Scope Change Management

By Suhail Iqbal

"This is not included in the scope of my project."

"This change is totally out of scope for my project."

"This might mean change in scope and can affect the whole project plan."

"No Way! This changes everything. I am out of here."

"No Sir! I cannot allow this change. You may consider dumping this project altogether."

These are kind of dialogues we happen to be treated with when we deal with changes in scope of a project. It is pleasant to note here that mostly all Project Managers are generally aware about this term and can effectively make the stakeholders and sponsor of the project aware about the effects it may have on their project. The knowledge which they normally miss is the extent and effect of changes in scope. Farther in project execution these changes are brought in, more serious implications they may have on the health of the whole project. If the stakeholders ever knew how serious it is to bring changes in the scope of a project, they would never think of doing so. Nevertheless, these changes are sometimes necessary and cannot be avoided but most of the scope changes are brought in on the whims of senior management and executive staff without sufficient reason to vouch for these changes.

On the other hand Project Managers must consider that the scope has to be in-line with the strategic objectives of the organization undertaking that project and any future changes required to be brought up in the scope must always follow this basic principle. The moment you feel the scope is not in-line with the organizational objectives, the usefulness of project seizes to exist and such projects should either be immediately closed or their scope re-aligned with the strategic objectives of the organization.

What is Scope?

Before we go any further with this discussion on scope, let us first try to understand what it really is.

Definition: Scope is the way that we describe the boundaries of the project. It defines what the project will deliver and what it will not deliver. For larger projects, it can include the organizations affected, the transactions affected, the data types included, etc.


Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It is primarily concerned with defining and controlling what is or is not included in the project.
In the project context, the term scope may refer to:

- **Product scope**—the features and functions that characterize a product or service.
- **Project scope**—the work that must be done to deliver a product with the specified features and functions.

----- Reference PMBOK 2000 (www.pmi.org)

It is assumed that the reader of this article fairly knows the difference between projects and operations and fully understands that projects are born out of the need for change to be brought up in a running operation or a new setup. In any case, projects are sponsored and owned by the parent organization and are designed to facilitate operations. As soon as a project is completed or abandoned, the procedures, processes, products or the lessons learnt are adopted in operations. This fairly explains that projects are always sponsored or owned and are never completely independently, therefore a project needs to have its goals and objectives within the scope of the goals and objectives of the parent organization.

This process of establishing the goals and objectives of a project requires for the project to have some boundaries to be defined, this very process is known as the scope of a project. The scope of a project has to be clear, concise, unambiguous and accountable. Only when the scope of a project is clearly defined and boundaries set, it will be convenient for the project manager to set goals and objectives for his project. To make sure the scope is being correctly defined, the sponsor must issue to Project Manager a Project Charter formally authorizing the project and defining the business need and product description.

**Who develops Scope Statement?**

If the reader has assumed that scope is defined by the sponsor, then the message has been misunderstood. At the time of initiation of a project, sponsor or parent organization is only responsible for authorizing the project through a project charter to the freshly appointed Project Manager. The accompanying information may include product description, project selection criteria and any available historical information. Initiation of a project is considered complete when project manager is fully in charge, holds a valid project charter and have figured out all the constraints and assumptions. He is now ready to start planning his project scope. Scope planning, definition and verification is the responsibility of the project managers and that is one of the reasons he guards it like the most precious asset in his project. Scope is going to be the basis for his complete project plan and any change in scope brings a lot of wrinkles and worry lines on his fore-head.

Even when the scope is defined, the job does not finish here, project manager is responsible to guard it with his life till the closure of the project. Any changes or amendments in project scope must be brought in personally by the project manager as if he can trigger the changes in his project plan accordingly. He must be sufficiently convinced about the change with supporting reasons or he should fight the change. He adopts the role of an advisor or a consultant for the sponsor and provides a workable solution to any new changes required in the project after issuance of project charter. Classically no changes in scope may be allowed but sometimes they can not be avoided and have to be introduced. Changes can either be due to external factors like sponsor requirements or internal adjustments due to the performance reporting.
When you have completed creating your objectives and scope statements, go back and make sure that they are all in alignment. You should not have any objectives that make references to deliverables that are not defined in scope. Likewise, you don't want to include scope in your project that does not help to achieve the project objectives. If the two areas are not in full agreement, either the scope or the objectives (or both) must be modified to bring everything into alignment.

**Scope Management**

The most likely causes of project failures are either ill-defined projects or lack of scope management. Once the scope has been developed after careful elaboration, the scope has to be managed throughout the life of the project. Planning of either the scope or the whole project is just part of the story, other part is Execution and Control.

Some amount of change in scope is but natural. No project can exist in vacuum; the world around it keeps changing. It is common that shifts in the external business environment results in a valid need to change the project scope. The longer the project, the more likely this becomes. Scope management techniques help you handle this effectively. We must be careful that no unnecessary scope changes creep in as most of them can even be avoided. This insidious variety of change is not due to the business environment, but due to the problems with the original scope definition. By allowing these flaws to exist in the scope definition, you’re setting yourself up for scope changes down the road. Keep an eye out for these problems to make your project as change-free as possible.

Without proper scope definition, you have no chance to manage scope effectively. Evoking the scope change process implies that a change is outside the scope agreed to in the Project Statement. If that scope is fuzzy, or leaves room for interpretation, then the client/sponsor will say that the change is within scope, and the Project Manager will find it difficult to make scope management stick.

**Scope Change Management**

The purpose of scope change management is to protect the viability of the current, approved Project Statement. When the project is defined, certain expectations are set as to what the project is going to produce for an agreed upon cost and within an agreed upon timeframe. Now is the tricky game of expectation management which comes into play. If the client or sponsor changes the deliverables during the project, the estimates for cost, effort and duration may no longer be valid. If the sponsor agrees to include the new work into the project scope, then the Project Manager has the right to expect that the cost, effort and duration may be modified to reflect this additional work. This new cost / effort / duration now become the approved target. The essence and purpose of scope change management, therefore, is to ensure that the initial agreements are met, and that any changes to the expectations are agreed to by the project team and the stakeholders.

Sometimes the Project Manager is placed in such a bad spot that he is tempted to say NO to any more changes specially when he sees that these changes are uneconomical and rather disastrous to the project. A good project manager would never take the burden or responsibility of conflict will the sponsor. Effectively scope management is the art of getting the Sponsor to say ‘NO’. Project Manager should keep the client/sponsor involved in scope definition and any changes in scope and make them realize when a specific change is not feasible. Sponsor must be made to understand that scope is the pillar on which whole project plan is based and we cannot
simply remove the pillar in one sweep and expect the plan to remain viable. Even if complete change in scope is desired, it must be brought in a very well calculated manner over a period of time. If the cost benefit analysis results show that such a major change is not economical, sponsor may be advised to close the existing project prematurely and go for a fresh project with new scope.

In case the change is valid and necessary, it must be managed through a well-defined procedure as to communicate its effect throughout the project. Communication is of utmost importance as any change in project plan must immediately be brought in the knowledge of project team as if they can re-align their efforts to meet new targets. This process ultimately brings the appropriate information to the Project Sponsor for resolution.

The need for scope change can come from

- Customer
- Project Team Members
- The environment
- Product obsolescence
- Technological advances
- Funding changes

**Scope Change Process**

Scope change request can be launched by any of the stakeholders in writing to project manager and he evaluates if it is a genuine request. For indirect stakeholders, such change request can be solicited through surveys or questionnaires. If the request is genuine, project manager determines the impact of change on the project in terms of cost, effort and budget. If the change request does not have any considerable impact on project cost, effort and duration, it can be treated as small and be approved directly by the project manager who will still be responsible to take all these small changes together to the sponsor for approval, when they collectively start having an impact on the project. For all major change requests, a detailed analysis, impact and alternatives concerning each are taken to the Project Sponsor for resolution. The responsibility of approval lies squarely on the shoulders of the sponsor and the resolution of any such request is documented by project manager. This is why sponsor will usually say NO to any scope changes as he would have a clear picture of the impact on the project. If the resolution is agreed upon, the appropriate activities are added to the work plan to ensure the change is implemented. The project budget should also be updated, if necessary. If an approved scope change results in a substantial change to the project, the original Project Statement should be updated. All changes in scope must be communicated to project team members and other appropriate stakeholders.

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A change control system will include the following:

- Recognising that a change is needed
- Reviewing all requested changes
- Ensuring that any change is beneficial
- Evaluating the benefits of the requested change
- Identifying alternatives that would achieve the same result
- Identifying all impacted tasks
- Analysing these impacts and how they affect project performance in terms of time, money and scope
- Approving or rejecting the request
- Communicating the approved changes to all stakeholders
- Changing the baselines for performance monitoring
- Updating the project scope definition
- Implementing the change
- Documenting the change

Scope Creep

As mentioned earlier, there must be a threshold below which changes may be approved by the Project Manager himself, as long as there is no impact to budget or schedule. This is because the sponsor is usually not available to approve every small or large change. Some of the responsibility of approval of changes is therefore taken up by the project manager and large requests are batched for approval. For small changes below this threshold, it does not seem worthwhile to invoke scope change procedures. Scope creep is a term used to define a series of small changes that are made to the project without scope change management procedures used. Where a single such change may seem small with little project impact, a number of such small changes may have a considerable impact on the project. Such small scope changes, none of which otherwise appear to have much project impact on their own, accumulate to have a significant impact on the project. Many projects fail because of scope creep, and the Project Manager needs to be diligent in guarding against it. Even here, the changes should be approved according to the documented procedures. However, if the project is at any risk of missing its dates, the better approach for small changes is to batch them together into one more significant request, and invoke scope change procedures for this larger unit.
Scope Change Approval

It must very clearly be understood that all scope changes have to be approved by the sponsor or his designate. No member of team or end-user can approve a change as they do not have any powers to allocate funds to cover the changes. The end users are the ones who will generally make requests for changes to deliverables but the end user cannot make those decisions for the Sponsor. If the change is important enough to the Sponsor, they will approve the change, along with the appropriate budget and duration changes. It will be the Sponsor making the decision, not the Project Manager, project team or end users.

Ten Signs You may have Scope Problems

1. **Unclear purpose.** Scope of a project cannot be adequately defined if the purpose of the project isn’t clear. If the overall purpose isn’t clearly understood and agreed upon, there is tremendous room for future disagreement on the project scope.

2. **Doesn’t meet objectives.** The scope as defined doesn’t adequately address the objectives of the project, or its expected benefits. If your project deliverables are not fulfilling the objective, it is a recipe for failure or future scope changes.

3. **Gaps in definition.** The gaps in scope definition makes some very important items optional to the project. Try to make sure you have all areas covered in the scope document.

4. **Insufficient detail.** Your project scope may have catered for all necessary ingredients but if have left some items with insufficient details, they can be interpreted wrongly. It pays to be more clear and to be more specific up front.

5. **Hidden assumptions.** Uncovering the hidden assumptions can be difficult, but is possible with persistent, delving questions. Document all known assumptions clearly, including those you’re making yourself. Spelling out constraints and exclusions can help with this too.

6. **Undocumented interfaces.** While planning ahead there is a tendency to overlooks the initial data conversion and the fact that you’ll need to exchange data with the legacy mainframe system. These can represent an enormous amount of effort on a project! Make sure you have every interface defined in the project scope, and all sources required for data conversion.

7. **Items don’t fit.** If something in the scope doesn’t make sense to you, then you should question it. If everything fits together except one module that seems unrelated to the rest of the project, check if it is relevant.

8. **Wrong participants/approvers.** Identify the actual sponsor or his designate. If you keep dealing with wrong people, you have all the chances to bog down later. If the right people get involved a month or two later, you can bet they’ll have something different to say about your project scope.

9. **Silent questions.** Try to get rid of all the silent questions and self mumblings but encouraging sponsor and stakeholders to table their concerns as they occur. If you do not do that, they’ll probably bring them up later when they blossom into scope changes.

10. **Unresolved issues.** Understand your issues well enough to identify those that potentially affect the scope, and then try to address each of these as early as possible. Skipping it now is just asking for a scope change later.
Ten Tips on Effective Scope Change Management

Throughout the five project scope management processes, a number of techniques are used and they can be consulted from PMBOK 2000. What is required to be emphasized here is those tips and techniques that will help define and refine the scope.

1. **Batching Scope Requests.** Batching small requests is a good idea as the sponsor would not always be available for resolution and approvals.

2. **Approval Threshold.** There has to be threshold defined below which it should be the discretion of project manager to approve small scope changes. If the impact on project cost, effort and duration is below this threshold the change be treated as small and approved by the project manager.

3. **Contingency Allowance.** Building contingency allowance in a scope change adversely affects the project as sponsor takes it as granted that there is still an allowance to accommodate some more change.

4. **Scope Log.** Scope log must be maintained to keep track of various small and large scope change requests and their batching.

5. **Freeze.** Scope changes must be frozen as the project proceeds to its closure. Lesser changes must be accommodated towards the end of a project though there will always be a rush of scope changes towards the end. Get an agreement of change freeze date by all stakeholders.

6. **Backlog.** Even if a scope change is not approved, it must be kept on Backlog as they may still be valid requests that can be approved at a later stage in project.

7. **User Acceptance Changes.** Hold user acceptance changes on a backlog and deal with them as enhancement requests after the solution is implemented. If you start accepting scope changes at termination of the project, your project will never end.

8. **Accountability.** Hold all the stakeholders accountable for scope change management and not only the sponsor and the project manager. No team member may be allowed to accept any changes directly from the end-user without following the proper approval procedure.

9. **Change Control Board.** For large projects, a Change Control Board may be formed to facilitate the approval process by the sponsor, especially when a number of organizations are impacted by funding decisions.

10. **Scope Change Plan.** Scope Change Plan must be prepared to clearly define the scope change process for a specific project especially when a Change Control Board is in place.
With a Bachelors in Civil Engineering from Military College of Engineering and Masters in English Literature, Computer Science and Business Administration, Suhail retired from the Pakistan Army after having served twenty years in the Army Corps of Engineers where he gained experience in GIS, PM and TQM while also working on computer systems and networks. During this time, Suhail continued his education and obtained degrees and certifications in Computer Sciences and Project Management. He was then assigned the job of Executive Project Manager amongst the team handling the high profile National Database and Registration Authority.

Since his retirement from Pakistan Army, Suhail has been on the visiting faculty of National University of Science and Technology, Fatima Jinnah Women University, Hamdard University and Al-Khair University. He is currently undergoing a Master's Degree in Business Administration from Allama Iqbal Open University. Suhail is a member of several prestigious international professional organizations, amongst them IEEE, BCS, ACM and ASPRS etc. He also possesses a number of technical certifications such as MCT, MCP, MCSE.

Suhail is a most dedicated PMI member having initiated the efforts to establish the Islamabad Chapter. His experience with Project Management at NADRA and in the Pakistan Army has convinced him of the importance of this subject. He has been the pioneer in establishing PMI Pakistan Islamabad Chapter and is the sponsor and current President of the chapter.

Suhail is currently a candidate for PMP as well.