International Journal of Advanced Technology in Engineering and Science
Vol. No.4, Issue No. 08, August 2016
www.ijates.com

ijates
ISSN 2348 - 7550

# ISSUE & CHALLENGES: SOFTWARE MAINTENANCE

[1]Nitin Panwar, [2]Amit Sharma

[1,2]*Assistant Professor, IIMT Group of Colleges, Greater Noida (India)*

## ABSTRACT

Support assumes an imperative part in the product improvement life cycle. A product undertaking is conveyed inside evaluated time just in the event that every one of the periods of programming improvement procedure are finished inside assessed and principally set up time. Different specialists have made significant apparatuses and systems to accomplish the nature of programming upkeep stage. In any case, and to diminish the difficulties of up keep stage. It has been assessed that there are more than 100 billion lines of code underway on the planet. As much as 80% of it is unstructured, repaired and not all around recorded. Support can calm these issues. This paper depicts the real action and procedure of upkeep stage alongside its key issues.in the meantime, the field requires a future exploration work to upgrade the nature of programming

***Keywords: Software Quality, Software Maintenance, Issues and Challenges in Maintenance Phase.***

## I. INTRODUCTION

Programming Development life cycle has a few stages. The procedure of programming advancement incorporates Requirements stage, Design, Implementation, Testing, and Maintenance. Support is the last phase of the product advancement life cycle. The expression "programming support" is utilized to comprehend the product building moves that make place amid the advancement of programming. Programming upkeep procedure is exceptionally packed procedure and as a rule it contains more than half of the improvement procedure once more. Regularly, the advancement of programming takes 1 to 2 years, while upkeep stage traverses 5 to 10 years. At the point when an organization discharged an effective task to its customer inside altered time, then the real work of the support start. Numerous a period it has been seen that the expense of the support surpasses the improvement expense of the undertaking. Essentially programming upkeep stage stays up with the latest with environment changes, amend the deficiencies and enhance the execution of programming item after conveyance. A typical perception of support stage is that it absolutely incorporates altering flaws. Nonetheless, past examination portrays that the larger part, above 80%, of the support exertion is utilized for non-restorative exercises [1]. Real issues of programming support are in course of action with client significances, cost estimation with some specialized difficulties and staffing and so forth. The primary point of this paper is to highlight the real issues of upkeep stage. Past this Introduction¬ on the foundation points of interest, rest of the paper is sorted out as takes after: Section II displays a brief diagram of support stage process

¬ though different upkeep challenges have been given in Section III. At long last, Conclusion and Future Work¬ are accounted for in Section IV.

## II. MAINTENANCE PROCESS

Programming upkeep is one of the real worries of programming improvement. Great upkeep procedure is extremely crucial to keep up the nature of programming. A few creators have proposed different procedure models for programming support. These models systematize support into a string of related exercises, or stages, and characterize the exhibit in which these stages are to be executed. Essentially there are seven noteworthy stages in upkeep process, which are given as takes after.

### 2.1 Change Management

This is the stage inwhich the client offer for alteration, a client, a developer, or a supervisor is alloted an upkeep classification, priority and a restrictive identifier. The stage additionally incorporates exercises to build up whether to acknowledge or dismiss the solicitation and to appoint it to an arrangement of changes booked for execution Maintaining the Integrity of the Specifications.

### 2.2 Analysis

This stage organize a base arrangement for configuration, execution test, and conveyance. The fundamental point of examination is to finish up the likelihood of the asked for change for course of action and usage of the change. Examination is directed at two levels: plausibility investigation and point by point investigation. Attainability examination perceive substitute arrangements and surveys their effects and expenses, while point by point investigation characterizes the necessities for the adjustment, devises a test approach, and builds up an execution arrangement.

### 2.3 Design

The modification to the framework is really outlined in this stage. This realizes all present framework and documentation of ventures, database and existing programming and yield of the examination stage [8]. It plans to extend a modified sensible and physical configuration for the change and to outline the progressions for the greater part of the classifications of upkeep.

### 2.4 Implementation

This stage incorporates the exercises of coding and unit testing, osmosis of the redid code, coordination and investigation, relapse testing, and hazard. The stage likewise incorporates a test-availability survey to asses' mindfulness for the framework and relapse testing.

### 2.5 Regression/System Testing

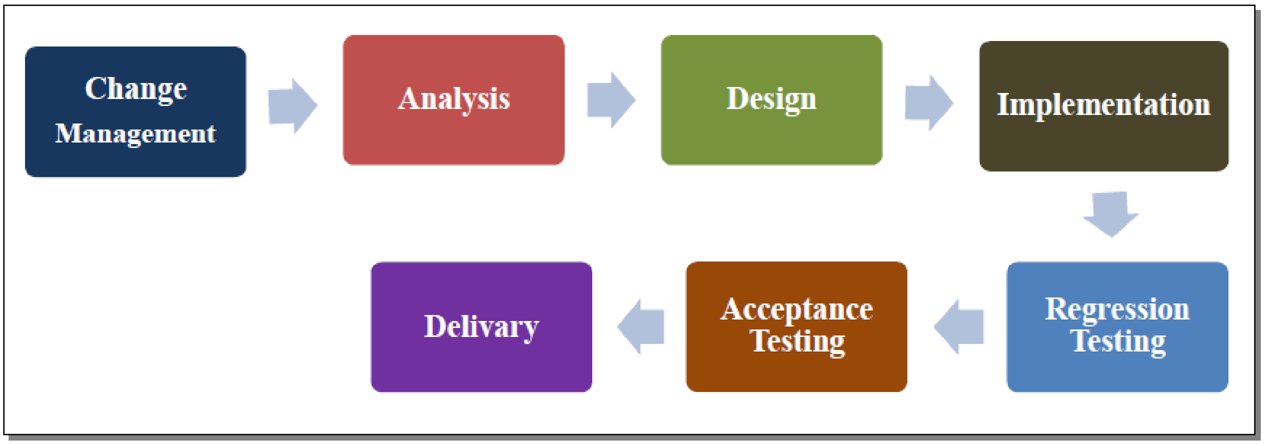
This is the stage in which the complete framework is tried to make certain adjustment to the new necessities in addition to the changes. Moreover this stage incorporates relapse testing to test utilitarian and interface, which validate that no new blames have been included. At long last, this stage is responsible for confirming mindfulness for acknowledgment testing.

### 2.6 Acceptance Testing

This level of testing is anxious with the completely fused framework and includes clients, clients, or an outsider named by the client. Acknowledgment testing contains relapse tests, interoperability tests and utilitarian tests [4].

### 2.7 Delivery

This is the stage in which the modified frameworks is unlimited for both operation and establishment. It incorporates the action of informing the client group, performing establishment training[5]



**Maintenance Change Process**

## III. ISSUES AND CHALLENGES

Most issues that are connected with programming upkeep can be followed to lacks of the product advancement process. There are a few specialized and administrative issues experienced while keeping up programming [2].

### 3.1 Costs

Various exploration concentrates on suggested that product support devours 60% to 80% of expense in entire improvement life cycle; these reviews likewise report that upkeep expenses are essentially because of upgrades, as opposed to corrections[6].

### 3.2 Impact Analysis

One of the most imperative difficulties in programming support is to discover the impacts of a proposed alteration on whatever remains of the framework. Sway investigation is the activity of evaluating the plausible impacts of a change with the arrangement of lessening sudden reactions. The undertaking includes surveying the rightness of an anticipated change and assessing the dangers related with its finishing, in addition to the appraisals of the impacts on properties, vitality and improvement.

### 3.3 Corrective Changes:

One of the real key issues is remedial changes since it is elusive the right place to do the progressions. It can be hard to perceive the code base. In the event that the preparatory configuration is decreased a moment change may demand engineering changes that take a considerable measure of time. On the off chance that there has been a finished workaround of one issue then the following are significantly harder to break. Outline mistakes are hard to repair since it requires a great deal of investment and comprehension of the whole code base and are connected to dangers.

### 3.4 Adaptive Changes

Adaptive changes are regularly difficult because of insufficiency of data about what the product is being adjusted to. The various realities of the new innovation to conform to be hard to grab hold of. Likewise affect investigation and finding interfaces to the new things are troublesome. Issues because of lopsided preparatory outline involve concern.

### 3.5 Program Comprehension

Another key issue is system cognizance which includes that broad measure of time ought to be consumed by upkeep architects to peruse and comprehend the code, the pertinent documentation to have a superior point of view on its rationale, reason and structure to keep up a piece of programming and to improve the nature of software[6].

## IV. CONCLUSION

The paper gave an outline of support stage procedure of programming improvement by covering all the action for the same. Furthermore, Literature uncovers a few issues and difficulties in upkeep stage, which result in inadequately finished a portion of frameworks investigation. These issues experiential in upkeep have been demonstrated a few times to be a noteworthy reason of frameworks disappointment. This paper has endeavored to introduce generous issues and difficulties in upkeep stage. Future work might be to raise clever thoughts/ways to deal with beat these worries alongside solid acceptance results. It is apparent from the previously stated examination that the underlying driver of every test is the cost estimation in this procedure. Joining of most recent Artificial Intelligence (AI) strategies may breaking point such issue up to some degree and appears to give some productive results.

## REFERENCES

[1] Ann-Sofie Jansson. Software Maintenance and Process Improvement by CMMI. Examensarbete 20 p(1650-8319).pp.4-24.

[2] Alkhatib, G. . The maintenance problem of application software: an empirical analysis. Journal of Software Maintenance: Research and practice 1,2 s.pp.83-104.

[3] Herbsleb J., Carleton A., Rozum J., Siegel J., Zubrow D. Benefits of CMM-based software process improvement: Initial results. Technical report, CMU/SEI-94-TR-013, ESC-TR-94-013.

[4] April A., Hayes J. H., Abran A., Dumke R.. Software Mainentance Maturity Model (SMmm): the software maintenance process model. Journal of software maintenance and evolution: research and practise, pp.197-233.

[5] Dubey, S.K, Sharma, A., Rana, A., "Comparison Study and Review on Object-Oriented Metrics", Global Journal of Computer Science &Technology Volume12 Issue 7 Version 1.0, Wed, 04 Apr 12.

[6] Coleman, D., Ash, D., Lowther, B. and Oman, P. Using Metrics to Evaluate Software System Maintainability. IEEE Computer, August, pp.44-49.

[7] Punia, S. K., Kumar, A., Sharma, A., "Evaluation the Quality of Software Design by Call Graph based Metrics", in Global Journal of Computer Science &Technology Volume 14 Issue 2 Version 1.0 Year 2014, pp-60- 64.

[8] Abran A., Moore J.W. Guide to the software body of knowledge (SWEBOK). Ironman version. IEEE Computer Society Press: Los Alamitos CA,pp. 6-1-6-15.

[9] Sharma, A., Dubey, S.k., "Comparison of Software Quality Metrics for Object-Oriented System", in IJCSMS for Vol-12, Issue3, June 2012, pp-12- 24.