

vague goal of “improving billing and record-keeping operations” in a large insurance firm. The IT department interpreted that goal to develop a project that provided a complex solution requiring multiple interactive screens, costly user retraining, and the generation of voluminous reports. In fact, the organization simply wanted a streamlined link between the billing function and end-of-month reporting. Because the problem was articulated vaguely, the IT department created an expensive system that was unnecessarily complex. In reality, the optimal project solution begins with creating a reasonable and complete problem statement to establish the nature of the project, its purpose, and a set of concrete goals.

A complete understanding of the problem must be generated so that the projects themselves will be successful in serving the purpose for which they were created. A key part of the problem statement is the analysis of multiple alternatives. Locking in “one best” approach for solving a problem too early in a project can lead to failure downstream.

Also, to be effective, problem statements should be kept simple and based on clearly understood needs in search of solutions. For example, a clear project goal such as “improve the processing speed of the computer by 20%” is much better than a goal that charges a project team to “significantly increase the performance of the computer.” A set of simple goals provides a reference point that the team can revisit when the inevitable problems occur over the course of project development. On the other hand, project goals that are vague or excessively optimistic—such as “improve corporate profitability while maintaining quality and efficiency of resources”—may sound good, but do not provide clear reference points for problem solving.

The Statement of Work

The impetus to begin a project is often the result of a statement of work. The **Statement of Work (SOW)** is a detailed narrative description of the work required for a project.⁶ Useful SOWs contain information on the key objectives for the project, a brief and general description of the work to be performed, expected project outcomes, and any funding or schedule constraints. Typically, in the case of the latter, it is difficult to present schedule requirements past some “gross” level that may only include starting and ending dates, as well as any major milestones.

An SOW can be highly descriptive, as in the case of a U.S. Department of Defense Request for Proposal (RFP) for a new Army field communication device that is “no greater than 15 inches long by 15 inches wide by 9 inches deep, can weigh no more than 12 pounds, has a transmitting and receiving range of 60 miles, must remain functional after being fully immersed in water for 30 minutes, and can sustain damage from being dropped at heights up to 25 feet.” On the other hand, an SOW can be relatively general, merely specifying final performance requirements without detailed specifics. The purpose of the SOW is to give the project organization and the project manager specific guidance on both work requirements as well as the types of end results sought once the project is completed.

A Statement of Work is an important component of conceptual development, as it identifies a need within the firm or an opportunity from an outside source, for example, the commercial market. Some elements in an effective SOW include:

1. **Introduction and background**—a brief history of the organization or introduction to the root needs that identified the need to initiate a project. Part of the introduction should be a problem statement.
2. **Technical description of the project**—an analysis, in clear terms, of the envisioned technical capabilities of the project or technical challenges the project is intended to resolve.
3. **Time line and milestones**—a discussion of the anticipated time frame to completion and key project deliverables (outcomes).

A useful Statement of Work should clearly detail the expectations of the project client, the problems the project is intended to correct or address, and the work required to complete the project.

For example, the U.S. Federal Geographic Data Committee recently developed an SOW for purchasing commercial services from government or private industry as an independent contractor. The Statement of Work contained the following components:

1. **Background**—describes the project in very general terms; discusses why the project is being pursued and how it relates to other projects. It includes, as necessary, a summary of statutory authority or applicable regulations and copies of background materials in addenda or references.