

Creating Effective Graphics

Effective graphics clarify numerical data and simplify complex ideas.

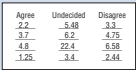



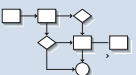


After collecting and interpreting information, you need to consider how best to present it. If your report contains complex data and numbers, you may want to consider graphics such as tables and charts. These graphics clarify data, create visual interest, and make numerical data meaningful. By simplifying complex ideas and emphasizing key data, well-constructed graphics make key information more understandable and easier to remember. In contrast, readers tend to be bored and confused by text paragraphs packed with complex data and numbers. However, the same data can be shown in many forms; for example, in a chart, table, or graph. That's why you need to know how to match the appropriate graphic with your objective and how to incorporate it into your report.

Matching Graphics and Objectives

In developing the best graphics, you should first decide what data you want to highlight and which graphics are most appropriate to your objectives. Tables? Bar charts? Pie charts? Line charts? Surface charts? Flowcharts? Organization charts? Pictures? Figure 10.5 summarizes appropriate uses for each type of graphic. The following sections discuss each type in detail.

Tables permit the systematic presentation of large amounts of data, whereas charts enhance visual comparisons.

Tables. Probably the most frequently used graphic in reports is the table. Because a table presents quantitative or verbal information in systematic columns and rows, it can clarify large quantities of data in small spaces. The disadvantage is that tables don't readily display trends. In preparing tables for your readers or

FIGURE 10.5 Matching Graphics to Objectives		
Graphic		Objective
Table		To show exact figures and values
Bar Chart		To compare one item with others
Line Chart		To demonstrate changes in quantitative data over time
Pie Chart		To visualize a whole unit and the proportions of its components
Flowchart		To display a process or procedure
Organization Chart		To define a hierarchy of elements
Photograph, Map, Illustration		To create authenticity, to spotlight a location, and to show an item in use

Jason Stitt/Shutterstock.com

FIGURE 10.6 Table Summarizing Precise Data

Figure 1 MPM Entertainment Company Income by Division (in millions of dollars)				
	Theme Parks	Motion Pictures	DVDs and Blu-ray	Total
2009	\$15.8	\$39.3	\$11.2	\$66.3
2010	18.1	17.5	15.3	50.9
2011	23.8	21.1	22.7	67.6
2012	32.2	22.0	24.3	78.5
2013 (projected)	35.1	21.0	26.1	82.2

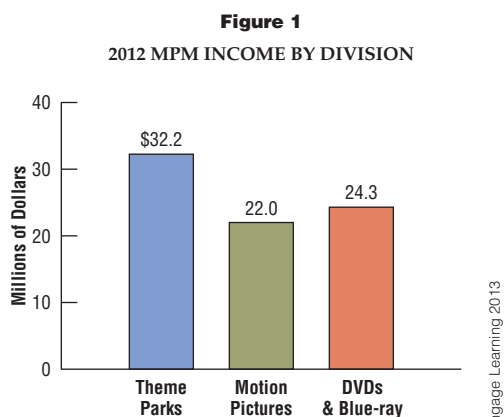
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Source: *Industry Profiles* (New York: DataPro, 2012), 225.

listeners, however, you need to pay attention to clarity and emphasis. Here are tips for designing good tables, one of which is provided in Figure 10.6:

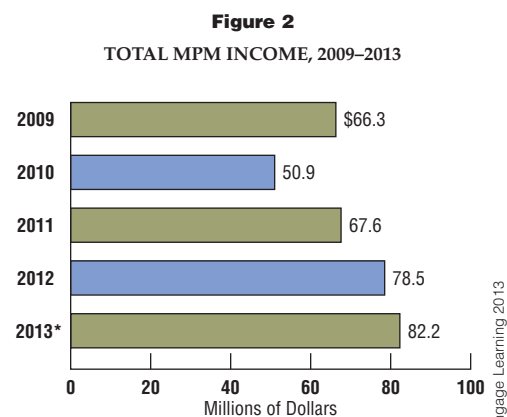
- Place titles and labels at the top of the table.
- Arrange items in a logical order (alphabetical, chronological, geographical, highest to lowest), depending on what you need to emphasize.
- Provide clear headings for the rows and columns.
- Identify the units in which figures are given (percentages, dollars, units per worker hour) in the table title, in the column or row heading, with the first item in a column, or in a note at the bottom.
- Use *N/A* (*not available*) for missing data.
- Make long tables easier to read by shading alternate lines or by leaving a blank line after groups of five.
- Place tables as close as possible to the place where they are mentioned in the text.

Bar Charts. Although they lack the precision of tables, bar charts enable you to make emphatic visual comparisons by using horizontal or vertical bars of varying lengths. Bar charts are useful for comparing related items, illustrating changes in data over time, and showing segments as part of a whole. Figures 10.7 through 10.10 show vertical (also called column charts), horizontal, grouped,

FIGURE 10.7 Vertical Bar Chart

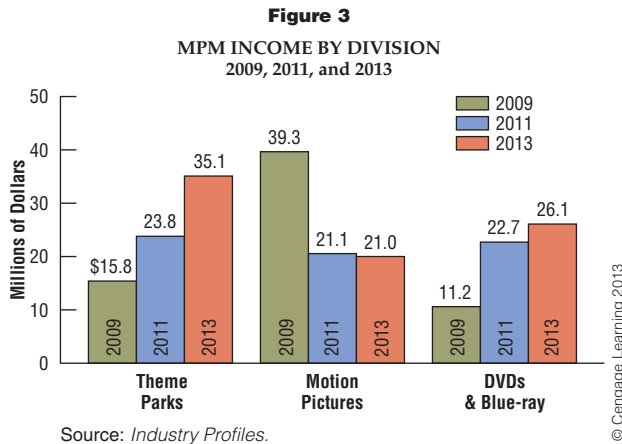
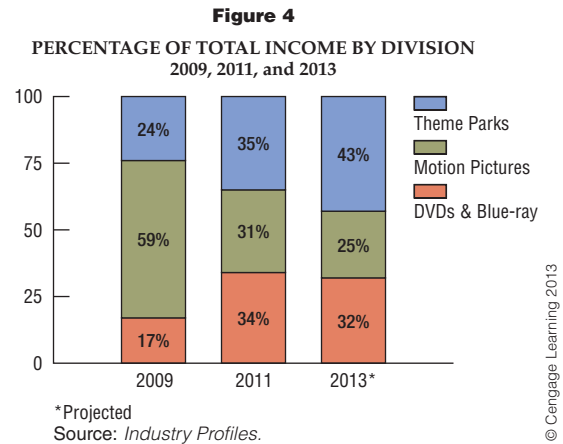
Source: *Industry Profiles* (New York: DataPro, 2012), 225.

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FIGURE 10.8 Horizontal Bar Chart

*Projected
Source: *Industry Profiles*.

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FIGURE 10.9 Grouped Bar Chart**FIGURE 10.10** Segmented 100% Bar Chart

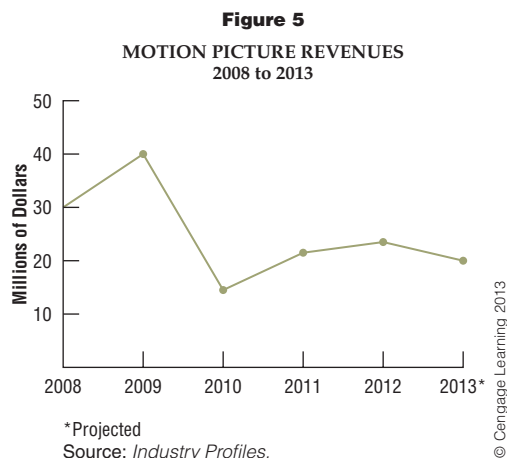
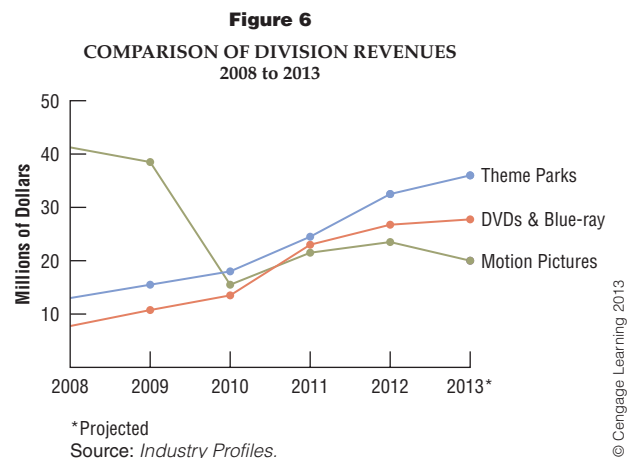
and segmented bar charts that highlight some of the data shown in the MPM Entertainment Company table (Figure 10.6). Note how the varied bar charts present information in differing ways.

Many techniques for constructing tables also hold true for bar charts. Here are a few additional tips:

- Keep the length and width of each bar and segment proportional.
- Include a total figure in the middle of a bar or at its end if the figure helps the reader and does not clutter the chart.
- Start dollar or percentage amounts at zero.
- Place the first bar at some distance (usually half the amount of space between bars) from the y axis.
- Avoid showing too much information, thus preventing clutter and confusion.

Line charts illustrate trends and changes in data over time.

Line Charts. The major advantage of line charts is that they show changes over time, thus indicating trends. The vertical axis is typically the dependent variable (such as dollars), and the horizontal axis is the independent one (such as years). Figures 10.11 through 10.13 show line charts that reflect income trends for the three divisions of MPM. Notice that line charts don't provide precise data, such

FIGURE 10.11 Simple Line Chart**FIGURE 10.12** Multiple Line Chart

as the 2012 MPM DVD and movies and Blu-ray disc income. Instead, they give an overview or impression of the data. Experienced report writers use tables to list exact data; they use line charts or bar charts to spotlight important points or trends.

Simple line charts (Figure 10.11) show just one variable. Multiple line charts compare items, such as two or more data sets, using the same variable (Figure 10.12). Segmented line charts (Figure 10.13), also called surface charts, illustrate how the components of a whole change over time. To prepare a line chart, remember these tips:

- Begin with a grid divided into squares.
- Arrange the time component (usually years) horizontally across the bottom; arrange values for the other variable vertically.
- Draw small dots at the intersections to indicate each value at a given year.
- Connect the dots and add color if desired.
- To prepare a segmented (surface) chart, plot the first value (say, DVD and Blu-ray disc income) across the bottom; add the next item (say, motion picture income) to the first figures for every increment; for the third item (say, theme park income) add its value to the total of the first two items. The top line indicates the total of the three values.

Pie Charts. Pie charts, or circle graphs, enable readers to see a whole and the proportion of its components, or wedges. Although less flexible than bar or line charts, pie charts are useful for showing percentages, as Figure 10.14 illustrates. They are very effective for lay, or nonexpert, audiences. Notice that a wedge can be “exploded,” or popped out, for special emphasis, as seen in Figure 10.14. Microsoft Excel and other spreadsheet programs provide a selection of three-dimensional pie charts. For the most effective pie charts, follow these suggestions:

Pie charts are most useful in showing the proportion of parts to a whole.

- Make the biggest wedge appear first. Computer spreadsheet programs correctly assign the biggest wedge first (beginning at the 12 o’clock position) and arrange the others in order of decreasing size as long as you list the data representing each wedge on the spreadsheet in descending order.
- Include, if possible, the actual percentage or absolute value for each wedge.
- Use four to eight segments for best results; if necessary, group small portions into a wedge called *Other*.

FIGURE 10.13 Segmented Line (Surface) Chart

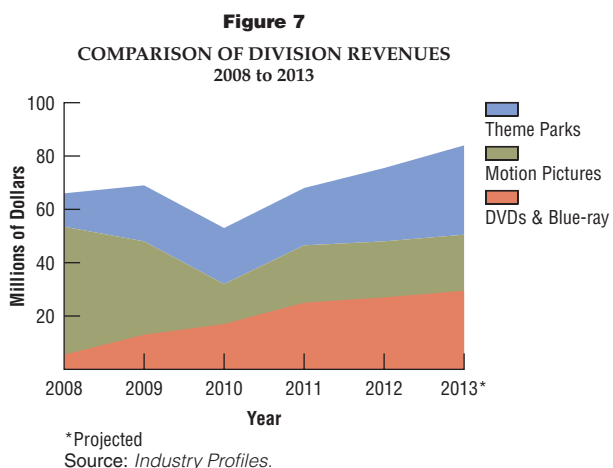
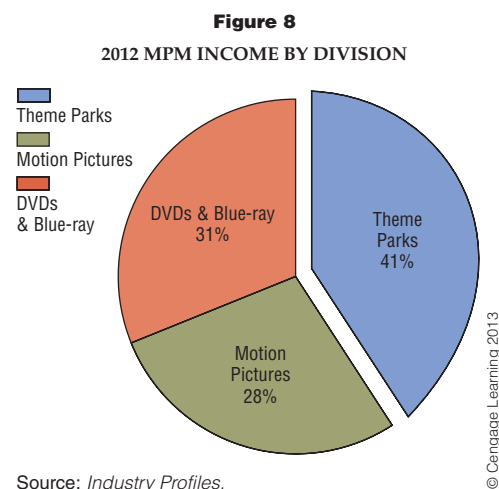


FIGURE 10.14 Pie Chart



- Draw radii from the center.
- Distinguish wedges with color, shading, or cross-hatching.
- Keep all labels horizontal.

Flowcharts use standard symbols to illustrate a process or procedure.

Flowcharts. Procedures are simplified and clarified by diagramming them in a flowchart, as shown in Figure 10.15. Whether you need to describe the procedure for handling a customer's purchase, highlight steps in solving a problem, or display a problem with a process, flowcharts help the reader visualize the process. Traditional flowcharts use the following symbols:

- Ovals to designate the beginning and end of a process
- Diamonds to indicate decision points
- Rectangles to represent major activities or steps

Software programs such as SmartDraw, EazyDraw, and ConceptDraw can be used to create professional-quality flowcharts.

Organization Charts. Many large organizations are so complex that they need charts to show the chain of command, from the boss down to the line managers and employees. Organization charts like the one in Figure 10.16 provide such information as who reports to whom, how many subordinates work for each manager (the span of control), and what channels of official communication exist. These charts may illustrate a company's structure—for example, by function, customer, or product. They may also be organized by the work being performed in each job or by the hierarchy of decision making.

Photographs, Maps, and Illustrations. Some business reports include photographs, maps, and illustrations to serve specific purposes. Photos, for example, add authenticity and provide a visual record. An environmental engineer may use photos to document hazardous waste sites. Maps enable report writers to depict activities or concentrations geographically, such as dots indicating sales reps in states across the country. Illustrations and diagrams are

FIGURE 10.15 Flowchart

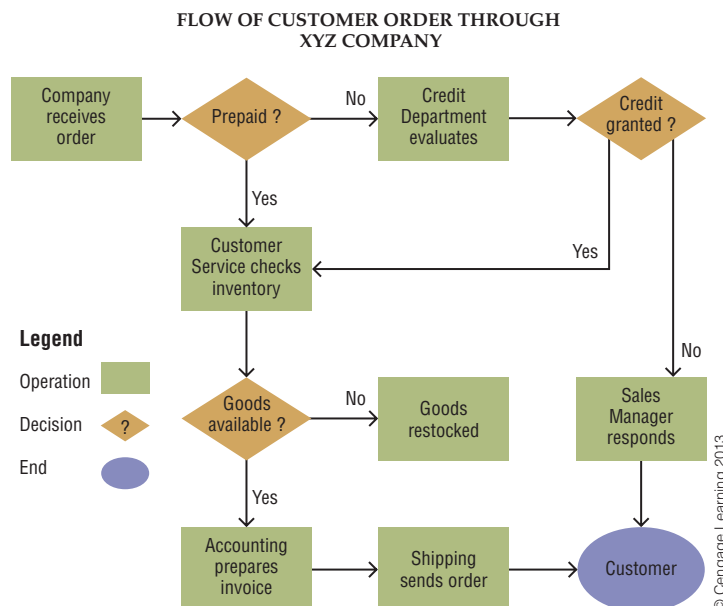
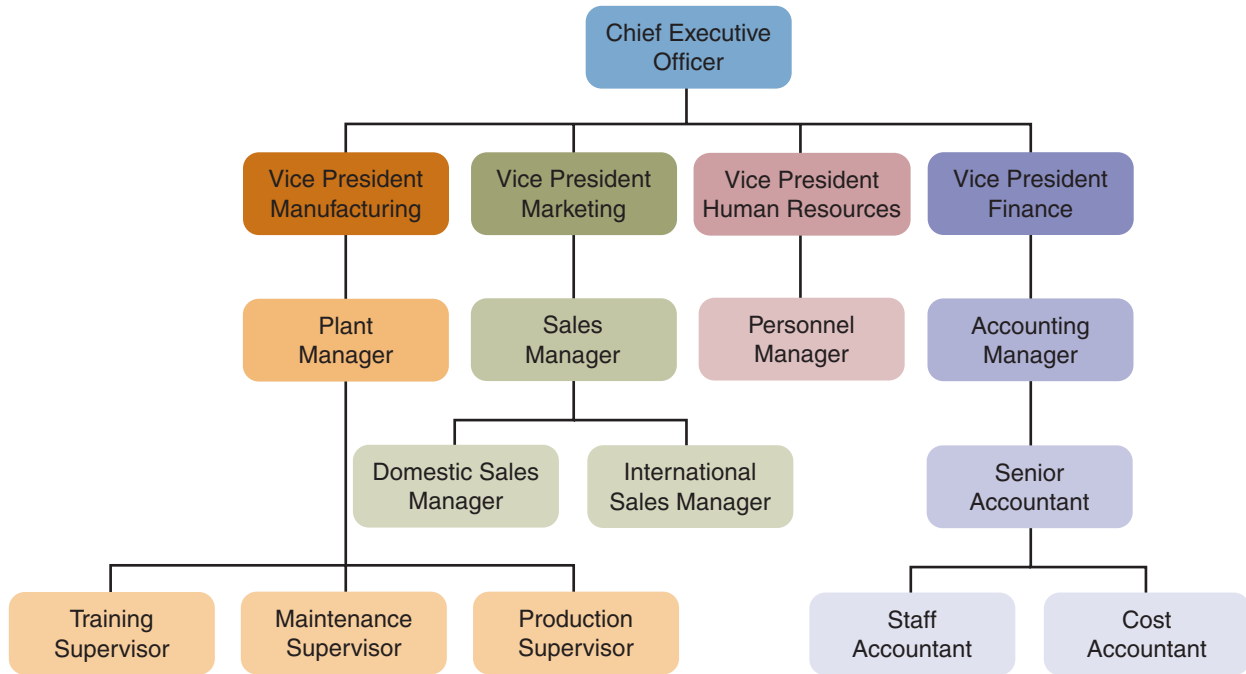


FIGURE 10.16 Organization Chart

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useful in indicating how an object looks or operates. A drawing showing the parts of a printer with labels describing their functions, for example, is more instructive than a photograph or verbal description. With today's computer technology, photographs, maps, and illustrations can be scanned directly into business reports, or accessed through hyperlinks with electronically delivered documents.

Incorporating Graphics in Reports

Used appropriately, graphics make reports more interesting and easier to understand. In putting graphics into your reports, follow these suggestions for best effects:

- **Evaluate the audience.** Consider the reader, the content, your schedule, and your budget.
- **Use restraint.** Don't overuse color or decorations. Too much color can be distracting and confusing.
- **Be accurate and ethical.** Double-check all graphics for accuracy of figures and calculations. Be certain that your visuals are not misleading—either accidentally or intentionally. Manipulation of a chart scale can make trends look steeper and more dramatic than they really are. Moreover, be sure to cite sources when you use someone else's facts.
- **Introduce a graph meaningfully.** Refer to every graphic in the text, and place the graphic close to the point where it is mentioned. Most important, though, help the reader understand the significance of the graphic. You can do this by telling your audience what to look for or by summarizing the main point of the graphic.
- **Choose an appropriate caption or title style.** Like reports, graphics may use talking titles or generic, functional titles. Talking titles are more persuasive; they tell the reader what to think. Functional titles describe the facts more objectively. These headings were discussed in Chapter 9.

When creating graphics in reports, consider audience needs, present figures without distortion, introduce your graphs, and use meaningful captions or titles.

Computer software programs enable you to produce top-quality graphics quickly and cheaply.

Using Your Computer to Produce Charts

Designing effective, accurate bar charts, pie charts, figures, and other graphics is easy with today's software. Spreadsheet programs such as Excel, as well as presentation graphics programs such as PowerPoint, allow even nontechnical people to design high-quality graphics. These graphics can be printed directly on paper for written reports or used for transparency masters and slides for oral presentations. The benefits of preparing visual aids on a computer are near-professional quality, shorter preparation time, and substantial cost savings.

Presenting the Final Report

Long reports are generally organized into three major divisions: (1) front matter, also called prefatory parts or preliminaries, (2) body, and (3) back matter, also known as supplementary parts. Following is a description of the order and content of each part. Refer to the model formal report in Figure 10.17 for illustrations of most of these components.



A letter or memo of transmittal presents an overview of the report, suggests how to read it, describes limitations, acknowledges assistance, and expresses appreciation.

Front Matter Components

Front matter items (preceding the body of a report) and back matter items (following the conclusions and recommendations) lengthen formal reports but enhance their professional tone and serve their multiple audiences. Formal reports may be read by many levels of managers, along with technical specialists and financial consultants. Therefore, breaking a long, formal report into small segments makes its information more accessible and easier to understand.

Title Page. A report title page, as illustrated in the Figure 10.17 model report, begins with the name of the report typed in uppercase letters (no underscore and no quotation marks). Next comes *Prepared for* (or *Submitted to*) and the name, title, and organization of the individual receiving the report. Lower on the page is *Prepared by* (or *Submitted by*) and the author's name plus any necessary identification. The last item on the title page is the date of submission. All items after the title appear in a combination of upper- and lowercase letters. The information on the title page should be evenly spaced and balanced on the page for a professional look.

Letter or Memo of Transmittal. Generally written on organization letterhead stationery, a letter or memo of transmittal introduces a formal report. You will recall that letters are sent to external audiences; and memos, to internal audiences. A transmittal letter or memo follows the direct strategy and is usually less formal than the report itself. For example, the letter or memo may use contractions and the first-person pronouns *I* and *we*. The transmittal letter or memo typically (a) announces the topic of the report and tells how it was authorized; (b) briefly describes the project; (c) highlights the report's findings, conclusions, and recommendations, if the reader is expected to be supportive; and (d) closes with appreciation for the assignment, instructions for the reader's follow-up actions, acknowledgment of help from others, or offers of assistance.

in answering questions. If a report is going to various readers, a special transmittal letter or memo should be prepared for each, anticipating how each reader will use the report.

Table of Contents. The table of contents shows the headings in a report and their page numbers. It gives an overview of the report topics and helps readers locate them. You should wait to prepare the table of contents until after you have completed the report. For short reports you should include all headings. For longer reports you might want to list only first- and second-level headings. Leaders (spaced or unspaced dots) help guide the eye from the heading to the page number. Items may be indented in outline form or typed flush with the left margin.

List of Figures. For reports with several figures or tables, you may wish to include a list to help readers locate them. This list may appear on the same page as the table of contents, space permitting. For each figure or table, include a title and page number.

Executive Summary. As you learned in Chapter 9, the purpose of an executive summary is to present an overview of a longer report to people who may not have time to read the entire document. This time-saving device summarizes the purpose, key points, findings, and conclusions. An executive summary is usually no longer than 10 percent of the original document. Therefore, a 20-page report might require a 2-page executive summary. Chapter 9 discussed how to write an article summary and included an example (Figure 9.9 on page 263). An executive summary is featured in Figure 10.17.

Body of Report

The main section of a report is the body. It generally begins with an introduction, includes a discussion of findings, and concludes with a summary and possibly recommendations.

The body of a report includes an introduction, a discussion of findings, and conclusions or recommendations.

Introduction. Formal reports start with an introduction that sets the scene and announces the subject. Because they contain many parts serving different purposes, formal reports are somewhat redundant. The same information may be included in the letter or memo of transmittal, executive summary, and introduction. To avoid sounding repetitious, try to present the information slightly differently in each section.

A good report introduction typically covers the following elements, although not necessarily in this order:

- **Background.** Describe the events leading up to the problem or need.
- **Problem or purpose.** Explain the report topic and specify the problem or need that motivated the report.
- **Significance.** Tell why the topic is important. You may wish to quote experts or cite newspapers, journals, books, Web resources, and other secondary sources to establish the importance of the topic.
- **Scope.** Clarify the boundaries of the report, defining what will be included or excluded.
- **Sources and methods.** Describe your secondary sources (periodicals, books, databases). Also explain how you collected primary data, including survey size, sample design, and statistical programs used.
- **Organization.** Orient readers by giving them a road map that previews the structure of the report.

Discussion of Findings. This is the main section of the report, and it contains numerous headings and subheadings. This section discusses, analyzes, interprets, and evaluates the research findings or solution to the initial problem. This is where you show the evidence that justifies your conclusions. As summarized in Figure 10.2 on page 294, you may organize the findings chronologically, geographically, topically, or by some other method.

Regardless of the organizational pattern, present your findings logically and objectively. In most cases you will want to avoid the use of first-person pronouns (*I, we*), unless you are certain that your audience prefers informal language. Include tables, charts, and graphs, if necessary, to illustrate your findings. Analytical and scientific reports may include another section titled *Implications of Findings*, in which the writer analyzes the findings and relates them to the problem. Less formal reports contain the author's analysis of the research findings within the *Discussion* section.

Conclusions and Recommendations. The conclusion to a report explains what the findings mean, particularly in terms of solving the original problem. If the report has been largely informational, it ends with a summary of the data presented. If the report analyzes research findings, then it ends with conclusions drawn from the analysis. An analytical report frequently poses research questions. The conclusion to such a report reviews the major findings and answers the research questions. If a report seeks to determine a course of action, it may end with conclusions and recommendations. Recommendations advocating a course of action may be placed in a separate section or incorporated with the conclusions.

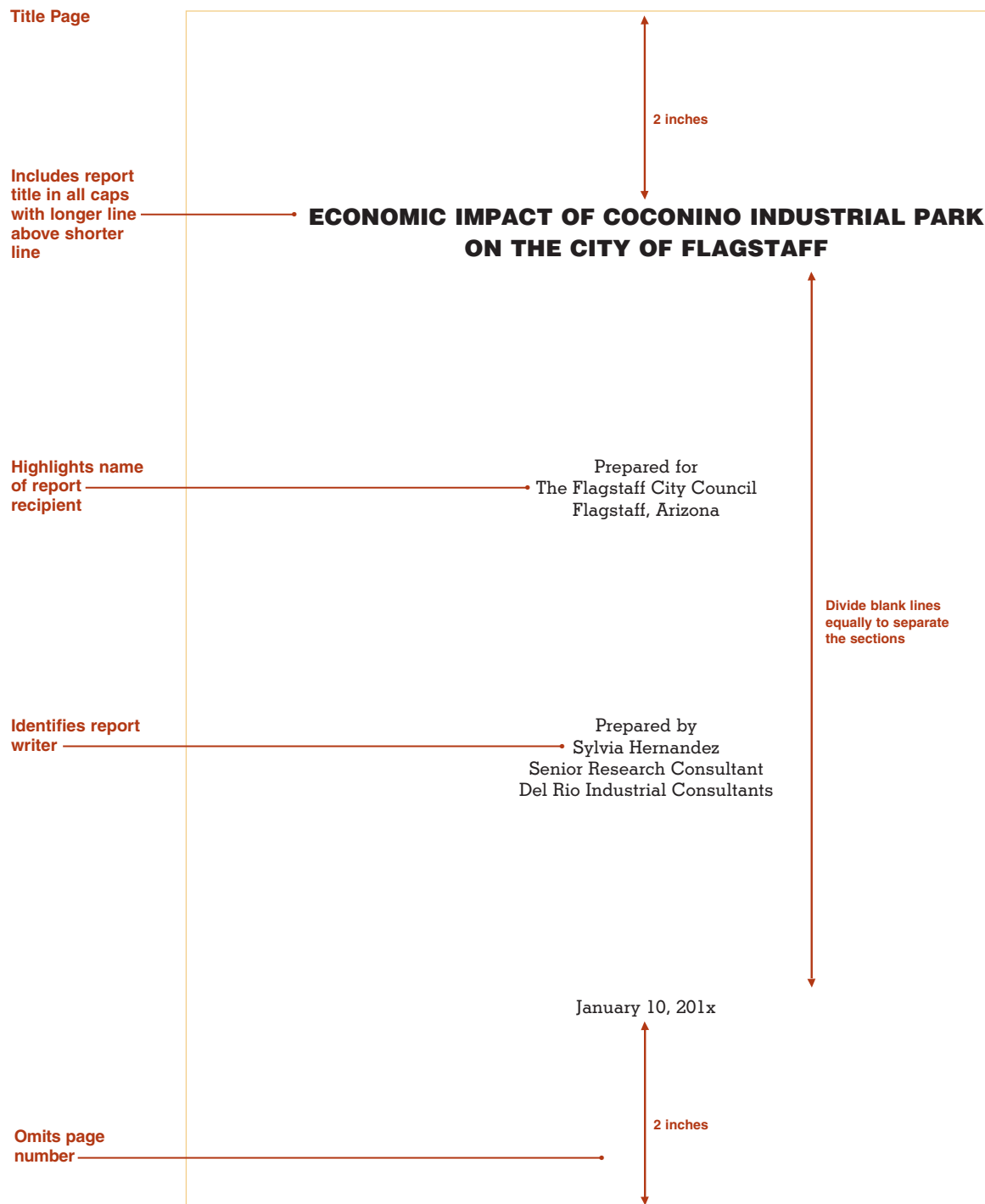
Supplementary Parts of Report

Endnotes, a bibliography, and appendixes may appear after the body of the report.

Works Cited, References, or Bibliography. Readers look in the bibliography section to locate the sources of ideas mentioned in a report. Your method of report documentation determines how this section is developed. If you use the Modern Language Association (MLA) referencing format, all citations would be listed alphabetically in the "Works Cited." If you use the American Psychological Association (APA) format, your list would be called "References." Regardless of the format, you must include the author, title, publication, date of publication, page number, and other significant data for all sources used in your report. For electronic references include the URL and the date you accessed the information online. To see electronic and other citations, examine the list of references at the end of Figure 10.17, which follows the MLA documentation style. See Appendix C for more information on documentation formats.

Appendixes. Incidental or supporting materials belong in appendixes at the end of a formal report. These materials are relevant to some readers but not to all. They may also be too bulky to include in the text. Appendixes may include survey forms, copies of other reports, tables of data, large graphics, and related correspondence. If you need more than one appendix, title them *Appendix A*, *Appendix B*, and so forth. Reference these items in the body of the report.

FIGURE 10.17 Model Formal Report



The title page is usually arranged in four evenly balanced areas. If the report is to be bound on the left, move the left margin and center point 0.25 inch to the right. Notice that no page number appears on the title page, although it is counted as page i. In designing the title page, be careful to avoid anything unprofessional—such as too many type fonts, italics, oversized print, and inappropriate graphics. Keep the title page simple and professional. This model report uses MLA documentation style. However, it does not illustrate double-spacing, the recommended format for research papers using MLA style. Instead, this model uses single-spacing, which saves space and is more appropriate for business reports.

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January 12, 201x

City Council
City of Flagstaff
211 West Aspen Avenue
Flagstaff, AZ 86001

Dear Council Members:

**Announces
report and
identifies
authorization**

The attached report, requested by the Flagstaff City Council in a letter to Goldman-Lyon & Associates dated October 20, describes the economic impact of Coconino Industrial Park on the city of Flagstaff. We believe you will find the results of this study useful in evaluating future development of industrial parks within the city limits.

**Gives broad
overview of
report purposes**

This study was designed to examine economic impact in three areas:

**Uses a bulleted
list for clarity
and ease of
reading**

- Current and projected tax and other revenues accruing to the city from Coconino Industrial Park
- Current and projected employment generated by the park
- Indirect effects on local employment, income, and economic growth

**Describes
primary and
secondary
research**

Primary research consisted of interviews with 15 Coconino Industrial Park tenants and managers, in addition to a 2012 survey of over 5,000 CIP employees. Secondary research sources included the Annual Budget of the City of Flagstaff, county and state tax records, government publications, periodicals, books, and online resources. Results of this research, discussed more fully in this report, indicate that Coconino Industrial Park exerts a significant beneficial influence on the Flagstaff metropolitan economy.

**Offers to
discuss report;
expresses
appreciation**

We would be pleased to discuss this report and its conclusions with you at your request. My firm and I thank you for your confidence in selecting our company to prepare this comprehensive report.

Sincerely,

Sylvia Hernandez

Sylvia Hernandez
Senior Research Consultant

SMH:mef
Attachment

**Uses Roman
numerals for
prefatory pages**

ii

A letter or memo of transmittal announces the report topic and explains who authorized it. It briefly describes the project and previews the conclusions, if the reader is supportive. Such messages generally close by expressing appreciation for the assignment, suggesting follow-up actions, acknowledging the help of others, or offering to answer questions. The margins for the transmittal should be the same as for the report, about 1 to 1.25 inches for side margins. The dateline is placed 2 inches from the top, and the margins should be left-justified. A page number is optional.

Uses leaders to guide eye from heading to page number

Indents secondary headings to show levels of outline

Includes figures (and sometimes tables) in one list for simplified numbering

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3	Average Annual Wages by Industry Groups	4

Because the table of contents and the list of figures for this report are small, they are combined on one page. Notice that the titles of major report parts are in all caps, while other headings are a combination of upper- and lowercase letters. This duplicates the style within the report. Advanced word processing capabilities enable you to generate a contents page automatically, including leaders and accurate page numbering—no matter how many times you revise. Notice that the page numbers are right-justified.

EXECUTIVE SUMMARY

Opens directly
with major
research
findings

The city of Flagstaff can benefit from the development of industrial parks like the Coconino Industrial Park. Both direct and indirect economic benefits result, as shown by this in-depth study conducted by Del Rio Industrial Consultants. The study was authorized by the Flagstaff City Council when Goldman-Lyon & Associates sought the City Council's approval for the proposed construction of a G-L industrial park. The City Council requested evidence demonstrating that an existing development could actually benefit the city.

Identifies data
sources

Our conclusion that the city of Flagstaff benefits from industrial parks is based on data supplied by a survey of 5,000 Coconino Industrial Park employees, personal interviews with managers and tenants of CIP, city and state documents, and professional literature.

Summarizes
organization of
report

Analysis of the data revealed benefits in three areas:

- **Revenues.** The city of Flagstaff earned nearly \$2 million in tax and other revenues from the Coconino Industrial Park in 2012. By 2018 this income is expected to reach \$3.4 million (in constant 2012 dollars).
- **Employment.** In 2012 CIP businesses employed a total of 7,035 workers, who earned an average wage of \$56,579. By 2018 CIP businesses are expected to employ directly nearly 15,000 employees who will earn salaries totaling over \$998 million.
- **Indirect benefits.** Because of the multiplier effect, by 2018 Coconino Industrial Park will directly and indirectly generate a total of 38,362 jobs in the Flagstaff metropolitan area.

Condenses
recommendations

On the basis of these findings, it is recommended that development of additional industrial parks be encouraged to stimulate local economic growth.

For readers who want a quick overview of the report, the executive summary presents its most important elements. Executive summaries focus on the information the reader requires for making a decision related to the issues discussed in the report. The summary may include some or all of the following elements: purpose, scope, research methods, findings, conclusions, and recommendations. Its length depends on the report it summarizes. A 100-page report might require a 10-page summary. Shorter reports may contain 1-page summaries, as shown here. Unlike letters of transmittal (which may contain personal pronouns and references to the writer), the executive summary of a long report is formal and impersonal. It uses the same margins as the body of the report. See Chapter 9 for additional discussion of executive summaries.

Uses a bulleted list for clarity and ease of reading

Lists three problem questions

Describes authorization for report and background of study

PROBLEM

This study was designed to analyze the direct and indirect economic impact of Coconino Industrial Park on the city of Flagstaff. Specifically, the study seeks answers to these questions:

- What current tax and other revenues result directly from this park? What tax and other revenues may be expected in the future?
- How many and what kind of jobs are directly attributable to the park? What is the employment picture for the future?
- What indirect effects has Coconino Industrial Park had on local employment, incomes, and economic growth?

BACKGROUND

The development firm of Goldman-Lyon & Associates commissioned this study of Coconino Industrial Park at the request of the Flagstaff City Council. Before authorizing the development of a proposed Goldman-Lyon industrial park, the City Council requested a study examining the economic effects of an existing park. Members of the City Council wanted to determine to what extent industrial parks benefit the local community, and they chose Coconino Industrial Park as an example.

For those who are unfamiliar with it, Coconino Industrial Park is a 400-acre industrial park located in the city of Flagstaff about 4 miles from the center of the city. Most of the area lies within a specially designated area known as Redevelopment Project No. 2, which is under the jurisdiction of the Flagstaff Redevelopment Agency. Planning for the park began in 2000; construction started in 2002.

The original goal for Coconino Industrial Park was development for light industrial users. Land in this area was zoned for uses such as warehousing, research and development, and distribution. Like other communities, Flagstaff was eager to attract light industrial users because such businesses tend to “employ a highly educated workforce, are quiet, and do not pollute the environment” (Cohen). The city of Flagstaff recognized the need for light industrial users and widened an adjacent highway to accommodate trucks and facilitate travel by workers and customers coming from Flagstaff.

The first page of a formal report generally contains the title printed 2 inches from the top edge. Headings for major parts of a report are centered in all caps. In this model document we show functional heads, such as **PROBLEM**, **BACKGROUND**, **FINDINGS**, and **CONCLUSIONS**. However, most business reports would use talking heads or a combination such as **FINDINGS REVEAL REVENUE AND EMPLOYMENT BENEFITS**. First-level headings (such as *Revenues* on page 2) are printed with bold upper- and lowercase letters. Second-level headings (such as *Distribution* on page 3) begin at the side, are bolded, and are written in upper- and lowercase letters. See Figure 10.4 for an illustration of heading formats. This business report is shown with single-spacing, although some research reports might be double-spaced. Always check with your organization to learn its preferred style.

Provides specifics for data sources

The park now contains 14 building complexes with over 1.25 million square feet of completed building space. The majority of the buildings are used for office, research and development, marketing and distribution, or manufacturing uses. Approximately 50 acres of the original area are yet to be developed.

Data for this report came from a 2012 survey of over 5,000 Coconino Industrial Park employees; interviews with 15 CIP tenants and managers, the Annual Budget of the City of Flagstaff, county and state tax records, current books, articles, journals, and online resources. Projections for future revenues resulted from analysis of past trends and "Estimates of Revenues for Debt Service Coverage, Redevelopment Project Area 2" (Miller 79).

Uses functional heads

DISCUSSION OF FINDINGS

Previews organization of report

The results of this research indicate that major direct and indirect benefits have accrued to the city of Flagstaff and surrounding metropolitan areas as a result of the development of Coconino Industrial Park. The research findings presented here fall into three categories: (a) revenues, (b) employment, and (c) indirect effects.

Revenues

Coconino Industrial Park contributes a variety of tax and other revenues to the city of Flagstaff, as summarized in Figure 1. Current revenues are shown, along with projections to the year 2018. At a time when the economy is unstable, revenues from an industrial park such as Coconino can become a reliable income stream for the city of Flagstaff.

Places figure close to textual reference

Figure 1

REVENUES RECEIVED BY THE CITY OF FLAGSTAFF FROM COCONINO INDUSTRIAL PARK

Current Revenues and Projections to 2018

	2012	2018
Sales and use taxes	\$ 904,140	\$1,335,390
Revenues from licenses	426,265	516,396
Franchise taxes	175,518	229,424
State gas tax receipts	83,768	112,134
Licenses and permits	78,331	112,831
Other revenues	94,039	141,987
Total	\$1,762,061	\$2,448,162

Source: Arizona State Board of Equalization Bulletin. Phoenix: State Printing Office, 2012, 103.

Notice that this formal report is single-spaced. Many businesses prefer this space-saving format. However, some organizations prefer double-spacing, especially for preliminary drafts. If you single-space, don't indent paragraphs. If you double-space, do indent the paragraphs. Page numbers may be centered 1 inch from the bottom of the page or placed 1 inch from the upper right corner at the margin. Your word processor can insert page numbers automatically. Strive to leave a minimum of 1 inch for top, bottom, and side margins. References follow the parenthetical citation style (or in-text citation style) of the Modern Language Association (MLA). Notice that the author's name and a page reference are shown in parentheses. The complete bibliographic entry for any in-text citation appears at the end of the report in the works-cited section.

Continues
interpreting
figures in table

Sales and Use Revenues

As shown in Figure 1, the city's largest source of revenues from CIP is the sales and use tax. Revenues from this source totaled \$904,140 in 2012, according to figures provided by the Arizona State Board of Equalization (28). Sales and use taxes accounted for more than half of the park's total contribution to the city of \$1,762,061.

Other Revenues

Other major sources of city revenues from CIP in 2012 include alcohol licenses, motor vehicle in lieu fees, trailer coach licenses (\$426,265), franchise taxes (\$175,518), and state gas tax receipts (\$83,768). Although not shown in Figure 1, other revenues may be expected from the development of recently acquired property. The U.S. Economic Development Administration has approved a grant worth \$975,000 to assist in expanding the current park eastward on an undeveloped parcel purchased last year. Revenues from leasing this property may be sizable.

Includes ample
description of
electronic
reference

Projections

Total city revenues from CIP will nearly double by 2018, producing an income of \$2.45 million. This estimate is based on an annual growth rate of 0.65 percent, as projected by the Bureau of Labor Statistics and reported at the Web site of Infoplease.com ("Economic Outlook Through 2018").

Employment

Sets stage for
next topic to be
discussed

One of the most important factors to consider in the overall effect of an industrial park is employment. In Coconino Industrial Park, the distribution, number, and wages of people employed will change considerably in the next six years.

Distribution

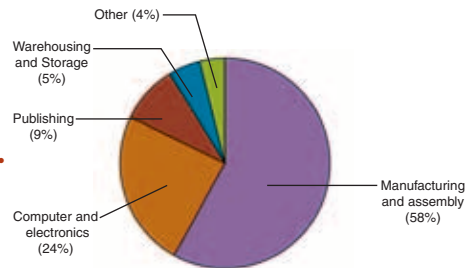
A total of 7,035 employees currently work in various industry groups at Coconino Industrial Park. The distribution of employees is shown in Figure 2. The largest number of workers (58 percent) is employed in manufacturing and assembly operations. In the next largest category, the computer and electronics industry employs 24 percent of the workers. Some overlap probably exists because electronics assembly could be included in either group. Employees also work in publishing (9 percent), warehousing and storage (5 percent), and other industries (4 percent).

Although the distribution of employees at Coconino Industrial Park shows a wide range of employment categories, it must be noted that other industrial parks would likely generate an entirely different range of job categories. *The Wall Street Journal* reports that regional industrial parks exert a strong pull on local employees (Pearson).

Only the most important research findings are interpreted and discussed for readers. The depth of discussion depends on the intended length of the report, the goal of the writer, and the expectations of the reader. Because the writer wants this report to be formal in tone, she avoids I and we in all discussions.

As you type a report, avoid widows and orphans (ending a page with the first line of a paragraph or carrying a single line of a paragraph to a new page). Strive to start and end pages with at least two lines of a paragraph, even if a slightly larger bottom margin results.

Figure 2
EMPLOYMENT DISTRIBUTION OF INDUSTRY GROUPS



Source: 2012 survey of CIP employees

Wages

In 2012 employees at CIP earned a total of \$398 million in wages, as shown in Figure 3. The average employee in that year earned \$56,579. The highest average wages were paid to employees in white-collar fields, such as computer and electronics (\$65,200) and publishing (\$61,100). Average wages for workers in blue-collar fields ranged from \$53,400 in manufacturing and assembly to \$48,500 in warehousing and storage.

Figure 3
AVERAGE ANNUAL WAGES BY INDUSTRIAL GROUPS

Coconino Industrial Park, 2012

Industry Group	Employees	Annual Wages	Total
Manufacturing and assembly	4,073	\$53,400	\$217,498,200
Computer and electronics	1,657	65,200	108,036,400
Publishing	672	61,100	41,059,200
Warehousing and storage	370	48,500	17,945,000
Other	263	51,300	13,491,900
	7,035		\$398,030,700

Source: 2012 Survey of CIP employees

If you use figures or tables, be sure to introduce them in the text (for example, as *shown in Figure 3*). Although it isn't always possible, try to place them close to the spot where they are first mentioned. To save space, you can print the title of a figure at its side. Because this report contains few tables and figures, the writer named them all "Figures" and numbered them consecutively.

Projections

Clarifies information and tells what it means in relation to original research questions

By 2018 Coconino Industrial Park is expected to more than double its number of employees, bringing the total to over 15,000 workers. The total payroll in 2018 will also more than double, producing over \$998 million (using constant 2012 dollars) in salaries to CIP employees. These projections are based on an 8 percent growth rate (Miller 78), along with anticipated increased employment as the park reaches its capacity.

Future development in the park will influence employment and payrolls. One CIP project manager stated in an interview that much of the remaining 50 acres is planned for medium-rise office buildings, garden offices, and other structures for commercial, professional, and personal services (Novak). Average wages for employees are expected to increase because of an anticipated shift to higher-paying white-collar jobs. Industrial parks often follow a similar pattern of evolution (Badri 41). Like many industrial parks, CIP evolved from a warehousing center into a manufacturing complex.

Summarizes conclusions and recommendations

CONCLUSIONS AND RECOMMENDATIONS

Analysis of tax revenues, employment data, personal interviews, and professional literature leads to the following conclusions and recommendations about the economic impact of Coconino Industrial Park on the city of Flagstaff:

Uses a numbered list for clarity and ease of reading

1. Sales tax and other revenues produced nearly \$1.8 million in income to the city of Flagstaff in 2012. By 2018 sales tax and other revenues are expected to produce \$2.5 million in city income.
2. CIP currently employs 7,035 employees, the majority of whom are working in manufacturing and assembly. The average employee in 2012 earned \$56,579.
3. By 2018 CIP is expected to employ more than 15,000 workers producing a total payroll of over \$998 million.
4. Employment trends indicate that by 2018 more CIP employees will be engaged in higher-paying white-collar positions.

On the basis of these findings, we recommend that the City Council of Flagstaff authorize the development of additional industrial parks to stimulate local economic growth.

After discussing and interpreting the research findings, the writer articulates what she considers the most important conclusions and recommendations. Longer, more complex reports may have separate sections for conclusions and resulting recommendations. In this report they are combined. Notice that it is unnecessary to start a new page for the conclusions.

FIGURE 10.17 (Continued) Works Cited

Arranges works
cited in
alphabetical
order

Brochure – Print

Magazine – Print

Newspaper – Web

Government
Publication – Web

Book – Print

E-mail Interview

Newspaper – Web

Follows Modern
Language
Association
documentation
style

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On this page the writer lists all references cited in the text as well as others that she examined during her research. The writer lists these citations following the MLA referencing style. Notice that all entries are arranged alphabetically. The *MLA Handbook for Writers of Research Papers*, Seventh Edition, 2009, requires italics for titles of books, magazines, newspapers, journals, and Web sites. For electronic sources, the following sequence is suggested: author or editor names; article name in quotation marks; title of Web site, project, or book in italics; any version numbers available; publisher information, including the publisher name and publishing date; page numbers, if available; medium of publication (such as *Web*, *Print*, or *PDF*); access date; and URL if necessary for retrieval or required by your instructor.

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