



BITS F112: Technical Report Writing

Dr. Kumar Sankar
Bhattacharya
BITS Pilani

Preparatory Steps

- ❑ Before beginning to draft a report, preliminary steps need to be undertaken.
- ❑ The effectiveness of this background work decides the effectiveness of the technical report.
- ❑ Planning for a report is as important as the process of writing itself.
- ❑ Enough time should be spent in collecting material, synchronizing details and ensuring that nothing has been left out.

How to Write Reports

Steps involved

- Define Purpose and Scope
- Determine the audience
- Collect the Data
- Organize the material
- Interpret the data
- Make an outline
- Prepare the first draft

Purpose and Scope

- ❑ Purpose refers to the objective of the study, while scope refers to the depth or extent of coverage.
- ❑ The purpose of the report enables one to decide on the amount of data to be collected, methods for collecting such data, quality and quantity of information to be included and methodology to be adopted in analyzing the situation and arriving at a solution.

Purpose and Scope (Contd.)

- Depending on the type of report to be written, there will be differences in the definition of the problem and purpose. E.g. An informative report will talk about the collation of information, while an analytical report must formulate a problem statement, the analysis of which would become the thrust area of the report.

Purpose and Scope (Contd.)

- ❑ In most reports, specific instructions are given to the report writer as to what objectives are to be achieved. Such terms of references need to be included while stating the purpose of the report. E.g.

You are directed to:

1. Identify the causes behind the recent fire incidents.
2. Analyze the existing firefighting facilities
3. Suggest preventive measures to stop the recurrence of such incidents.

Scope and Style of the Report:

Summary

- ❑ Boundaries of the report
- ❑ Inclusions (What is to be included?)
- ❑ Limitations (What is to be excluded?)
- ❑ Coverage of subject (demographic or otherwise)
- ❑ Style to be used (in terms of vocabulary usage)

Determine the Audience

- ❑ The audience is the intended or potential reader.
- ❑ Lack of audience analysis and adaptation is one of the root causes of most of the shortcomings of professional, technical documents.
- ❑ One of the first things to do while analyzing an audience is to identify its types.

Types of Audience

- ❑ Experts: They are people who know the theory and the product inside out. Often they have advanced degrees.
- ❑ Executives: They are people who make business, economic, administrative and legal decisions on matters that the experts and technicians work with. If it is a new product, they decide whether to market it or not.
- ❑ Non-specialists: They have the least technical knowledge of all. Their interest is more or less practical as they want to use the new product to accomplish their task.

Audience Analysis

- ❑ Background knowledge and experience: One of the most important concerns is just how much knowledge, experience or training we can expect in our readers. There is no easy answer – part of the answer may involve the size of the audience.
- ❑ Needs and Interest: While planning a report, we need to know the audience's expectations from the report – what they want to read.
- ❑ Other Demographic Characteristics: While writing the report care should be taken to keep in mind the demographic pattern of the audience – for example, age groups, type and area of residence, gender, political preferences etc.

Tips for writing for non-specialist reader

- ❑ Add information required by readers in order to understand the report
- ❑ Omit information your readers do not need
- ❑ Add examples to help readers understand
- ❑ Change the level of your examples
- ❑ Change the organization of your information
- ❑ Use more graphics to illustrate
- ❑ Add cross-references to important information

Data Collection

- ❑ The two types of data that one can collect are primary and secondary.

Primary Data

- Unique to your task
- First Hand – Reliable
- Updated

Secondary Data

- Purpose may have been different
- Reliability is a concern
- Not updated

Primary Data Collection

- ❑ The important methods of collecting primary data for a report are:
 1. Personal Observation
 2. Personal interviews
 3. Telephonic interviews
 4. Mail questionnaires (Surveys - (preparing and circulating questionnaires))

Secondary Data Collection

- ▣ Common sources of secondary data are:
 1. Internal records
 2. Published materials such as directories, guides, statistical data, government publications
 3. Databases dealing with bibliographic and numeric data
 4. Census
 5. Syndicated Sources (Information services provided by research organizations)

Material Organization

- ▣ Depending upon the topic, purpose and audience, material/data collected can be organized in either of the following:
 1. The order of occurrence
 2. The order of importance
 3. A combination of orders

Order of Occurrence

- ❑ It is also known as chronological order.
- ❑ The data or events are presented in the sequence of their occurrence in time – none of the parts are uniquely important.
- ❑ For example, reports dealing with the history of a transaction or the procedure for manufacturing or installing equipment are generally written in the order of occurrence.

Order of Importance

- ❑ When the matter/data collected for the report is not of uniform value, we may have to organize the information in descending or ascending order of importance.
- ❑ Generally, the descending order of importance is valid for informational reports, as readers are looking for the most important information first.
- ❑ E.g. Feasibility reports (in which immediate needs are more important than future needs) or a feedback report on a conference recently attended.
- ❑ Certain analytical report based on a certain theory can be written in an ascending order as the reader may wish to understand first the basic concepts on which the study is built.

Combination of Orders

- ❑ A combination of the order of occurrence and the order of descending importance is useful in reports involving double assignment. E.g. A report on the appraisal of a situation and the recommended changes.
- ❑ To arrive at the correct order, examine the data as a whole, consider them for completeness, their relationship to the purpose of investigation, their total significance to the problem at hand, and then organize in an appropriate order.

Information Interpretation

- ▣ The following points must be kept in mind:
 1. Present the facts as they are
 2. Only analyze comparable data
 3. Be conscious of unreliable data
 4. Interpret only the available data
 5. Be aware of the statistical tools available for interpretation
 6. Even the smallest calculation should be explained to make the content easy and comprehensive for the readers

Making an Outline

- ❑ An outline is a mechanical framework into which the information collected for the report can be fitted in bits and pieces. It shows the direction in which one needs to proceed in writing the report.
- ❑ The time spent on a systematic outline is always beneficial as this ultimately helps save time in writing.
- ❑ The outline indicates the main topics and sub-topics for the report in the form of words or phrases.

Making an Outline

- Think of possible organizational patterns
- Write down topics and sub topics
- Arrange them
- Prepare a tentative outline
- Examine and make changes, if any
- Write out the final outline

Making an Outline: Thumb rules

- ❑ Use parallel grammatical construction
- ❑ Avoid needless repetition
- ❑ Follow the principle of coordination and subordination
- ❑ Use decimal numbering system

Parallel Grammatical Construction

Non-parallel Construction

1. Advantages of computers
 - 1.1. Internet browsing
 - 1.2. Promotes sales
 - 1.3. Analyzing data
 - 1.4. Managing finance

Parallel Construction

1. Advantages of computers
 - 1.1. Internet browsing
 - 1.2. Sales Promotion
 - 1.3. Data analysis
 - 1.4. Financial management

Avoid Needless Repetitions

Original

3. Present status

3.1. School Education

3.1.1. Primary Education

3.1.2. Secondary Education

3.1.3. Higher Secondary
Education

Revised

3. Present status

3.1. School Education

3.1.1. Primary

3.1.2. Secondary

3.1.3. Higher Secondary

Principles of coordination and subordination

- ❑ The outline indicates the level of each heading in the report, that is, how important each heading is. The closer a heading is to the margin, the greater is its importance in the report. Likewise, as the headings move away from the margin, they become less important.
- ❑ According to the principles of coordination, all the main headings have the same importance with respect to their relation to the subject and also the seriousness of discussion.

Coordination

- ▣ Topics / Sub-topics of equal rank to find same level in outline e.g.
 - 2. Sources of energy
 - 2.1. Oil
 - 2.2. Electricity
 - 2.3. Coal
 - 3. Applications
 - 3.1. Industry
 - 3.2. House-hold

Subordination

- ▣ Subtopics to be appropriate to the Main topics e.g.

- 2. Methods of data collection

- 2.1. Personal observation

- 2.2. Telephone Interview

- 2.3. Personal Interview

- 2.4. Mail questionnaire

Coordination and Subordination of Headings

Illogical

2. Computers: Beginning of a new era
3. Applications
4. Education
5. Industries
6. Advantages
7. Disadvantages

Logical

2. Computers: Beginning of a new era
3. Applications
 - 3.1. Education
 - 3.2. Industries
4. Advantages
5. Disadvantages

Decimal Numbering System

1. First level heading
 - 1.1. Second level, first part
 - 1.2. Second level, second part
 - 1.2.1. Third level, first part
 - 1.2.2. Third level, second part
 - 1.2.2.1. Fourth level, first part
 - 1.2.2.2. Fourth level, second part
2. Follow the same pattern given above

Outline (Sample)

Incidents of Diseases in Khurshidabad

1. Introduction
2. Diseases in Khurshidabad- An Overview
3. Major Diseases
 - 3.1. AIDS
 - 3.2. Cardiovascular
 - 3.3. Tuberculosis
4. Minor Diseases
 - 4.1. Gastritis
 - 4.2. Non-infectious diseases
 - 4.3. Others
5. Conclusions
6. Recommendations



THANK YOU