A STUDY ON HUMAN RESOURCE PLANNING IN A TELECOM TOWER DESIGN COMPANY WITH SPECIAL REFERENCE TO CHENNAI

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INTRODUCTION

1.1 RESEARCH BACKGROUND

Project Information Management System (PIMS) is a system tools and techniques used in project management to deliver information. Project managers use the techniques and tools to collect, combine and distribute information through electronic and manual means.

PIMS helps in plan, execute and close project management goals. During the planning process, project managers use PIMS for budget framework such as estimation hours and estimating costs. The PIMS is also used to create a specific schedule and define the scope baseline. At the execution of the project management goals, the project management team collects information into one database. The PIMS is used to compare the baseline with the actual accomplishment of each activity, manage materials, collect financial data and keep a record for reporting purposes.

During the close of the project, the PIMS is used to review the goals to check if the tasks were accomplished. Then, it is used to create a final report of the project close.

1.2 IDENTIFIED PROBLEM

The current service is filled with competition also it is being very challenging and all are to win the race. In that way, organization having the principles of performance measurement in the service quality context, in order to examine the effectiveness and efficiency not only of their internal operations, but also the customers external perceptions. The organization should provide the valuable service offerings which are best in class, in delivering valuable services and customer satisfaction alone is not enough to sustain.

This research aim is to analyze and studying the service levels that one should excel to exceed the expectations of the customer and measure their performance using the PIMS tool.

1.3 NEED FOR THE STUDY

PIMS is a powerful methodology that allows management to plan, monitor and manage the business. The need is to reduce repeated and major errors made in project work by improving Self Quality Check (SQC) and increasing most number of sheets as First Time Pass (FTP) to decrease the rework of project.

Rework of project, which results taken more time and unable to complete the project work in give standard hours and target time period. Thus results the poor performance of the individuals in project work. By improving internal quality we can reduce rework of project, time taken to complete the project and helps to increase the performance of individuals towards project work.

1.4 OBJECTIVES & SCOPE

1.4.1 Primary Objective

This study is to identify the various ways to improve the self quality check of project work.

1.4.2 Secondary Objectives

- To improve the time management of project work.
- To increase the productivity in the project work.
- To find the use of PIMS in managing the various information about the project work.

- To find out the changes needed in SQC.

- To determine the effective use of resources used for project work.

1.4.3 Scope

This project will be more helpful for organization who involved in designing and drafting works to know about the service levels one should excel to exceed the expectations of customer needs and to measure customer satisfaction, by continuous improving of internal performance to achieve the customer needs.

1.5 DELIVERABLES

- Visualize the end result of project work in the initial starting stage.

- Increase the confidence level of individuals in doing the project work.

- Comparative check analysis to avoid repeated and knowledgeable errors.

- Better way of utilizing the time in doing project work.

- Satisfying client's quality needs with high quality assurance.

In this chapter, the problem definition, need, objectives, scope and deliverables of the study are discussed. The detailed literature survey is discussed in the next chapter.

LITERATURE SURVEY

2.1 REVIEW OF LITERATURE

Sharma *and Gadenne (2008)* discussed the importance of quality management practices and performance, in which the rivalry between both evolves a roadblock to the performance. To improvise, survey were conducted and found that those who pay close attention to client needs are positively competitive and improve overall performance. Also the findings indicate that by creating entry barrier results in improved opportunity to increase the organizations performance.

The quality managers indicate the gap between customer's expectation Vs delivery team which needs to be measured with the customer complaints and problems. Hence the defect deficiency and the importance of control were evolved to succeed and be superior which resulted in applying the performance indicators. This process is in place to ensure the customer expectation is driven as a performance indicator which results in bringing a better

understanding of the delivery team and to measure their performance. This would result in analyzing and working towards continuous improvement action which shows target Vs the actual. (*Zisis et al, 2009*)

Quality control refers to the process employed to meet standards consistently. The control process involves observing actual performance, comparing it with some standards, and then taking action if the observed performance is significantly different from the standard (**Dr. Joseph M. Juran**)

Defining, measuring, and reporting critical performance metrics for service sectors are essential to a quality framework, as well as to maintaining quality, service, and efficiency. Performance measures allow tracking and trend performance, identify, diagnose, and correct individual performance problems, and establish and assign accountability for achieving performance goals.

Quality Assurance (QA) perform throughout all of industry, one constant significant element exists for companies to ponder over, and that is the act of making sure that each and every item of note is done or produced according to a specific and rigid standard that has been predefined. This is the act of quality assurance. In terms of the successful management of projects, quality assurance is quite significant. Performing quality assurance (which is also known by the two letter anagram QA), is an essential part of the project management process. During the process of quality assurance, the project management team and project management team leader undergoes the process of applying the previously planned and systemic quality related activities (some examples of these are the concept of auditing or peer review), for the purpose of making sure that the current scenario fits within those parameters, and undertakes efforts to employ all of the previously designated processes in order to actually meet those parameters.

Global view of quality during 1950's European countries and Japan got inspiration and support from the United States to establish its quality roots. The rest of the world did not catch with the quality wave until late in the 20th century. Worldwide quality awareness increased as a result of global competition, release of ISO Standards, ISO Certification requirements by customers, quality awards and educational efforts by institutions, establishment of quality societies and government's supports.

Quality circles were originally associated with Japanese management and manufacturing techniques. The introduction of quality circles in Japan in the post war years

was inspired by the lectures of **W. Edwards Deming (1900 – 1933)**, a statistician for the U.S. government. Deming based his proposals on the experience of U.S. firms operating under wartime industrial standards. Nothing that American management had typically given line managers and engineers about 85 percent of the responsibility for quality control and line workers only about 15 percent, Deming argued that these shares should be reversed.

To understand quality, think of it as a broad term that is often used to encompass many things. ASQ refers to quality as a collection of powerful tools and concepts that are proven to increase customer satisfaction, reduce cycle time and costs, and eliminate errors and rework.

 (**Wang** *et al 2007*) describes a Quality of Service (QoS) management approach and architecture for Service Level Management (SLM). The approach brings in a new perspective to the SLM problem by using QoS management and QoS Contract specification, establishment, and monitoring. In SLM, the service consumer side and the service provider side must share a common understanding of QoS characteristics and use a common language for specifying desired QoS parameters in the form of QoS contracts. A service consumer must negotiate with the service provider to establish mutually agreed QoS contracts for an interaction session. When establishing a new QoS contract, the service provider must consider both QoS contracts already agreed upon with existing consumers and system resource conditions. Once a QoS contract is established, SLM must monitor QoS status to make sure that the service quality is provided at the agreed range. If necessary, SLM must activate adaptation mechanisms to bring the service quality to the desired level. A case study is presented in this paper to validate the QoS contract management design approach and architecture for SLM.

2.2 RESEARCH GAP

- However the gaps and deficiencies in implementing an effective performance measurement tool for tracking the service levels was not analyzed.
- In this study we will be analyzing and describing these identified gaps and suggestions to overcome these deficiencies in implementing a successful performance measurement tool for tracking and measuring customer expectation and improving quality.

METHODOLOGY

3.1 TYPE OF PROJECT

- The research type employed in this project is Descriptive research. Descriptive studies aim at portraying accurately the characteristics of a particular group or situation. A descriptive study involves formulating the objectives of the study, defining the population and selecting a sample, designing the method of data collection, and analysis of the data and result.

- The research design was based on descriptive study. The descriptive research studies are those, which are concerned with describing the characteristics of a particular individual or of a group. It is a formalized study serving the following research objectives.

3.1.1 Project A

Project A is Site Modification Request (SMR project), thus the SMR projects deals with the internal work of the site shelter. Thus which has less number of plans in the project work and standard hour is minimum for this project work.

3.1.2 Project B

Project B is (Link upgrade project), thus this project covers updating existing equipment, installing new equipment, modifying the existing equipment positions. This project contains more plans when compared to SMR projects and having detailed structural drawing work, and the standard hour is four times higher than the SMR project.

3.2 TARGET RESPONDENTS

Data was collected from the existing Internal Quality Findings (IQF) of Project Information Management System software from a telecom tower design company.

- Junior Cad Engineers and Junior Draftsman
- Cad Engineers and Draftsman
- Senior Draftsman

3.3 ASSUMPTIONS, CONSTRAINTS AND LIMITATIONS

3.3.1 Assumptions

The assumptions with respect to the projects are as follows

- The sample size may not reflect the entire population fully.
- The information/suggestion provided by the participant is true.

3.3.2 Constraints and Limitations

- The duration of the study is limited.
- Due to the limited time constraint the survey cannot be carried out in a wide manner.
- Based on experience of the employees (0 – 6 months) & (6 – 12 months).
- Secondary data only taken for analysis.

3.4 SAMPLING METHODS

The sampling method used in this study is stratified sampling analysis. Stratified random sampling requires the separation of defined target population into different groups called strata and the selection of sample from each stratum. This sampling is very useful when the division of target population are skewed or when extremes are present in the probability distribution of the target population elements of interest.

The goal in stratification is to minimize the variability within each stratum and maximize the difference between strata. Stratification leads to segmenting the population into smaller, more homogeneous sets of elements. This will increase the sample's statistical efficiency and also provide adequate data for analyzing various sub population.

The total sample and the strata's are as below based on stratified sampling method

- Sample size   -   276 projects
- Project A (SMR projects)   -   42 projects
- Project B (Link upgrade projects)   -   234 projects

3.5 DATA PROCESSING

3.5.1 Data type

The source of data falls under Secondary source and data also collected using brainstorming session.

3.5.2 Data Gathering

The data gathered by brainstorming session, to analyze the individual opinion about the quality issues and what are the problems which are facing by employees (Junior Cad engineers, Cad engineers, Junior Draftsman, Draftsman and Senior Draftsman). By brainstorming sessions able to find out the difficulties of the employees and giving suggestions for the problem.

The other type used in this research is Secondary data was collected from the existing Internal Quality Findings of Project Information Management System of previous records where the mistakes happening and where we can avoid the unwanted errors to increase the quality of every project work to increase the confident level.

3.6 TOOLS FOR ANALYSIS

The statistical tools and test used for this study is

- Simple percentage
- Z – Test Analysis.

SIMPLE PERCENTAGE ANALYSIS

Simple percentage analysis is initially done to edit and tabulate the data collection of secondary data.

Z – Test Analysis

Z-test is any statistical test for which the distribution of the test statistic under the null hypothesis can be approximated by a normal distribution. Because of the central limit theorem, many test statistics are approximately normally distributed for large samples.
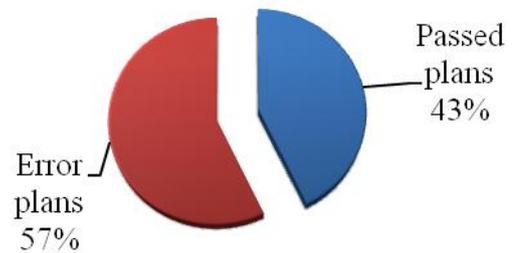
Formula

$$Z = \frac{\bar{x} - \mu}{s/\sqrt{n}}$$

Where $\bar{x}$ is the sample mean, μ is a specified value to be tested, s is the population standard deviation, and n is the size of sample.

DATA ANALYSIS AND INTERPRETATION

4.1 SIMPLE PERCENTAGE

FTP OF PROJECT A (0 – 6 MONTHS)   Table 4.1   Figure 4.1

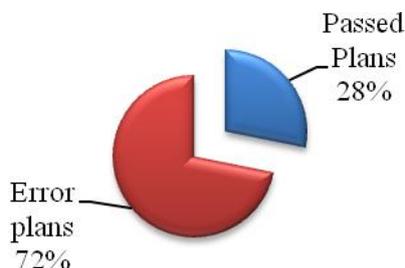| No. of plans	Passed Plans	Error Plans
84	36	48

Inference

The table 4.1 and figure 4.1 shows that out of 84 plans 43% of passed plans and 57% of error plan

FTP OF PROJECT B (0 – 6 MONTHS)   Table 4.2   Figure 4.2

No. of plans	Passed Plans	Error Plans
174	49	125

Inference

The table 4.2 and figure 4.2 shows that out of 174 plans 28% of passed plans and 72% of error plans.

ERRORS IN PROJECT A

Table 4.3

Errors in project A

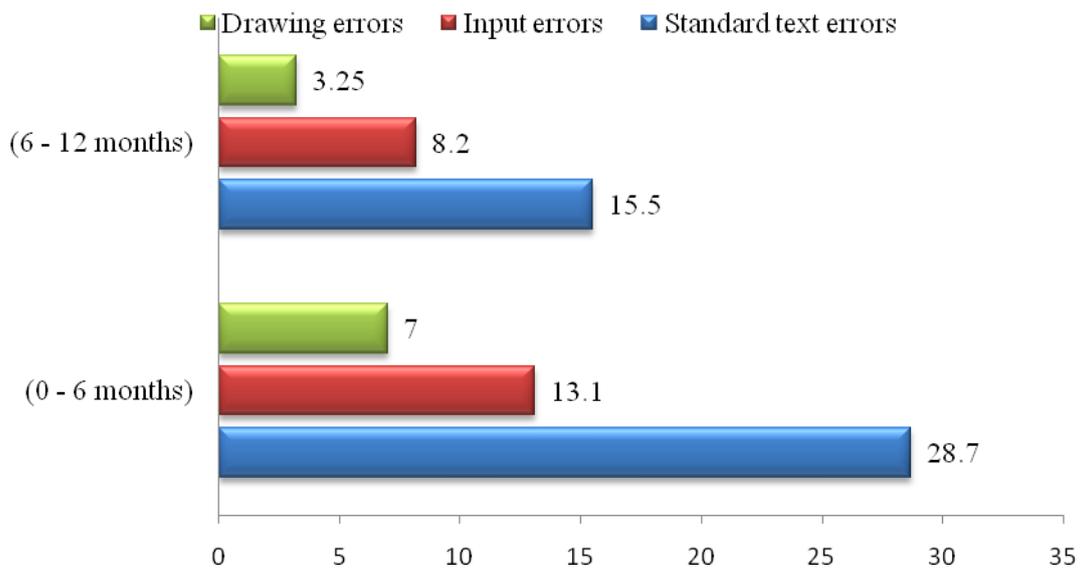| Experience / Errors	Standard text errors	Input errors	Drawing errors
(0 – 6 months)	7.5	4.25	0.35
(6 – 12 months)	5	2.85	0.35

Errors in project A

Figure 4.3

Inference

The table 4.3 and figure 4.3 shows that errors made in the project A with the difference level of both experience levels.

OCTOBER ERRORS IN PROJECT B

Table 4.4

October errors in project B

Experience / Errors	Standard text errors	Input errors	Drawing errors
(0 – 6 months)	28.70	13.10	7.00
(6 – 12 months)	15.50	8.20	3.25

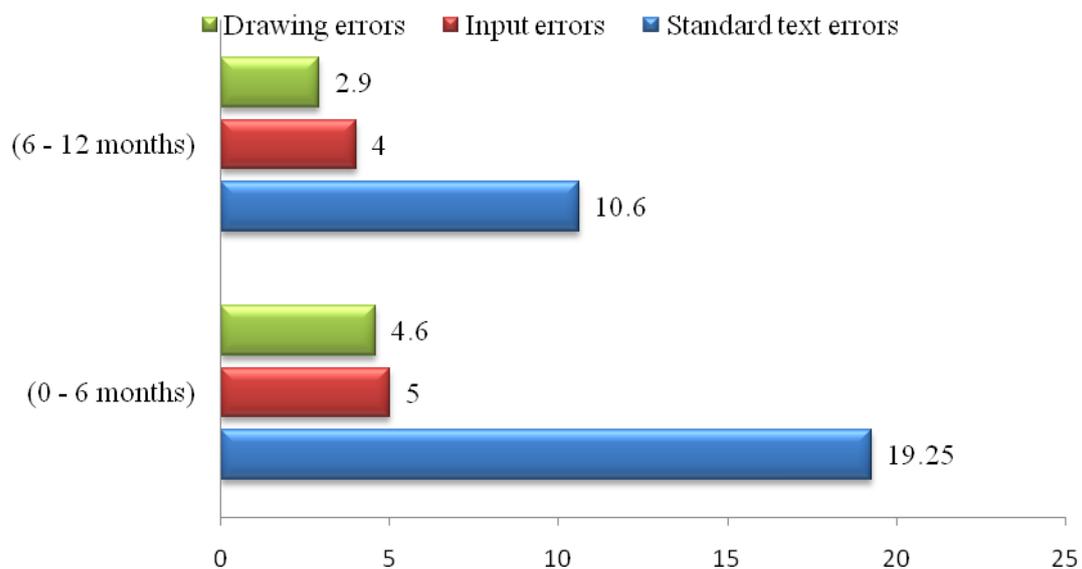### October errors in project B

Figure 4.4

Inference

The table 4.4 and figure 4.4 shows that October month errors made in the project B with the difference level of both experience levels.

NOVEMBER ERRORS IN PROJECT B

Table 4.5

November errors in project B

Experience / Errors	Standard text errors	Input errors	Drawing errors
(0 – 6 months)	19.25	5.00	4.60
(6 – 12 months)	10.60	4.00	2.90

November errors in project B

Figure 4.5

Inference

The table 4.5 and figure 4.5 shows that November month errors made in the project B with the difference level of both experience levels. The graph itself shows that the standard text errors occurred more and not reduced.

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CONCLUSION

5.1 FINDINGS

5.1.1 Simple percentage

- 43% of plans passed in project A (0 – 6 months experience)
- 64% of plans passed in project A (6 – 12 months experience)
- 28% of plans passed in October project B (0 – 6 months experience)
- 47% of plans passed in October project B (6 – 12 months experience)
- 39% of plans passed in November project B (0 – 6 months experience)
- 61% of plans passed in November project B (6 – 12 months experience)

5.1.2 Z – Test analysis

5.2 SUGGESTIONS & RECOMMENDATIONS

BRAINSTROMING

Topic: Reasons for quality drop

(This session for 1 hour with 16 members and 3 team heads)

Opinions of (0 – 6 months experienced) people:

- They didn't know the standards, and unable to find standard file locations easily.

- Not having the knowledge of photo adaption.

- Errors found in Quality Assurance (QA) level is high, which mostly take more time and leads to redo the project.

- They are missing the inputs that what send by the clients.

- Occurrence of repeated mistakes and every time identified from higher level.

Opinions of (6 – 12 months experienced) people:

- The information from the client side is not clear and partial information's only.

- Day to day standards changes.

- Various design check from the client side have their individual view.

- The Technical Check List (TCL) is not used properly, while doing SQC.

- New information's always provided in the back drafting.

Opinions of Team heads:

- Team members are not adopting to different design checks.

- Less knowledge about client requirements as per standards.

5.3 CONCLUSION

Have sample of collections to reduce the repeated errors. Do SQC properly along with Primary Client. Check the inputs from the clients with input checklist, if any queries to be asked make it earlier. Make shortcuts from server for standards to access the place quickly.

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