Project Scope Management

PROJECT MANAGEMENT FOR DEVELOPMENT ORGANIZATIONS

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A methodology to manage development projects for international humanitarian assistance and relief organizations

PROJECT SCOPE MANAGEMENT

Scope is the description of the boundaries of the project. It defines what the project will deliver and what it will not deliver. Scope is the view all stakeholders have from the project; it is a definition of the limits of the project. 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. Project scope management's primary concern is with defining and controlling what is and is not included in the project.

One of the leading causes for project failures is poor management of the project scope, either because the project manager did not spend enough time defining the work, there was not an agreement on the scope by stakeholders, or there was a lack of scope management which leads to adding work not authorized or budgeted to the project, this is known as scope creep. Scope creep, or the uncontrolled changes in a project's scope, is the tendency of a project to include more tasks than originally specified, which often leads to higher than planned project costs and an extension of the project end date.

The purpose of scope change management is to protect the viability of the approved Project Contract (or agreement) and the approved Project Logical Framework (Logframe). In other words, the Project Contract defines the overall scope of the project, and the Logframe which establish a causal link between inputs, processes, outputs, outcomes and objectives of the project.

It is not possible to assume there will be no changes during the life of the project. For example, changes may come from the beneficiaries who want additional deliverables, then the initial estimates for budget, and schedule may no longer be valid. If the donor agrees to include the new work into the project scope, the project manager has the right to expect that the current budget and deadline will be modified (usually increased) to reflect this additional work. This new estimated cost, effort and duration now become the approved target.

All changes to the project scope must be approved by management and the donor; this is one of the principal requirements for scope management.

This is not to say the objective of scope management is to avoid any changes to the initial agreement; development projects, due to their

nature are initiated mostly on general assumptions. It is expected that as the project makes progress, additional information will lead to new insights that require the project to change its approach and its plans. The purpose of scope management is to establish a process that will allow the incorporation of changes by ensuring the changes contribute to the ultimate goal of the project, changes are agreed by stakeholders and approved by management and the donor.

Scope management consists of a series of tasks and steps designed to help the project manager manage the project deliverables, the steps are:

- Defining the Scope
- Assigning Scope Work
- Verifying the Scope
- Adapting the Scope

Inputs	Process	Outputs
• Project Contract • Logical Framework • Historical Information • Beneficiary Information	• Plan - Define project scope, boundaries, assumptions, constraints and criteria for success • Do -Assigning work to people • Check -Verifying work accomplished • Adapt - Updating the scope from authorized changes	• Scope Statement • Work Breakdown Structure • Scope change Control Plan

Inputs: Inputs for the project scope management include the following documents or sources of information:

- The project contract or agreement between the organization and the donor, which include the general purpose and ultimate goal of the projects as well as restrictions imposed by the donor
- The Project Logframe that describe the project's inputs, outputs, outcomes and objectives of the project.
- Historical information from similar projects and their lessons learned.
- Expert advice from subject matter experts on a specific technical area of the project
- Information from project beneficiaries

Outputs: The project team will use the above information to develop three important documents for the project:

- the Project Scope Statement,
- the Work Breakdown Structure or WBS,
- and the Scope Change Control Plan

DEFINING PROJECT SCOPE

Defining the project scope is identifying all the work that the project will accomplish in order to achieve its final goal. The work includes the activities identified in the Logframe and the activities the project team has identified that will be necessarily to support the project, these includes activities such as team capacity building, stakeholder management, meetings and project presentations and all significant activities that will consume project resources.

Project Scope Statement

The Project **Scope Statement** is used to develop and confirm a common understanding of the project scope among key project stakeholders. The scope statement should include the project justification, a brief description of the project outputs and its intended benefits, a brief summary of the project major constraints, assumptions and dependencies with other projects or external initiatives and a statement of what constitutes project success. This document is used as a communications tool with all project stakeholders to ensure all have a common perception of what the projects is and what it is not, it is also used to communicate any approved changes made to the project.

- The project justification describes the need that the project will satisfy or the problem it will address. For example, the increase of economic income of a target population. It also describes the communities or groups of beneficiaries that will benefit from the project outcomes and the locations were the project will work.
- The brief description also summarizes the tangible outputs of the project such as the number of beneficiaries that received a loan.
- Project constrains include any significant limitations either imposed by the donor, the beneficiaries or local conditions. For example the beneficiaries may impose the project doesn't include work during harvesting season, or that the donor requires the project to be completed by a certain date.

- Project assumptions include a list of the conditions that are expected to exist for the project to be a success; conditions that are accepted as true without proof or demonstration, such as the labor contribution of the beneficiaries to complete an activity in the project.
- Project dependencies are either internal or external factors on which the project is dependent, such as another partner organization that will deliver services or goods that will be used by the project, for example the road reparation work a local municipality needs to complete for the project to have good access to the community.
- Project success is defined by the stakeholders, specially the donor and the beneficiaries. Success is not only meeting and completing the project activities on time, under budget and in the expected quality that is acceptable to the donor and stakeholders, but how the project outputs produced the desired outcomes that contribute to the well being of the beneficiaries. Success is ultimately defined by the beneficiary so it is good practice to ask and document what the beneficiary expects the project.

The Project Scope Statement is the most important tool the project has to frame the project, it is used to evaluate every change request and helps communicate the limits of the project to a wider audience. It is also used as a project information document that puts in concise terms what the project will do.

Work Breakdown Structure

Once the Scope Statement has been completed, the next step to further define the scope is to break it down to its most manageable pieces. The purpose is to develop a complete list of all the tasks that are needed by the project, this list will be used to determine the resources requirements such as the time, skills and cost estimates. It is also used as a baseline for performance measurement and project monitoring, and supports the clear communication of work responsibilities. The output is the Work Breakdown Structure or WBS.

The Project **Work Breakdown Structure** is an outcome oriented analysis of the work involved in the project and defines the total scope of the project. It is a foundation document in project management because it provides the basis for planning and managing the project schedule, budget and requests for any changes or deviations from plans. The WBS is developed in the form of an inverted tree structure,

organized by objectives; it looks like an organizational chart which helps visualize the whole project and all its main components.

A Work Breakdown Structure (WBS) is a project management technique for defining and organizing the total scope of a project, using a hierarchical tree structure. The first two levels of the WBS define a set of planned outcomes that collectively and exclusively represent 100% of the project scope. At each subsequent level, the children of a parent node collectively and exclusively represent 100% of the scope of their parent node. A well-designed WBS describes planned outcomes instead of planned actions. Outcomes are the desired ends of the project, and can be predicted accurately; actions comprise the project plan and may be difficult to predict accurately. A well-designed WBS makes it easy to assign any project activity to one and only one terminal element of the WBS.

One of the most important WBS design principles is called the 100% Rule. The Practice Standard for Work Breakdown Structures (Second Edition), published by the Project Management Institute (PMI) defines the 100% Rule as follows: "The 100% Rule...states that the WBS includes 100% of the work defined by the project scope and captures all deliverables – internal, external, interim – in terms of the work to be completed, including project management."

The WBS is a hierarchy of all project work, it is a vertical breakdown, moving from the project goal to the tasks or subtasks. This decomposition process allows a good level of confidence in estimating the final project schedule and budget. It shows all the work that needs to be accomplished. At the top level is the project ultimate goal, the second level contains the project objectives, the third level has the project activities and depending on the size and complexity of each activity the WBS may contain a fourth level that describe the tasks.

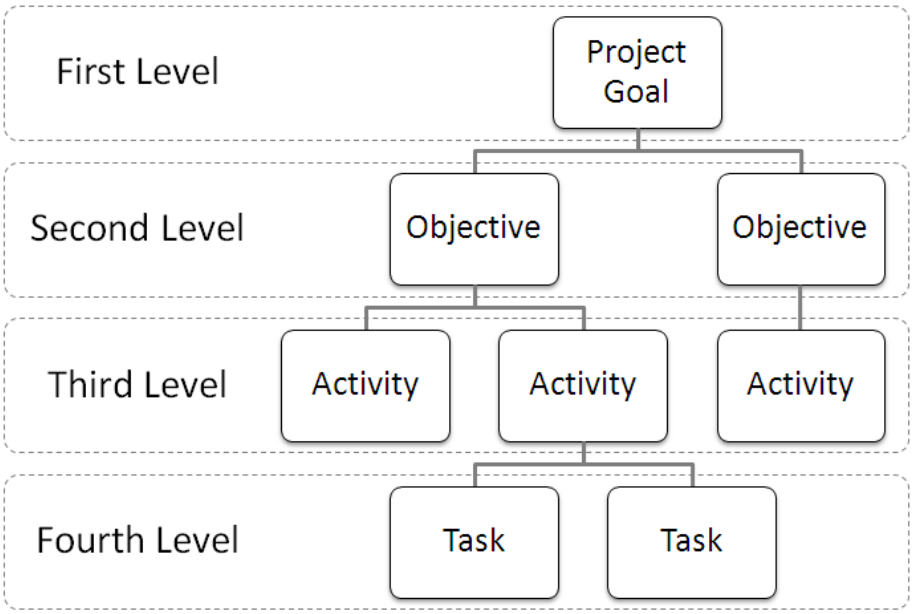

Figure 7.1 Project Work Breakdown Structure

The size and complexity of a project will determine the number of levels a WBS needs. For some projects additional levels may be included to represent intermediate objectives. Other projects may choose to structure the WBS by the geographical locations the project will work or group the objectives by the communities participating in the project.

The lowest level of the WBS represents a work package. A work package is a deliverable, a basic rule to determine the lowest level of the WBS is to use the 80/8 rule, which specifies that a work package should not be longer that 80 hours or smaller than 8 hours.

The WBS needs to be constructed with the aid of the project team or people in the organization who participated in similar projects. It uses information from the project design done at the Project Initiation Phase and part of the donor RFP response, specifically the Logframe matrix which contains the description of project goals, outcomes, objectives, outputs and activities. In addition to the logframe the project will need to identify all other activities related to the project which may include project team training, participation in seminars, presentations, administrative activities, setting up the project office infrastructure, purchasing project office equipment such as computers and a development of a project information system; in summary the WBS include all work the project will do, work that will consume resources of people, time and funds.

The Work Breakdown Structure (WBS) is an important planning tool used to define a project in terms of its outputs while providing a method for breaking these deliverables into meaningful work units. The WBS allows the project manager to clearly describe the hierarchical nature of the work to be performed and establishes a foundation for other elements of the project planning documents including the project's resource plan, budget, implementation plan, and project schedule.

With the WBS, the project manager will be able describe the outcomes of a project in a way that is clear to the project team, while at the same time capturing the order and sequence of the work necessary to produce those outputs. The WBS provides a means for carefully detailing the outputs of the project and facilitates the identification of specific the work elements, and groupings required to deliver each element. Additionally, once it is complete, the WBS becomes an essential building block and reference point for other project plan components. Another component of the WBS is the numbering system used to track each element with a unique number useful for development of the project schedule.

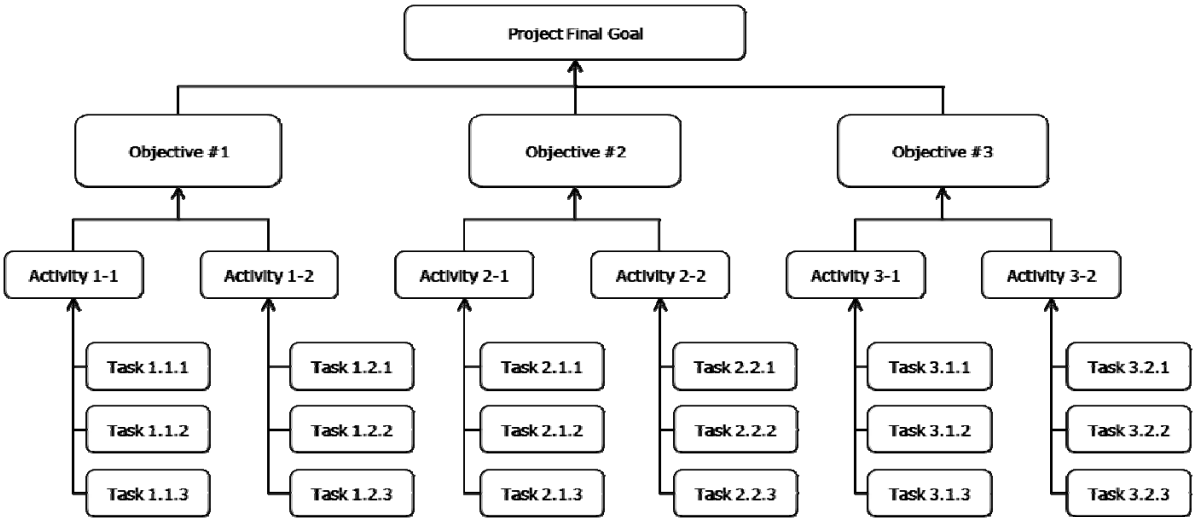

Figure 7.2 Project Work Breakdown Structure Numbering System

Project Scope Change Control Plan

An important component of scope management is the scope change control plan, which specifies the process to: submit any changes to the projects scope, identifies the people with responsibility to approve changes and the role of the manager to assess the implications on the schedule and budget from the requested changes.

The purpose of this plan is to minimize scope creep which is the natural tendency of all projects for increasing the project scope without compensating the other project constraints. Components of this plan include:

- Project Change request form. This is a form that is used to record any request for changes to the project scope coming from any project stakeholders, specially the donor or the beneficiaries. It records the justification for the change, the person requesting the change, date and the justification of why the change is needed.
- Scope Change analysis. The analysis is done to determine the impact to the project by the change, in some cases the change may be a new activity in substitution of another activity with no impact to the schedule or budget, in other cases is the addition of activities that will increase the project budget and lengthen the schedule. No change should be included in the scope statement or WBS unless an analysis is made and an approval is obtained.
- Scope change approval. The project will determine the key stakeholders for approving any changes; these include the Donor, for changes that will affect the budget or schedule, the organization management for changes that affect the strategies, methodologies or approaches the organization has identified for the project; and the beneficiaries for changes that may affect the initial agreements or expectations of what they need from the project. All changes are to be approved before any work is started.
- Update project scope statement and projects plans. Once the change has been approved the project must update any relevant project plans, including the schedule, budget, the scope statement, the logframe and the WBS. Failure to update this information may lead in the project not recognizing the change or making the necessary actions to implement the change.
- Communicate changes to scope. Once all plans have been updated the project manger needs to communicate to the project team, stakeholders, and management the changes and its implications to the project. The scope of the communication will depend on the significance of the change.

All the above documents will need to be revised as the project makes progress and new information or insights are gained that leads to changes to the original assumptions the project was originally designed.

An efficient Scope Change Control plan should have a balance between flexibility and control. If the process is too difficult, either valuable

changes will be lost or the team will ignore the rules. If the process is too easy, then many changes may be applied with insufficient thought given to their merits and consequences.

ASSIGNING SCOPE WORK

Once all the work needed to accomplish the project has been identified the next step in the scope management process is to assign the work to the people responsible for it. Inputs to this step include the WBS, the project schedule that identifies when each activity or task should occur, and the Resource Requirements Matrix (RRM), which identifies the skills required to accomplish the activities, this matrix us used to select the project team.

Elements of this step include the actions to assign scope work to the project team via the Work Assignment Sheet, and assign work to consultants via the Scope of Work document; part of this process includes collect information on the work completed, get and acceptance of the work by the beneficiaries.

Work Assignment Sheet

All activities or tasks identified in the WBS need to be assigned to a person responsible for its deliverable. Scope of work is assigned based on the different cycles of phases of the project and follows the project schedule. A project tam member may get on a monthly or quarterly basis a list of work that needs to be accomplished during that period, these may include analysis of information, meetings with stakeholders, training session or developing a report.

The assignment sheet should include the date of the assignment, the expected completion date, the beneficiaries involved and the locations of the activities and any other resources needed to accomplish the activity or task. Depending of the skills and authority of the team member the assignment could be at the objective level or at the task level, but should include a brief description of the instructions or approaches selected to carry out the activity. For example a technical professional may be assigned to accomplish an objective using gender based approaches, while a field worker may be assigned a task to collect baseline data on a specific community using detailed instructions and forms.

Scope of Work (SOW)

Scope if work is a similar process, but in this case the work is assigned to a contractor or consultant hired to deliver a specific work for the project, The Scope of Work or SOW usually follows a Terms of Reference (TOR) that helped define the objectives and select a consultant to do a specific work that required skills not present in the team or organization. For more on this subject see Chapter 12 Resource Management).

At the completion of the work the consultant should present a document that informs on the progress made and the results and outputs generated by the SOW.

VERIFYING THE WORK

This step refers to the actions required to ensure that the work delivered meets the specifications of the project and it is used as a guarantee that the project is delivering the promised quality in its work.

At the end of the assignment the team members or consultants, report the activities accomplished, any deviations from the plan, changes or modifications to the activity and any information that will help update the project plan.

Scope Verification

Scope verification deals with obtaining the stakeholders' formal acceptance of the completed project work scope and the goods or services delivered. Verifying the project scope includes reviewing deliverables to ensure that each is completed satisfactorily. If the project is terminated early, the project scope verification process should establish and document the level and extent of completion. Scope verification differs from quality control in that scope verification is primarily concerned with acceptance of the deliverables, while quality management which is primarily concerned with meeting the quality requirements specified for the deliverables. Quality management is generally performed before scope verification, but these two processes can be performed in parallel.

Verification comes from three sources, the project manager or project person assigned with this responsibility verifies and checks that the work planned has been delivered according to specifications; the project beneficiaries who are the ultimate judges of the quality of services or goods received by the project; and the project donor who in the process of project evaluation or project audit verifies once again the project deliverables.

Scope verification includes activities such as inspections, measuring, examining, and verifying to determine whether work and deliverables meet requirements and product acceptance criteria. Scope verification is also called reviews, product reviews, audits, and walkthroughs. In some development sectors, such as engineering or health, these different terms have narrow and specific meanings. For example verification may include the inspection that a community health center received the equipment in the quantities and quality approved and agreed by the beneficiaries.

Work Acceptance

Once the scope verification confirms that the work meets the requirements of the project, the next step is to obtain acceptance of the work; work acceptance is needed in cases when the beneficiary needs to give testament that the work or activities delivered by the project were achieved as agreed, and that they met the needs of the beneficiaries within the scope of the project.

This step documents the completed deliverables that have been accepted and those completed deliverables that have not been accepted; along with the reasons for non-acceptance. The document includes supporting documentation received from the beneficiaries and acknowledging acceptance of the project's deliverables.

Acceptance may be as simple as a signature on the Work Assignment Sheet or a formal letter from the community leadership that certifies the community has received a good or a service from the project. Beneficiaries are the ultimate judges of the quality of the work and acceptance should be sought as a means to validate the project has completed an activity.

The project manager should seek formal approval from the appropriate stakeholders. For small projects, one signature from the beneficiary

representative is probably sufficient to show approval of the work delivered. For larger projects, the organization or the donor should identify who should have formal approval of the project deliverables. A formal approval should be kept as a record of the project final evaluation or audit.

Change Requests

Out from the delivery of work and the verification of work, requests to change the scope may occur based on new insights gained on the project, changes in the original conditions or assumptions of the project or discovery of new opportunities. Changes are not necessarily made to correct a situation but could also include changes in approaches or strategies that will impact the project scope. Changes can originate from the project team, beneficiaries, organization's management, or the donor. In any case the project manager should use the Project Scope Change Control Plan defined to manage the process or change request, obtain approval and incorporate and communicate the changes.

The project manager first step is to quantify the impact of the request on the project constraints, any change has a potential to impact the project time, budget and quality, so before any recommendation is done to approve the change the project should determine the effect it will have on the project. It is not unusual that the expected benefits the change may claim may be too expensive for the project to incorporate or increase the length of the project beyond the original date agreed with the donor.

The assessment study to quantify the impact of the change request involves looking at the project plan, assessing how the change request impacts the plan, the implications to the project team, the organization, the changes in the initial risk assessment, a list of alternative courses of action that the person in charge of approving the change can consider.

The analysis of impact should be send to the corresponding people with authorization to approve changes. Each project should have identified the people and the limits they have to approve a change. Even if the request for change comes from the donor, it is the responsibility of the project manager to asses the impact of the project. For example the donor may request a change in one of the locations the project works, but with no budget increase, the analysis

may show that impact on changing location will affect the project budget.

The Project Manager should pay a great deal of attention to managing scope. Allowing unauthorized changes to the scope usually means added costs, greater risks and longer duration. Many projects fail due to poor scope management. Very often it is a large number of small scope changes that do the damage, rather than the big, obvious ones. The successful Project Manager knows that rigorous scope control is essential to deliver projects on time and on budget.

The decision whether to accept or reject a change would be based on a number of rules. The fundamental logic to recommend the acceptance of a change should be:

- The change unavoidable, external factors uncontrollable by the project such as legal, social or economical factors require a change in the scope.
- The change increase the overall benefit to the community, taking into account any impact on the costs, benefits, timescales and risks
- The Project Team is able to make such a change, the skills and knowledge are in the team to successfully implement the change

The Scope Change Plan defines various responsibilities and authority levels so that routine changes can be dealt with efficiently but significant changes receive due management attention. Where a proposed change affects the scope of the project it should be seen as a decision requiring approval from the donor of the project. Where scope is not affected, it may be agreed that the Project Manager has the power to approve the change within certain authority limits.

ADAPTING THE SCOPE

Once changes to the project scope have been approved, the project needs to update all project plans and communicate these changes to the stakeholders and inform the way the changes will impact the project.

Adapting the scope is a step whose sole function is to incorporate changes that will provide improvements to the project and increase the chances for its success.

No changes to the project scope should be incorporated that do not add value and that have not been approved.

Incorporate approved Scope Changes to baseline

Approved change requests affecting the project scope can require modifications to the WBS and WBS dictionary, the project scope statement, and the project scope management plan. These approved change requests can cause updates to components of the project management plan including the schedule, budget, risk and quality plans.

An integral part of project change is the documentation which protects the project team from any audits or evaluations that will question the validity of a change. The project should keep all approved changes as part of the projects information system and properly communicate all affected parties of the change. The project should maintain a project Log of all request for changes including approve and not approved changes with their justifications. This log will become handy during the project audit or evaluations at the end of a major phase or at the end of the project.

Update and Communicate Approved Scope Statement and WBS

All project plans affected by the change needs to be updated and the change communicated to the stakeholders, failure to do this may result in an oversight to incorporate the changes in the day to day work of the project which may lead to an increase in the project risk, beneficiary dissatisfaction or donor formal complains to the organization.

For every change the change request form should incorporate a list of the project plans that need to be updated and communicate, the most common plans that need to be updated are: The Scope Statement and WBS, the project schedule and the project budget.

Communication of the scope changes would be directed to the people, or parties that will be most affected by the change, the communication can occur right after the approval of a change when the change has significant implications to the project or communicated in the regular communication cycles the project has established to keep all project stakeholders updated.

It is responsibility of the project manager responsibility to communicate scope change status and resolution to project team members and other appropriate stakeholders through the methods established in the Communication Plan, including the project Status Report.

Register Lessons Learned

At the end of each project phase or at the completion of a significant milestone the project needs to capture the lessons learned in managing the project scope. This include the causes or reason why something did not went according to plans, the causes that contributed to success, and the actions the project took to deal with an issue or challenge.

The idea behind is to capture the lessons right after an action and not wait until the end of the project; the project should incorporate a practice that builds a discipline and a routine to capture lessons continuously and creates spaces for the project team to reflect on the lessons and incorporate them in the next phases or cycles of the project.

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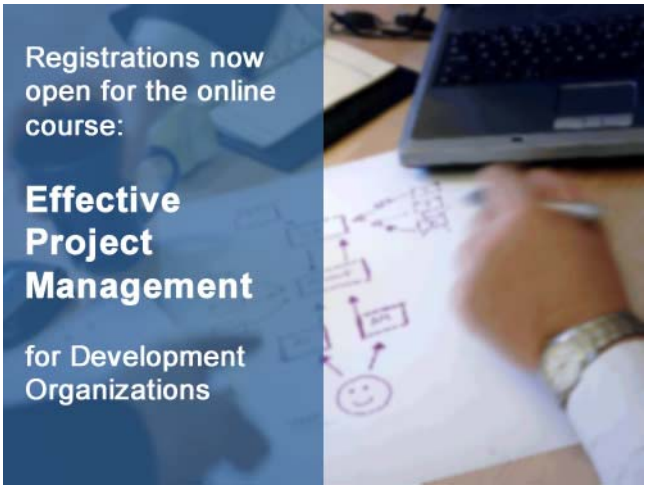

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