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## Formal Reports

Instructor Only Version
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Adapted by Sir Khan



Present the final report

Research secondary data



Illustrate report data

**Formal** Reports Generate primary data



Organize report data





Document data

# Researching Secondary Data

#### **Print Resources**

- Books
- Periodicals
- Bibliographic indexes such as Reader's Guide

#### **Electronic Databases**

 Collections of magazine, newspaper, journal articles

### **Electronic Databases**

### Databases/Publishing companies

- Oxford journals
- Cambridge Journals
- Emerald Insight
- Taylor & Francis
- Blackwell
- SageOpen
- Science Direct
- Proquest
- Elsevier

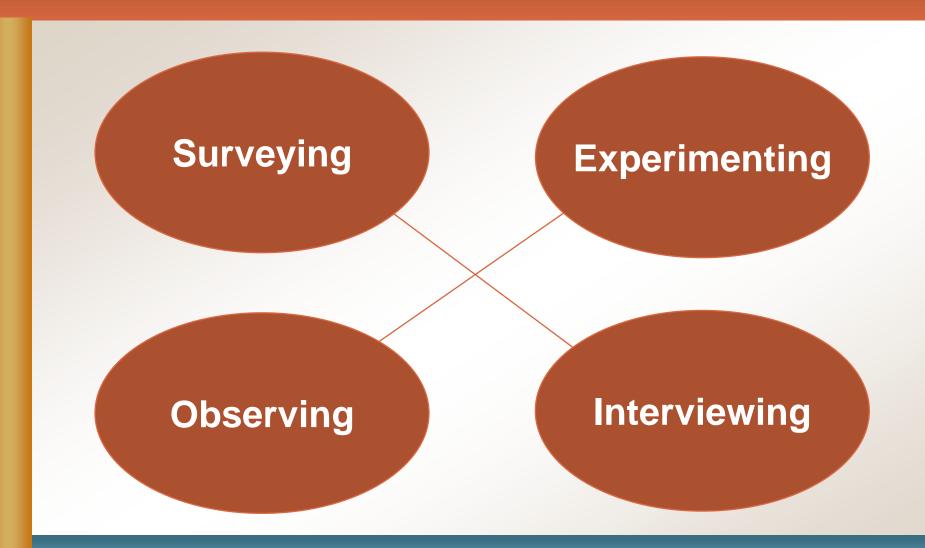
- Scopus
- Ulrichs Periodicals
- Thomson Reuters
- HEC Journals(see lists on website HEC)

# Web Search Tips and Techniques

- Use two or three search tools.
- Know your search tool.
- Understand case sensitivity in keyword searches.
- Use nouns as search words and as many as eight words in a query.

- Use quotation marks.
- Omit articles and prepositions.
- Proofread your search words.
- Save the best.
- Keep trying.
- Consider searching blogs, wikis, and social networks.

# **Generating Primary Data**



## **Generating Primary Data**

### Surveying

- Develop questions, conduct trial.
- Work in person or online.

### Interviewing

- Locate an expert.
- Consider posting an inquiry to an Internet newsgroup.
- Prepare for the interview.
- Maintain a professional attitude.
- Prepare objective, friendly questions.
- Watch the time.
- End graciously.

## **Generating Primary Data**

### **Observing**

- Be objective.
- Quantify observations.

### **Experimenting**

- Develop rigorous research design.
- Pay careful attention to matching experimental and control groups.

## **Documenting Data**

### What to document

- Another person's ideas, opinions, examples, or theory
- Any facts, statistics, and graphics that are not common knowledge
- Quotations of another person's actual spoken or written words
- Paraphrases of another person's spoken or written words

# Levels of Headings in Reports

- The main points used to outline a report often become the main headings of the written report.
  - Major headings are centered and typed in bold font.
  - Second-level headings start at the left margin.
  - Third-level headings are indented and become part of the paragraph

## **Illustrating Report Data**

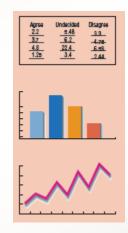
### Reasons to use visual aids

- To clarify data
- To summarize important ideas
- To emphasize facts and provide focus
- To add visual interest

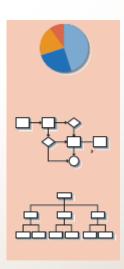
# **Illustrating Report Data**

## Most common types of visual aids

- Tables
- Charts
- Photographs, maps, and illustrations







#### **Table**

To show exact figures and values

Figure 1
MPM Entertainment Company
Income by Division (in millions of dollars)

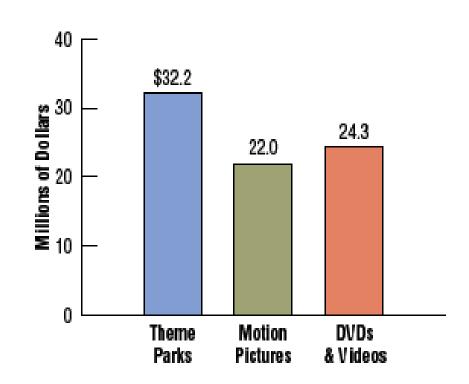
	Theme Parks	<b>Motion Pictures</b>	DVDs and Videos	Total	
2006	\$15.8	\$39.3	\$11.2	\$66.3	
2007	18.1	17.5	15.3	50.9	
2008	23.8	21.1	22.7	67.6	
2009	32.2	22.0	24.3	78.5	
2010 (projected)	35.1	21.0	26.1	82.2	

Source: Industry Profiles (New York: DataPro, 2009), 225.

### **Bar Chart**

To compare one item with others

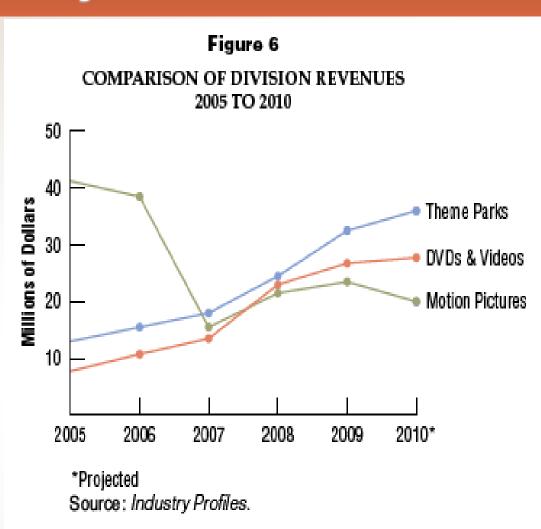
Figure 1
2009 MPM INCOME BY DIVISION



Source: Industry Profiles (New York: DataPro, 2009), 225.

### **Line Chart**

To demonstrate changes in quantitative data over time

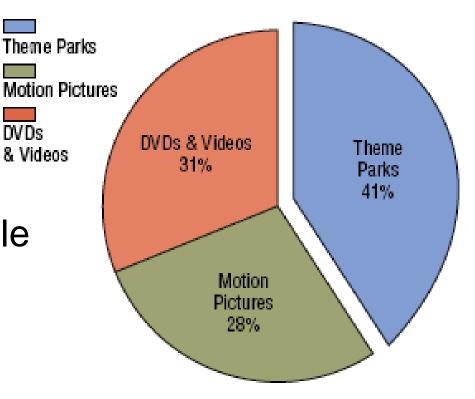


 $\overline{\text{DVDs}}$ 



### **Pie Chart**

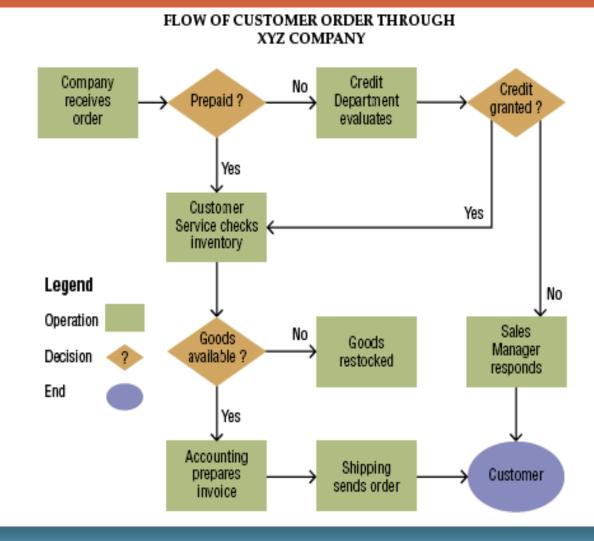
To visualize a whole unit and the proportions of its components



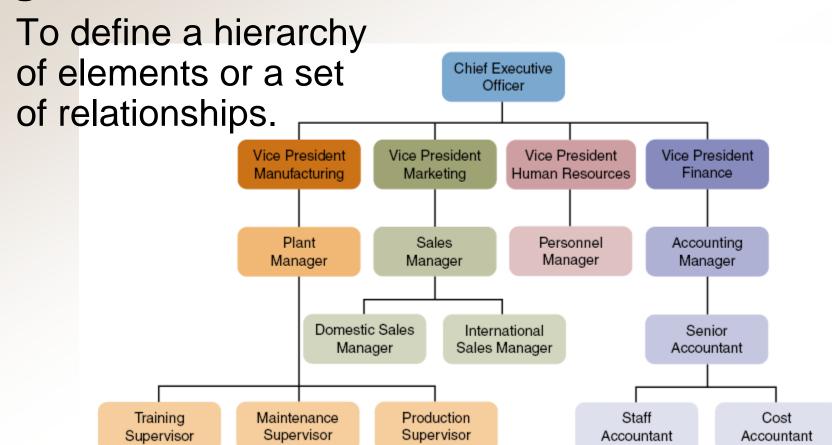
Source: Industry Profiles.

### Flow Chart

To display a process or procedure



### **Organization Chart**



### Photograph, Map, Illustration

To achieve authenticity, to spotlight a location, or to show an item in use.







# Tips for Effective Use of Visual Aids

- Evaluate the audience. Consider the reader, the content, your schedule, and your budget.
- Use restraint. Don't overdo the color or design.
- Be accurate and ethical. Double-check your graphics; don't distort the visuals. Cite sources when using someone else's facts and data.
- Introduce graphs. Place the graphic close to where it is mentioned. Explain its significance.
- Choose an appropriate caption or heading.
   Use functional or talking headings.

## **Format**

- 1. Title Page
- 2. Abstract or Summary
- 3. Introduction
- 4. Background
- Development
- 6. Discussion
- 7. Conclusion
- 8. Recommendations
- 9. References
- 10.Appendix

# **Title Page**

The essential information here is your name, the title of the project, and the date. Be aware of any other information your instructor requires. The title of a report can be a statement of the subject. An effective title is informative but reasonably short. Ornamental or misleading titles may annoy readers.

# **Abstract or Summary**

- This section states the report in miniature. It summarizes the whole report in one, concise paragraph of about 100-200 words. It might be useful to think in terms of writing one sentence to summarize each of the traditional report divisions: objective, method, discussion, conclusions. Emphasize the objective (which states the problem) and the analysis of the results (including recommendations). Avoid the temptation to copy a whole paragraph from elsewhere in your report and make it do double duty.
- Since the abstract condenses and emphasizes the most important elements of the whole report, you cannot write it until after you have completed the report.
- Remember, the abstract should be a precise and specific summary of the report/research.

## Difference

#### (Too general)

 This report considers three energy sources and recommends the best one.

#### (Specific & detailed)

This report compares nuclear plants, fossil fuels, and solar generators, in order to determine which energy source will best meet the nation's needs. The criteria for comparison were the economic, social, and environmental effects of each alternative. The study concludes that nuclear energy is the best of these options, because North America is not self-sufficient in fossil fuels, and solar power is currently too unreliable for industrial use. Although nuclear plants are potentially very dangerous, nuclear energy is still the best short-term solution.

## Introduction

- Whereas the abstract summarizes the whole report, the introduction of a technical report identifies the subject, the purpose (or objective), and the plan of development of the report. The subject is the "what", the purpose is the "why", and the plan is the "how". Together these inform the reader with the problem you are setting out to solve.
- State the subject and purpose as clearly and concisely as possible, usually in one sentence called the thesis or purpose statement: example given below;

## Background

If the introduction requires a large amount of supporting information, such as a review of literature or a description of a process, then the background material should form its own section. This section may include a review of previous research, or formulas the reader needs to understand the problem. In an academic report, it is also the point where you can show your comprehension of the problem.

## Development

• In this broad area of the report, you would outline key issues, ideas, and practices etc. that are the main focus of the report. You might also present relevant data or information to help build a picture for the reading of what has happened. You might include, for example, the ways a particular model is currently applied

## Discussion

The discussion section is the heart of the report – and usually is the most important in terms of the mark you receive! This is where you present your analysis of the issues presented earlier in the report. This is where you interpret, explain and discuss the issues you outlined. In an academic report this is often done by reference to relevant theories, models and practices.

#### Its basic components are

- 1. findings (or results)
- 2. evaluation (or analysis)

Mostly in academic reports, the above mentioned components are highly focused. Before you begin writing, ask the journalist's questions: who? when? where? what? why? how? The last three in particular will help you focus analysis. Beyond asking these simple questions, you also need to make decisions such as: How do you interpret the data? What is the significance of your findings?

## Conclusion

What knowledge comes out of the report? As you draw a conclusion, you need to explain it in terms of the preceding discussion. Some repetition of the most important ideas you presented there is expected, but you should avoid copying.

## Recommendations

• What actions does the report call for? The recommendations should be clearly connected to the results of the rest of the report. You may need to make those connections explicit at this point—your reader should not have to guess at what you mean. This section may also include plans for how further research should proceed.

## Citation & Referencing

- Using references in essays is the way to avoid accusations of plagiarism. It helps tutors and other readers to locate sources you refer to so they can pursue for themselves the ideas or practices you mention.
- For example: The School of Management requires students to use the Harvard System. This involves citing the source, e.g. the author, as you write.
- Citing the source as you write involves giving a partial or shortened reference (last name of author(s) and year of publication) in the main section of your written assignment and then giving full details of the source in full at the end of the assignment in a 'references' section.

## **Citations**

#### Example: Citations

Although *Handy* (1994) has argued that education is the key to economic success for individuals, organisations and nations, a majority of adults in the UK have yet to be convinced or persuaded of this argument. In 1999 only forty per cent of adults had participated in any sort of formal learning in the previous three years. Of these, a significant majority was from social class groups A, B and C. Only a quarter of adults from semi-skilled or unskilled work backgrounds had involved themselves in formal education *Tuckett* 1999). The consequences for people without qualifications who lose their jobs are often serious. A study of long-term unemployed people in Yorkshire found that sixty-one per cent had no educational qualifications, and a significant number of these had special learning needs. (*Y&HES* 1998). There would appear to be a link too, between lack of qualifications, poor health and a disengagement from participation in political or civic life, and could aggravate the situation of unemployment for the people concerned (*Hagen* 2002).

# Citation Guide: Science & Engineering

#### Engineering & Science - No One Style

The sciences and engineering disciplines do not all follow one citation nor one writing style format, in the way that, for example, most humanities disciplines use the Modern Language Association (MLA) style guide.

On this tab we have provided links to a number of science and engineering style guides, but these are not everything! Please check with your professor or your editor for the style and citation format required for your paper or article!

#### **Table of Contents**

- ACS (American Chemical Society)
- Engineering Styles (IEEE, etc)
- More Chem, Med, Physics, etc.

## References

 At the end of the assignment the references are given in alphabetical order, by last name of the author(s), in full:

#### References

Hagen, J. (2002) Basic Skills for Adults, Birmingham: The Guidance Council.

Handy, C. (1994) The Empty Raincoat, London: Hutchinson.

Tuckett, A. (1999) 'Who's Learning What?' The Guardian 18/5/1999, p. 13,

Manchester: Observer Group Newspapers.

(Y&HES) Yorkshire and Humber Employment Service (1998) Survey of Clients Aged 25+ Unemployed for Two Years or More, London: Department for Education and Employment.

For full details of how to cite and reference, you can obtain a copy of 'References and Bibliographies' from the Effective Learning Service.

# Attachments/Appendix

These will include references and may include appendices. Any research that you refer to in the report must also appear in a list of references at the end of the work so that an interested reader can follow up your work. Since the format for references varies across engineering, consult your instructor, or check a style manual for the field.

## Cont....

Appendices may include raw data, calculations, graphs, and other quantitative/qualitative materials/tools that were part of the research, but would be distracting to the report itself. Refer to each appendix at the appropriate point (or points) in your report. In industry, a company profile and profile of the professionals involved in a project might also appear as appendices.

## **Informative Reports**

- Reports that present data without analysis or recommendations are primarily informative. Although writers collect and organize facts, they are not expected to analyze the facts for readers.
- A trip report describing an employee's visit to a conference, for example, simply presents information. Other reports that present information without analysis involve routine operations, compliance with regulations, and company policies and procedures.

### Cont.....

 Writers of information reports provide information without drawing conclusions or making recommendations. Some information reports are highly standardized, such as hospital admittance reports, monthly sales reports, or government regulatory reports.

# **Analytical Report**

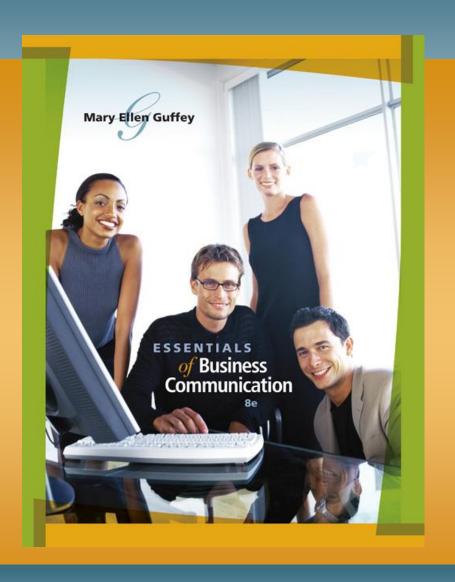
- Reports that provide data, analyses, and conclusions are analytical. They also provide recommendations. Analytical reports may intend to persuade readers to act or to change their beliefs.
- For example, you are writing a feasibility report that compares several potential locations for a skateboard arena in your institute. After analyzing and discussing alternatives, you might recommend one site, thus attempting to persuade readers to accept this choice.

## Task

Write a short report on a topic of your interest; provide: Introduction, Statement of the problem, Research Questions, Objectives, Significance, Limitations, Conclusion, Reference (IEEE format)

# **Model Formal Report**

Figure 10.17, Page 278



# CONCLUDE

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