Defining The Hierarchy Of Project Objectives

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Abstract

Clear and concise objectives *early* in the life cycle are critical to project success because they help ensure that project stakeholders will develop a:

- Common understanding of what the project is attempting to do, and
- Commitment to the *same* objectives.

When this does not happen, the result is confusion and conflict as stakeholders gradually discover differences in their interpretations of the project's objectives.

It is important to get early agreement from all stakeholders that the project objectives are the ones that they want and that the enterprise needs. A tool for achieving this is the Hierarchy of Project Objectives, which we describe in the following topics:

- Introduction
- Levels of Objectives
- Why-How Framework
- Strategic Alternatives
- Horizontal Logic
- Summary
- Conclusions
- References

Introduction

The methodology was developed as a means of clarifying project objectives, both for planning purposes and for post-project evaluation. The hierarchy of objectives serves a number of purposes; namely it can be used to:

1. Clarify the need or demand for the project.
2. Clarify the requirements for meeting the need.
3. Communicate the project objectives to everyone involved in the project.
4. Promote appropriate project design by encouraging feedback from the people who are involved in, or affected by, the project.
5. Enable the post-project evaluators to measure the project's success in attaining its objectives. The hierarchy provides guidance to the evaluators and helps direct their inquiry.
6. Demonstrate that the project has different levels of objectives, and clarify how the objectives relate to one another in the hierarchy.
7. Visibly link a project to the enterprise's business strategy.

Studies that focus on project success and failure support what many experts believe. Namely that the most important issue in project management is for the project manager to get project staff, beneficiaries, and other stakeholders to develop a common understanding, agreement, and commitment to a project's objectives.

A shared perception about objectives, agreement that the project is worth doing, and the commitment to make it happen does not happen automatically. It takes effort and involves a considerable amount of communication.

Levels of Objectives

The hierarchy of objectives is a tool that helps analyze and communicate a project's objectives. The hierarchy of objectives organizes the objectives of a project into different levels of a hierarchy or tree. Different organizations use different names for the various levels and the types of objectives at each level. Otherwise, there is a great deal of similarity in approach.

Our approach organizes objectives into three broad levels: *policy, strategic, and operational.* In general, these levels correspond to the top, middle, and working levels of management in an organization.

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***Levels of Objectives**, continued*

Broad, general objectives (some people call them *goals)* that policymakers deal with, such as *improve economic growth*, fall into the top level and are called *policy objectives.*

Objectives that are narrower in scope, such as *increase literacy for teenage girls*, fall into the middle level and are called *strategic objectives.* Objectives that relate directly to a project's deliverables fall into the operational level and are called *project objectives.* Objectives that relate to project inputs—what is needed to make a project function—are also considered operational and are called *input objectives.* Operational objectives are usually the concern of working management, including project managers.

Figure 1

Figure 1 shows an example of a hierarchy of objectives for an electric power plant. The hierarchy has four types of objectives: *policy, strategic, project, and input.* They are grouped into three levels: *policy, strategic, and operational*.

Policy Objective. The overall policy objective is to *increase industrial production*. We then ask: *How* is this to be accomplished? That brings us to the next lower objective, the strategic objective.

Strategic Objective: One way the country is trying to increase industrial production, the policy objective, is by producing 50 KW of electric power. This is the strategic objective for the project. Presumably there are other strategic objectives and additional projects that support the overall policy objective.

Again we ask: *How* is the 50 KW of electric power to be obtained? The answer takes us to the next lower level of objective in the hierarchy: the project objective.

Project Objective: The project objective in most cases is the same as the deliverable for the project. In this case, it is to *build a new power plant*. Asking: "*How* is the power plant to be built?" again takes us to the next lower level of objective, the input objective.

Input Objective: The input objectives relate primarily to the resources and conditions that are required to accomplish the project. For the power project, they consist of a $10 million contract, land for the power plant, and necessary labor and expertise.

You may have noticed as we went down the hierarchy of objectives that each time we asked *how* a particular objective was to be accomplished, we went to the next lower level objective for our answer.

Why How Framework

For example, if we ask: How is the 50 KW of power to be produced? The answer is at the next lower level and is the project objective: Build a new power plant. This illustrates an interesting and useful aspect of the hierarchy of objectives.

Each level answers the *how question* for the level that is immediately *above* it in the hierarchy. But the hierarchy also has another interesting characteristic that we haven't mentioned yet, although you may have noticed it. This relates to what happens when you go *up* the hierarchy.

For example, *Why build the power plant?*
(the project objective.)
Answer: *To produce 50 KW of power*
(the strategic objective.)

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***Why How Framework**, continued*

This feature of the hierarchy of objectives is called the *Why-How framework*. The Why-How Framework is based on the Means-End Chain developed by March and Simon in 1958. When you ask *why* something is to be done you are asking about *ends*—what is the purpose or objective of the activity. When you ask *how* something is to be done, you are asking about the *means*—the *strategy* that will be used.

▲ Why ▲ Ends ▲ Objectives Go Up ▲

▼ How ▼ Means ▼ Strategy Go Down ▼

Figure 2

As shown above in Figure 2, you answer *Why* questions by looking up the hierarchy and *How* questions by going down the hierarchy. This is true for every level in the hierarchy. The next level up answers why the objective is being pursued. The next level down answers the question of how the objective is to be accomplished.

This is very useful when developing a Why-How framework or hierarchy of objectives, because it means that you can start anywhere in the hierarchy—at the top, bottom, or somewhere in the middle. You simply work your way up and down from your starting place until you have developed a complete hierarchy. Let's look at another example of how this works.

You may be familiar with the age-old story about the stonemasons who were working on a cathedral. The first one when asked what he was doing said he was hitting stones with a hammer. The second one who was also hitting stones answered he was making square stones.

The third stonecutter said he was building a wall, while the fourth said he was building a cathedral. The fifth one answered he was giving praise to the greater glory of God.

Who was correct? The answer is that all of them were correct.

Each was giving an objective that related to the project, but which was at a different level in the Why-How Framework.

In fact, each mason answered the question of *why* the previous mason was pursuing his objective, as shown in Figure 3, below.

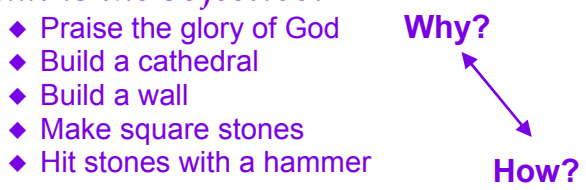

Figure 3

The first mason was at the lowest level of the hierarchy—hitting stones with a hammer. Why was he doing this? To make square stones? Why make square stones? To build a wall. Why build a wall? To build a cathedral? Why build a cathedral? To give glory to God.

This illustrates the point that we mentioned earlier: at any point in a hierarchy, you can go to an objective and ask *why* are you going to do it and work up the hierarchy. You can also go to any objective in the hierarchy and work your way down the hierarchy.

As you go down the hierarchy you answer the question of *how* each objective will be achieved. This way you can determine the *means or strategy* that will be used to reach an *end* or objective.

For example, *How* will we achieve the objective of building a cathedral? By building a wall. How will you build a wall? By making square stones.

Each time you move up a level in the hierarchy, you move to a broader *objective* that puts *why* into a broader perspective and gives you a better understanding of the *end* that is being sought. Each time you move down a level, you are dealing with *strategy*—the *how* or the *means* by which a particular objective will be achieved.

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***Why How Framework**, continued*

As you move lower, the objectives become increasingly narrower and detailed.

Answering all the Why-How questions to the appropriate level of detail is a very important part of the planning process and is a primary task of the project manager during the early phases of the life cycle.

It provides a structure for policymakers to use to determine how a project fits into an overall policy framework and for judging whether any disconnects or flaws in logic exist from one level of the Why-How framework to another.

The project manager can also use it during Implementation to help motivate project staff and to build commitment. For example, it is much easier to be excited about a project and motivated to *hit stones with a hammer* if you believe you are contributing to the greater glory of God compared to just hitting stones or making square stones.

A sophisticated way to think about the Why-How Framework is as a series of causative linkages that transform inputs into outputs and results as you move from the bottom of the hierarchy to the top. Let's take one more example to see how this occurs.

Imagine that we want to improve the income of farmers in our country. That is our policy objective. The benefit that we want, and impact we expect to achieve, is to increase farmer income by $200 per year.

Strategic Alternatives

How can we achieve this policy objective? As conscientious project managers we should look at a number of options and decide on an approach that meets our preliminary feasibility criteria. In this case, let's assume we've decided that increasing rice production by 50% appears to be the most promising alternative. This becomes our *strategic objective.*

We now need to think *operationally*. Again, we drop one level in the hierarchy and again ask ourselves: *How are we going to obtain our strategic objective of increasing rice production?* The answer will give us our *project objective.*

We want to have realistic, achievable project objectives. This requires us to weigh various options before deciding on our project objective. For example, we might try to introduce new farming practices or we might try to bring additional land into production; see Figure 5, below.

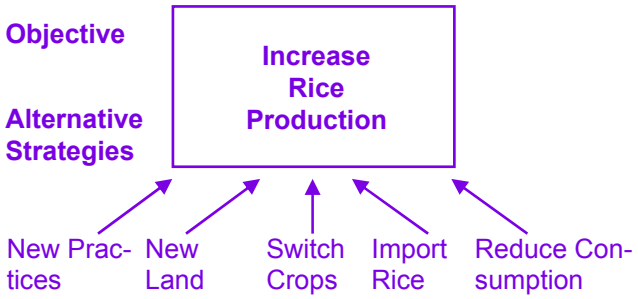

Figure 5

In this case, let's say that after a rigorous preparation/ analysis/feasibility process we decide that the introduction of a variety of new farming practices seems to offer the best solution. So we select that alternative as our project objective.

We add new *farming practices* to the hierarchy. That gives us the answer to *how* we will achieve the next higher-level objective of increasing rice production.

But how will we introduce the new farming practices? This obviously will take some thought. Again, we will have to consider our options and decide on an approach.

How will we get farmers to decide to use new seeds and cultivation techniques? How will we introduce the new seed and other practices? We will give loans to buy the seeds and conduct extension programs.

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***Strategic Alternatives**, continued*

Eventually, we will get to the lowest level in the hierarchy, where we are dealing with basic inputs—our *input objectives*. For the rice project, these are people or human resources, money, seeds, fertilizer, pesticides, and knowledge.

The hierarchy of objectives framework has a vertical logic, from specific input objectives at the bottom to broad policy objectives at the top. With the rice illustration, we started at the very top of the hierarchy and worked our way down. This is a logical approach, but in reality we could have started anywhere in the hierarchy.

Why	*Policy Objectives* Double farmer income to $200
How	*Strategy* Increase rice production 50%
Why	*Strategic Objectives* Increase rice production 50%
How	*Strategy* Use new seeds and fertilizer
Why	*Project Objectives* Use new seeds and fertilizer
How	*Strategy* Loans and extension work with farmers
Why	*Input Objectives* Loans and extension work with farmers
How	*Strategy* Bank Loan of $10 million

Figure 6

For example, we could have started with the project objective. Then we could have worked our way up the hierarchy by repeatedly asking ourselves W*hy?* This would have given us the strategic and policy objectives. We also could have started by working our way down the hierarchy, as we did, by asking, *How?* Then we could have gone back and worked our way up to the strategic and policy objectives.

The order in which the hierarchy is traversed is not really so important, although most managers will usually find it easier to start at the top and work down.

Most important is that the Why-How framework should be carefully considered and that the logic not be flawed. Note that the strategy at one level becomes the objective at the next lower level.

Horizontal Logic

So far, we have talked about the vertical (up and down) logic of the hierarchy of objectives. We established a Why-How or Ends-Means relationship between levels of the hierarchy. There is also a Horizontal, or Left-Right) logic that we have not yet introduced.

The purpose of this logic is to specify what *outcomes* the project is to achieve at each level in the hierarchy, and to make clear what *assumptions* we are making at each level in the hierarchy.

Assumptions can be thought of as *if-then* relationships. For example, *if* the new farming practices are effective, then the yields on rice should increase enough to cover the added cost of the inputs and also provide an increased profit to the farmer.

The horizontal logic is made explicit by adding two columns to the hierarchy of objectives: **Results Measures and Assumptions.** Items in the *measures column* make it easier to evaluate project progress during implementation and impact after implementation and during operations. Items in the *assumptions column* help people to understand the conditions, the *if-then* relationships, that must exist for the project to achieve the higher-level objectives.

The horizontal logic for the example of the rice project is shown in Figure 7, on the next page. By making explicit their thinking about measures and assumptions, the project managers are giving reviewers, including potential beneficiaries, a better opportunity to understand their thinking and to help them avoid mistakes.

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***Horizontal Logic**, continued*

Why-How Chain	Results Measures	Assumptions
Policy Objective (end-outputs) Double farmer income to $200	• per capita income	Price of rice does not fall w/increased production
Strategy (means-inputs) Increase rice production 50%	• # tons grown • tons/hectare	
Strategic Objective Increase rice production 50%		Proper use of fertilizer will increase yields
Strategy Use new seeds & fertilizer	• # of tons distributed	
Project Objective Use new seeds & fertilizer		Loans will lead to better practices
Strategy Loans & extension work	• # of loans • value of loans	
Input Objective Loans & extension work		
Strategy Bank loan of $10 million	• level of effort/ expenditure	

Figure 7

Example: planners are assuming that the price of rice will not fall as supply increases. How realistic is this assumption? If there is considerable reason to doubt it, then the proposed project must be considered highly risky. Perhaps a less risky alternative should be found? Or perhaps the objective of increasing farmer income by $200 is too optimistic if the assumption is faulty?

Maybe a $100 increase is more realistic? Related activities and conditions must also be taken into account. For example, will storage and milling capacity have to be increased to accommodate larger yields; and will rice marketing need to be expanded to prevent a supply glut?

The benefit of the hierarchy of objectives is that it makes this type of discussion possible. As long as the hierarchy is not complicated with too many levels and columns, it provides a basis for project manager, sponsor, and other stakeholders to discuss and shape a realistic project.

Perhaps that is why the technique, which was originally developed in the 1970s, is again becoming popular, as planners seek better ways of involving beneficiaries and developing practical solutions that meet real needs.

Summary

As we have just seen, the hierarchy of objectives results in a logical framework that involves both a vertical and horizontal logic. The vertical logic answers *Why-How* questions, also referred to as Ends/Means or Objective/Strategy. The horizontal logic deals with measures of results and assumptions, or *if-then* relationships.

Planning can begin at any vertical level of the hierarchy and then proceed in an up-down direction until all levels of the hierarchy are complete. We called these levels: *policy, strategic, and operational*, and we've associated them *with policy, strategic, and operational objectives*.

We have also said that the interests of different levels of management within an organization typically correlate with levels in the hierarchy: top, middle, and operational. Top management is interested in policy and policy objectives.

Middle management wants to know about operational objectives. While the hierarchy of objectives is primarily a tool for use by project managers during the pre-implementation phases of the life cycle, sponsors and post-project evaluators can also use it.

Conclusions

The project managers use the logical framework during the analysis process to help perfect their plan for the project. It is especially useful as a way of getting advice and feedback from other experts, from management, and from beneficiaries and other stakeholders.

It is an excellent tool for developing a shared understanding of, and commitment to, the project. It is a vehicle for taking stakeholder views into account when developing the project plan.

The logical framework can be developed collaboratively with stakeholders in workshop settings or reviewed in workshops or by other means.

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***Conclusions**, continued*

Project reviewers use the hierarchy of objectives to evaluate the project to see if inputs are likely to lead to the desired higher-level objectives.

The project manager uses the logic to understand a project's measures of success. This is important, because you can use them during implementation to assess the project's progress.

You also use the hierarchy to sensitize teams to key objectives and measures of success. This way, it helps motivate staff and avoids unintentionally affecting project measures negatively.

The project manager can also use the logical framework to understand the assumptions customers made when planning the project. This is important information because project managers must know if and when significant changes in project assumptions occur so they can appropriately modify project implementation plans.

Significant changes in assumptions are much easier to detect if customers have clearly stated them in a hierarchy of objectives and results. Otherwise, the project manager must infer the assumptions from the Project Analysis Report, which increases the possibility of error.

The post-project evaluators also benefit from having a hierarchy of objectives. The job of most project evaluators is to determine how well a project met its objectives, and to identify what other effects it may have had.

This is much easier to do, and often much less contentious, if the project planners develop a hierarchy of objectives that lists the measures of results that they think should be used. Otherwise, the post-project evaluators have no choice but to develop their own measures. This often leads to disputes, because the planners, and others, may claim the evaluators are measuring the wrong objectives.

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This paper is based on material included in the World Bank Institute's Instructors Resource Kit on *Managing the Implementation of Development Projects* (Washington D.C., World Bank, 2001).

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About Our Author

Robert Youker is an independent Project Management trainer and consultant with more than thirty-five years of experience. He is retired from the World Bank where he developed and presented six week project management training courses for managers of major projects in many different countries. He has written and presented more than a dozen papers at Project Management Institute and International Project Management Association (Europe).

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