

STANDARD OPERATING PROCEDURE

Freedom through Conformity: The Value of Standard Operating Procedures

People often pursue careers as project managers because they value the diversity in work assignments and the freedom that comes with making decisions that determine project outcomes. Project managers are often independent and creative thinkers who vigorously oppose efforts to limit their actions because they are concerned they will lose the flexibility they need to manage their projects. Not surprisingly, project managers often resist the preparation or implementation of standard operating procedures (SOPs), asserting that they are too busy managing projects to write SOPs or that each project is unique, thereby making SOPs useless. For these captains of their own destinies, “standard” often translates into “limiting,” “conforming,” “devoid of creativity,” or worse, “submissive” or “subordinate.”

Environmental service projects, compliance programs, and management systems all rely on the proper and consistent implementation of procedures, some of which can be highly technical and detailed. Although proper execution of procedures is fundamental to project success, few organizations provide adequate attention to the development of SOPs. Certainly, each project is unique; however, objective examination will reveal that each project a project manager undertakes will share a common set of procedures. For example, almost all projects involve the use of spreadsheets, the preparation of reports, and recordkeeping. Any project manager who has made a decision based on a wrong spreadsheet value, been embarrassed by an improper reference in a report, or has had trouble locating an important record will recognize, perhaps reluctantly, that these problems could have been prevented with documented

procedures in the hands of project team members who understood how to use them. In these cases, SOPs would not have limited project management flexibility; rather, they would have contributed to effective, successful project management. Thus, project managers have the motivation for insisting that SOPs be developed and implemented for routine project tasks.

SO WHAT IS AN SOP?

The U.S. Environmental Protection Agency (EPA) defines an SOP as “a set of written instructions that document a routine or repetitive activity” and “an integral part of a successful quality system” (*Guidance for Preparing Standard Operating Procedures*, EPA/600/B-07/001, April 2007). Further, EPA recognizes that SOP may not always be the appropriate term and offers “protocols,” “instructions,” and “worksheets” as

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alternate terms. Other tools such as “flowcharts” and “process maps” may also function as SOPs for certain activities, provided they clearly guide the user through the execution of tasks. Thus, it is clear that the conventional narrative approach to SOP preparation is not the only option and, in fact, may not be the most useful option.

In *The Practical Guide to People-Friendly Documentation* (ASQ Quality Press, 2001), Adrienne Escoc describes eight formats for SOPs and offers guidance for format selection (see sidebar “Typical Formats for SOPs”). The narrative, modular, flowchart, and process map formats, all of which are adaptable for intranet or Internet use, are most suitable for use by the scientists and engineers who perform environmental projects. All of these formats can be used in conjunction with checklists, logs, or datasheets to document completion



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Typical Formats for SOPs

Format Name	Description
Narrative	Presents operational sequence for the procedure in paragraph form, often using numbered sections.
Play Script	Identifies responsible individuals for a procedure and in a side-by-side format, identifies the actions associated with each responsibility.
Modular	Presents the operational sequence for the procedure into parts or modules. Within each module, additional information is provided to further guide the user. A modular format readily supports “if-then” decision points within each module, making the logic clear to the user.
Flowchart	The operational sequence for the procedure is presented in visual form using standard geometric shapes. The flowchart can easily be structured to show how work flows from one individual to another.
Process Map	An expanded version of the flowchart that can be used to illustrate decision points and the relationships between different groups that may perform tasks on a procedure. Graphically illustrates how one’s work affects that of another.
Video	Video clips are used to document the operational sequence for the procedure.
Audio	Operational sequences are recorded as spoken words.
Web	Any of the formats can be delivered via an intranet or the Internet.

Source: Adapted from Escoe, A. *The Practical Guide to People-Friendly Documentation*; ASQ Quality Press: Milwaukee, WI, 2001.

of a sequence of events and to record any problems associated with implementation. The selection of an SOP format should be governed by the nature of the work, the aptitude of the individuals performing the work, and organizational culture.

Once an SOP format (or group of formats) is agreed upon, the next task is deciding on content. This can often become a significant challenge, particularly when an organization insists that each SOP contain the same elements. Consider the difficulty in trying to describe both a sequence of sample collection operations and a sequence of data review operations with the same SOP headings. Although these tasks may be performed by similarly trained individuals, these are very different activities that require different approaches and emphases. Thus, an organization will often benefit by grouping SOPs into categories (e.g., “Administrative” and “Technical” with subdivisions as necessary), identifying formats that are acceptable for each category, and then specifying the content that is appropriate for each format within a category. In short, an organization needs to develop an SOP for developing SOPs. Organizations that take this vital step will find that SOPs are easier to prepare, manage, and use moving forward.

PUTTING AN SOP TO THE TEST

SOPs for different types of operations do not need to look alike, although it is appropriate for them to share common elements like identification number, revision number,

effective dates, approvals, and references. More important, the format and content of the SOPs should support the scope of the operation with proper consideration of the aptitude of the individuals who will perform the work and how those individuals interact with one another and the system. The objective in deciding SOP format and content should always be to ensure that the operation is consistently and properly performed.

Confusing SOPs, SOPs that are issued without adequate training, and outdated SOPs have no value. Once an SOP is developed, it must be validated through testing to ensure that it produces the desired outcome. Personnel must receive training that is both appropriate to the scope of the validated SOP and the skills of the user. Finally, the SOP must be reviewed at regular intervals, and if necessary, revised based on those reviews, changes in regulatory requirements, or the feedback from users.

For many of us, preparing SOPs is not project work; however, well-written and properly executed SOPs help move us closer to our goal of successful project completion. Consider the routine operations within your organization or on your projects and if SOPs do not exist for them, write them or work with others to have them written. If SOPs do exist, make sure they are usable and insist that your team members follow them. Take these simple steps, and you will find that SOPs are not shackles that bind, but keys that provide the freedom you need to focus on the more challenging and interesting aspects of your projects. **em**