NATIONAL INFORMATION TECHNOLOGY AUTHORITY - UGANDA

IT Project Management Methodology

Project Scope Management Support Guide

Version 0.3

National Information Technology Authority Uganda (NITA)
Palm Courts, Plot 7A
Rotary Avene (Lugogo Bypass)
P.O. Box 33151, Kampala—Uganda
Office: +256 417 801 049
Fax: +256 417 801 050
Email: info@nita.go.ug
Website: www.nita.go.ug

Version	Date	Author	Change Description
0.1	23rd Mar, 2013	Gerald Kisongoch, PMP	Draft development
0.2	30th May, 2013	Gerald Kisongoch, PMP, PMI-RMP	TF comments
0.3	4th June, 2013	Abdul Nsubuga, PMP.	General document restructuring

Table of Contents

1 INTRODUCTION 4

1.1 When should Scope Management start? 4

1.2 Project requirements collection 5

1.3 Scope Management support documents 6

2 DEFINE PROJECT SCOPE 7

3 WORK BREAKDOWN STRUCTURE 8

3.1 Organizing the WBS 9

3.2 Design Principles when Constructing Work Breakdown Structures 9

3.3 WBS Dictionary 10

3.4 Scope Baseline 11

4 MONITORING AND CONTROLLING SCOPE 11

4.1 Scope verification 11

4.2 Control scope 11

1 Introduction

1.1 Scope Management Support Guide Overview

1.0.1 Project scope management ensures that all the work required, and only the work required to complete the project, is included in the project. As a Project Manager it is your responsibility to ensure effective scope management throughout the life of your project. By applying a well-planned and structured approach to scope management you can ensure this.

1.10.2 This guide provides guidance on the processes of managing scope all the way through to controlling scope changes. All relevant stakeholders should be consulted in order to come up with comprehensive product / services specifications (functionalities) and project requirements, which later form a scope statement of the project.

1.10.3 Scope change management process should be defined and agreed upon in advance. A change request should be raised, analyzed / evaluated, approved before being effected.

1.2 When should Scope Management start? At Initiation Stage

1.2.1 Project scope management is handled throughout the project life cycle; from initiation to closure. However, the high level scope definition in the project charter at **initiation stage** reflects the intentions of the initiators of the project.

1.2.2 On receiving an approved project charter, a project manager and his / her planning team should study the high level scope and redefine the product / service and project scope in details and the outcome should

form the scope statement through engaging stakeholders listed in the project charter and other SMEs. A WBS should then be developed.

1.3 Scope Requirements collection at Planning Stage

1.3.1 The initial source of scope (product/services or project) requirements is the project objectives specified in the project Charter. Secondly, engagement with stakeholders (including the Project Owner) identified in the project charter to come up with a comprehensive list of scope requirements.

1.3.2 The following tools and techniques could also be deployed to collect scope requirements from stakeholders;

1. Interviews
2. Focus group discussions
3. Facilitated workshops
4. Group creativity techniques
5. Group decision making techniques
6. Questionnaire and surveys
7. Observations
8. Prototypes
9. Review of previous similar projects documentation

1.3.3 At the end of the scope requirements definition process, you should have;

1. Scope Statement, its associated WBS and WBS dictionary.
2. A scope change management process which documents how change requests will be raised, analyzed, documented and managed throughout the project life cycle. The requirements should include, but not limited to;

a. How requirements activities will be planned, tracked, and reported
b. How changes to the project product, service or result requirements will be initiated, how impacts will be analyzed, tracked and reported.
c. Requirements prioritization process
d. Product metrics that will be used and rationale for using them
e. Requirements attributes that will be captured on the traceability matrix

3. Requirements Traceability Matrix which is a table that should be used to link requirements to their origin and traces them throughout the project lifecycle. This should provide a means to track requirements throughout the project lifecycle. The process includes, but is not limited to:
    a. Requirements to business needs, opportunities, goals and objectives;
    b. Requirements to project objectives;
    c. Requirements to project scope/WBS deliverables
    d. Requirements to product design;
    e. Requirements to product development;

1.4 Scope Management support documents

No.	Document	Objective
1	Requirements Management Plan	Documents how requirements will be analyzed, documented and managed throughout the project
2	Requirements	To link stakeholders' requirements / expectations to the

	Traceability Matrix	product or project outcome throughout the project lifecycle.
3	Requirements Documentation	To describe project / product business requirements for the project

2 How to Define a Project Scope

2.1 Project Scoping Process

2.1 This is an important process where a detailed description of the scope (project and product requirements) is outlined. A detailed project scope statement is a critical project success factor. The scope statement builds upon the major deliverables, assumptions, and constraints that should be documented during project initiation.

2.2 The project team could use the following techniques among other to define a project scope:

a. Expert judgment
b. Product analysis; for projects that have a product as a deliverable as opposed to a service or result, product analysis can be an effective tool.
c. Alternatives identification; identifying alternatives is a technique used to generate different approaches to execute and perform the work of the project.
d. Facilitated workshops; this can help develop and fine tune requirements in one sitting.

2.3 The project scope statement will be the main output of this process and should contain, but not limited to;

1. Product scope description;

2. Product acceptance criteria
3. Project deliverables
4. Project exclusions
5. Project constraints
6. Project assumptions

3 Project Scoping Tools and Techniques

3.1 Work Breakdown Structure (WBS)

3.1.1 This is the process of subdividing project deliverables and project work into smaller, more manageable components. It is a hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables. The Work Breakdown Structure (WBS) organizes and defines the total scope of the project and represents the work specified in the approved project scope statement.

3.1.2 The project / product scope should be decomposed up to the lowest level referred to as the work package where the cost and activity durations for work can be reliably estimated and managed.

3.1.3 Decomposition is a 5-step process:

1. Identify all the major project / product deliverables. The project manager should engage the project team as a group to identify all the major deliverables from the project scope statement.
2. Organize the WBS (refer to 3.2 below)
3. Define the WBS components. Here the team should decompose the major deliverables defined in step 1 above into lower level components.

4. Assign identification codes. This could be done by attaching a number to each of the WBS components. If a MS Project is used, this will be done automatically.
5. Verify the WBS. The team should validate the WBS for correctness and completeness. The project manager should challenge the team with questions such as "are all the components clear?" Are all components complete? Is each component absolutely necessary? Does the decomposition sufficiently describe the work which needs to be done? Is there any critical component we may have missed out? ETC.

3.1.4 Organizing the WBS. The WBS could be organized in any of the following ways:

1. **Major Deliverables and subprojects:** here the major deliverables of the project or program are used as the first level of decomposition.
2. **Project phases:** using this technique, each phase of the project would be listed in the first level of decomposition, with the deliverables of each phase listed in the next level.
3. **Combination approach:** this is a combination of the organizational methods, for example, you might have subprojects listed on the first level, with the major deliverables of each listed on the 2nd level.

3.2 Guiding principles for Developing a Work Breakdown Structures

3.2.1 When a WBS there are couple of guiding principles the planning team need to know to keep them on track and these will enhance the

scoping of the project / product, these include the following among others:

1. **The 100% Rule:** The WBS should define the total scope of the project / product. If it doesn't do this then the plans one creates from the WBS will by inference have gaps and missing components. Hence a candidate for change requests during project execution, which may result into project delays, budget overrun and missed quality.
2. **Mutual Exclusivity:** there should be no overlap between any two elements in a WBS. If there are, then one run the risk of duplicating work in the project execution.
3. **Include Deliverables, Not Actions**: It is important to focus on deliverables and not actions one will perform.
4. **Use Common Sense:** Don't go into too much detail (e.g. an activity to be done in a hour duration) What you're looking for is enough detail so you can plan, manage and control the project.

3.3 WBS Dictionary

3.3.1 While developing a WBS, one should also develop a WBD Dictionary. A WBS dictionary provides detailed descriptions of the components in the WBS, including work packages and control accounts. This is a very important supportive document of the WBS. It contains but is not limited to information on;

1) Code of account identifier
2) Description of work
3) Responsible organization
4) List of schedule milestones
5) Associated schedule activities
6) Resources required

7) Cost estimates
8) Acceptance criteria
9) Technical references
10) Contract information.

3.4 Scope Baseline

3.4.1 This is a component of the Project Management Plan which is composed of

a. Project scope statement
b. WBS
c. WBS dictionary

4 Monitoring and controlling scope

4.1 Scope verification

4.1.1 This is the stage in project management lifecycle where the Project Manager actively receives, reviews and accepts or rejects project deliverables while project is in execution phase. When project execution starts, the Project Manager will ensure that only the agreed and signed off scope is produced. He or she will during scope verification formally accept project deliverables including reviewing deliverables with the customer or sponsor to ensure that they are completed satisfactorily. Formal acceptance of deliverables by the customer or sponsor is a requirement during this stage. Scope verification is done by inspection.

4.2 Control scope

4.2.1 During this process, the status of project and product scope is monitored in relation to the scope baseline defined during planning. Any changes to scope are managed during this process and effort is made to minimize scope creep. Any proposed changes to scope must follow the

integrated change control procedures outlined in the change management plan.

4.2.2 The technique used during this process is called variance analysis. Under this technique, actual project performance is measured against the scope baseline and any variations noted and actioned through the change control procedures. Normally the outcome of such actions lead to preventive or corrective actions if there is foreseen or already occurred scope creep.