

CHAPTER TWO

REVIEW OF LITERATURE

This chapter reviews the literature used as a framework for the study and consists of four main areas. They are (1) background knowledge about user manuals, (2) theory of reading technical documents, (3) relevant studies, and (4) summary.

2.1 BACKGROUND KNOWLEDGE ABOUT USER MANUALS

2.1.1 Definition of User Manuals

According to Greene and Ripley (1993), “user manuals” are defined as “task-oriented documents which provide detailed specifications and operating instructions for complex technical systems or products” (p. 308). He added that user manuals are also called “user documentation” which has two main functions: instruction and reference. The purpose of user manuals is to give information to people who want to use technical products and systems.

2.1.2 Parts of User Manuals

Greene and Ripley (1993) elaborately divided user manual parts into various sections as follows.

1) **The cover and title page** is the first page of a manual that leads readers to the manual. The cover always contains a title which is clearly and directly written in large font size to inform the readers about the purpose of manual (Markel, 1994).

2) **The table of contents** functions as a “map” that helps readers to access the information they want to find.

3) **The introduction** gives general information or background of the product to readers and also informs readers about ways to use the manual.

4) **Overviews and summaries** appear at the first part and at the end of chapters. They assist readers to follow up the content while reading.

5) **Warnings and cautions** are legally obliged to be put into user manuals to warn users about dangers to them or their property.

6) **Notes** are added information for readers’ benefit. These do not include any hazards.

7) **Lists** are steps of actions that product users have to follow.

8) **Tables** are used as a format for putting data to help readers to locate information easily.

9) **The glossary** gives definitions of technical terms for readers who are not familiar with them.

10) **The index** is a list of all important topics mentioned in a manual. It is in alphabetical order and identifies the location where topics appear in a manual. The index helps readers to find information they want to read.

The following topics are theories and relevant studies the researcher has reviewed.

2.2 THEORIES OF READING TECHNICAL DOCUMENTS

2.2.1 Purposes for Reading Technical Documents

Burnett (2001) stated that when reading technical documents, readers have various purposes depending on their needs. Four common purposes for reading technical documents are (1) reading to assess; skimming to evaluate the text if it is useful to read or not; (2) reading to learn; getting knowledge from reading; (3) reading to learn to do; reading to know how to perform a task; and (4) reading to do; applying knowledge from reading to complete work. Burnett also used the table to elaborate the purposes for reading with examples shown in the table below.

Table 1. Purposes for Reading

Purpose	Examples
<p>Reading to assess. This reading—often skimming—enables you to decide whether a document will be useful for you or someone else, usually at a later time.</p>	<p>A forester might skim summaries of registration about support for reforestation that he or someone else in his Department of Natural Resources might need to study.</p>

Purpose	Examples
Reading to learn. This reading enables you to learn information for problem solving, decision making, and background knowledge.	A small-animal veterinarian might read an article in a professional journal to learn about new medicine for feline colitis.
Reading to learn to do. This reading enables you to learn how to complete tasks.	A dental assistant might read a continuing education booklet about ways to minimize pain and anxiety for pediatric patients.
Reading to do. This reading—which serves largely as an external prompt—enables you to complete tasks.	A furniture refinisher might read the product label and information sheet to determine safety requirements for using a new paint remover.

Note. The table is from *Technical communication*, Burnett, R. E., 2001, Fort Worth, Tex.: Harcourt College.

2.2.2 Types of Readers Who Read Technical Documents

Lannon (1994) stated that identifying people who read technical documents is necessary because it helps technical writers to write and design documents to meet their readers' expectations. He explicitly said that “[m]ost readers would prefer not to have to read your document at all. They are not interested in how smart or eloquent you are, but they *do* want to find what they need, quickly and easily” (p. 18).

He broadly classified readers who read technical documents into two major groups based on their different background knowledge of a technical field. They are “primary readers” and “secondary readers”. Primary readers are people who basically need documents and use them to make decisions and perform tasks. In contrast, secondary readers use documents to get advice and information to keep them up-to-date with technology. Lannon (1994) added that primary readers usually need a “highly technical message” or documents that contain technical facts, figures, jargon,

etc., and it is not necessary for technical writers to translate the documents into easy messages. However, secondary readers require a “semi-technical message”, a “non-technical message”, and documents which are simplified.

White (1996) used readers’ job functions and characteristics to divide readers into six major groups: technical specialists, production and promotion managers, administrators, clients, stockholders, and laypersons. He stated that each group requires different details of technical documents. To illustrate, technical specialists require accurate and detailed technical documents while laypersons need documents that are less complex.

Lay, Washlstrom, Rude, Selfe, and Selzer (2000) categorized readers into four groups by using technical writers’ viewpoints towards their targeted readers and readers’ need as the criteria. They were as follows:

- 1) **Simple, homogeneous reader:** a single individual who has similar needs and uses technical documents with the same or similar purpose as the technical writer.
- 2) **Multiple readers:** they are several readers who have similar interests.
- 3) **Single readers with multiple needs:** a single reader who has multiple and different needs for technical communication.
- 4) **Multiple readers with multiple needs:** many readers who have different needs for technical documents.

From the perspective of reader types from Lannon, White, and Lay et al, it can be summarized that readers are divided into “specialists” and “non-specialists”. Each type of reader needs technical documents with different levels of complexity, especially in terms of content and wording, because of varying needs.

2.2.3 Analysis of Readers’ Behavior and Their Reading Process

Based on Redish (1993), readers who read technical documents “decide how much attention to pay to a document” (as cited in Sun, 2006, ¶11). They skim and read until they are satisfied with the knowledge they gain or until they feel frustrated with the document. Before reading technical documents, readers regularly have questions in their minds and then use technical documents as tools to solve the

problems they encounter when operating products. Redish, moreover, believed that readers decipher the meaning in the technical documents by using their prior knowledge or their “schemata”.

In reference to Redish’s explanation, the reading process for technical documents is highly selective. Readers scan only for sections that relate to the problems they face and then read them carefully for particular information they want.

White (1996) agreed with Redish’s concept that readers who read technical documents choose the most relevant sections that can meet their needs. In addition, he noted that readers used formats of technical documents for locating the sections they want to read. His viewpoint about the formats of technical documents matches that of Collier and Toomey. Collier and Tomey (as cited in Sun, 2006, ¶13) believed that formats cause readers to read only some parts of technical documents with two reading processes which they call “a first reading and a second reading process.” In the first reading process, readers scan for parts they want to read and read only those parts. While readers perform the first reading process, they see that some parts are useful for them and they need to take a closer look. Typically, readers lay the documents aside, and when they think they want to read those useful parts again, they come back to read the documents. This is called the second reading which is a more careful reading than the first reading process.

Lay’s et al (2000) concept of readers’ behavior is different from those theorists named above. They stated that readers read technical documents in various ways depending on their reading condition, and most of the time their reading is interrupted. To demonstrate, readers may have to read a manual while repairing a car, read documents outdoors such as at a construction site in strong wind or rain, or read documents quickly to deal with an urgent situation.

The theories about types of readers, readers’ behavior, and reading processes explained by the theorists: Lannon, Redish, White, Collier and Tomey, as well as Lay et al can be summarized that reading technical documents has four characteristics.

- 1) It mainly involves two groups of readers—“specialists” and “non-specialists” who have different needs in using technical documents;
- 2) It is selective reading depending on reading conditions;

- 3) It requires scanning and skimming processes, and
- 4) It contains formats which determine the sections that readers read.

2.3 RELEVANT STUDIES

Studies about user manual reading behavior have been conducted by many researchers, but only a few studies relating to the researcher's project have been selected to be discussed.

In 1997, Ericsson Mobile Communications AB carried out marketing research on user manuals for mobile phones in Sweden, Great Britain, Italy, the USA, Hong Kong, and Malaysia. The purpose was to know how people in different countries think about user manual layouts and functionality. The company asked women and men of different ages (the subjects of the study) who did not own a mobile phone but planned to buy one within the next year to use four types of manuals. The four types of user manuals used in the study were the following:

- 1) The Tie: A5-format, landscape, two columns, and black and white
- 2) The Product: A5-format, landscape, two columns, black and white, with a fold-out
- 3) The Jazz Player (black and white): Cut A5-format, portrait, one-column, black and white with a fold-out and photographs, and
- 4) The Jazz Player (color): Cut A5-format, portrait, one-column, color with a fold-out and photographs

The participants had to perform some tasks (e.g. turning on the device, reading the text message, erasing the text message, etc.) by using a mobile phone, a SIM-card, and one of the user manual types that were given. While performing the task with the manual, the respondents were asked to use a scale of 1-5 to indicate how easy or difficult the manual was to find the information needed to complete the tasks, and how helpful the illustrations and instructions were. Then the rest of manual types were rotated and tested with the participants. The participants were also put into groups for discussion to explain their satisfaction or dissatisfaction when using the four types of manuals by focusing on the manual's overall impression, instructions

and information, illustrations, structure, language, menu structure, table of contents, format, and cover. The results of this study are displayed in the table below.

Table 2. The Results of User Manual Survey Conducted by Ericsson Mobile Communications AB in 1997

Type of User Manual	Strength	Weakness
1) The Tie	<ul style="list-style-type: none"> • Clear and well-organized table of contents, menu system • Clear and colored illustrations • Good-flow and order structure 	<ul style="list-style-type: none"> • Too big format • Outdated layout • Too many technical terms
2) The Product	<ul style="list-style-type: none"> • Distinct headings • 1, 2, 3 in bullets when instructions • Product shown on front cover • Easy-to- understand language • Good detailed table of contents 	<ul style="list-style-type: none"> • Too big format • Dark and dull front cover • Old-fashioned and very difficult-to-read menu system • Unimpressive cartoons and illustrations
3) The Jazz Player (black and white)	<ul style="list-style-type: none"> • Modern and instructive layout and front cover • Small format • Illustrations and symbols combined with text • Information separated from instructions • Logical structure • Plain and straightforward language 	<ul style="list-style-type: none"> • Too brief table of contents • Irrelevant photos • Confusing menu system
4) The Jazz Player (color)	<ul style="list-style-type: none"> • Innovative and colorful cover • Small format • Illustrations and symbols combined with text • Information separated from instructions • Logical structure • Plain and straightforward language 	<ul style="list-style-type: none"> • Too brief table of contents • Irrelevant photos • Confusing menu system

In addition, the participants were asked what the ideal user manual would be like and listed the following elements:

- 1) Color cover is preferred.
- 2) Format should be small.
- 3) Structure must be logical and easy to follow, i.e., basic information should be presented first and followed by complex information.
- 4) Table of contents should be printed on one page with bold headers preferred.
- 5) The menu system should be placed at the beginning of the manual and be clearly marked out in the table of contents.
- 6) Illustrations and symbols should be enlarged.
- 7) Photos should be used sparsely to prevent confusion.
- 8) 1, 2, 3 in bullets when presenting instructions is a good number of points.
- 9) Remove excess wording in information part (e.g. congratulations text).
- 10) Language should be as simple as possible.
- 11) Font size should be as large as possible, crisp, and modern.
- 12) Fold out should be attached with the manual.

In 2006, David G. Novick carried out an empirical study about customer preferences in using online and printed manuals for Microsoft Office Programs. His methodology in this study included an in-depth interview of 25 computer users who used Microsoft Office Programs and found problems while working. Novick wanted to know which help source of manuals (online or printed) the participants preferred, and how they solved their problems while using Microsoft Office Programs. From the in-depth interviews, he found out that computer users tended to avoid consulting both of the help sources. They complained about the difficulties in navigating and finding useful search terms in both online and printed manuals, the printed manual's bulkiness, and insufficient explanations. Ultimately, the participants solved their problem by asking a colleague or experimenting on their own.

2.4 SUMMARY

In this chapter, theories on the concepts of user manuals in general, the purpose of reading technical documents, types of readers, and analysis of their reading processes were reviewed. Moreover, previous similar studies offer overall views of manual reading in foreign countries; however, research in this field has not been conducted yet in Thailand. As a result, this paper explores the reading behavior of working people in Silom sub-district, Thailand, and the results are presented in the next chapter.