

Elements of a Senior Design Final Report

As with most genres, formal reports follow a set of genre conventions while also responding to the particular needs of their audiences and of the purpose they serve. The generic elements of a final report (especially the body) are outlined in the Report Guidelines link. This handout is designed to help you think through your final report, including the letter of transmittal, front matter, the body, and the end matter.

Letter of Transmittal

Usually, you don't simply dump a formal report on your readers, but you contextualize the report in a separate letter or memo of transmittal. This short (<2 page) letter or memo helps you "sell" your work (your report), maintain a good relationship with your readers (e.g. your client, your supervisor, your stakeholders), and advise your readers on how to use the report well. Therefore, in a letter of transmittal, you often do the following:

- 1 Acknowledge those who helped in your research (interviewees, others)
- 2 Refer to sections of special interest: unexpected findings, key visuals, major conclusions, special recommendations
- 3 Discuss the limitations of your study, or any problems gathering data
- 4 Discuss the need and approaches for follow-up investigations
- 5 Suggest some special uses for any particular part of the report
- 6 Urge the reader to act
- 7 Maintain a confident and positive tone.
- 8 Avoid implied apologies, such as "I hope this report meets your expectations."

Front Matter

The front matter leads your readers into the report and provides an overview of the contents. Typically, it consists of the cover page, the table of contents, the list of tables and figures, and the executive summary.

Cover and/or Title Page

The cover page provides important contextual information for your readers and plays an important role in branding your communication. If prepared for an external client, the report cover therefore often contains the logos of both the consulting company and the client company.

- 1 Do not number, but count as page i.
- 2 Choose a title that reveals the purpose of the report
- 3 Include who the report was prepared for (title, organization, place), who it was prepared by (title, organization, place), and when it was submitted.

Table of Contents

The table of contents is the key navigation tool for your readers. To produce an effective table of contents, consider the following points:

- 4 Include front matter, glossary, appendixes, and endnotes (if applicable)
- 5 Include only those headings that you used in the report
- 6 Phrase headings exactly as in the report (use the automatic toc function in Word to do

this automatically)

- 7 List headings at various levels in varying type styles and indentation
- 8 Use leader lines (.....) to connect headings to page numbers. Align rows of dots vertically, each above the other.

List of Tables and Figures

Following the table of contents, provide a list of tables and figures. If you have more than four or five visuals, place this table on a separate page.

Executive Summary

The executive summary provides a snapshot of your report—from the context (why and for what purpose it was written) to your findings, your discussion of the findings, and your conclusion). Often, this is all busy executives have time to read.

- 1 Write the executive summary after the report is completed. (so you have everything you need to summarize)
- 2 Include the following information: the issue (purpose), what you found, what it means, and what should be done based on your findings.
- 3 Add no new information
- 4 Make sure the executive summary can be understood by itself.
- 5 Persuade your reader to act. (help your reader make decisions)
- 6 Place the executive summary on a separate page immediately following the table of contents.

Report Body

The report body commonly consists of an introduction, your results (what you found), your discussion and analysis of these results (what these findings mean), and your conclusion (what action or next steps your readers should take based on your findings).

Introduction

Much of the introduction will draw on your proposal, except that you now don't propose methods, but explain what methods you used.

- Need for the study or investigation
- Goal
- Objectives
- Methods (incl. possible limitations)

Results

The specific topics in your results section will show that a proof-of-concept prototype was produced and tested to validate the performance and cost viability of the system concept; that the prototype continues to be aligned with customer needs and metrics; and that a plan to implement the concept in the sponsor's business was developed and proposed in an effective and professional manner. In particular, it should show how you used customer-driven engineering specifications to select and validate the most appropriate subsystems to be demonstrated in a simulated or physical realization. For example, your results may include the following topics:

- Customers, Needs and Metrics
- Lessons Learned from Benchmarking

Concept Generation
Concept Selection
Detail Design
Prototype Development
System Validation
Transition Plan

Discussion

The discussion usually contains much of the analytical and thinking work you do to determine what your findings mean. For example, your report may have the following sections:

Closing the loop from initial metrics to final system testing
Validity of prototype to original mission

Conclusion

The conclusion relates your findings and your analysis back to the goal or overall purpose of your study. Here, you usually state what all of this analysis means for your readers. Given your findings and given your analysis of these findings, what action should or could your readers take?

End Matter (Appendixes)

Formal reports often contain appendixes in order to provide more specialized information for some readers who may need more specific details than you can provide in your report (e.g. the actual interview questions, or the actual responses to your survey). Like the executive summary, your appendixes may help you serve the needs of a variety of readers. In your report, for example, you may include the following elements:

Appendix A: Benchmarking
Appendix B: UDesign Spreadsheets
Appendix C: Design Detail Definition

To use appendixes effectively, consider the following points:

- 1 Use appendixes for items that are important but difficult to integrate in the body of the report.
- 2 Use appendixes sparingly. Four or five appendixes in a 10-page report suggest that your report is poorly organized.
- 3 Refer your reader to the appendixes early in the body of the report (e.g. “see Appendix A for examples of promotional materials considered in this study”). Do not simply include your appendixes in your report without referring your readers to them.