CHAPTER 2

FEATURES OF TECHNICAL REPORT WRITING

2.1 Introduction

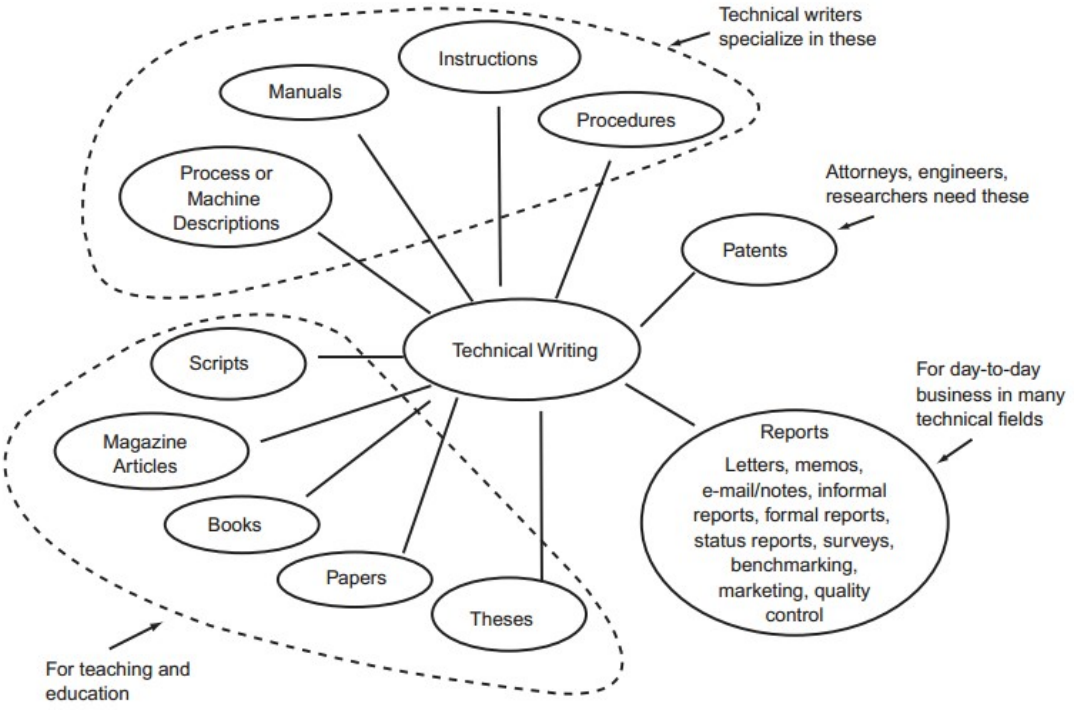
A report is a piece of informative writing that describes a set of actions and analyses any results in response to a specific problem. It is often used to display the results of an experiment, investigation, or inquiry.

2.2 Major documents

The following are the major documents required in Technical Writing:

- Reports and communications in day-to-day business.
- Technical papers, magazine articles, books, and thesis for purposes of education, teaching, and the sharing of information and knowledge.
- Patents
- Operational manuals, instructions or procedures

DRAFT COPY



2.3 Purpose of Technical Report

- The primary purposes of technical report are to disseminate the results of scientific and technical research and to recommend action.
- To transmit information to teachers: to show that the writer is thoroughly acquainted with the material, the information, and/or the procedures; therefore, be thorough(systematic) and complete; be concise
- To transmit information to decision makers: experts and technicians, executives, and laypeople

The report also provides sufficient detail to allow the reader to recreate the results although the level of detail provided depends heavily on the report‘s audience and any proprietary nature of the work.

- Technical report is useful to report plans, progress, and problems of an organisation or activity.
- At university, reports are read by lecturers and tutors in order to assess your mastery of the subjects and your ability to apply your knowledge to a practical task.
- In the workplace, they will be read by managers, clients, and the construction engineers responsible for building from your designs. Also, as an employee in a company, you will be asked to prepare or contribute to annual, project or progress reports. The ability to produce a clear, concise, and professionally presented report is, therefore, a skill you will need to develop in order to succeed both at university and in your future career.

DRAFT COPY

2.4 General features of technical Writing and the Difference from General Writings

- General writings can be subjective in nature. They reflect the writer‘s personality.
- Reports have a highly structured format**.**
- The reader/audience is the most important person in report.

- The audience for technical writing documentation is very small and specific.
- Reports are usually preceded by a summary. Summaries give the whole picture in miniature.
- Reports can also be oral but essays are only written.

Some factors to keep in mind about the differences of technical writing from other forms of writing are the following:

- Technical writing communicates issues in engineering and the sciences.
- Technical writing has form and style requirements that are different from those of other types of writing. Reports need to include definite elements.
- Technical writing does not employ humor or slang.
- Technical writing is objective oriented.
- Technical writing does not blame people.
- Technical writing requires facts or data.
- Technical writing never hides facts.
- Technical writing deals with non-administrative issues.
- Technical writing is never used as advertising copy.
- Technical writing is impersonal—it does not use personal pronouns or name people who performed parts of the work.

DRAFT COPY

2.5 Different stages in Technical Report Writing

The following **stages** are involved in **writing a report:**

i. **Planning and preparation** /clarifying your terms of a reference/

Terms of reference of a report is a guiding statement used to define the scope of your investigation. Before you write a single word you must:

a. *Set your objective*. You must first be absolutely sure of the purpose of your report. An objective is not what you intend to **write**, it is what you intend to **achieve**.

b. *assess your readership*. In many cases, you know who will be reading your report. In this case, the detailed content, style and structure can then be matched to readers' level of knowledge and expertise:

- Concentrate on points they will care about.
- Explain things they do not know.
- Address questions and concerns they would be likely to raise.

If you do ***not*** know your readers, try to find out:

- Are the readers alike or mixed?
- Are they used to reading and understanding reports?
- How much time will they spend on this report?
- What do they already know?
- What else will they need to know?

DRAFT COPY

c. *Decide what information you will need.* For some reports, you will need to collect very little information, while for others you will require a great deal.

d. *Prepare your skeletal framework*. There are three stages involved in the preparation of a skeletal frame work:

- Write a **working title.**
- Consider the **overall structure** of the report.
- Consider how information will be presented **within the main body**.

ii. **Collecting** and **handling information**

iii. **Writing** the **first draft**

iv. Checking and re-drafting and **completing the document**

2.6 Language in a Technical Report

Use of Language

A. Formality: Reports are formal. Therefore, the language used has to be formal, but not grandiose (or in a boastful or pretentious way). Formal writing simply means writing in full (it is, not it's), avoiding slang or colloquialisms, and using words correctly. It does not mean that simple words are unacceptable. 'Dispatch' is not intrinsically better than 'send', and 'finish' is not inferior to 'draw to a conclusion'.

B. Avoid sexist language: The tone of your writing should not reflect a gender bias – or any other bias, such as race, religion, age or disability.

not - A good manager will gain the respect of his staff.

but - A good manager will gain the respect of staff.

C. Simplicity: Most written reports should avoid using overly complicated language. If a report is to persuade, brief or justify, its message must be clear. Avoid using unnecessary jargon. This confuses even the most informed reader.

DRAFT COPY

D. Objectivity: A report should not reflect personal emotions and opinions. You must look at all sides of a problem with an open mind before stating your conclusions. The role is similar to that of a sports referee or a High Court judge. In these situations, decisions are based on the results, the evidence, or an interpretation of the evidence –not on personal opinions and feelings.

Similarly, Technical Report is usually written **impersonally**, i. e. **passive sentences** are used quite frequently and personal pronouns like 'I, we, my, our, you, etc.' are avoided. However, in a summary or critical appreciation it is OK, to speak of 'we' or 'our', if the own working group or department is meant.

Most technicians got used to the impersonal way of writing during their education and professional practice. The customers will probably prefer impersonal writing as well, because they are used to it, too.

You have to decide carefully for your Technical Report, whether, how much and where you want to use active sentences instead of the usual passive. You are 'on the safe side', if you avoid personal pronouns and

use the passive voice instead. Here an example of formulating the same fact once in active and once in passive voice:

Active: '... we have evaluated the following alternatives ...'

Passive: '... the following alternatives have been evaluated ...'

Note: 'We' is bad writing style in Technical Reports!

The tense is present tense. Past tense is only used, if a previously used part, measuring procedure or similar is described.

2.7 Choice of words in a Technical Report

Careful choice of words can enable you to convey many subtleties of meaning.

- Prefer plain words: Do not be afraid of plain English. Write to express, not to impress. Prefer words your readers are likely to understand. Example:

  not - The ready availability of computer-based tutorials associated with applications software has become prevalent since the development of Microsoft Windows.

  but - *Computer*-based tutorials associated with applications soft ware have become readily available since the development of Microsoft Windows.

DRAFT COPY

- Avoid overwriting and padding: Weed out any meaningless and excess words.

  not - Accounts Receivable is not concerned with the follow-up of any of the items with the exception of delinquent accounts.

  but - Accounts Receivable follows up delinquent accounts only.

- Avoid redundant words: Repetition of a word can keep the reader aware of the topic. However, saying the same thing twice over in different words for no good reason is tautology.

  not - Past history suggests that our future prospects are bright.

  but - History suggests that our prospects are bright.

- Prefer the positive: Try to use positive statements wherever possible.

  not - We do not believe the backup files are adequate.

  but - We believe the backup files are inadequate.

- Prefer English to foreign words and phrases: Using uncommon foreign-language terms like *inter alia*, *per se*, *Ato,* and *sine die* may look like showing off. Avoid them unless there are no good English equivalents – and unless you are *sure* that your audience will understand them.

2.8 Guidelines for accuracy check of the Technical report

Check that everything you write is factually accurate. The accuracy of a document is the responsibility of its writer. Some guidelines are given below:

DRAFT COPY

a) Spelling: When the engineer has completed a section of the report, it should be checked for spelling and typing errors.

b) Technical words: Engineers sometimes avoid the spell-check because it highlights too many technical words which are not in the computer‘s dictionary. Such words should be added if they are likely to be used frequently, and a second person should check what is added.

c) Sentences: Good style involves variety in sentence length. But many technical writers are led into grammatical confusion because their sentences are so long that by the end both writer and reader have lost sight of the beginning.

Short sentences produce a clear, easily-read style for factual material. There are two main ways to shorten a sentence: to replace *wordy constructions with simpler ones*; second, *to break complex and compound sentences into two or more sentences*. Example,

Before: We make no specific guarantees with respect to future rate of return on these investment instruments.

After: We guarantee no specific return on these funds.

2.9 Arrangement of paragraphs in a section or chapter.

Paragraphs have a psychological effect on the reader. Several paragraphs on a page, with the resulting spaces, encourage reading, but a page which is filled by only one paragraph even if it is logically cohesive may discourage and frustrate the reader. To avoid this use the two ways below:

1. **Break Apart Long Paragraphs**: The following paragraph (also justified to make it less inviting) is arbitrarily split. Notice the effect.

Before:

Remember that nearly all readers sub vocalize, saying words mentally to themselves silently. So, words those are hard to pronounce will as they read slowly the reader. This advice is particularly germane in naming products, systems, or companies. Nearly every E2 and E3 has trouble with the th sound (especially unvoiced) and many Asian languages struggle with l and r. When General Instrument of Horsham, Pennsylvania, changed their image in 996, they also adopted the more high-tech sounding name of Next Level. In 1998, they will restore the original name, mainly because most of their Asian customers for cable-TV converter boxes have trouble with saying Next Level. Similarly, the spokes clown for McDonald's restaurants in Japan is called Donald McDonald not Ronald.)

DRAFT COPY

After:

Remember that nearly all readers sub vocalize, saying words mentally to themselves as they read silently. So, words that are hard to pronounce will slow the reader. This advice is particularly germane in naming products, systems, or companies. Nearly every E2 and E3 has trouble with the *th* sound (especially unvoiced) and many Asian languages struggle with l and r.

When General Instrument Corporation of Horsham, Pennsylvania, changed their image in 1996, they also adopted the more high-tech

sounding name of Next Level. In 1998, they will restore the original name, mainly because most of their Asian customers for cable-TV converter boxes have trouble with saying Next Level. (Similarly, the spokes clown for McDonald's restaurants in Japan is called Donald McDonald not Ronald.)

2. **Convert Some Paragraphs into Lists*:*** Proposals or reports that contain items or steps in a process are far more understandable in list form.

Instead of

In evaluating alternative offertory, please consider that our company has 15 years' experience in the construction of oil and gas pipelines. We hold the patents on the most advanced pumping technology. Further, we maintain business offices in all the major Middle Eastern capitals.

Write

DRAFT COPY

In evaluating alternative offertory, please consider that our company:

- Has 15 years' experience in the construction of oil and gas pipelines
- Holds the patents on the most advanced pumping technology
- Maintains business offices in all the major Middle Eastern capitals.

2.10 State the different Styles for presenting Sources of Information in References Section

Many different styles of referencing have developed over the years. Currently there are **four** main styles of referencing for academic articles, as follows:

a. **The APA style**: This system is also known as the *Harvard* or, more colloquially, as the *_name (date)' system*. This is because an author's surname in the text is followed by the date of the publication in brackets, and entries in the reference list are listed alphabetically, starting with the name and the initials of the author(s) followed by the date of publication for each entry. For example:

Sharples, M. (Ed.). (1993). *Computer supported collaborative writing.* London: Springer-Verlag.

Speck, B. et al. (1999). *Collaborative writing: An annotated bibliography*. Westport, Connecticut: Greenwood Press.

Zammuner, V. L. (1995). *Individual and co-operative computer writing and revising*: Who gets the best results? Learning and Instruction, 5 (2), 101–24.

b. The Modern Languages Association (MLA) style: In this version the authors' surnames (with or without the dates) appear in the text and the first author's surname comes first in the reference list. This is followed by his or her first name, but first names then come first for any additional authors. Dates of the publications are given after journal titles, or at the end of the references for books, etc. The list is ordered alphabetically. For example:

DRAFT COPY

Sharples, Michael (Ed.). Computer Supported Collaborative Writing. London: Springer-Verlag, 1993.

Teresa R. Collaborative Writing: An Annotated Bibliography. Westport, Connecticut: Greenwood Press, 1999.

Tang, Catherine. _Effects of collaborative learning on the quality of assignments.' Teaching and Learning in Higher Education. Eds. Barry Dart and Gillian Boulton-Lewis. Pp. 103–23. Melbourne: Australian

Council for Educational Research, 1998. Zammuner, Victoria L. _Individual and co-operative computer writing and revising: Who gets the best results?' Learning and Instruction 5 (1995) 101–24.

c. The Institute of Electronic and Electrical Engineers (IEEE) style: Here, the authors in the text are numbered in order of their appearance in the text, sometimes without their names, and the numbers are enclosed in square brackets. The reference list is then numbered sequentially. Names are presented with the initial(s) first, followed by surnames. Dates of the publications are given after journal titles, or at

the end of the references for book, etc. Journal titles are sometimes abbreviated. For example:

[1] M. Sharples, Ed., Computer Supported Collaborative Writing. London: Springer-Verlag, 1993.

[2] V. L. Zammuner, ‗Individual and co-operative computer writing and revising: Who gets the best results?' Learning and Instruction, vol. 5, no.2, pp. 101–24, 1995.

[3] C. Tang, ‗Effects of collaborative learning on the quality of assignments,' in Teaching and Learning in Higher Education, B. Dart and G. Boulton-Lewis, Eds. Melbourne: Australian Council for Educational Research, 1998, pp. 102–23.

[4] B. W. M. Speck, T. R. Johnson, C. P. Dice and L. B. Heaton, Collaborative Writing: An Annotated Bibliography. Westport, Connecticut: Greenwood Press, 1999.

DRAFT COPY

An alternative version is to list (and number) the authors *alphabetically* in the reference list, and to assign these numbers to the authors in the text as appropriate.

d. The Vancouver style: Here, as with the ISCME (International Steering Committee of Medical Editors) system, the authors are numbered in the text in order of their appearance, and the numbers are enclosed in square brackets.

The reference list is numbered sequentially, but the authors are listed surnames first, followed by their initials. Again the dates of publications are given after journal titles, or at the ends of the references for books etc. The key feature of the Vancouver style is its ‗spare' typography and punctuation, and the use of abbreviated journal titles. For example:

1 Sharples M, editor. Computer supported collaborative writing. London: Springer-Verlag, 1993.

Zammuner VL. Individual and co-operative computer writing and revising: Who gets the best results? Learn Instruction 1995; 5 (Pt 2): 101–24.

4 Speck BWM, Johnson TR, Dice CP, Heaton LB. Collaborative writing: an annotated bibliography. Westport, CT: Greenwood Press, 1999.

DRAFT COPY