

The Role Software Project Scope Verification in Software Development

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ABSTRACT

This research aims to shed light on one of the important factors that play a prominent role in the success of the software project, namely the process of verifying the scope of the software product and its compatibility with the requirements of the end users. This paper has reached important results through the field study and the survey conducted. That the verification of the scope of the project plays an important and influential role in the completion of the software product within the cost and time specified and if there is any defect in this leads to negative results and failure of the software project

Keywords

Software Scope, Scope Verification, Work Breakdown Structure, Product Breakdown Structure.

1. INTRODUCTION

One of the most important factors that play an important role in the success of the software project is the ability of the software project manager to manage the software project by dealing with three important matters (software project scope, the cost, the time) and here must link these three things with the needs of the user, Determine the scope of the software project [3]. One of the most important challenges facing the Project Manager is to define the scope of the project specifically to cover all the requirements of the users well.[3]And [7] agree that the process of determining the scope of the project is considered difficult and critical to manage the scope of the project. In addition, [5] provides a weak point of project management is to understand and define the scope of the project so it is important to have since the beginning of the project, project team a clearly defined scope of the order:

- Minimize changes in the scope of the software project in order to work on the mitigation of scale changes to facilitate the control of the software project scope,
- Minimize potential crawling of the software project scope,
- Need to ensure that users' requirements are met
- Avoid unnecessary re-drafting of the project
- Minimize the possibility of bypassing the software project for time and cost

The important question is how can the project manager define a project scope that meets all of the above requirements? This is done through the verification process and definition of the scope of the project [7] verification of the scope of the project defined as:

“A process involving the formal acceptance of the scope of the project by the stakeholders of the software”

The management of the scope of the project is one of the most important things to be aware of the project manager and have the know-how and knowledge to deal with it because it is critical and play a key role in the success of the project, and must have the owners of the project knowledge and understanding enough to the quality of products that will result. The software project achieves all of the above through the use of project definition and validation processes as they are part of the project scope management. Of the tools and standards commonly used to measure the success of the software project using the triple-entry (the iron / golden triangle) i.e. the implementation of the project within the specified cost and time and performance of the software product within the scope of the specified project [2].

A formula for the Report of Maximum [6] to the software project scope takes fifth place in terms of priority regarding the success factors of the software project. An extreme chaos report connects the company's range to the maximum with the duration of the project and states that the scope of work has been reduced to as close as possible. [1] indicates important of identifies software projects risk factors, that the scope and objective are not clear or misinterpreted the scope of delineation between what is system in and system out of the project. Without a clearly obtained software project scope, implement the software project by issuing an open invitation to infiltrate the scope. Before the measurement is met, the project must be [8].

Often we do not know how "big" the system will be, what jobs are required, what will be required to create these jobs[4] states that an examination is an activity that links the system or a set of systems by eliminating those "existing" behaviors and "external" behaviors. The scale of the program has been gradually improved despite little empirical evidence on the way developers and software designers are identified.

The main problem of this research is to investigate the software project scope factor that effects on software project successes/ failure. Therefore, this research will try to answer this question

RQ) what is the effect of Minimized scope on the software project success / failure?

In order to answer this question, the following hypothesis was developed:

There are statistical differences of ($\alpha \leq .05$) level and the minimized scope, as one dimension of success of software project.

Therefore, the researcher relied on the methodology of the research through the study of library documents, as well as the development of a questionnaire was distributed to 205 managers of software projects in the Jordanian region and a random sample of 20 managers was taken for interviews, Shown below as follows.

2. Data Analysis

Table (1) Result towards Scope factor

No	Problem	Severity degree			Frequency degree			T.Value	Sig
		Mean	Std	Severity	Mean	Std	Severity		
1	Permanent change in project plan, design, documentation and other things	3.7	0.89	high	3.60	1.05	high	17.72*	0.00
2	Excessive team project work can lead to a loss of time to implement the software project	3.6	0.92	high	3.6	1.04	high	15.58*	0.00
3	Team project work may deviate from specific software project commitments and a predefined engagement	3.50	1.03	high	3.44	1.03	high	13.19*	0.00
4	Team project work does not fully see the picture of the software project	3.54	1.02	high	3.47	0.99	high	14.10*	0.00
5	The period in which software project workers are recruited is quickly and unacceptably presented	3.57	0.95	high	3.53	1.03	high	15.58	0.00
6	When the software project value limit is reached, the quality of the software product is negotiated in the framework of the project	3.60	0.98	high	3.57	0.98	high	15.87*	0.00
7	There is a positive / negative impact on software project size	3.56	1.01	high	3.50	0.97	high	14.15*	0.00
8	Some tasks or jobs are neglected or ignored because they are not prioritized	3.68	0.99	high	3.60	0.97	high	18.43*	0.00
	Total mean	3.55	0.62	high	3.53	0.64	high	19.57*	0.00

- significant at level ($\alpha \geq 0.05$)

Interview Question) what is the effect of the project scope on the success of the software product and meeting user requirements?

Table (2): Result of scope of the project

No	Item	means	percentages	Rank
1	The minimized scope of the software project, the more challenging the program and the reality of the target	12.90	65.35%	1
2	The sooner the target is confirmed, the minimized scope of the software project	12.62	63.10%	2
3	The clarity and ambiguity of the system's users demands that the scope of the software project be reduced	12.58	62.98%	3

3. RESULT DISCUSSIONS

Through the results achieved in the field of research and conducted in the field of software design and development in Jordan, we note the importance of the role of work on changing the scope of the software project that it plays an important role in the success of the software product in the end, which leads to the satisfaction of customers who host the software product. And the clarity of vision must be clear as well as the clarity of the requirements of users of the system and all these things Permanent change in project plan, design, documentation, Excessive teamwork can lead to a loss of time to implement the project, Teamwork may deviate from specific project commitments and a predefined engagement, When the project value limit is reached, the quality of the software product is negotiated in the framework of the project

and The sooner the target is confirmed, the minimized scope of the project must be project managers software attention and take them to attention and be a priority in their management of their projects and the following are some recommendations in the mechanism to verify the scope of the project program. As figure no1 and figure no2

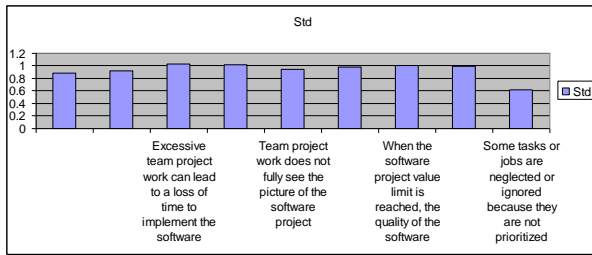


Figure1.

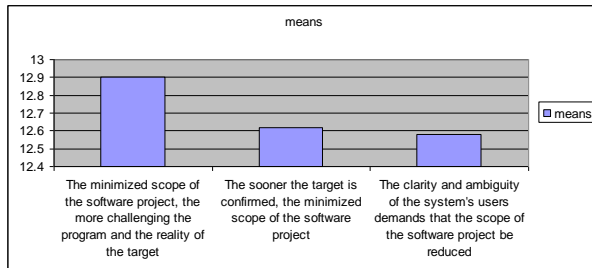


Figure2.

4. PROJECT SCOPE MANAGEMENT

The project scope management focuses on the things that the project needs to focus on and the interest in all the works that lead to the success of the project. The scope of the project is primarily concerned with identifying what falls within the framework of the project and what is outside the framework of the project and the process of control and monitoring so as to ensure that the project progress as planned.

4.1.Scope Planning.

Attention on monitoring and determining the impact of project scope on project success. As such manufacture balances the project in terms of sources of data, processes, procedures ... etc. To this end, the scope of the work should be emphasized with the size of the project, and the importance of the project, since the project needs formal, full and intensive field activities. On the other hand, the management of the routine project scope can be less concerned with the documents and the safe plans. Project scope management plan (PSMP) is a tool that enables the project management team to define the scope of the project and to develop the scope of the project in detail. Hence the developments of work break down structure (WBS) improvement of the structure of the division of the software project into smaller pieces.

4.2. Scope Definition

The success of software projects is the taste of a detailed preparation of a project scope statement that relies on most births, assumptions and constraints documented in the initiative from the scope of the initial project. But in the planning of the scope of the project is more detailed and detailed bees more information available and known about the project at this stage. The needs and aspirations of shareholders are interpreted and analyzed and converted to the requirements of constraints and assumptions analyzed for efficiency, where necessary, adding more assumptions or constitutions. This analysis is carried out by project teams and other stakeholders. Who has a good vision within the scope of the initial project?

4.3. Create Work Breakdown Structure (WBS)

WBS has many advantages such as organization, full project scope and project division into smaller, easier-to-handle parts of work, at each descending WBS level, giving a more detailed definition of the project's work. WBS represents the work that is specified in the newly approved project. Scope statement that helps stakeholders sees deliveries. The primary technique in the creation of WBS is the process of decomposition, WBS can be presented in two formats, two hierarchical format tables and there are different approaches can be used in the development of WBS these include:

Use of guidelines - Regulatory guidelines to be followed in the development of work breakdown structures in the organization.

- Measurement approach - use WBS similar software project in the WBS mode of the new software project.
- Top-down approach - one starts with larger elements of the software project and splits them into their affiliate items.
- Bottom-up approach - one that defines software project-specific project tasks and organizes them into summary activities (aggregated tasks).
- Mapping approach - one starts with a basic idea and then connects ideas related to the basic idea.

It is best to design WBS because there is no clear approach in the development process WBS. As the science of software engineering progressed, developers used another approach to project planning and suggested using product breakdown structure (PBS) or a deliverable-oriented WBS to create WBS to achieve better results. One of the advantages of this approach is to focus on what needs to be done in the project rather than how it works, that is, it focuses on ends rather than means. The outputs of the software project are divided into smaller products until they are similar to what is done in (PBS) and here we must use the creation of which highlights a logical system of software products and parts WBS until a reasonable level of standardized software product.

4.4. Deliverable-Oriented WBS in Scope Verification

The project manager should emphasize the importance of setting the final objectives and results from the start of the project, as the goal-oriented approach is to establish WBS this is the final result of the project results. WBS is a goal-oriented tool to provide a map to define the scope of work for a project and to give a clearer picture of what must be done. In addition, it is considered as a basis for establishing WBS.

Deliverable-oriented WBS facilitates the achievement of results for the effective exchange of information and communication as well as the monitoring of the scope of the project, where the verification of the scope of the software product will focus on whether the advanced domain meets the requirements of the users. The project scope must be checked against user requirements. Here the focus should be on the end users' requirements in the final product, in the process of clarifying and detailing the scope of the project and making sure that it is compatible with the requirements of the users, and here the person can know whether the product that will be completed through the completion of the scope of the project meets the needs and requirements of users. Where the project scope must be the product of the user requirement analysis process. In addition, Deliverable-oriented WBS it should

focus on achieving these results. This is the total scope of the project, which will be produced in accordance with the requirements of the users. In addition, the well-designed WBS system requires all project work, and all project outcomes are clear. In general, such a system of work (scope) makes it easier for project managers to verify the scope against user requirements, because it knows what results are expected in order to meet user requirements. The main purpose of domain verification as mentioned above is to determine the completeness of the scope of the project in terms of user requirements. This would require determining whether all WSP outputs as defined by WBS were actually complete in terms of user specifications. This scrutiny, detailed and cross-reference or reference using WBS-oriented results will assist in detecting misinterpretation of user requirements and furthermore the fall of some inadvertent requirements that may occur in the development of specification documents.

The process of verifying the scope of the software product against the final requirements of the product is very important and must be done with utmost precision and caution to minimize the impact when the product is finally verified within the framework of the software project in order for this project to meet the final requirements of the users. It is important to bear in mind that if domain verification is not carried out against the requirements of the users effectively and well, this may lead to the re-formulation of the project, which will be expensive. This is considered to be one of the reasons for the failure of some software projects.

5. CONCLUSION

As a result, we need to take care when reformulating the scope of the software project. Administrators and analysts of the information systems must ensure that the scope of the software project is controlled. The process of verifying the scope of the project is therefore important and urgent.

It is considered a very important process to ensure that the project team software services are addressed to the client exactly as required as per users' requirements. As well as the software project manager to minimize the changes that are made across the project and this in turn reduces the scope of verification of the project. This research was confirmed by the field study and survey conducted by the importance of verification of the scope of the project because it is one of the factors to ensure the success of the software project.

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