**Lecture 4: Writing Formal Technical Reports**

Formal technical reports sell solutions. They occur both internally and externally and address complicated problems needing lots of care. For this reason, they naturally are longer than the letters, memos, and short reports that working writers daily create. And because they address important problems, they usually are of interest to multiple readers. That means your audience analysis must become more thoughtful as you consider diverse reactions to your ideas. A company executive's reaction to your formal report may be much different than a stockholder's.

The formal report you will complete in this course requires you to master fully the problem/solution approach to technical communication. Think of the report as an argument that you must support with evidence. It must define a problem, define a solution, anticipate and refute objections to the solution, discuss the advantages of the solution, discuss how to implement the solution, and justify the cost of the solution.

Like a lawyer arguing a case, the report writer must present the facts objectively and let the facts lead readers to logical conclusions and recommendations. The report writer therefore must analyze and interpret data. Your work summarizing and evaluating ideas this quarter prepares you for this task. The report writer also deals with problems positively by discovering and emphasizing solutions. Your practice with "bad news" cases this quarter prepares you for this task.

The report combines the talents you develop through summary/evaluation memos and bad news cases.

In addition to Pearsall's Chapters 8 and 9, the following information should provide useful guidelines to help you complete your report; this page is organized by the following topics.

* **Assignment**
* **Content and Design**
* **Rhetorical Strategies**
* **Research Component**
* **Citing Sources**
* **About Your Thesis**
* **About Your Executive Summary: When Do I Write Different Parts of the Report**
* **Page Layout and Graphic Aids**

# Assignment

1. Investigate a problem where you work and direct the report to your supervisor. Consider asking your supervisor specifically what problems he/she would like you to investigate.
2. Write either a Request for Proposal (RFP) or a proposal (bid) on behalf of your company.
3. Solve a social, political, or technical problem and propose your solution to an. individual or a group that has the power to act on your recommendations

# Content and Design

Pearsall offers relevant discussions of technical report writing formatting and strategies in **Chapters 8: Elements of Reports and 9: Formats of Reports**. His appendices A-D offer sample reports. Look through the various models for a sample report that fits your needs as a guideline when completing your report.

**IMPORTANT:** Note, however, that not all model reports in Pearsall include two additional components that you must include in your report:

1. A transmittal memo (if you are writing to an internal audience) or a transmittal letter (if you are writing to an external audience). Consult Pearsall p. 105 for a discussion of a letter of transmittal. In cases where you are writing to reader who is a member of your organization, you would write a memo of transmittal instead of a letter.
2. A bibliography. Pearsall Chapter 8, pp. 87-93 offer examples of how to cite secondary sources; you should review the entire discussion of technical research in this chapter.

You should use the book as a reference tool throughout your writing process. Decide which parts best apply to your needs. No matter which report option you choose, your report should be **at least** 10 pages long (including all “parts” listed below; that means 10 pages altogether, including extra bits like transmittal memos, title pages, bibliographies, etc.) using at least three sources and should contain the following parts:

* + A letter or memo of transmittal.
  + A title page.
  + A table of contents and a list of illustrations.
  + An executive summary (a.k.a. an informative abstract).
  + Headings and sub-headings.
  + Appropriate graphic aids.
  + A references section and citations.
  + Appropriate appendices and/or attachments.

# Rhetorical Strategies

Your report should accomplish the following tasks:

* Analyze data, draw conclusions from the analysis, and base recommendations on those conclusions.
* Define a problem.
* Define a solution.
* Anticipate and refute objections to the solution.
* Discuss the advantages of the solution.
* Discuss how to implement the solution.
* Justify the cost of the solution.

# Research Component

Effective problem solving involves two kinds of research, “primary” research and “secondary” research. Both require solid summary/evaluation skills:

1. Primary research is hands-on, requiring you to dig into raw data and conduct personal interviews and observations to determine the nature and extent of the problem. One of the best methods of conducting primary research is to conduct a survey.
2. Secondary research takes you into the library or other sources of knowledge to find possible solutions and to discover additional background on the problem. Using secondary sources requires you to supplement your ideas with expert testimony drawn from articles, books, and other texts.

Think of relating primary and secondary research in the following way: Your thesis (solution) might apply the theory discovered through secondary research to the problem identified through primary research.

# Citing Sources

Secondary research requires you to formally cite books, articles, and the like in a bibliography or works cited page. Remember Booth when you incorporate your secondary sources. Are you showing the connections between a source's ideas and your own, or are you merely filling up space? Use sources to support your argument.

*Do not merely repeat what your sources say. Apply what they say to your reader's needs. Your sources should back up what you say, not give you something to say.*

Exploit your summarization skills and paraphrase sources. Use a word-for-word quotation only when the source's words are particularly striking or memorable. Using quotations of this kind helps emphasize ideas. Extensive quoting kills this emphasis.

Follow proper documentation format as presented in Pearsall Chapter 8. Remember that if you do not cite a work in your report, you should not include it in your bibliography.

# About Your Thesis

Remember that your thesis is your solution. It is an argument, not a topic. You should be able to summarize it in a sentence.

TOPIC: "The Importance of Office Automation"

THESIS: "The Dag Corporation can save money and improve customer service by installing the DTK-2000 Auto-Mate Alternative to handle inventory and accounting procedures."

Note that the thesis sets up the remaining parts of the argument, which are keyed to the problemsolving structure. The idea that a problem exists is implied: we need to save money and improve customer service. The solution is emphasized: the DTK system will solve these problems. The report will emerge from this problem/solution base to further anticipate and refute objections to the solution, to discuss the advantages of the solution, to discuss how to implement the solution, and to justify the costs of the solution.

To convince the reader that the problem is serious enough to justify the costs, the writer will analyze existing data or background about the problem with dwindling profits and deteriorating customer service, will derive the conclusions that our internal inventory tracking and accounting procedures are the source of the problem, and then introduce the recommendation that the DTK system is the best alternative to address these needs.

The thesis thus is a crucial touchstone for the whole report. You should not begin "writing" the report until you have a clear thesis. That's another way of saying that you should not worry about drafting a final product until you've adequately completed the preliminary stages of the writing process: brainstorming, where you collect the facts necessary to objectively determine the problem and most appropriate solution, and outlining, where you decide how best to arrange the facts to meet your persuasive goals.

Your thesis should appear in three prominent places at the beginning of your report:

* In the memo or letter of transmittal.
* In the executive summary.  In the introduction.

Why? There's no buried treasure in the world of technical writing. Readers want to know what you are selling right away, without delay. And you can be sure that many distractions--phone calls, faxes, email bells--will be competing for their attention. Repetition can ensure clear understanding, and three times is a charm; they might get the point if you remind them of it three times before going into detail.

An even more compelling reason for this repetition involves your readers. Formal reports often are read by multiple readers, and some of these readers are only interested enough in the subject to want a quick overview. That's where the executive summary comes in. The thesis needs to stand out there so that many readers with little time can take in your argument quickly.

Including the thesis in the transmittal memo or letter lets your immediate reader know what's coming, but often the transmittal memo or letter gets tossed away as the report gets passed around, so you cannot depend on its doing the work of the executive summary. The transmittal is merely a rhetorical formality and a courtesy, giving your reader a context for the report.

Imagine a busy executive who sees a thick report in her in-box. She looks at it, distracted by other office activities. It's titled "The DTK Solution." *What the heck does that mean?* she wonders. She sees the author's name and extrapolates that this must be the report she assigned about one of the many projects your team is working on, but which? Scenarios like this are not unlikely. A simple transmittal memo would immediately dispel the fog:

"Here is the analysis you requested on the company's declining profits and customer service complaints. It shows that adopting a new software application called the DTK-2000 Auto-Mate for inventory tracking and accounting procedures can improve departmental performance and win back our customer's trust."

*Oh, yes,* she thinks. *I've been worried about this one. Well done!*

The memo of transmittal establishes a context for your first reader's routing of the report.

Finally, the thesis should appear in the introduction as a rhetorical element of your problem solving structure. It appears as the end point of your introduction, which sets up the contents of your of the rest of the report.

# About Your Executive Summary: When Do I Write Different Parts of the Report

Write the executive summary last. Think of the executive summary as just what its name implies: a summary of the contents of your report. Obviously, you cannot summarize something that does not exist, so you must have the finished report in hand in order to summarize it accurately and efficiently. Many working writers make the mistake in the "writing" stage of the writing process of attempting to write the executive summary first since it comes first in sequence. But it comes first only from the reader's perspective. From yours, it's written last but placed first in the product you are creating.

Here's the skinny on when to write each part of the argument. The order is approximate for some parts; the important sequence is: write the data analysis first, the conclusions from the analysis second, and the recommendation third. Every other aspect of the report follows from this important sequence (Figure 1). You must analyze data objectively or you may fail to consider important facts, making your recommendations seem biased.

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| --- | --- | --- |
| **Report Component** | **You write it** | **But reader sees it** |
| Transmittal memo/letter | Twelfth | First |
| Title page | Eleventh | Second |
| Table of contents | Ninth | Third |
| List of illustrations | Tenth | Fourth |
| Executive summary | Eighth | Fifth |
| Report Introduction | Fourth | Sixth |
| Analysis of Data | **First** | Seventh |
| Conclusion from Analysis | **Second** | Eighth |
| Recommendations (including anticipating, refuting objections to your recommended solution; discussing advantages of your solution; discussing how to implement your solution; and justifying costs of your solution. | **Third** | Ninth |
| Concluding Remarks Fifth Tenth | | |
| Bibliography | Sixth | Eleventh |
| Appendices | Seventh | Twelfth |
| *Figure 1: Report Components* | | |

Finally, remember to use the strategies strengthened by your practice with summary/evaluation memos when writing the executive summary. Make sure you state your thesis and main points briefly yet completely. The most important test of an executive summary's effectiveness is this: your reader should be able to stop reading after the executive summary without missing any important parts of your argument.

# Page Layout and Graphic Aids

As a writing course, WR 327 emphasizes the words you write slightly more than the visual presentation of your argument. However, document design counts, and you should use appropriate graphic aids whenever possible.

Page layout simply means presenting a visually attractive document. The design you use should aid the reader in progressing through the text. Use of headings, subheadings, white space, tables, charts, lists, and the like is highly encouraged in technical writing.

Graphic aids help readers picture ideas and therefore serve to clarify your argument. Keep the following guidelines in mind when planning your use of graphic aids.

* Including too much information in a graphic aid defeats your purpose. Busy graphic aids are like bad maps--you stare and stare but can't find the path you need to take.
* Graphics and text complement each other. When you discuss complex numerical or statistical data, you also should present the information in graphic form. However, you should not include a graphic aid without discussing its significance in the text.
* Remember to direct the reader to the graphic aid's location. Use markers such as "see figure 1, p. 3," for example.
* Experiment with different kinds of graphic aids. Do not automatically limit yourself to simple charts and tables--sometimes a diagram or photograph can help clarify your description of a product or process, for example.
* Use graphic aids that are appropriate for the ideas you need to clarify.
* Use the report assignment in this class to improve your ability to integrate graphics with text using a computer.

Pearsall's discussions of page design (Chapter 5) and of graphics (Chapter 6) provide a valuable source of information and examples that you can consult when planning your report.

Onward!