	40,000.00	39,500.00	40,000.00	40,000.00	500.00	1.01	1.00	40,000.00
A1460	Development Of Business Process "Issuance of Special Power of Attorney"	40,000.00	40,500.00	40,000.00	40,000.00	(500.00)	0.99	1.00	40,000.00
A1470	Development Of Business Process "Cancellation of Special Power of Attorney"	40,000.00	40,500.00	40,000.00	40,000.00	(500.00)	0.99	1.00	40,000.00

Project Cost sheet
Page 1 of 2

Fig 29 – Project Activities Cost Status 1

DHA Automation...

Activity ID	Activity Name	Budgeted Total Cost	Actual Cost	Planned Value Cost	Earned Value Cost	Cost Variance	Performance Index	Schedule Performance	Budget At Completion
A1480	Development Of Business Process "Registration of Property De	100,000.00	100,000.00	100,000.00	100,000.00	0.00	1.00	1.00	100,000.00
A1490	Development Of Business Process "Pri Alpaigamtion"	80,000.00	78,100.00	80,000.00	80,000.00	1,900.00	1.02	1.00	80,000.00
A1500	Development Of Business Process "Pri Subdivision"	160,000.00	96,000.00	100,000.00	100,000.00	4,000.00	1.04	1.00	100,000.00
A1510	Development Of Business Process "Legal Heir Transfer"	160,000.00	160,000.00	160,000.00	160,000.00	0.00	1.00	1.00	160,000.00
A1520	Development Of Business Process "Ownership Certificate"	100,000.00	100,000.00	100,000.00	100,000.00	0.00	1.00	1.00	100,000.00
A1530	Development Of Business Process "Heba Transfer of Plot"	100,000.00	100,000.00	100,000.00	100,000.00	0.00	1.00	1.00	100,000.00
A1540	Development Of Business Process "Duplicate Allotment Letter"	100,000.00	98,900.00	100,000.00	100,000.00	1,100.00	1.01	1.00	100,000.00
A1550	Development Of Business Process "Duplicate Regular Member"	40,000.00	39,500.00	40,000.00	40,000.00	500.00	1.01	1.00	100,000.00
A1560	Development Of Business Process "Issuance of She/Hart"	100,000.00	100,000.00	100,000.00	100,000.00	0.00	1.00	1.00	100,000.00
A1570	Development Of Business Process "Physical Demarcation"	60,000.00	60,000.00	60,000.00	60,000.00	0.00	1.00	1.00	60,000.00
A1580	Development Of Business Process "Temporary Water Sewerag	80,000.00	79,000.00	80,000.00	80,000.00	1,000.00	1.01	1.00	80,000.00
A1590	Development Of Business Process "Permanent Water Sewera	120,000.00	120,000.00	120,000.00	120,000.00	0.00	1.00	1.00	120,000.00
A1600	Development Of Business Process "Completion Certificate"	40,000.00	40,000.00	40,000.00	40,000.00	0.00	1.00	1.00	40,000.00
A1610	Development Of Business Process "Demolition of Building"	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1620	Development Of Business Process "Permission of Renovation"	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1630	Development Of Business Process "Registration of Architect"	120,000.00	120,000.00	120,000.00	120,000.00	0.00	1.00	1.00	120,000.00
A1640	Development Of Business Process "Submission of Drawing"	20,000.00	20,000.00	20,000.00	20,000.00	0.00	1.00	1.00	20,000.00
A1650	Development Of Business Process "Submission of Revised Dra	120,000.00	120,000.00	120,000.00	120,000.00	0.00	1.00	1.00	120,000.00
A1660	Development Of Business Process "Use of Excavator"	20,000.00	0.00	20,000.00	20,000.00	20,000.00	0.00	1.00	20,000.00
A1670	Development Of Business Process "Issuance of Sheeba Card F	20,000.00	0.00	20,000.00	20,000.00	20,000.00	0.00	1.00	20,000.00
A1680	Development Of Business Process "Cutting of Trees"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1690	Development Of Business Process "Caution Marking"	120,000.00	0.00	120,000.00	120,000.00	120,000.00	0.00	1.00	120,000.00
A1700	Development Of Business Process "Caution Removal"	80,000.00	0.00	80,000.00	80,000.00	80,000.00	0.00	1.00	80,000.00
A1710	Development Of Business Process "Permission To Mortgage"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1720	Development Of Business Process "Lem Marking"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1730	Development Of Business Process "Lem Marking"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1740	Development Of Business Process "Land Acquisition"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1750	Development Of Business Process "BC Request"	20,000.00	0.00	20,000.00	20,000.00	20,000.00	0.00	1.00	20,000.00
A1760	Development Of Business Process "Club Membership"	20,000.00	0.00	20,000.00	20,000.00	20,000.00	0.00	1.00	20,000.00
A1770	Development Of Business Process "Construction Valuation"	60,000.00	0.00	60,000.00	60,000.00	60,000.00	0.00	1.00	60,000.00
A1780	Development Of Business Process "Court Degree Execution"	40,000.00	0.00	40,000.00	40,000.00	40,000.00	0.00	1.00	40,000.00
A1790	Development Of Business Process "Issuance of Burial Certificate"	20,000.00	0.00	20,000.00	20,000.00	20,000.00	0.00	1.00	20,000.00
BL-1.4 Custom Application		1,550,000.00	0.00	930,000.00	860,000.00	360,000.00	0.00	1.00	1,550,000.00
A1810	General Query Form for TFR Br.	200,000.00	0.00	200,000.00	200,000.00	200,000.00	0.00	1.00	200,000.00
A1820	General Query Form for BC Br.	240,000.00	0.00	240,000.00	240,000.00	240,000.00	0.00	1.00	240,000.00
A1830	General Query Form for Land Aczn.	300,000.00	0.00	300,000.00	300,000.00	300,000.00	0.00	1.00	300,000.00
A1840	General Query Form for Legal Br.	220,000.00	0.00	190,000.00	220,000.00	30,000.00	0.00	1.15	220,000.00
A1850	General Query Form for Finance Br.	160,000.00	0.00	0.00	0.00	160,000.00	0.00	0.00	160,000.00
A1860	Integration of Business Process "Change of Name"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1870	Integration of Business Process "Change of Address"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1880	Integration of Business Process "Change of Name"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1890	Integration of Business Process "No Demand Certificate"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1900	Integration of Business Process "Issuance of Information Letter"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1910	Integration of Business Process "Issuance of Allotment letter"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1920	Integration of Business Process "Issuance of Transfer Letter"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1930	Integration of Business Process "Regular membership Card"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1940	Integration of Business Process "Associate Membership Card"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1950	Integration of Business Process "Issuance of Power of Attorney"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
A1960	Integration of Business Process "Issuance of Power of Attorney"	40,000.00	0.00	0.00	0.00	40,000.00	0.00	0.00	40,000.00
DHA-2017 DHA Automation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Project Cost sheet
Page 2 of 2

Fig 30 – Project Activities Cost Status 2

8.1.6 EARNED VALUE CURVE

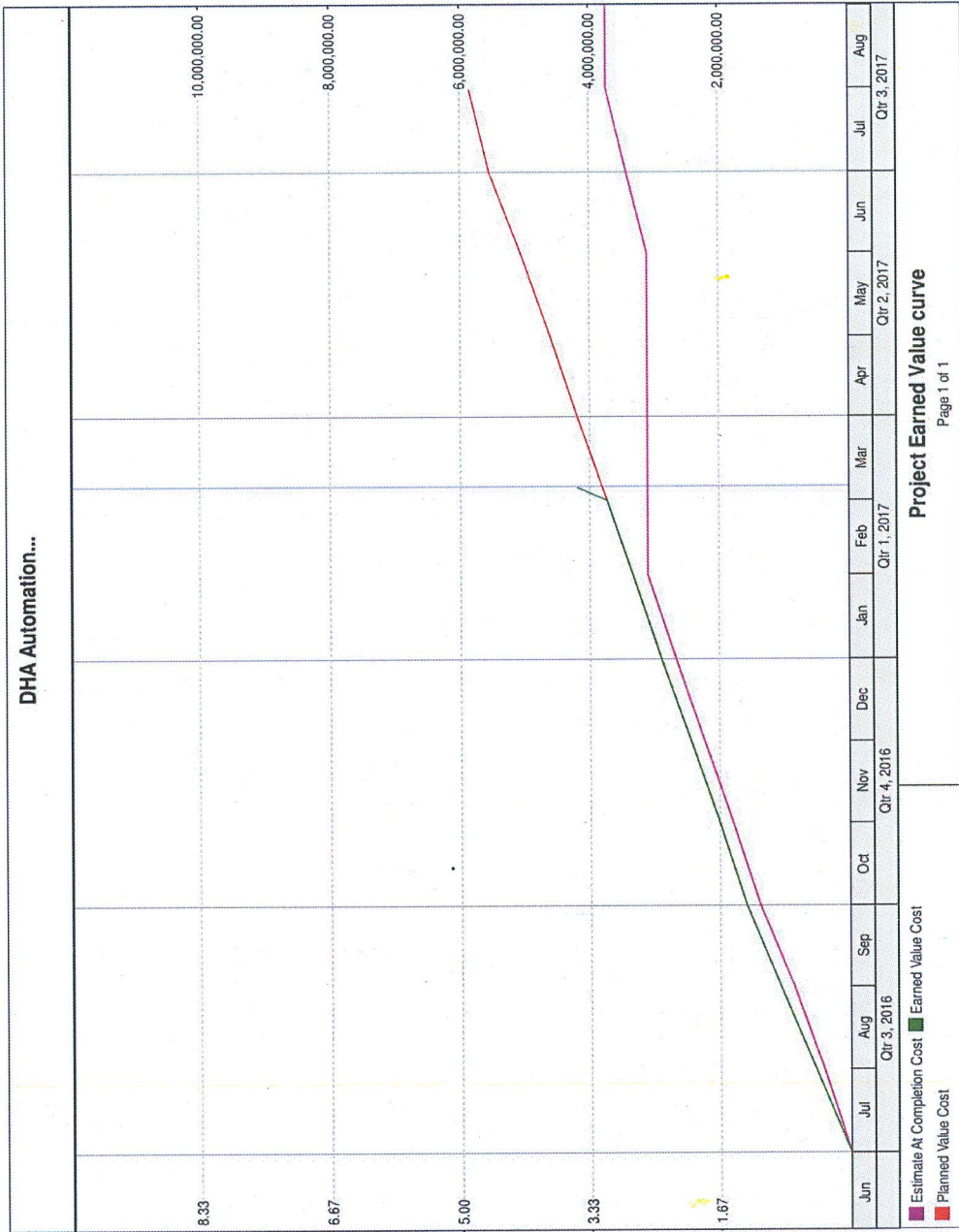


Fig 31 – Project Earned Value Curve

8.1.7 S-CURVE

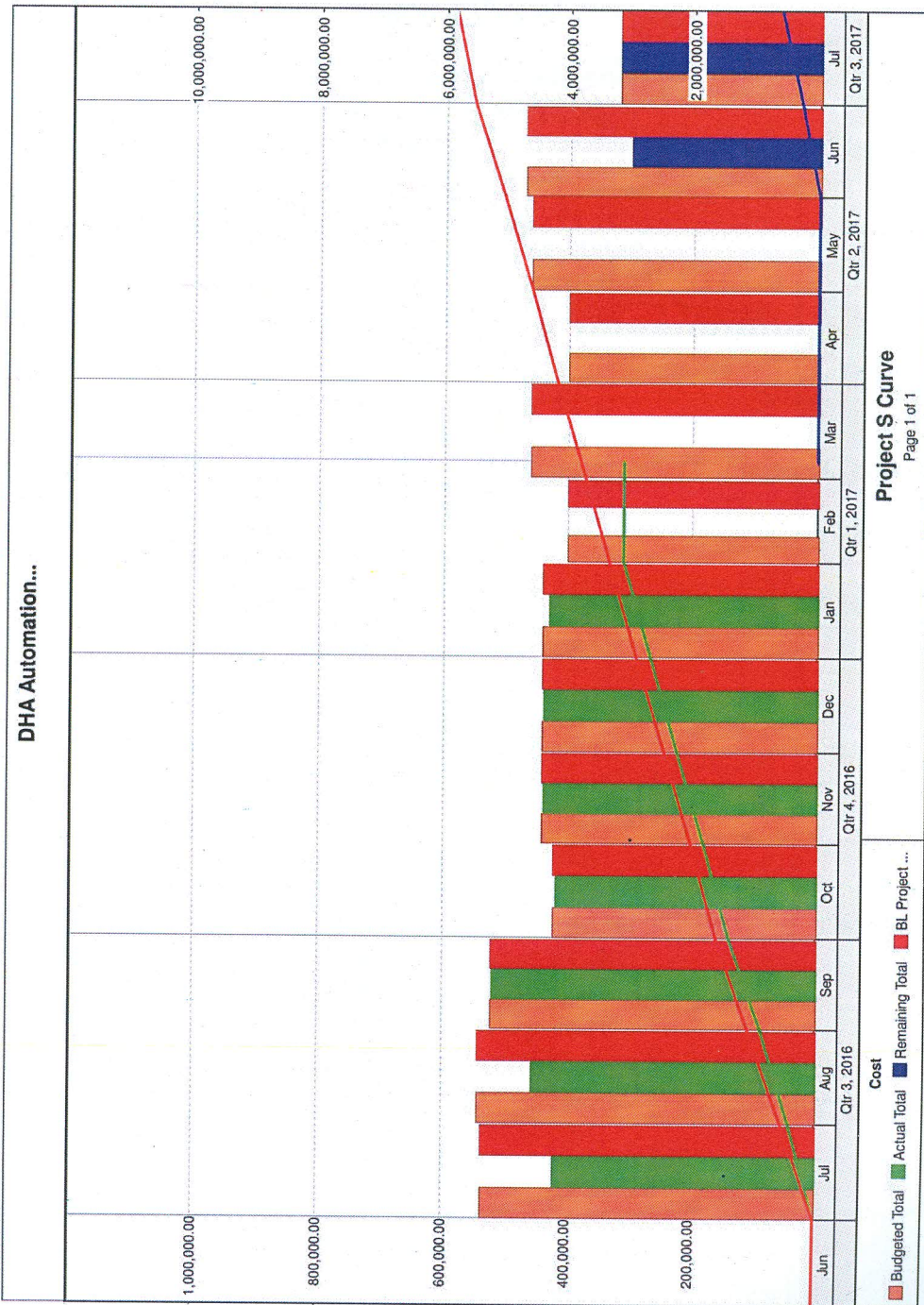


Fig 32 – S – Curve Report

8.2 APPENDIX B – CBT LOG

**CBT Log by
Nouman Haider Nawaz (03-298161-013)
and
Mr. Sajjad Ali (03-298161-031)**

S.No	Date	Problem	Solution	Source	Status	Remarks
1	19-3-17	In check the basis for the grouping scheme	By clicking Group and Sort option form the menu bar	Teacher	Cleared	Closed
2	19-3-17	Assigning Enterprise Project	Go to enterprise option to open enterprise project structure then add open to assign responsible person	Teacher	Cleared	Closed
3	26-3-17	Opening GANTT Chart	Click view from Toolbar then select check giant chart form the show on top	Teacher	Cleared	Closed
4	26-3-17	Assigning Baseline for the project	Click Project then assign baseline whether primary, secondary and tertiary	Teacher	Cleared	Closed
5	2-4-17	Making relationships in between activities	By defining predecessors and successors by clicking on the activities	Internet	Cleared	Closed
6	2-4-17	Defining resources	Clicking enterprises and open resources option then use add for defining resources with their wages	Teacher	Cleared	Closed
7	9-4-17	Assigning Resource to each activity	Click on activity then select resource to open add resource option for assigning resources for the activity	Friend	Cleared	Closed
8	9-4-17	Difference in techniques for computing performance percentage	By going to project then WBS option for selecting desirable technique	Teacher	Cleared	Closed

9	23-4-17	In defining activity and resource code	By clicking enterprises to select resource and activity codes to add codes for each domain	Internet	Cleared	Closed
10	23-4-17	Selecting industry after installation of P6	Go to admin then admin preferences go to industry option to select as your industry or requirement	Friend	Cleared	Closed
11	30-4-17	In making S-Curve	Click Activity usage profile then select form the right bottom activity usage profile option	Internet	Cleared	Closed
12	30-4-17	In making of Stacked Histogram	Resource usage profile then marked stacked histogram so open resource usage profile to add values	Internet	Cleared	Closed
13	7-5-17	Incorrect Overtime Calculation	Go to admin menu click on admin preferences under time period change the default hours per time period then check the box use containing calendar , click enterprises then to click on calendar change the time periods to meet required need	Friend	Cleared	Closed
14	17-5-17	Viewing a WBS	Display Options bar, then choose Show on Top, WBS Table. To list and sort WBS elements	Teacher	Cleared	Closed
15	17-5-17	Use status for filtering projects in the EPS	Open a Project, view only those projects with a specific status choose View, Filter By, Status, then choose the status we want to use. We can also choose View, Filter By, and Customize. In the	Internet	Cleared	Closed

			Filters dialog box, mark the applicable check boxes For the statuses of the projects we want to see.			
16	14-5-17	Define resource shifts	Choose Enterprise, Resource Shifts. Click Add, and then type the new shift's name. To edit the new shift, click Modify	Internet	Cleared	Closed
17	14-5-17	Dissolving Activities	Choose Edit, Dissolve, in the Activities window. Dissolving deletes an activity and joins its predecessor and successor activities with a finish to start relationship.	Internet	Cleared	Closed
18	14-5-17	Defining General Activity Information	Click the General tab.	Friend	Cleared	Closed
19	14-5-17	Level resources	Open the projects that contain the resources we want to level	Internet	Cleared	Closed
20	14-5-17	Export of current project	Through open file option	Friend	Cleared	Closed

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8.4 Appendix C: Research Paper Abstract for Primavera Working

Basic Concepts of Earned Value Management in a Primavera P6

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Financial matters play significant role in project planning and progressing. With the passage of time these financial aspects of a project change which actually depicting about in which direction project is moving. Every project manager want is complete its project with allocated budget but some successful in doing this as many have to face budget issues which is over costing of a project. In past no such tool was there to monitor the financial matters of project regularly. In this modern world of advance technology and economic development Primavera P6 is providing facility of viewing project progress in terms of finance like project is moving under cost or over cost. Likewise many other things are also being shown in this tool like Cost variance, Schedule variance, Earn Value, Planned value, Actual cost and many more. If one spends huge amount of investment for the construction of a project then it is also compulsory he knows what amount actually work is accomplished and which one is not. Through this technique many future factors can be avoid as risk or problems which seems to be occur in near future. Moreover, it attention management to become proactive and provide immediate solution for any problem occur during an execution of a project. Accountability can be done in a more effective and efficient way by using earned value management in a Primavera P6. A number of misuse of resources and allocated budget can be occur in a project this can overcome by utilizing earned value management in a Primavera P6. Assessment of overall performance of a project is provides by this technique. In many private and government organizations earned value management concept is placing its place. It is just to provide information to upper management about budget utilization in a best way and benefits of it in a future.

Developing an efficient schedule in Primavera P6 Significance of activity Identity & Description

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It is often said that without proper planning of activity project could not be able to achieve its final aim. There are several tasks to complete before project generates its final result. So this article is about importance of activity Identity and description. As there are many activities which need to be performed for the timely completion of a project. Without proper assign identity and description it is difficult for one to know about activity status whether it is progressing or not. Meanwhile, it provides benefit to Project manager to track only that particular activity which needs special attention for a timely accomplishment of project. Basically, this article or research paper was written to emphasize on the importance of schedule development. Through good schedule planning planner able to view about the whole activities of project which need to be handle by multiple resources. Primavera P6 provide its best for assigning proper activity identity and description for each and every activity in a schedule. In this article methodology and methods were used to define activity identity and description in a Primavera P6. Firstly, layout in Primavera P6 contains activity view on the left side along with the Gantt chart view on the right side. By going to activity view one able to view and find Activity Identity, Duration, Start and finish dates which are used to define about activity existences and overall identity in a project. Furthermore, it provide platform to reader that make easily assessment about the activity through its description written in its column. Perhaps, Activity identity structure is a way to know about activity. By default it is define with a digit 10 which is change with entering or other activity in a schedule. Activity identity look likes as A100, A200 and A300 so on depends upon a number of activities in the project. Overall Activity identity and description enhanced the quality of schedule which is developed in a Primavera P6. It provides user a facility of knowing about activity overall information and nature of work required to complete that activity. Proper scheduling provides opportunity to complete project without any conflict. As activity identity and description separate all types of activities from each other. Hence, identity of all activities helps the project manager or user to differentiate different activity from each other. If there is number of activities for a particular project then it is activity id and description that segregated them form each other and turns into their own separate identification. Main motive is to make schedule more effective and efficient

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