Section 7

Project Presentation

7.1 Writing the Technical Report

In no other area of professional activity will you be judged so critically as your first technical report. The quality of a report generally provides an image in the reader's mind that, in large measure, determines the job of report writing cannot disguise a sloppy investigation, but many excellent job of report writing cannot received proper attention and credit because the work was reported in a careless manner. You should be aware that written reports carry a message farther than the spoken word and have greater permanence. Therefore, technical workers often are known more widely for their writings that for their talks.

7.2 Steps in Writing a Report

The five operations involved in the writing of a high-quality report are best remembered with the acronym POWER.

P Plan the writing

O Outline the report

W Write

E Edit

R Rewrite

The planning stage of a report is concerned with assembling the data, analyzing the data, drawing conclusions from the data analysis, and organizing the report into various logical sections. The planning of a report is usually carried out by considering the various facets of the work and providing a logical blend of the material. The initial planning of a report should begin before the work is carried out. In that way the planning of the work and planning of the report are woven together, which facilitates the actual writing operation.

Outlining the report consists of actually formulating a series of headings, subheadings, sub-subheadings, etc., which encompass the various sections of the report. The outline can then be used as a guide to the writing. A complete outline can be detailed to the point at which each line consists of a single thought or point to be made and will then represent one paragraph in the report. The main headings and subheadings of the outline are usually placed in the report to guide the reader.

The writing operation should be carried out in the form of a rough draft using the maximum technical and compositional skill at the command of the writer. However, do not worry about perfection at this stage. Once you get going, don't break stride to check out fine details of punctuation or sentence structure.

Editing is the process of reading the rough draft and employing self-criticism. It consists of strengthening the rough draft by analyzing paragraph and sentence structure, economizing on words, checking spelling and punctuation, checking the line of logical thought, and, in general, asking oneself the question "Why?" Editing can be the secret of good writing. It is better for the writer to ask himself embarrassing questions than to hear them from his technical readers, his supervisor, or his instructor. In connection with editing, it has often been said that the superior writer makes good use of both ends of the pencil.

It is generally good practice to allow at least a day to elapse after writing the rough draft before editing it. That allows the writer to forget the logical pattern used in writing the report and appear more in the role of an unbiased reader when editing.

Many mistakes or weak lines of thought that would normally escape unnoticed are thereby uncovered. The rewriting operation consists of retyping or rewriting the edited rough draft to put it in a form suitable for the reader. An important tip for preparing a handwritten report draft is to use every other line on the paper. In that way you will be able to make correction in the empty lines and use part of your rough draft without doing a complete rewrite. Of course, if you are able to do your rough draft on a word processor, the revision is much less painful.

7.3 Information on Writing Project Reports

Here is a suggested outline to use in organizing and writing an engineering report.

- Title Page
- Abstract
- Acknowledgements
- Table of Contents
- Nomenclature (if applicable)
- Executive Summary
- Introduction
- The Solution
- Analysis and Performance Results
- Discussion
- Conclusions and Recommendations for Future Work
- References
- Appendices

7.4 Amplification on Component of the Report

- Title page

  The title page clearly identifies the following elements:

  -Title of the project

  -Author(s)

  -Entity for which the project was done (e.g., San Jose State Univ., Department of Mechanical & Aerospace Engineering, ME 195, etc.)

-Date

- Abstract

The abstract provides the following information (ASME Manual, MS-4):

-A clear indication of the objective, scope, and results of the paper so that readers may determine whether the full text will be of particular interest to them.

-Key words and phrases for indexing, abstracting and retrieval purposes.

- Acknowledgements

It is very important to recognize the contribution of others to the success of your work. Design is never done in a vacuum! Be thoughtful of how others helped you achieve success. Common areas are:

-Project sponsorship or financial support

-Donations of equipment, supplies, etc.

-Technical help

-Other help of a significant nature

- Nomenclature

The nomenclature section lists any symbols, variable names, etc. and shows what they stand for Lettered symbols come first, in alphabetical order. Greek symbols come next, in alphabetical order.

- Executive Summary

The executive summary is a brief, concise summary of important information, intended for specific readers who want to know, but don't have the time, patience, or energy to slog through a rambling, obscure report.

The executive summary answers the following questions:

- What is the problem?
- What is the solution of the problem?
- What actions are recommended or have been taken?

The executive summary must be:

- *Brief*: The executive summary is generally not longer than a few pages, unless figures make up a significant portion.
- *Crisp*: Words and sentences must be relevant to the subject. Avoid filler and verbiage that doesn't add important information.
- *Readable*: The executive summary should be organized and formatted so that the reader can quickly extract the essential information. Use ample headings and subheadings to form a clear outline of the subject that can be readily understood by the reader. Multiple points or features should be tabulated or bulleted (for example,

this list). All statements in a common tabulation must have the same grammatical structure.

- *Will-illustrated*: Figures must have brief, self-explanatory titles with text that explains the significance of what is shown. Figures should be integrated into the text, not grouped together at the end. If needed, full-page figures should be oriented so that the bottom is adjacent to the outer edge of the report, not adjacent to the binding.
- Introduction

The introduction presents the following information:

-*Background of the problem*: The background sets the stage, provides context, explains the need for the solution.

-*Functional specification*: The functional specification clearly spells out in quantifiable terms how the solution must perform.

-*State-of -the-art review*: The state-of-the-art review summarizes prior and related solutions to the problem. For example, patens, journal papers, reports, etc.

- The Solution

This section clearly presents the solution to the problem. It is critical that this section contains sufficient illustrations, drawings, photographs, etc., to fully communicate the solution to the problem.

- Analysis and Performance Results

This section presents *results* of testing and modeling of the solution. Graphs, charts, tables, etc., should be used and described to clearly show how the solution performs relative to the design specifications.

- Discussion

This section reflects on the performance of the solution and interprets the meaning of the information presented in the previous section. Discussion on failure models is appropriate in this section.

- Conclusions and Recommendations for Future Work

This section summarizes the meaning of your results and outlines what could be done in the future to carry on development of your work. In other words, answer the questions, “So what?”, and “What more could be done on this problem?”

- References

The references should list all literature, catalogs, interviews, etc. that have been used in the project work. You may either list references in alphabetical order (see References below) and cited as done in the section on the Abstract or Executive sections of this document, or you may number each one and cite the number in your text.

- Appendices

The appendices contain details and other relevant information that are important to the project, but would otherwise bog down the flow of the report if included in the main sections. For example:

-Alternative design approaches and evaluation

-Supporting analysis

-Detail drawings

-Materials specifications

-Details on testing procedures, apparatus, and raw test data

-Supporting information, such as catalog data, etc.

7.5 Oral Presentations

Impressions and reputations (favorable or unfavorable) are made most quickly by audience reaction to an oral presentation. There are a number of situations in which you will be called upon to give a talk. Progress reports, whether to your boss in a one-on-one situation or in a more formal setting to your customer, are common situation in which oral communication is used. Selling an idea or a proposal to your management budget committee or a sponsor is another common situation. In the more technical arena, you may be asked to present a talk to a local technical society chapter or present a paper at a national technical meeting.

Oral communication has several special characteristics: quick feedback by questions and dialogue; impact of personal enthusiasm; impact of visual aids; and the important influence of tone, emphasis, and gesture. A skilled speaker in close contact with an audience can communicate far more effectively than the cold, distant, easily evaded written word. On the other hand, the organization and logic of presentation must be of a higher order for oral than for written communication. The listener to an oral communication has no opportunity to reread a page to clarify a point. Many opportunities for noise exist in oral communication. The presentation and delivery of the speaker, the environment of the meeting room, and the quality of the visual aids all contribute to the efficiency of the oral communication process.

7.6 Developing a Presentation Outline

To organize a logical flow of ideas designed to tell a complete story it is important to develop an outline for each presentation. The outline also serves as a checklist for items that appear in the slides. This checklist prevents the presenter from omitting important ideas as he or she becomes immersed in the details of designing the slides.

To develop an outline, transform the earlier questions into headings for the outline, then follow two steps. First, construct a general outline: write the answers to the questions as the key ideas of a presentation, organized under their corresponding headings. Then expand the general outline into a detailed outline the contains all the specific items can then be placed on the slides.

The purpose of the general outline is to collect and organize the answers to the audience's questions as the key ideas of a presentation. The following headings can be used to organize the key ideas:

- Title
- Presentation Outline
- Introduction
- Goals and Objectives
- Methodology / Approach
- Analysis / Experiment
- Details of the work
- Results / Discussion
- Conclusions
- Future work

7.7 Guidelines For Making Presentation

Instructors may have their own specific requirements regarding the number of presentations, their format, method of delivery, and grading.

Following are some guidelines and grading criteria regarding the presentations of your project reports. Presentation

s are part of the course requirement.

- All presentations should be limited to 15 minutes followed by a 5 minutes question and answer period.
- Each group will make 3 presentations during the semester. A detailed description follows.

PRESENTATION #1 (15 minutes maximum including 5 minutes questions and answers).

This presentation will be made during the 4th week of the semester and should include:

- Project introduction & goals
- Project background
- Work completed so far
- Preliminary timeline and milestones
- Future work to be done

PRESENTATION #2 (15 minutes maximum including 5 minutes questions and answers).

- Project introduction
- Functional specifications
- Review of project schedule
- Describe the work completed
- Any anticipated problems, outside contacts, etc.
- Future work to be completed

PRESENTATION #3 (15 minutes maximum including 5 minutes questions and answers).

This presentation will be made during the 12th week and should include:

- Project introduction
- Review of project schedule
- Work completed
- Future work

ADDITIONAL COMMENTS

- All presentations should include 5 to 7 overhead transparencies and prepared professionally.
- Only one person in the group should make a presentation with recognition and introduction of other group members.
- Presenter must use a pointer.

The presentation will be graded based on:

- Compliance with time-limit
- Compliance with all the guidelines as outlined above
- Quality of overhead transparencies and visual aids
- Quality of presentation (loud and clear, substance, interaction with audience, etc.)

HELPFUL HINT

A day or two before your presentation, go through a dry run using your group members as audience. This will give you confidence and a good estimate of the time it takes to present the material.