CHAPTER ELEVEN

Preparing Informative and Influential Business Reports

Learning Objectives

Upon completing this chapter, you will be able to prepare well-organized, objective reports. To reach this goal, you should be able to

1 Write clear problem and purpose statements.

2 List the factors involved in a problem.

3 Explain the common errors in interpreting data and develop attitudes and practices conducive to good interpreting.

4 Organize information in outline form, using time, place, quantity, factor, or a combination of these as bases for division.

5 Turn an outline into a table of contents whose format and wording are logical and meaningful.

6 Write reports that are focused, objective, consistent in time viewpoint, smoothly connected, and interesting.

7 Prepare reports collaboratively.

Writing Reports to Solve Workplace Problems

Introduce yourself to the subject of report writing by assuming the role of an operations analyst at Technisoft, Inc. Much of your work at this large software company involves getting information for your boss, the president of the company. Yesterday, for example, you looked into the question of excessive time spent by office workers on the Internet. A few days earlier, you worked on an assignment to determine the causes of unrest in one of the local branches. Before that assignment you investigated a supervisor's recommendation to change an evaluation process. You could continue the list indefinitely because investigating problems is a part of your work.

You must write a report on each of your investigations. You write such reports for good reasons. Written reports make permanent records. Those who need the information contained in these reports can then review and study them at their convenience. Written reports also can be routed to a number of readers with a minimum of effort and for this reason are often a convenient and efficient means of transmitting information.

Your report-writing work is not unique to your job. In fact, report writing is common throughout the company. For example, the engineers often report on the technical problems they encounter. The accountants regularly report to management on the company's financial status and compliance with regulations. The salespeople regularly report on marketing matters. And so it is throughout the company. Such reporting is vital to your company's operations—as it is to the operations of all companies.

Writing to external audiences can also be critical to an organization's success. If the organization is a consulting firm, reports to the client may be its primary deliverable. If the company is publicly traded, it is required by law to submit financial reports to the government and to shareholders. Depending on the nature of its business, a company may have to write reports to various agencies about its impact on the environment, its hiring practices, or its compliance with quality standards.

Sometimes reports are written by individuals. Increasingly, however, they are prepared in collaboration with others. Even if one person has primary responsibility for a report, he or she will often need contributions from many people. Indeed, report writing draws on a wide variety of communication skills, from getting information to presenting it clearly.

This and the following chapter describe the structure and writing of this vital form of business communication.

REPORTS AND YOUR FUTURE

How often you write reports in the years ahead will depend on the size and nature of the organization you work for. If you work for a very small organization (say, one with fewer than 10 employees), you will probably write only a few. But if you work for a midsize or larger organization, you are likely to write many. The larger the organization, the greater its complexity; and the greater the complexity, the greater the need for information to manage the organization.

The nature of the business can also influence the number and type of reports you will write. The Securities and Exchange Commission requires all publicly traded businesses to write certain financial reports at regular intervals. A consulting firm's whole business effort may be directed toward informational and advisory reports to its clients. A business performing work under government contracts will also have special reporting needs. Though the frequency with which you will write reports and the kinds you will write will depend on your job and your employer, you can be fairly certain that report writing will figure significantly in your business career.

DEFINING REPORTS

You probably have a good idea of what reports are. Even so, you might have a hard time defining them. Some people define reports to include almost any presentation of information, while others use the term to refer only to the most formal presentations.

We use this middle-ground definition: *A business report is an orderly and objective communication of factual information that serves a business purpose.*

As an *orderly* communication, a report is prepared carefully. This care in their preparation distinguishes reports from casual exchanges of information. The *objective* quality of a report is its unbiased approach. Good reports present all the relevant facts and interpret them without personal bias. The word *communication* in our definition is broad in meaning. It covers all ways of transmitting meaning: speaking, writing, using visuals, or a combination of these. The basic ingredient of reports is *factual information*. Factual information is based on events, statistics, and other data. Finally, a business report must *serve a business purpose*. Research scientists, medical doctors, ministers, students, and many others write reports, but to be classified as a business report, a report must help a business solve its problems or meet its goals.

This definition is specific enough to be useful but broad enough to account for the variations in business reports. For example, some reports (information reports) do nothing more than present facts. Others (analytical reports) go a step further by including interpretations, sometimes accompanied by conclusions. Recommendation reports go further yet, presenting advice for future action. Some reports are highly formal both in writing style and in physical appearance, while some are highly informal. The situation will determine the specific qualities of any given report. However, all reports should help readers make informed business decisions.

LO1 *Write clear problem and purpose statements.*

DETERMINING THE REPORT PROBLEM AND PURPOSE

Your work on a report logically begins with a need, which we refer to in the following discussion as the **problem**. Someone or some group (usually your superiors) needs information for a business purpose. Perhaps the need is for information only; perhaps it is for information and analysis; or perhaps it is for information, analysis, and recommendations. Whatever the case, someone with a need will authorize you to do the work. How you define this need (problem) will determine your **report's purpose**.

The Preliminary Investigation

Your first task is to understand the problem. To do this well, you will almost surely have to gather additional information beyond what you've been given. You may need to study the company's files or query its databases, talk over the problem with experts, search through external sources, and/or discuss the problem with those who authorized the report. You should do enough preliminary research to be sure you understand the problem that your report is intended to address.

The Need for Clear Problem and Purpose Statements

Your next task is to clearly state your understanding of the *problem* and your report's *purpose*. Clear problem and purpose statements are important for you as you plan and write the report and for those who will read and use the report.

The **problem statement** provides a clear description of the situation that created the need for your report. Problem statements are generally written as declarative statements. For example, a simple one might read "Sales are decreasing at Company X."

You should then write a **purpose statement** (also called the report's *objective, aim,* or *goal*). This statement is often written in the form of a question or infinitive phrase. Thus, if your problem is that Company X wants to know why sales are decreasing, your purpose statement may be "to determine the causes of decreasing sales at Company X" or "What are the causes of decreasing sales at Company X?"

Sometimes, as in the preceding example, the purpose will be clearly implied in the problem statement. Other times, the problem will be so complex or general that you will need to put some thought into your report's purpose. For example, the purpose of a report intended to help a company reduce employee turnover could be "to find out why

Report-Writing Practices and the Sarbanes-Oxley Act

Changes in the regulatory environment can have a significant impact on the kinds of reporting that companies must do. One of the most major changes in recent history was the adoption of the Sarbanes-Oxley Act in 2002.* The law, which applies to all publicly traded companies, was intended to minimize financial scandals like those involving Enron, Arthur Andersen, Lehman Brothers, and Bernie and Peter Madoff and to maintain investor confidence. It requires companies to submit periodic reports on their financial practices to outside audit committees and assessments of those practices to the Securities and Exchange Commission (SEC), beyond the financial reports they were already submitting (such as their annual 10-K reports).

But chief financial officers are not the only ones writing more reports. Managers, office personnel, and information technology professionals also must do much more reporting on procedures and controls involving financial transactions and recordkeeping. And the process of bringing these companies into compliance has generated thousands of internal directives and reports.

You will not be able to predict all the kinds of reports you may be asked to write. At any moment, your company, its needs, or its environment may change. You must be ready to adapt with your problem-analysis, data-gathering, interpreting, and writing skills.

*For further information, see the Sarbanes-Oxley Beginner's Guide at http://beginnersguide.com/accounting/sarbanesoxley/.

employee turnover is so high," "to find out how other companies have addressed employee turnover," "to find out what makes loyal employees stay," a combination of these, or some other purpose. Consider carefully what approach your report will take to the problem.

These statements will help keep you on track as you continue through the project. In addition, they can be reviewed, approved, and evaluated by people whose assistance may be valuable. Most important, putting the problem and purpose in writing forces you to think them through. Keep in mind, though, that no matter how clearly you try to frame the problem and your research purpose, your conception of them may change as you continue your investigation. As in other types of business writing, report writing often involves revisiting earlier steps (recursivity), as discussed in Chapters 1 and 6.

In your completed report, the problem and purpose statements will be an essential component of the report's introduction and such front matter as the letter of transmittal and executive summary; they will orient your readers and let them know where your report is headed.

DETERMINING THE FACTORS

LO2 List the factors involved in a problem.

Once you've defined the problem and identified your purpose, you determine what **factors** you need to investigate. That is, you determine what subject areas you must look into to solve the problem.

What factors a problem involves can vary widely, but we can identify three common types. First, they may be subtopics of the overall topic about which the report is concerned. Second, they may be hypotheses that must be tested. Third, in problems that involve comparisons, they may be the bases on which the comparisons are made.

Use of Subtopics in Information Reports

If the problem concerns a need for information, you will need to figure out the areas about which information is needed. Illustrating this type of situation is the problem of preparing a report that reviews Company X's activities during the past quarter. This is an informational report problem—that is, it requires no analysis, no conclusion, no

recommendation. It requires only that information be presented. The main effort in this case is to determine which subdivisions of the overall topic should be covered. After thoroughly evaluating the possibilities, you might come up with a plan like this:

Purpose statement: To review operations of Company X from January 1 through March 31.

Subtopics:

1. Production
2. Sales and promotion
3. Financial status
4. Computer systems
5. Product development
6. Human resources

Hypotheses for Problems Requiring Solution

Some problems concern why something bad is happening and perhaps how to correct it. In analyzing problems of this kind, you should seek explanations or solutions. Such explanations or solutions are termed **hypotheses**. Once formulated, hypotheses are tested, and their applicability to the problem is either proved or disproved.

To illustrate, assume that you have the problem of determining why sales at a certain store have declined. In preparing to investigate this problem, you would think of the possible explanations (hypotheses) for the decline. You might identify such possible reasons as these:

Purpose statement: To find out why sales at the Springfield store have declined.

Hypotheses:

1. Activities of the competition have caused the decline.
2. Changes in the economy of the area have caused the decline.
3. Merchandising deficiencies have caused the decline.
4. Changes in the environment (population shifts, political actions, etc.) have caused the decline.

You would then conduct the necessary research to test these hypotheses. You might find that one, two, or all apply. Or you might find that none is valid. If so, you would have to generate additional hypotheses for further evaluation.

Bases of Comparison in Evaluation Studies

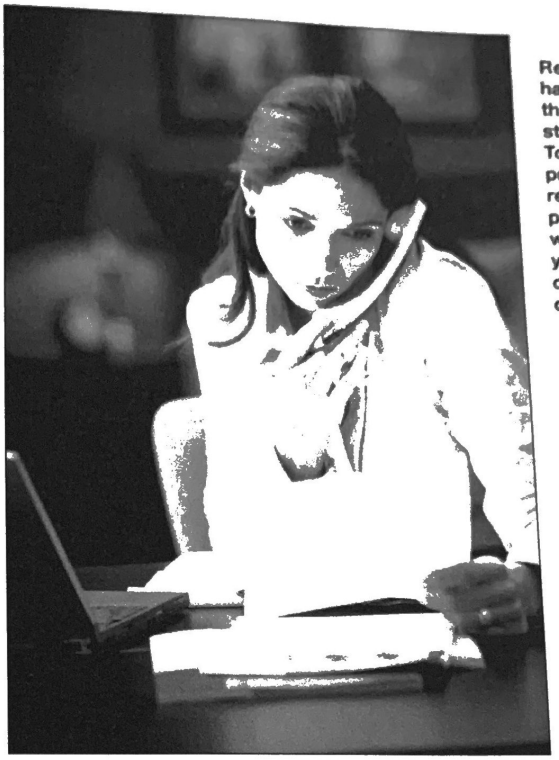
When the problem concerns evaluating something, either singularly or in comparison with other things, you should look for the bases for the evaluation. That is, you should determine what characteristics you will evaluate and the criteria you will use to evaluate them.

Illustrating this technique is the problem of a company that seeks to determine which of three cities would be best for expansion. The bases for comparing the cities are the factors that would likely determine the success of the new branch. After considering such factors, you might come up with a plan like this:

Purpose statement: To determine whether Y Company's new location should be built in City A, City B, or City C.

Comparison bases:

1. Availability of skilled workers
2. Tax structure
3. Community attitude
4. Transportation facilities
5. Nearness to markets



Report writing requires hard work and clear thinking in every stage of the process. To understand the problem, identify your report's purpose, and prepare the report that will solve the problem, you may need to consult many sources of information.

Each of the factors selected for investigation may have factors of its own. In this illustration, for example, the comparison of transportation in the three cities may well include such subdivisions as water, rail, truck, and air. Workers may be compared by using such categories as skilled workers and unskilled workers. Subdivisions of this kind may go still further. Skilled workers may be broken down by specific skills: engineers, programmers, technical writers, graphic designers. Make as many subdivisions as you need in order to provide a thorough, useful comparison.

GATHERING THE INFORMATION NEEDED

For many business problems, you can conduct the investigation on your own. A production problem, for example, might require gathering and reviewing the company's production records. A sales problem might require collecting information through discussions with customers and sales personnel. A computer problem might require talking to both end users and programmers. A purchasing problem might require getting product information, finding prices, and compiling products' performance statistics. A problem involving adopting a new business practice might require searching business literature and relevant websites to learn about the practice's pros and cons and to gather advice about its implementation. An investigation that you do by yourself usually requires knowledge of your field of work, which is probably why you were assigned the problem.

Some business problems require a more formal type of research, such as an experiment, survey, or focus group. In such cases, you will almost surely require others' assistance. Chapter 13, as well as the collaborative writing section at the end of this chapter, can help you prepare for these projects.

As you conduct your research, follow these general guidelines:

- *Gather more information than you will use.* Busy college students are sometimes tempted to gather just enough information and no more or to exert the effort

Report-Writing Tools Help Businesses Succeed

To survive and thrive, businesses must have timely, accurate data about their operations. For many businesses, that means investing in software that will generate the informational reports they need.

The most powerful report-writing tools are those that are integrated with enterprise resource planning (ERP) systems, which allow managers real-time access to data about the different facets of the company. These products' report-writing tools make it easy to get a snapshot of any part of business operations, whether it be the current financial picture, the sales history of a certain product, or the status of customers' accounts.

But even small businesses can benefit from report-writing tools. Shown here is the title page of a sample home-inspection report created with Horizon software. The software enables home inspectors to create all the necessary components—from transmittal letter to contract to results and recommendations—and then generates a professional-looking report for the customer.

While you may not be able to find software to support your report writing to this extent, you will almost surely use electronically generated reports when preparing your own reports. Be sure to familiarize yourself with any report-writing tools your organization uses so that you do not overlook important data or leave out information that your reader expects to see in your report.

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they think the research should require and then stop. But those are bad research practices. In business, your job is to help solve a problem, not just to show that you spent some time on it. Keep researching until you feel you have found the information that will allow you to generate the best solution.

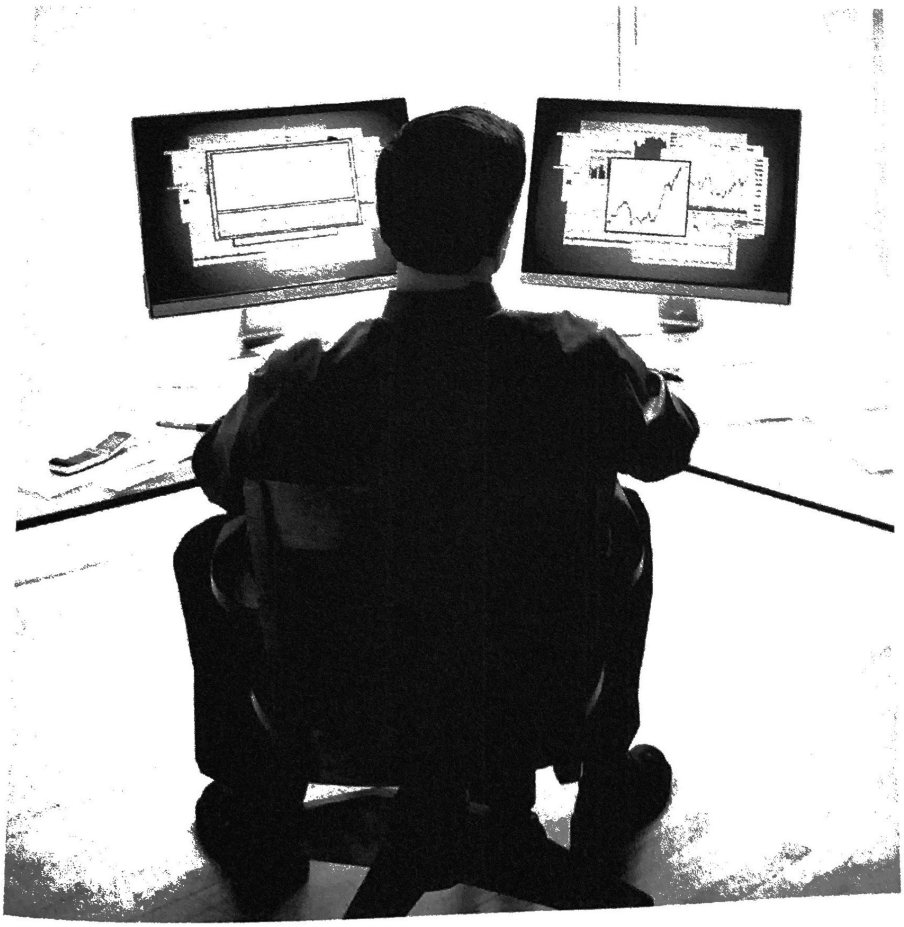
- *Be resourceful.* As Chapter 13 explains, you'll have many research methods and resources at your disposal. Use good judgment when figuring out where you're likely to find the best information. And when you find information in one place (for example, a website about customers' preferences), check it against information in another place (the research literature or opinions of your own customers).
- *Keep accurate notes.* To make your research efficient, keep a record of where you've looked and what you've found there. For example, if you're searching the Internet or a database, jot down the different search terms and combinations of terms you've used so that you don't repeat the same search. As Chapter 13 advises, you should also keep careful records of your sources so that you can go back to them as needed and document them accurately in your report.

INTERPRETING THE FINDINGS

LO3 Explain the common errors in interpreting data and develop attitudes and practices conducive to good interpreting.

The next major stage of the report-writing process is to interpret the information you've gathered.

Actually, you will have done a good bit of interpreting already by the time you reach this stage. You had to interpret the elements of the situation to understand the problem and determine your research purpose. You also had to interpret your data as you were gathering them to make sure that you were getting appropriate and sufficient information. But when your research is finished, you will need to formulate the interpretations that will guide the shape and contents of your report.



Interpreting facts requires not only analytical skills and objective judgment but consideration for ethical issues as well.

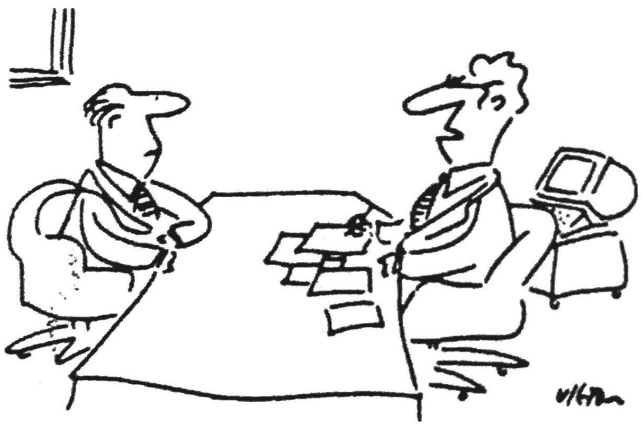
To do this, keep both your problem and your readers in mind. Your findings will need to apply clearly to the given problem in order to be viewed as logical solutions. But they will also need to meet the readers' needs in order to be viewed as relevant and helpful. If you have kept your reader-based problem and purpose statements in mind while doing your research, making logical, reader-based analyses of your data should follow naturally.

How you interpret your data will vary from case to case, but the following general advice can help you with this process.

Advice for Avoiding Human Error

Certain human tendencies lead to error in interpretation. The following list explains how to minimize them:

1. *Report the facts as they are.* Do nothing to make them more or less exciting. Adding color to interpretations to make the report more interesting compromises objectivity.
2. *Do not think that conclusions are always necessary.* When the facts do not support a conclusion, you should just summarize your findings and conclude that there is no conclusion. All too often, report writers think that if they do not conclude, they have failed in their investigation.
3. *Do not interpret a lack of evidence as proof to the contrary.* The fact that you cannot prove something is true does not mean that it is false.
4. *Do not compare noncomparable data.* When you look for relationships between sets of data, make sure they have enough similarities to be comparable. For example, you might be able to draw conclusions about how two groups of employees differ at Company X, but you probably would not be justified in comparing Group A from Company X to Group B from Company Y.
5. *Do not draw illogical cause–effect conclusions.* The fact that two sets of data appear to affect each other does not mean they actually do. They may be only **correlated** (strongly associated for an undetermined reason). Use research and good logic to determine whether a cause–effect relationship is likely.
6. *Beware of unreliable and unrepresentative data.* Much of the information to be found in secondary sources is incorrect to some extent. The causes are many: collection error, biased research, recording mistakes. Beware especially of data collected by groups that advocate a position (political organizations, groups supporting social issues, and other special interest groups). Make sure your sources are reliable. And remember that the interpretations you make are no better than the data you interpret.
7. *Do not oversimplify.* Most business problems are complex, and it can be tempting to settle for easy answers. Avoid conclusions and recommendations that do not do justice to the problem.



You're right. This report does make you look like a fool.

SOURCE: © 1985 Dean Vietor. Used with permission.

8. *Tailor your claims to your data.* There's a tendency among inexperienced report writers to use too few facts to generalize far too much. If you have learned about a certain phenomenon, do not assume that your interpretations can automatically be applied to similar phenomena. Or if your research has revealed the source of a problem, do not assume that you can also propose solutions; finding solutions can be a separate research project altogether. Make only those claims that are well supported by your evidence, and when you are not sure how strong to make them, use such qualified language as "may be," "could be," and "suggest."

Appropriate Attitudes and Practices

In addition to being alert to the most likely causes of error, you can improve your interpretation of findings by adopting the following attitudes and practices:

1. *Maintain a judicial attitude.* Play the role of a judge as you interpret. Look at all sides of every issue without emotion or prejudice. Your primary objective is to form the most reliable interpretations of the situation.
2. *Consult with others.* It is rare indeed when one mind is better than two or more. You can usually profit by talking over your interpretations with others.
3. *Test your interpretations.* While the ultimate test of your interpretations' validity will be how well they hold up in their actual application to a company problem, you can perform two tests to help you make reasonable inferences from your data.

   First is the **test of experience.** In applying this test, you ponder each interpretation you make, asking yourself, "Does this appear reasonable in light of all I know or have experienced?"

   Second is the **negative test**, which is a critique of your own conclusions. Here, you consider what a skeptic or "devil's advocate" might say about your interpretations. By considering the opposing viewpoint, you can make your interpretations more reliable.

Statistical Tools for Data Analysis

In many cases, the information you gather is quantitative—that is, expressed in numbers. "You can't manage what you can't measure" is a common business expression, and while nonnumerical data, such as descriptions of customers' experiences or comments by employees, are also extremely valuable, the popularity of this expression rightly suggests that businesses need accurate numbers in order to succeed. As Chapter 1 points out, barcode systems and other "smart machines," which store statistics about their use, are generating huge amounts of numerical information. To use such data intelligently, you must find ways of simplifying them so that your reader can grasp their general meaning.

Statistical techniques provide many methods for analyzing data. By knowing them, you can improve your ability to interpret. Although a thorough review of statistical techniques is beyond the scope of this book, you should know the more commonly used methods, described in the following paragraphs.

Possibly of greatest use to you in writing reports are **descriptive statistics**—measures of central tendency, dispersion, ratios, and probability. Measures of central tendency—the mean, median, and mode—will help you find a value that roughly represents the whole. The measures of dispersion—ranges, variances, and standard deviations—help you describe how spread out the data are. Ratios (which express proportionate relationships) and probabilities (which determine how many times something will likely occur out of the total number of possibilities) can also help you give meaning to data. **Inferential statistics,** which enable you to generalize about a whole population based on the study of a sample, are also useful but go beyond these basic elements. You will find descriptions of these and other useful techniques in the help documentation of your spreadsheet and statistics software as well as in any standard statistics textbook.

A word of caution, however: Your job as a writer is to help your reader interpret the information. Sometimes unexplained statistical calculations—even if elementary to you—may confuse the reader. Thus, you must explain your statistical techniques and findings explicitly with words and appropriate visuals. You must remember that statistics are a help to interpretation, not a replacement for it. Whatever you do to turn numerical data into meaningful information deserves careful explanation.

LO4 Organize information in outline form, using time, place, quantity, factor, or a combination of these as bases for division.

ORGANIZING THE REPORT INFORMATION

When you have interpreted your information, you will know your report's main points. Now you are ready to organize this content for presentation. Your goal here is to arrange the information in a logical order that meets your reader's needs.

The Nature and Benefits of Outlining

An invaluable aid at this stage of the process is an **outline**. A good one will show what things go together **(grouping)**, what order they should be in **(ordering)**, and how the ideas relate in terms of levels of generality **(hierarchy)**. Although you can outline mentally, a written plan is advisable for all but the shortest reports. Time spent on outlining at this stage is well spent because it will make your drafting process more efficient and orderly. For longer reports, your outline will also form the basis for the table of contents.

If you have proceeded methodically thus far, you probably already have a rough outline. It is the list of topics that you drew up when planning how to research your problem. You may also have added to this list the findings that you developed when interpreting your data. But when it's time to turn your research plan into a report plan, you need to outline more deliberately. Your goal is to create the most logical, helpful pattern of organization for your readers.

In constructing your outline, you can use any system of numbering or formatting that will help you see the logical structure of your planned contents. If it will help, you can use the conventional or the decimal symbol system to mark the levels. The **conventional outlining system** uses Roman numerals to show the major headings and letters of the alphabet and Arabic numbers to show the lesser headings, as illustrated here:

Conventional System

I. First-level heading
  A. Second level, first part
  B. Second level, second part
    1. Third level, first part
    2. Third level, second part
      a. Fourth level, first part
        (1) Fifth level, first part
          (a) Sixth level, first part
II. First-level heading
  A. Second level, first part
  B. Second level, second part
  etc.

The **decimal outlining system** uses whole numbers to show the major sections, with decimals and additional numbers added to show subsections. That is, the digits to the right of the decimal show each successive level in the outline, as shown here:

Decimal System

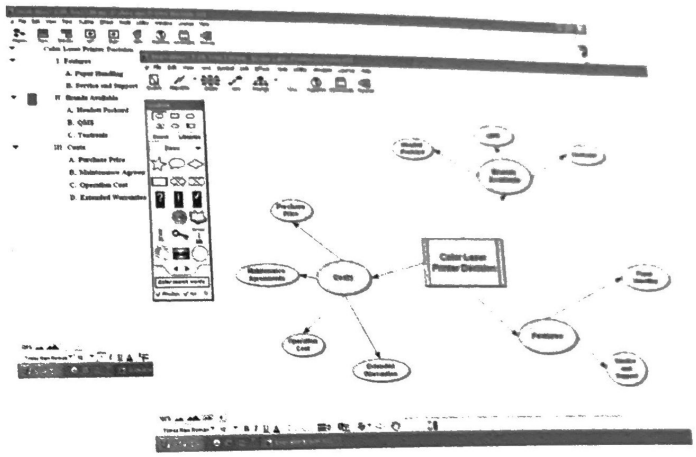
1.0 First-level heading
  1.1 Second level, first part
  1.2 Second level, second part
    1.2.1 Third level, first part

Brainstorm and Outline with Visualization Tools

Inspiration is a concept mapping tool aimed at helping writers generate ideas and outline their documents. The example shown here demonstrates how individuals or groups can brainstorm the factors of a report that investigates which color laser printer a product design department should purchase. Using either the diagram or outline view (or both), a report writer would list as many ideas as possible. Later the items and relationships can be rearranged by dragging and moving pointers.

The software will update the outline symbols as changes are made. Users can toggle between the different views to work with the mode that works best for them. When ready to write, users can export the outline or diagram to Word or Google Docs.

You can download a free 30-day trial version from www.inspiration.com/freetrial. Or try the online version, WebspirationPro, available at www.mywebspiration.com/. Both forms are relatively inexpensive, and the Web-based version is particularly good for collaborative planning and report writing.



1.2.2 Third level, second part
1.2.2.1 Fourth level, first part
1.2.2.1.1 Fifth level, first part
1.2.2.1.1.1 Sixth level, first part

2.0 First-level heading
2.1 Second level, first part
2.2 Second level, second part
etc.

Bear in mind that the outline is a tool for you, even though it is based on your readers' needs. Unless others will want to see an updated outline as you work, spend minimal time on its appearance. Allow yourself to change it, scribble on it, depart from it—whatever seems appropriate as your report develops. For example, you might want to note on your outline which sections will contain visuals, or to jot down a particularly good transition between sections that comes to mind. The time to labor over the outline's format and exact wording will be when you use it to create the headings and the table of contents for your finished report.

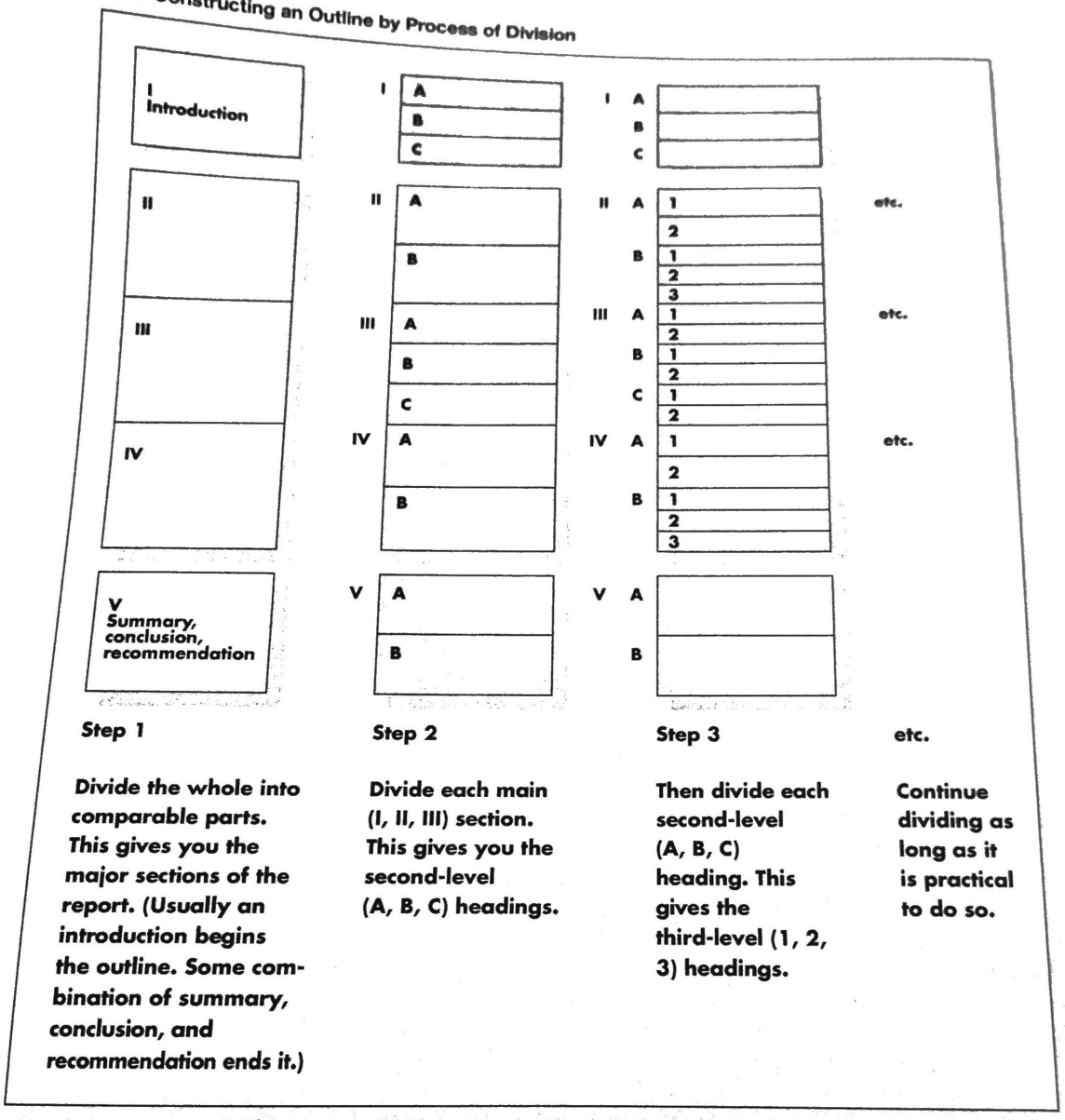
Organization by Division

One methodical way to create an outline is to use the process of dividing the contents into smaller and smaller sections. With this method, you begin by looking over all your information. You then identify its major parts. This first level of division gives you the major outline parts indicated in Figure 11–1 by the Roman numerals (I, II, III, and so on).

Next, you find ways to subdivide the contents in each major section, yielding the second-level information (indicated by A, B, C). If practical, you keep dividing the contents, generating more levels. This method helps you divide your report into manageable chunks while also creating a logical and clear structural hierarchy.

Figure 11–1

Procedure for Constructing an Outline by Process of Division



Division by Conventional Relationships

In dividing your information into subparts, you have to find a way of dividing that will produce approximately equal parts. Time, place, quantity, and factor are the general bases for these divisions.

Whenever the information you have to present has some time aspect, consider organizing it by **time division.** In such an organization, the divisions are periods of time. These time periods usually follow a logical sequence, such as past to present or present to past. The periods you select need not be equal in duration, but they should be about equal in importance.

A report on the progress of a research committee illustrates this possibility. The period covered by this report might be divided into the following comparable subperiods:

Orientation, May–July

Project planning, August
Implementation, September–November

The happenings within each period might next be arranged in order of occurrence, and additional subdivisions might even be possible.

If the information you have collected has some relation to geographic location, you may use a **place division**. Ideally, this division would be such that the areas are nearly equal in importance.

A report on the U.S. sales program of a national manufacturer illustrates division by place. The information in this problem might be broken down by these major geographic areas:

New England
Atlantic Seaboard
South
Southwest
Midwest
Rocky Mountains
Pacific Coast

Another illustration of organization by place would be a report on the productivity of a company with a number of customer service branches. A major division of the report might be devoted to each of the branches. The information for each branch might be broken down further, this time by sections, departments, or divisions.

Quantity divisions are possible for information that has quantitative values. To illustrate, an analysis of the buying habits of potential customers could be divided by such income groups as the following:

Under $30,000
$30,000 to under $45,000
$45,000 to under $60,000
$60,000 to under $85,000
$85,000 to under $100,000
$100,000 and over

Problems often have few or no time, place, or quantity aspects. Instead, they require that certain factors, or information areas, be investigated. You might identify these areas by figuring out what questions must be answered in order to have complete information pertaining to the problem. Sometimes the problem you're investigating will naturally suggest certain subtopics.

An example of **division by factors** is a report that seeks to determine which of three locations is the best for a new office for property management. In arriving at this decision, one would need to compare the three locations based on the factors affecting the office location. Thus, the following organization of this problem would be a possibility:

Location accessibility
Rent
Parking
Convenience to current and new customers
Facilities

Another illustration of organization by factors is a report advising a manufacturer whether to begin production of a new product. The solution of this problem will be reached through careful consideration of the factors involved. Among the more likely factors are these:

Production feasibility
Financial considerations
Strength of competition
Consumer demand
Marketing considerations

Combination and Multiple Division Possibilities

In some instances, combinations of two or more bases of division are possible. In a report on a company's sales, for example, the information collected could be arranged by a combination of quantity and place:

Areas of high sales activity
Areas of moderate sales activity
Areas of low sales activity

A report on sales of cyclical products might use the following combination of time and quantity:

Periods of low sales
Periods of moderate sales
Periods of high sales

Some contents can be organized in more than one way. For example, take a report that addresses the problem of determining the best of three locations for an annual sales meeting. It could be organized by site or by the bases of comparison. Organized by sites, the bases of comparison would probably be the second-level headings:

Site A
- Airport accessibility
- Hotel accommodations
- Meeting facilities
- Favorable weather
- Costs
- Restaurant/entertainment options

Site B
- Airport accessibility
- [and so on]

Site C
- Airport accessibility
- [and so on]

Organized by bases of comparison, cities would probably be the second-level headings:

Airport accessibility
- Site A
- Site B
- Site C

Hotel accommodations
- Site A
- Site B
- Site C

Meeting facilities
- Site A
- Site B
- Site C

[and so on]

Both plans would be logical. However, the organization by cities separates information that has to be compared, thus making it difficult to see which city has the best hotel accommodations. In the second outline, the information that has to be compared is close together. You can determine which city has the best hotel accommodations after reading only one section of the report. In this example, then, the second way would be preferable.