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# The DP Professional's Guide to Writing Effective Technical Communications

J. VAN DUYN

*EDP Management Consultant*
*Adjunct Faculty Member*
*California State University, Sacramento*

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# Preface

The primary objective of this book is to provide DP professionals a comprehensive, practical source of knowledge about one of the essential though somewhat neglected skills of the information industry: written communications. To emphasize its pragmatic approach, functional examples and sample applications illustrate the straightforward, step-by-step description of how to write effective technical presentations.

After the first chapter introduces the topics, Part I presents the basic tools and skills necessary for clear and succinct writing; Part II details how to write systems-related documents; Part III shows how to write successful technical proposals, explains how to write company manuals, and reveals how to write and sell technical articles.

This book is intended for DP managers, computer systems analysts, programmers, and auditors. It is also meant for college students whose curriculum of computer systems analysis and data processing would not be complete without being able to write useful, quality documents.

J. VAN DUYN

*Loomis, California*
*March 1982*

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# Chapter One

# Introduction

It is a well-known fact that the more adept some systems analysts, programmers, and other data processing (DP) professionals are in performing their work, the less effective they are in communicating with users, especially non-DP users.

Authorities who concern themselves with the human side of DP offer many theories about the communications problem that seems to permeate the field. Some say that the schools are to blame for emphasizing technical subjects and training. Others claim that the people attracted to this discipline are too involved solving technical problems, and consequently are not aware of the problems and requirements of non-DP users, especially users in the business world. Still others say that because DP professionals do not take the time and trouble to communicate with the marketplace, they are not solving the problems the customers are concerned with.

Marketing personnel, on the other hand, prove that DP professionals can learn to communicate. Thus presale systems analysts/systems engineers learn not to respond to customers' questions with raw technical, scientific, or statistical data. They convince the customers in simple, everyday language that their company has the ability to resolve the stated problem(s). Moreover, the DP marketing personnel also know that to communicate well he or she has to ask the right questions and do a great deal of listening.

It is interesting to note that after the presale DP marketing professional thoroughly understands the requirements and problems of the customer, he or she relays this information down to the technical level. And it is at this level that the DP facility systems analyst/designer or programmer/analyst designs or modifies the computer system or application for the customer.

Not surprisingly, DP professionals who rarely get involved with customers tend to have difficulties in communicating with non-DP users.

To help DP professionals master written communications, this book presents the basic tools and skills as well as flexible guidelines for producing effective technical presentations. In addition, since people learn style, format, and appropriate language by reading good documentation and then writing similar material, a large number of sample applications are included in the text.

## HOW TO USE THIS BOOK

To facilitate finding specific information, the book is organized into three major sections. They are: 1. Basic Tools and Skills of Written Communications, 2. Writing System-Related Documents, 3. Writing Other Types of Technical Material.

### PART I. BASIC TOOLS AND SKILLS OF WRITTEN COMMUNICATIONS

**USE CRISP, DIRECT, UNADORNED LANGUAGE IN YOUR COMMUNICATIONS**

a. ***Mechanics of clear writing.*** Whether writing a feasibility study, progress report, proposal, or any other communication, organize your material for greatest impact. This you can achieve by outlining your document; writing clearly and concisely; using simple yet vivid language; and aiming at a particular audience. The best technical presentations are written for a specific audience, for a specific purpose. Furthermore, in such documents the communicator is not trying to impress the reader with ostentatious words and phrases intermingled with technical jargon. The computer systems, operations, procedures, and the like are described in lucid, succinct language, using an informal tone. Formal, stilted language and style are a thing of the past. It is crisp, direct, and unadorned language that is used today, especially in the DP field. That doesn't mean, however, that you can sacrifice relevant information, accuracy, and clarity for brevity.

Purpose is another essential component of effective writing. It gives substance and cohesiveness to the document.

The attitude of the person writing the material is as important as the presentation having a purpose. If the writer's attitude is to serve the readers; if the person thinks of himself or herself as a communicator first and a DP professional second, then he/she is going to communicate well and produce a useful document.

A common pitfall of DP professionals is using undefined acronyms and initials in their communications. While the originator may know the definitions of all the acronyms and initials in the presentation, other DP personnel may not. And nontechnical readers surely have no idea of the meanings of those strange-looking words. Consequently, you will increase the reader's understanding of your material if you define each acronym and initial the first time you use it. In addition, it's a good idea to list all such items, even the simplest ones, in a glossary.

## EDIT FOR EFFECTIVE PRESENTATION

After you have observed all the niceties of lucid, distinct writing, there is one final step: editing. Editing is crucial for producing useful, quality documents. When editing your communication, you should not only challenge every sentence to ensure that it gives valid information in the smallest number of simple words, but you should also check if your material flows smoothly from one line to the next, from one paragraph to another. And finally, you should verify that the effect of the presentation is consistent with your initial purpose.

## CONSIDER YOUR READERS

**b.** ***Defining your target readers.*** To ensure a useful document, it's vital that the DP professional defines his/her readers and zeros in on the particular audience's basic needs and preferences. Technical communicators who don't relate to their readers produce their material in a vacuum. Perhaps it is this sort of dissociation that causes systems, programs, and procedures documentation to be treated as residual activity—an unpopular task to be put off until all "important" work has been completed. Much too often the result is NO documentation.

Simply put, whatever your writing project is, you must first study and analyze your potential readers. There are

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many levels of communications in the DP field, so be sure to define the particular audience you want to reach.

c. ***Steps prior to writing.*** The steps you take before beginning to write determine the quality and effectiveness of your final product. These preliminary activities include:

1. **Defining and establishing the objective, scope, object audience, tentative schedule, and the cost of producing your document.** The last step you do only if your firm uses the "charge out" system. In any case, these preliminary steps (detailed in Chapters 3 and 4) will give you a blueprint of the intended project, and make your actual writing task easier.

**PROPER PRELIMINARY STEPS ARE THE BUILDING BLOCKS FOR USEFUL DOCUMENTS**

2. **Gathering data in a systematic manner.** This may be done in several ways. A couple of methods worth mentioning are the "top-down" and the "bottom-up" approaches described at length in Chapter 4. Whichever approach you use, however, it should include interviewing all persons who will be using your document(s): the DP staff, the non-DP staff, and the outside users, if the project involves a user's guide or other documentation for the customer.

3. **Interviewing to collect information at the prime source.** Please note, however, that, as explained in detail in Chapter 4, only well-planned interviews that include preparation of a list of relevant questions based on research will yield valid information.

**ORGANIZE YOUR DATA ACCORDING TO PRIORITIES**

4. **Organizing the collected data** according to the priorities that you have established in your objective (step 1). In other words, the sequence of arranging the collected data and information depends on what your purpose is and who is going to use your document. (For full explanation see Chapter 4.)

5. **Determining the layout and content formats** before you actually start writing. This is quite important, unless

the company can provide you with established format standards.

### ESTABLISH ATTRACTIVE LAYOUT AND CONTENT FORMATS

The layout format standards include definition of the type and color of paper, the type font, the width of the margins, and the color and thickness of the binders.

The content format standards should define how the title page, table of contents, and list of illustrations will be presented. An attractive content format can be achieved by liberal use of headings and illustrations.

### OUTLINING YOUR MATERIAL CAN SAVE TIME AND EFFORT

6. **Outlining your communication** before you do any writing is as significant as preparing a list of questions before you interview anybody. An outline can help you to stick to your defined goal and be of substantial help in writing your document. Specifically, you are able to pick out any block of related information or module within your outline, write it, and not lose its place in the finished document. Also, you can move the blocks around, if it appears that a particular block of information would be more effective in a different section of your presentation. The three kinds of outlines are discussed and illustrated with samples in Chapter 4.

7. **Summarizing the content** of your communication on one page, if possible, is a valuable exercise in thinking through a project. It forces you to state your purpose and your subject clearly and concisely.

### USE GRAPHICS TO GIVE YOUR DOCUMENT EYE APPEAL

d. ***Mechanics of data processing graphics.*** Graphics is an excellent tool for visually expressing ideas, theories, facts, corporate structures, flow of systems, flow of manual processing, and many other concepts. Graphics, whether drawn manually or produced via computer systems, can aid tremendously in explaining a complex computer system or technical subject to both DP and non-DP audiences.

In addition, graphics is used as a documentation device. Systems, programs, and processing can be graphically presented before, during, and after the design, development, and implementation of projects. The two graphical documentation methods discussed in Chapter 5 are: HIPO (Hierarchical Input Process Output) an IBM-originated documentation technique; and SADT (Structure Analysis and Design Technique), a documentation tool developed by Softech (The Software Technology Company). HIPO treats a system as a hierarchy of functions and subfunctions, presenting these activities at succeeding levels of detail. SADT, on the other hand, is a top-down, problem-definition-oriented technique that describes a system in terms of data diagrams and activity diagrams, and their relationships.

## PART II. WRITING SYSTEM-RELATED DOCUMENTS

a. ***Writing effective progress reports.*** This excellent communication tool, when used properly, can save a lot of money and effort for the enterprise. Key ingredients of progress reports are:

1. **An attractive, informative front section** that consists of a title page, a table of contents, a list of illustrations (if it's a long report), and a summary.

**DISTINCT PROGRESS REPORT SUMMARIES WILL BE NOTED BY MANAGEMENT**

The last item is more than an overview of the report. It provides management an accurate digest on the progress of a particular project. And perhaps just as important: it can, if it's well-written, arouse the interest of the executives, so that instead of "later" they will read the rest of the report immediately. This in turn will shorten the time the DP professional may have to wait for some sort of decision on the project, a not unusual occurrence.

2. **An introduction** that does not duplicate the summary. It states the period covered by the report, the actual progress (or lack of progress) with the assignment, AND the problems that were met. In short, the introduction addresses only major points of interest to management.

3. **A discussion** that (being the body of the progress report) provides a detailed account of the progress made. It also tells of the difficulties or problems, AND the potential problems that may be encountered. This is done

without any elaborate excuses, and using a matter of fact tone.

4. **A conclusion** that not only sums up the essential points discussed in the body of the report, but also states the due date of the next report and the tasks expected to be performed in the next reporting period, if there is one.

## WRITTEN PROCEDURES ENFORCE STANDARDS

b. ***Writing usable procedures.*** Clearly written, well organized, and (if appropriate) illustrated procedures are imperative for uniformity and efficiency of both manual and DP activities.

Producing functional procedures calls for:

1. **Establishing preliminary steps.** This includes studying existing documentation about the particular activity or process; observing at first hand the functions; and discussing the activity with personnel who are or will be involved in the procedures.
2. **Ensuring that the document's style, format, language, and level of information are not only appropriate for the specific procedures but helpful to the audience who will use the document.** Thus, to eliminate any possible misunderstanding about the technical terminology used in the procedures, include a glossary. Also, list the names and extension numbers of key staff personnel, so that people who are doing the procedures can get help quickly, if necessary. Finally, include a "Communicating and Operating Hints" section in the appendix, as well as additional sources of information for people who may want to learn more about the subject.
3. **Getting a sign-off/approval by the appropriate department manager.** This little formality will save you possible future problems or questions.
4. **Establishing an updating and follow-up method for the procedures.** Generally, a simple "Updating Log" form and a one-page "Follow-up" instructions will satisfy this requirement.

c. ***Writing the systems study.*** Systems studies is the collective name for feasibility studies, management re-

**SYSTEMS STUDIES CAN BE FOR INTERNAL OR EXTERNAL USE**

quirements planning studies, computer systems design specifications, and programming specifications, to mention a few. Generally, these documents are either reports for internal use or reports for the users (either within the enterprise or outside).

**1.** For internal use the systems studies are comprised of the following parts: front section (title page, table of contents, and list of illustrations), introduction (restatement of assignment), and discussion (statement of the problem, summary of present system, if there's one, and recommendation of a solution among several possible alternatives, based on data gathered and verified). And finally, cost of the recommended system, as well as its projected effectiveness and benefits for the enterprise.

Except for the front section, specifications, though they may be called systems studies, follow a different format. As the name implies, this type of document states precisely the particulars of management requirements, or the details of a computer system design or programs.

**2.** For the users the systems studies are often quite similar to those for internal use. If the users are not DP staff, however, the systems studies are more general in approach, using a minimum of technical terms.

## PART III. WRITING OTHER TYPES OF TECHNICAL MATERIAL

The first section of Part III is devoted to a very important if often neglected subject in schools and technical writing seminars: technical proposals. Moreover, this section contains actual sample applications that can be used readily by the reader. Or, if that's not feasible, parts of these proposals can be adapted to fit the reader's particular needs.

**a.** ***Writing a winning technical proposal.*** This provides step-by-step procedures in preparing an effective technical proposal. If the proposal is well-written, meaningful and concise, has a spacious format with functional illustrations, is logically organized and easily referenced, and cost-attractive, it is likely to be a winner.

**WHEN WRITING A POLICY MANUAL IT'S IMPERATIVE TO GET MANAGEMENT'S APPROVAL AND THE GOOD WILL OF STAFF**

b. ***Writing policy and standards manuals.*** In writing company manuals, whether it's a manual establishing corporate policy or standards and procedures, it is imperative to establish rapport not only with management but also with the staff for whom the documents are written. If you do, it will be much easier to get information from those people, and you will have much more success in having them accept and use your manuals. Thus, while management's approval is important, getting the cooperation of staff is essential. To achieve this, or at least go a long way toward that goal, assure the staff in words and in actions that you are working *with them and not against them.*

1. **Company policy manuals.** To write a useful policy manual that defines, establishes, and disseminates the information about the corporate policy within the enterprise, you should go through the same preliminary steps as in any other document. Once the required data have been gathered and organized, an outline prepared, and a sign-off/approval received from your manager, you are ready to write the manual. The document, in addition to the previously discussed front section (see Part II, a.1), includes: a foreword or preface (signed by top management), instructions for using and updating the manual when new/replacement pages are issued, and descriptions of the firm's policies as established by top management. These policies may cover job responsibilities, promotions, hiring and firing, vacations, training, communications protocols, development directions, and the like.

2. **Company standards and procedures manuals.** When writing company standards and procedures manuals, the preliminary steps are identical to those for the corporate policy manual. However, you may have to establish specific forms and styles that are appropriate to the particular manuals.

NOTE: Be careful that your instructions are detailed but not dogmatic, and that your illustrations are simple.

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