Introduction

As the business environment grows in its complexity, the importance of skillful communication becomes essential in the pursuit of institutional goals. In addition to the need to develop adequate statistical skills, you will find it necessary to effectively communicate to others the results of your statistical studies. It is of little use to formulate solutions to business problems without transmitting this information to others involved in the problem-solving process. The importance of effectively communicating the results of your statistical study cannot be overemphasized.

Unfortunately, it seems that many business managers suffer from inadequate communication skills. The December 1990 issue of the Training and Development Journal reports that "Executives polled in a recent survey decry the lack of writing skills among job candidates." A report in 1993 issue of Management Review notes the "liability imposed on businesses by poor writing skills." The report states that employers are beginning to place greater emphasis on communication in hiring practices. Many employers have adopted policies requiring job candidates to submit a brief written report as part of the screening process. An August 1992 issue of Marketing News reveals that "Employers seek motivated communicators for entry-level marketing positions." Obviously, the pressing lack of adequate writing and communications skills in American businesses is well documented.

Therefore, the purpose of this appendix is to illustrate some of the major principles of business communication and the preparation of business reports. We examine the general purpose and essential features of a report and stress the benefits of effective report writing. Emphasis is placed on the customary form a business report should take and the format, content, and purpose of its component parts. We will study illustrations of practical reports and the problems will
provide the opportunity for students to develop and sharpen their communication skills.

**The Need to Communicate**

Most business decisions involve the cooperation and interaction of several individuals. Sometimes dozens of colleagues and co-workers strive in unison to realize mutual goals. Lines of communication must therefore be maintained to facilitate these joint efforts. Without communicating ideas and thoughts it would be impossible to identify common objectives and purposes necessary for successful operations. Without communication and the team effort it permits, the successful completion of any important project can be jeopardized. Some aspects of the project would be unnecessarily replicated while other tasks would be left unattended. Further, in the absence of adequate communication, colleagues would find themselves working at Coors purposes and perhaps pursuing opposing goals. What one team member may have worked to assemble one day, a second team member may dismantle the next. Without communication the chances for a successful outcome of any business endeavor are significantly reduced.

**The Characteristics of the Reader**

Business reports are quite often intended for a wide variety of different audiences. It is critical that you carefully identify the intended audience for your report, otherwise it is likely that your report will be misdirected and less effective. You should consider exactly what the readers of your report already know and what they need to know to make informed decisions.

You should also consider the attitude the audience will adopt toward your report. If you fear that the readers may be somewhat hostile toward your report, you may want to offer more supporting evidence and documentation that you would if their reception was thought to be more favorable. The educational background and work experience of the audience is also a key factor in the formulation of your report. A report written for top executives will differ considerably from the prepared for line supervisors in terms of style, word usage, and complexity. Even
age, gender, and other demographic characteristics might serve to shape the report.

One thing is certain. Whether you earn your livelihood as an accountant, a marketing manager, a production supervisor, or a sales representative, you will work in a vacuum. You will find it necessary to constantly communicate with others in order to successfully complete your job. Generally speaking, the larger the institution in which you work, the greater will be the need to prepare written reports. As the organization grows in complexity, so does the required degree of formal communication.

The Purpose of Statistical Studies

Given the importance of communication, it should come as no surprise that the primary purpose of a report is to convey information. In this effort, statistical reports are fairly concise and follow a rather predetermined pattern. This familiar pattern permits easy recognition of the essential features and allows the reader to quickly comprehend the study. We will examine two types of statistical studies: Statistical reports and statistical abstracts.

These studies are quite similar to purpose and in the composition of their component parts. However, a statistical report is the result of a more complete and exhaustive study. Its focus is on complex issues that could affect the long-term future and direction of the organization. It is used when decisions such as plant locations, major capital projects, and changes in the product line are made. A statistical abstract, on the other hand, is used when the problem is of less complexity and consequences. Each of these is examined in detail.

Statistical Reports

To complete a statistical report you must isolate the problem and collect the necessary data. The population must be clearly identified and a sample carefully chosen. The researcher then conducts the study and prepares to report the results.

As noted above, the procedure to be followed in reporting a statistical study consists of rather precise and well-defined steps that may be modified only
slightly. Immediately following the title page the statistical report provides an account of its conclusions and recommendations. In a business setting this opening statement is usually referred to as an executive summary.

Executive Summary

The intent of the executive summary is to immediately provide the time-constrained reader with the important facts and findings derived from the study. It summarizes these findings and conclusions, along with any recommendations, and places them at the beginning of the study. This placement provides easy access to the more important information relevant to any decision that a manager must make. If the manager is interested in any further details, he or she may consult the main body of the report.

The executive summary should be written in a non-technical manner. It is intended for upper-level managers whose expertise often lies in business management and not in technical fields such as chemistry, physics, or even, in many cases, statistics. They generally have little concern for the technical aspect of the report. They only want to be assured that you have considered all relevant business factors and followed proper scientific procedures in the formulation of the report. If the reader then decides a more complete technical explanation, he or she can read any additional portion of the report. The executive summary seldom exceeds one or two pages.

Although the executive summary precedes the main report when it is submitted in final form, the summary is written only after the study has been conducted and the rest of the report has been completed. The summary should include no new information not presented in the report, and should not offer conclusions based on data or information not contained in the report.

INTRODUCTION

The second step is a brief introduction describing the nature and scope of the problem. Any relevant history or background of the problem that is essential to a thorough understanding and provides clarification for the rest of the study should
also be included. A statement is made explaining why the resolution of this issue is important and the critical need to formulate a course of action.

**METHODOLOGY**

The third section of a statistical report is more technical than the rest of the study, as it explains the exact nature of the statistical tests that you indeed to conduct. It describes in detail the precise quantitative tools and techniques to be used, and reveals the manner in which they will lead to the desired results. It is also customary to briefly characterize the data set and the manner in which the sample was taken. This will become familiar to you as you gain an increased understanding of statistical analysis and its many applications.

The methodology that you use will depend largely on what you want to accomplish. This fact too will become more evident as you gain more insight into the process of statistical analysis as described in this text.

**Findings**

It is here that the true statistical analysis is preformed. The findings consist of the actual statistical computations that provide the information required to make decisions and recommendations. These calculations may vary from simple descriptive techniques to the more advanced inferential analysis. The computations are shown in sufficient detail to reveal and validate the statistical test without providing needless information or becoming overly cumbersome.

In addition, comments regarding the computations are provided to note the results and draw attention to their significance. That is, the results of the computations are merely cited or quoted. No effort is made to discuss or interpret these computations. This is left for the next segment.

**Discussion and Interpretation**

Based on the findings from the previous section, the researcher now woofers a discussion and interoperation of the report's major implications. The researcher should provide an interpretation of the findings in a meaningful and yet non-technical sense. This section has a considerable impact on the formulation of the solution to the problem described in the introduction, which motivated the report.
Conclusions and Recommendations

This final segment often repeats some of the information found in the executive summary, yet allows the researcher to explain in greater detail how and why the conclusions were reached. A more complete discussion of the recommendations may also be included. It is important that this section be based on the results of the findings and not other conclusions or recommendations not supported by the analysis.

If reports are prepared in this organized form, they are inherently more useful and lend the researcher a sense of credibility and authority. The report will command respect from those who rely on it to make important decisions.

STATISTICAL ABSTRACT

The statistical abstract is used when the issue is less complex and does not have the long range implications associated with a statistical report. The statistical abstract is shorter and less formal than the report form. Unlike the statistical report, the statistical abstract is seldom accompanied by an executive summary. The less complex nature of the issue the abstract is to address makes such a formal summary unnecessary.

Other than the executive summary, the abstract contains essentially the same features as the report. However, the components parts of the abstract are much less detailed and shorter in length. The statistical abstract can sometimes be presented in a single page. The following discussion of the abstract's main components reveals that each resembles those found in the statistical report, but in somewhat abbreviated form.

Introduction

The introduction is a brief statement describing the motivation for the study. It explains what problem or concerns prompted the study and why the study is important. Little or no reference is made to historical developments as was the case with the report form.

Methodology

As with the report form, the methodological statement contained in the abstract describes in some technical detail the statistical tools and techniques that will be
used to complete the study. This is perhaps the most technical component of the abstract. A brief description of the population and the manner in which the sample was taken is customary.

**Findings**

This section includes the actual statistical computations and implements the statistical tools described in the methodology section. Due to the less involved, less complex nature of the problem, this section may consist of only a few calculations, which will serve as the basis for the study's conclusion. Brief commentary is provided regarding the outcome of the computations.

**Discussion and Interpretation**

Relying on the findings in the previous section, the researcher presents a discussion of the study's findings and offers an interpretation. This interpretation translates the technical findings for those who are less trained in statistical procedures.

**Conclusion and Recommendation**

The abstract may be completed without a conclusion or any statement regarding recommendations. The study may have been requested by a superior who simply requires more information to make his or her own managerial decision. This superior may consider a recommendation for action as a usurpation of his or her administrative power. Remember, the abstract is used when the decision to be made is of lesser consequence; the decision can often be administered by a single authority. For this reason, a recommendation is not usually offered unless specifically requested.